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- Pillai and Joshy (2010) argue that ...
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- Pillai, Josukutty, Joshy and Parija (2015) support

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GRASS ROOT DEMOCRACY THROUGH PEOPLE'S PARTICIPATION : PATHWAY TO GOOD GOVERNANCE

Pavithran K.S.*

Abstract

Good Governance refers to the dynamic process in Public Administration which needs proper rethinking and reformulations both at the level of administration and the public.. 'Good Governance' and democracy include the basic values such as human rights, the principle of participation, accountability, transparency and high standard of public sector management, which are means to development ends. In this respect peoples' participation is considered as one of the most important tool for Good Governance, because participation makes the governance more consensus oriented. The best State is one where there will be broad participation, with no discrimination. Thus, participation and good governance are complementary to each other. Therefore it is essential that there should be direct participation of people in planning, implementing and monitoring the development policies. In a democratic system the legitimacy of government depends on the existence of participatory processes and the consent of those who are governed.

Governance means the process as well as the result of making authoritative decisions for the benefit of the society. It is the process of decision making and the process by which decisions are implemented. Governance has wider meaning and implication than the term 'government'. Government and its institutions are the formal actors in governance. There are informal actors which are different in rural and urban areas. In rural areas informal actors may include landlords, associations of farmers, cooperatives, Non-Governmental Organizations (NGOs), religious leaders, finance institutions, political parties etc. At the national level, in addition

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to the above actors, the lobbyists, international donors, Multi-national Corporations (MNCs), the military, media etc., may play important role in decision making process. These organized syndicates influence decision making, particularly in urban areas and at the national level. Among all these actors, the role of people possess prime importance. In one way or the other almost all aspects of governance have a bearing on the lives of all sections of people. Therefore, the government institutions need to be made responsive to the people, and the whole administration should be based on public interest. In many democratic countries, tendencies show that participation of citizens has been gradually declining. Representatives are often elected on the basis of tiny minority of voters. In the name of people, officials determine policies and programs, which often end up benefiting themselves and other elite (Varma, 2004, p.158). The poor never feel that they are proud citizens of their country. They are neither respected by the community nor respected by the bureaucracy or the politicians. The poor continued to be petitioners and beneficiaries and never have an opportunity to claim their rights and entitlements and assert themselves as citizens.

Good Governance and Peoples Participation

Good Governance refers to the dynamic process in Public Administration which needs proper rethinking and reformulations both at the level of administration and the public (Pavithran, 2017:86), Good governance focuses on the formal and informal structures that involved in decision making and its implementation. Good governance stands on the basic principle of responsible administration. It has three salient features (Lodha and Shrivastava, 2004, p.197). They are;

- a) delegation and devolution of authority and responsibility (decentralization);

- b) adherence to clearly defined ethical standards; and
- c) process of consultation and participation in decision making

Good governance ensure the marginalized groups full citizenship rights and duties by creating appropriate systems, structures, investment and opportunities. Therefore, participation and good governance are depending up on each other. One of the primary objectives of Good governance is that all the citizens of a State have equal rights and access to government. This means that their rights are guaranteed and delivered; they have a voice in decision making, and a definite role in development. The denial or exclusion from rights and benefits of any social group creates inequality and injustice, which in turn often fuels violence and conflict. Good governance minimizes the chances of conflict by including all citizens. Participation and consensus building in the design and implementation of governance programmes and projects is intrinsic to Good Governance.

People's participation refers to the role of members of the general public, as distinguished from appointed officials, including civil servants, in influencing the activities of the government or in providing facilities directly for community needs (Mishra 2004, p.70). Participation is considered as one of the important tools for good governance, because participation makes the governance more consensus oriented. Participation may be direct as in community projects or it may be indirect through elected representatives. The direct participation may involve decision making and it may be extend to actual implementation. Participation in the affairs of State as a citizen was essential to the development and fulfillment of human personality. The best State is one where there was broad participation, with no discrimination. People have the right to self determination. There will always be those who are 'different' in society. Difference

in class, caste, sex, race, colour, and creed. When we are considering 'participation' it should mean the participation or inclusion of all the indigenous people, minorities, and women. In a democratic system the government should ensure an environment where people from all walks of life especially the traditionally discriminated, enjoy the benefit of progress, and are in position of power and authority.

Democracy and People's Participation

Robert A. Dahl in his 'Democracy and its Critics' says that democracy provides 'the prior value of equal personal autonomy and the equal consideration of interests'.(Dahl,1989:237). Democracy may be direct or indirect. The indirect participation means, participation through political parties by electing representatives. In most of the times political parties act on the basis of party elites. Often these political parties not even consider its local level party units or followers. Thus the local level governance units fail to fix correct priorities. Besides the representative are influenced by political affiliations in debates and in the decision making process (Sisodia, 2008:364). Therefore direct participation of people in planning, implementing and monitoring the development policies of their State is essential. It is the backbone of Good Governance and democracy. In a democratic system the legitimacy of government depends on the existence of participatory processes and the consent of those who governed. 'Good Governance' and democracy include the basic values such as human rights, the principle of participation, accountability, transparency and high standard of public sector management, which are means to development ends. The policy-making process should be decentralized for the Good Governance. Public policy is not a product of the will of the elite or the chosen few, as the elitist theories of democracy hold. On the contrary, it is an

outcome of the interaction of all groups who make claims upon or express interest in that particular issue (Gaub, 2005, p.443). Placing people at the centre of development efforts and decision making got many benefits, such as the contribution of local knowledge to activities, the increased chance of objectives and output being relevant to perceived needs, greater efficiency and honesty of officials as they come under public scrutiny, and 'ownership' of the activity by local communities. The consultation with the people and sharing of information can bring improvement in project design and gain public support for development. For accountable and transparent administration, participatory decision-making is important. because it is an indicator of Good Governance.

Democratic decision-making at local level laid emphasis on expanding opportunity for people's participation. In fact, ratification of decisions in the local bodies endorses this principle. But participating in every decision-making process by all the people have hurdles before it. This is because of lack of time, fear to antagonize the powerful, lack of expertise and so on. Therefore, in several occasions the decisions are arrived at by a miniscule number of people who can devote more time, and are acknowledged to be more knowledgeable, are vocal, and have contacts with officials and politicians in and outside the village. Decisions should be taken from the ground level. When these decisions get legal sanction the public can enjoy their rights fully because these laws are based on their interest. Therefore, a much decentralized decision making and resource allocation with more flexibility is required for democratic governance.

Decentralization and People's Participation

Decentralization as a concept dwells on how the State structure

is designed to allow sharing of power between the centre and the sub-national units of the State and other organizations within society. United Nations Development Programme (UNDP) uses the term decentralized governance to describe a situation of power sharing between the Central and Local governments, based on the principle of subsidiarity and that transcends governments to include the private sector and civil society. UNDP seeks to promote such a governance arrangement that significantly enhances services delivery to the local population in an equitable; cost effective manner while observing the tenets of Good Governance.

Decentralization also involves the local governance of grass root subjects. Local governance is important because of its real touch with the lives of common people. Local governance encompasses both technical and representational aspects. The technical governance refers to strengthening the management of programs and policies concerned with effective resource development, service delivery, program implementation and maintenance at the local level. The representational aspect refers to strengthening the participation and empowerment of all organizations, institutions, and individuals of Local government, civil society and private enterprises in the local governance process. It strengthens participation and focuses on a process of dialogue and negotiation rather than the dominance of an externally set agenda. Local governance provides a direct mechanism for enabling the interests of communities to be represented in the decision making structures of government. It is the effective means of providing sustainable and equitable opportunities for all citizens.

Decentralization is a holistic people-centered approach and it leads to greater effectiveness in administration. Through decentralization, social and economic development programs at the local level become more

realistic and target group oriented. It not only increases popular capacity to ensure responsibilities and accountability but also improves delivery of services by allowing careful consideration of local needs and creating conditions for innovations. It helps to achieve flexible implementation through quicker decision making (Dutta, 2006, Pp. 156-157). Now-a-days governments are providing support for decentralization programs and enhanced people participation at Local government because it is proved that democratic decentralization accelerates socio-economic development within a particular framework.

Decentralization contributes to service delivery improvement. The centralized bureaucratic procedures are unlikely to succeed in the delivery of local services. The quality and quantity of services depend on interaction between stakeholders especially the Local government and the civil society with active involvement of people. The awareness of people about their duties and rights is necessary for their active participation. The capacity building (for active participation) is essential for building more effective decentralized governance. In this context, the mobilization of adequate resources including the public, for the local community to pursue their goals effectively is a major challenge in decentralization. Therefore, it is a much debated issue in India and other developing countries as a part of good governance.

‘Though there are various arguments for and against decentralization, arguments in favour of decentralization outweigh those against it because of the inherent potential of democratization in the decentralized federal system through proper empowerment of people at the grass roots level’ (Sisodia, 2008, p.51). The most important factor is the partnerships between and among different levels of government, the private sector, civil society and other stakeholders.

This will lead to efficient, effective and sustainable development programs. Thus we may say that decentralized planning is the need of the hour.

Now the governments itself provide conditions and tools for improve the people's participation and awareness in administration. The major tools are as follows;

- **Stakeholder Analysis:** Clear understanding of the potential roles and contributions of the different stakeholders is a fundamental need for successful participatory governance. The Stakeholder Analysis is a basic tool for this. The Stakeholder Analysis facilitates analysis of the stakeholders, their roles and contributions. This will indicate how best to maximize the potential of each stakeholder.
- **Social Audit :** Social auditing is the process of verifying expenditures actually made as to their sufficiency with regard to stated social aims. Social auditing is a very important step in terms of accountability and making budgets responsive to the needs of those living in poverty. Social auditing and participatory budgeting require transparent systems of information flow. The social auditing is emancipatory for those disempowered within the society.
- **Citizen's Charter :** In the context of Good governance, a citizen's charter represents people's perspective and identifies changes in structures needed to improve governance and government. It is essentially an advocacy instrument aimed at putting forward the demands and aspirations of people to those in positions of power. They come in different forms like the people's agenda, community charter, declarations, conventions etc. They are increasingly being used by CSOs for mobilizing people put forth demands on the establishment.

- Good Governance Report Card: It is a way to participate in Good Governance efforts. It helps to measure the performance of the political and administrative regimes, problems that stress them, and the effectiveness of their responses. The Report Card also measure direction of the local and national governance, impact of governance, and the degree of democratic participation in local governance. The report card is aimed at encouraging and assisting local and national government institutions and their civil society and corporate sector partners to understand and appreciate the need for Good Governance, regular assessment of their programs, and the good methodologies and indicators for self assessment.

- Right to Information

We have innumerable government departments carrying out activities at the grassroots through schemes and programs and yet the people's needs, largely are not met. Main reason for this is the unawareness of people about government institutions, policies to have access to information is imperative for Good Governance. The success of any representative government depends on the quality of the citizens. The higher the level of the citizens in understanding and analysing the process of governance, the higher will be the level of performance and the quality of performance by the citizens. A well-developed structure has to be put in place to convey the feelings and responses of the public to the government for policy and decision-making. When people are informed, political parties cannot align themselves by assessing their strength in the vote banks.

- E-Governance

E- Governance means the use of Information and communication Technology (ICT) for administrative works. The E-governance

can be defined as a way to good governance (Garg, 2008:43). In the world of ICT, governance become more effective. The administration becomes simple, moral, accountable, responsive and transparent. It means, the administration and governance become SMART (Moolakkattu, 2009:9).

Despite the recent creation of diverse innovative legal spaces in many countries for participatory governance, the practice in most cases has been halting because of many reasons. The local power structures, such as class, caste and gender, dominated, distorted and subverted participatory processes. Lack of participatory skills, knowledge and experience to the local authorities and people, especially the disadvantaged groups is another reason. Participation at various levels -local, provincial and central- lacked political will to include deprived social groups. The paucity of financial resources and statutory powers with local authorities is another reason. However, despite these barriers, there is optimism in local level. Adequate support from the part of government and civil society can make improvement in people's participation. In fact , since the 1980's decentralization has become a truly global movement, affecting most developing countries (Fischer,1991,Dillinger,1994). A number of nations like India, Brazil and Bolivia had introduced programs for participatory governance and implemented them successfully. In Brazil, municipal administrations governed by the *Partido dos Trafal hadroes* (The Worker's Party) involved citizens in participating budget making and the execution of plans. In Bolivia, as in Kerala, the law provides for citizen's vigilance communities to monitor the probity and quality of Local government expenditures (Mander and Asif 2004:197).

Conclusion

In substance, governance through people's participation is for people. Since Good Governance is based on the idea of public interest, a democratically decentralized decision making process is necessary for public administration in democratic political systems. Generally, Public Administration is highly rule-oriented and bureaucratic, and thus unsympathetic and inhuman in character. The main aim of people's participation and Good Governance is to change this situation. Therefore we need a mechanism which is inclusive and responsive, and it can reconstruct the society by a process of consensus through converting the citizens into informed citizens and making the process of governance simple. In this respect, people's participation will help to strengthening grassroots democracy. It is the most important tool for Good Governance. The participation of people in administration will make it more transparent and accountable. Through participation the government will become inclusive in nature and thereby it can protect the interest of all its citizens.

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PATTERN AND SOCIO-ECONOMIC DETERMINANTS OF FOOD CONSUMPTION EXPENDITURE AMONG THE AGRICULTURAL LABOURERS: A CASE STUDY OF THE KOLLAM DISTRICT IN KERALA

Shibu A.S*

Abstract

The magnitude and structure of consumption is a major measuring rod of the welfare of marginalised and weaker sections in the society. As agricultural workers are one of the major segments of weaker sections in the society, the study tries to decipher the socio-economic determinants of consumption expenditure of this section along with their dependence on the public-sector outlet for meeting consumption requirements. The empirical results shows their heavy dependence on the public outlet for consumption along with the significant role of the social status, income and employment diversification in influencing the magnitude of consumption. Besides, the existence of inequality in consumption expenditure within the group warrants a multi-pronged approach in dealing with the issue of lower consumption among the agricultural labourers.

Introduction

The act of consumption i.e., the use of goods and services by households is a major development driver of any society. The level of consumption determines not only the welfare of individuals but also the growth and overall development of the entire country. However, the consumption of various goods and services are not uniformly distributed across various segmented population groups in a developing country like India. One major category of people whose consumption standards remain poor as compared to others is agricultural labourers. The upliftment of consumption

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standard and reducing the inequality of consumption within this marginalised section warrants a detailed analysis of the determinants of consumption. In addition to socio-economic determinants, the intervention on the part of government through various institutional mechanism such as public distribution system also influence the consumption of these marginalised people.

Agricultural labour force of a country is different from its labour force in other sectors. They are the most unorganised and dispersed stratum of the country's labour force. They are usually the most unskilled category of workers and hence have no bargaining power to exercise in the labour market. As a result of their low bargaining capacity, their wages are found to be the lowest among the working category. They are comparatively an easily available factor of production and most of the countries do not face the problem of scarcity of agricultural labour, except a few.

In the present study, the issues such as socio-economic determinants of consumption such as social group, income, employment diversification and the degree of dependence on the public distribution system are studied in details. The paper has three parts. The first part summarises the major objectives and methodology of the study. This section also gives the literature review in nutshell. The second part gives the level and pattern of consumption of food expenditure. This section also gives the socio-economic determinants of food consumption expenditure, the level of dependency of people on the public and private outlet for food articles, and intra group inequality of consumption expenditure. The third part gives the conclusion.

Part: 1

1.1 Objectives

The following are the important objectives of the study.

- (1) Examine the status of food consumption among agriculture labourers in Kerala
- (2) To examine the role of socio-economic factors including income and employment diversification in determining the food consumption expenditure among agriculture labourers
- (3) To evaluate the adequacy and accessibility of food articles among agriculture labourers
- (4) To examine the intra group inequality in consumption expenditure among agricultural labourers

1.2 Methodology

The study objectives are analysed with the help of both primary and secondary data. The secondary sources, particularly information gathered from various NSSO reports on Household Consumption Expenditure are used for identifying the overall consumption standards of agricultural labourers at the national and state level. The determinants of the consumption status of agricultural labourers and other related issues are studying with the help of primary data collected from the selected district of Kerala. The number of agricultural labourers per sq.km. is used as a critical variable for the selection of a sample district for collecting primary data. Out of the districts which have a density of agricultural labourers greater than the state average, a district was randomly selected. The district selected for the purpose is Kollam. By using the criteria of precision and confidence level, 450 sample agricultural labourers are selected. A structured interview schedule was used for elicited information about consumption and related factors. Out of the total sample households, the number of SC/ST, OBC and General category households are 83, 147 and 220 respectively.

Indices representing adequacy of quantity, quality and accessibility for food articles are prepared. Before preparing the

concerned indices, scores representing adequacy of quantity, quality and accessibility are prepared. Indicators such as 'not available, less adequate, adequate and very adequate' are used for assessing adequacy of quantity and quality of food articles. These options are assigned a value equal to zero, one, two and three respectively. The sum of values of these options for all food articles gives the adequacy score for quantity and quality. Similarly, indicators like 'not at all, difficult, less easily and easily or readily' are used for assessing accessibility of food articles. These options are assigned values such as zero, one, two and three respectively. The sum of these options for all food items gives the accessibility score. The adequacy and accessibility scores are converted into a normative index. The formula used for calculating the index from the score is

$$(\text{Actual value} - \text{Minimum value}) / (\text{Maximum value} - \text{Minimum value})$$

Values of the index lie between the minimum of zero and the maximum of one.

1.3 Review on determinants of consumption expenditure.

Numerous studies on consumption and consumption pattern have been undertaken in India and in various parts of the world. Some of these studies are purely theoretical and some others are empirical. Empirical studies in India are mostly based on NSS data and concentrated on broad commodity groups like cereals, pulses; edible oils, other food and non-food items. No attempt has been made to analyse the consumption expenditure of agricultural labourers in Kerala and the nature of such expenditure. Filling this research gap is very essential as Kerala has a unique consumption expenditure pattern compared to other regions of the country.

A large number of theoretical proposition or hypothesis on consumption have been put in empirical evaluation over many decades. The important theoretical proposition put in to empirical

verification are: the Keynesian consumption hypothesis (1936), Duesberry's relative income hypothesis (1949), Friedman's permanent income hypothesis (1957), Modigliani's lifecycle hypothesis (1954), Random Walk hypothesis of Hall (1978), the normal income hypothesis of Farrel, the growth hypothesis of Modigliani and Brumberg (1954). In addition to the empirical verification of the above hypothesis, a large number of case studies on consumption expenditure have been conducted at the global, national and local level. The inferences from these empirical surveys provide valid insights for policy decision making.

The inferences such as insufficiency of food consumption of farm women (Chanderkanta Vats, 2014), the growing inter-temporal and rural-urban variation in consumption and the variation in household nutritional intake between high and low expenditure groups in Bangladesh (Quazi Shahabuddin, 1989), the increasing demand for food along with growth and its insights towards developing the agriculture sector (HuseyinÖzer, 2003) are highly useful for understanding the nature of the consumption expenditure of agricultural labourers. The study by A K Rejula Devi (2001) on the issue of food insecurity among India's poor and landless agricultural labourers reveals the stark food insecurity, particularly among female-headed households.

The role of occupational factors in the consumption pattern was well taken in the study of Balvir Singh (1973). At the same time, the increasing disparity in consumption expenditure among the households in India was studied by Satya Paul (1988). The volatility of farm income and its impact on consumption expenditure and other economic activities are studied by Gordon L. Carriker, Allen M. Featherstone, and Ted C. Schroeder (Jan., 1993). The inelastic nature of consumption expenditure of farmworkers is an interesting inference derived from the study of Shenggen Fan, Eric J. Wailes and Gail L. Cramer (1995). The consumption expenditure showed

significant differentials not only between the groups (rural vs. urban) but also within the group in India. This was highlighted in the study of Dr K.T. Geetha (2011) and G S Chatterjee (1976).

The above empirical reviews highlight that income, other socioeconomic factors, including employment diversification determines the consumption expenditure of the marginalised groups such as agricultural labourers.

Part: 2

2.1 Consumption status of agricultural labourers: National and state level comparison

Kerala shows a higher level of consumption at an absolute level as well as in its growth rate over the period. The mean MPCE of Kerala for rural and urban areas are higher compared to their All India averages. While the average MPCE increased at 3.44 times in India between 1999 (55th round) and 2012 (68th round of NSSO household consumption expenditure survey), it was 3.66 times for Kerala. This is in line with the consumerism experienced in Kerala. However, the relative status of various social and occupational groups on consumption expenditure of Kerala is not different from All India figures. The consumption expenditure is the lowest among agricultural labourers throughout time. Not only the absolute MPCE but also its growth rate is lowest among this marginalised group.

2.2 Average MPCE (Rs.) by household type - Kerala and India (55th to the 68th round)

At the national level, among rural households, those belonging to the occupational group 'others' showed the highest average monthly per capita expenditure (Rs.652) and the lowest MPCE was for agricultural labour, (Rs.386). In urban India, average MPCE was the highest (Rs.1031) for the household type 'others' as in rural areas. On the other hand, the average MPCE was the lowest (Rs.541) for casual labour households.

Table 1 Average MPCE (Rs.) by household type for each sector

Average MPCE (Rs.) by household type India and Kerala (55 th to 68 th round)									
Type of HH	55 th round (1999-00)		61 st round (2004-05)		66 th round (2009-10)		68 th round (2011-12)		
	India	Kerala	India	Kerala	India	Kerala	India	Kerala	
Rural	Self-employed in non - agriculture	502	800	604.14	1134.28	1111	1896	1509	2932
		386	570	415.65	690.77	828	1402	1159	1933
	Agri. Labour	483	656	519.81	792.81	968	1454	1238	2081
	Other labour	520	925	583.81	1296.53	1102	2407	1436	2989
	Self-employed in agri.								
Urban	Reg. wage /salary earning	652	1016	818.19	1307.72	1557	2287	1893	3569
	Other	486	766	558.78	1013.15	1054	1835	1430	2669
	All types	813	950	982.35	1455.9	1806	2462	2415	3798
	Self-employed	981	1129	1212.66	1513.65	2326	3068	3062	3815
	Regular wage salary earning	541	653	579.63	830.91	1090	1477	1514	2076
Urban	Casual labour.	1031	1258	1444.97	1430.2	3012	3143	3734	4309
	Other	855	932	1052.36	1290.89	1984	2413	2630	3408
	All types								

Source: NSSO Data (various rounds)

It is interesting to analyse the type of household which has the merit of the highest growth in MPCE and which has the lowest growth in MPCE. This can be done with the help of Table 1. As far as rural India is concerned, self-employed in agriculture and agricultural labour show the highest relative change over the concerned period. Both these sections show a growth of 300.60 and 300.26 percent respectively in the average MPCE. Meanwhile, other labour experiences the lowest change in this category. Over the period of time concerned, this section's average MPCE grew by 256.31 percent only which is below the national average growth of 294.24 percent.

In rural Kerala, 'Others' had the highest MPCE in the 55th 61st and 68th round. The household type self-employed in agriculture had the highest MPCE in the 66th round. At the same time, agricultural labour had the lowest MPCE in all four rounds. In urban Kerala, 'others' had the highest MPCE in the 55th 61st and 68th round. The lowest MPCE is for the casual labour in all the four rounds.

In rural India, the household group 'regular wage-salary earning' had the highest MPCE in the 68th round, and the occupational group 'agricultural labour' had the lowest MPCE. The lower group's MPCE is just 57.89 percent of the MPCE of the highest household group. Similarly, in the case of urban India, highest MPCE is for others and lowest MPCE is for casual labour. This implies the occupational group 'Others' have MPCE which is 146.53 percent higher than that of the lower group. It is inferred from the above analysis that in urban India, inequality in consumption expenditure is considerably higher than in rural India.

In rural Kerala, the highest MPCE (68th round) is for 'others', and the lowest MPCE is for agricultural labourers. The highest group's consumption expenditure is 86.63 percent greater than that of the lowest group. In urban Kerala, the highest MPCE

is for the occupational group 'others' and the lowest for casual labour. This indicates that there is a difference of Rs.2233, which is 107.75 percent higher compared to the lowest category, casual labour. It is noted that both in rural India and in rural Kerala, the lowest MPCE is for the SC/ST category among social groups and for the agricultural labourers among the type of households. It is clear from the above analysis that, like in urban India, there exists a considerably higher level of inequality in rural and urban Kerala. However, the inequality in rural Kerala is less than that of rural India. The situation of agricultural labourers, who are considered as the marginalised income class, is similar to the social groups SC and ST. Average MPCE, both at national and at the state level shows that they are the lowest consumption group. Rural agricultural labourers, who receive low income had low consumption expenditure in all the four rounds.

Analysis of the MPCE of all India and Kerala state provides some interesting insights. The high MPCE of Keralite compared to the national average proves the high level of consumption standards kept by the people in Kerala. The above-average consumption expenditure in Kerala is linked to the high values of socio-economic indicators of the state. Kerala is the top-ranked state in terms of educational attainment, health indicators and socio-economic development. However, there are marginalised groups which are not receiving the benefits of all-round development. As a result of this, the consumption expenditure of social groups like ST and SC and economic group like agricultural labourers are comparatively low.

2.3 Food Consumption expenditure of sample agricultural labourers in Kerala

The level and pattern of expenditure on food items are the important determinants affecting the standard of living of people, particularly the marginalised section like agricultural labourers. In

the following analysis, an attempt for a detailed investigation of the pattern of food expenditure incurred by the sample households is made. In addition to cereal items, people consume a variety of food items, including fish, meat, vegetables, edible oils, beverages, fruits, milk, etc. Table 2 shows the average monthly consumption expenditure of sample households for various items. The average monthly food consumption expenditure is Rs 5750/-. The pattern of food consumption expenditure shows that the major portion of food expenditure is incurred for the consumption of cereals, fish, meat, milk, spice, and fast foods.

Table 2 Food consumption expenditure of agricultural labourers

Food items	Monthly expenditure (Rs.)
Cereal	747.58 (12.81)
Meat	419.97 (6.98)
Fish and egg	786.86 (13.53)
Edible oil	193.38 (3.45)
Vegetables	229.59 (4.14)
Fruits	111.43 (1.89)
Pulses	263.63 (4.75)
Tea/coffee	178.59 (3.22)
Milk	583.7 (10.36)
Sugar	62.14 (1.1)
Spices	456.33 (8.26)
Bakery sweets	333.31 (5.96)
Beverages intoxicated	380.19 (5.78)
Beverages non intoxicated	126.19 (2.1)
Fast foods	428.46 (7.66)
Other food items	449.02 (8.04)
Amount of total food expenditure	5750.6

2.4 Food consumption expenditure and social groups

Table 3 summarises the pattern of food consumption expenditure of sample households categorised by social groups. The monthly

average food expenditure for the entire sample population is Rs 5751. The average expenditure of SC/ST, OBC, and General community are Rs 5300, Rs 5945 and Rs 5791 respectively. As compared to the OBC and General community, the average food expenditure of SC/ST is significantly lower. However, there is not much difference in spending between OBC and the general community. As shown by the significance of the F-ratio test, the difference in the monthly average food expenditure among the social groups is statistically very significant.

The pattern of food expenditure is not uniform across social groups. In general, the largest percentage of food expenditure is incurred for items such as cereals, fish, milk, and spices. The share of expenditure on cereals, fish, milk, and spices is 12.80%, 13.52%, 10.35%, and 8.25% respectively. Households are also spending a significant amount for fast food and beverages including intoxicated drinks. Nearly 6 percent of spending is incurred for intoxicated beverages. The average monthly expenditure for all individual food items by the SC/ST community is lower than the OBC and General community. The value of F-ratio and its significance shows the magnitude of variation among the social groups. Except for items such as vegetables, milk, sugar, spices, intoxicated beverages, fast foods and other food items, the difference in spending on food items among social groups is statistically very significant.

Table 3Average monthly food consumption expenditure by social groups. (in Rs.)

Food items	Social Groups				ANOVA results		
	SC/ST	OBC	General	Total	F- ratio	DF	Sig.
Cereal	660.38 (12.45)	804.7 (13.54)	742.31 (12.82)	747.58 (12.81)	3.025	2	0.05*
Meat	385.3 (7.27)	465.59 (7.83)	402.57 (6.95)	419.97 (6.98)	5.382	2	0.005*
Fish	721.08 (13.60)	818.43 (13.77)	790.59 (13.35)	786.86 (13.53)	3.375	2	0.035*

Edible oil	179.32 (3.38)	200.4 (3.37)	194 (3.94)	193.38 (3.45)	3.639	2	0.027*
Vegetables	217.71 (4.11)	238.74 (4.02)	227.95 (3.94)	229.59 (4.14)	2.846	2	0.059
Fruits	82.77 (1.56)	120.8 (2.03)	115.97 (2.00)	111.43 (1.89)	9.802	2	0.001*
Pulses	244.34 (4.61)	268.62 (4.52)	267.58 (4.62)	263.63 (4.75)	5.977	2	0.003*
Tea/coffee	170.19 (3.21)	185.03 (3.11)	177.46 (3.06)	178.59 (3.22)	3.280	2	0.039*
Milk	545.49 (10.29)	597.04 (10.04)	589.2 (10.17)	583.7 (10.36)	2.547	2	0.079
Sugar	59.33 (1.12)	63.86 (1.07)	62.06 (1.07)	62.14 (1.1)	1.416	2	0.244
Spices	438.79 (8.28)	458.11 (7.71)	461.76 (7.97)	456.33 (8.26)	1.504	2	0.223
Bakery sweets	336.2 (6.34)	355.41 (5.98)	317.49 (5.48)	333.31 (5.96)	4.15	2	0.016*
Beverages intoxicated	342.69 (6.47)	333.7 (5.61)	425.33 (7.34)	380.19 (5.78)	1.87	2	0.155
Beverages non intoxicated	106.41 (2.01)	108.65 (1.83)	145.37 (2.51)	126.19 (2.1)	5.86	2	0.003*
Fast foods	380.2 (7.17)	465.94 (7.84)	421.93 (7.29)	428.46 (7.66)	2.62	2	0.074
Other food items	429.91 (8.11)	459.57 (7.73)	449.18 (7.76)	449.02 (8.04)	0.820	2	0.41
Amount of total food expenditure	5300.19	5944.67	5790.79	5750.6	5.02	2	0.007*

Source: primary data

Note: significance at 5% level. Figures in the bracket show the percentage

It is also inferred that there exists a close link between the level of food expenditure and its distribution among various items. The highest average expenditure incurred among the social groups is OBC. Examination of the expenditure pattern of OBC highlights that their percentage expenditure on cereals, meat, fish and fruits

are higher than in other communities. It may also note that the percentage of expenditure incurred on intoxicated beverages by OBC is lower compared to SC/ST and General Community. Thus, the higher expenditure group tries to optimise their expenditure plan in such a way that it should give maximum benefits to them in terms of calorie and nutrients value.

2.5 Food consumption expenditure and income groups

The income is supposed to be the critical factor influencing the level and pattern of consumption expenditure. The average monthly income of sample households is Rs 20751. Households are categorised into four monthly income groups as given in Table 4. The Table reveals the level and pattern of consumption expenditure on food items by various income groups.

Table 3 Average monthly consumption expenditure for food items by income groups (in Rs)

Food items	Classification of household income (in Rs)					ANOVA Results		
	Monthly income below Rs15000	Income between Rs15000 and Rs 20000	Income between Rs 20000 and Rs 25000	Income above Rs 25000	Total	F- Ratio	DF	Sig.
Cereal	515.38 (11.36)	687.05 (12.35)	920.44 (15.50)	897.2 (13.10)	747.58 (12.8)	23.91	3	0.00*
Meat	302.89 (6.68)	407.86 (7.33)	432.75 (7.29)	522.56 (7.63)	419.97 (6.98)	24.7	3	0.00*
Fish	634.72 (13.99)	794.36 (14.28)	814.62 (13.34)	889.3 (12.98)	786.86 (13.53)	19.261	3	0.00*
Edible oil	166.46 (3.67)	192.16 (3.46)	198.52 (3.75)	214.02 (3.12)	193.38 (3.45)	14.973	3	0.00*
Vegetables	200.52 (4.42)	233.21 (4.19)	223.03 (3.76)	254.26 (3.71)	229.59 (4.14)	14.57	3	0.00*
Fruits	81.92 (1.81)	93.5 (1.68)	127.81 (2.15)	144.46 (2.11)	111.43 (1.9)	25.56	3	0.00*

Pulses	235.28 (5.19)	261.89 (4.71)	270.56 (4.57)	284.87 (4.16)	263.63 (4.74)	16.96	3	0.00*
Tea/coffee	159.97 (3.53)	179.16 (3.22)	179.31 (3.02)	193.17 (2.82)	178.59 (3.23)	12.36	3	0.00*
Milk	489.83 (10.80)	561.73 (10.10)	607.95 (10.09)	669.92 (9.78)	583.7 (10.35)	25.80	3	0.00*
Sugar	53.42 (1.18)	62.61 (1.13)	64.61 (1.09)	67.45 (0.98)	62.14 (1.1)	11.40	3	0.00*
Spices	412.36 (9.09)	450.96 (8.11)	464.15 (7.82)	493.84 (7.21)	456.33 (8.25)	13.304	3	0.00*
Bakery sweets	269.07 (5.93)	331.97 (5.97)	359.17 (6.05)	373.42 (5.45)	333.31 (5.97)	16.718	3	0.00*
Beverages intoxicated	170.03 (3.75)	347.45 (6.25)	264.46 (4.45)	661.54 (9.66)	380.19 (5.78)	26.736	3	0.00*
Beverages non intoxicated	90.13 (1.99)	100.4 (1.81)	136.24 (2.29)	176.7 (2.58)	126.19 (2.09)	14.92	3	0.00*
Fast foods	362.29 (7.99)	426.52 (7.67)	421.87 (7.11)	490.46 (7.16)	428.46 (7.65)	4.204	3	0.01*
Other food items	391.1 (8.62)	431.76 (7.76)	451.94 (7.61)	513.51 (7.50)	449.02 (8.04)	11.80	3	0.00*
Amount of total food expenditure	4535.43	5561.73	5937.45	6848.69	5750.6	67.176	3	0.00*

Source: primary data

Note: significance at 5% level. Figures in the bracket show the percentage

As expected, the average food expenditure increases along with the increases in monthly income. The average monthly expenditure of the highest income group is Rs 6849, while it is only Rs 4535 for the lowest income group. The monthly food expenditure has drastic variation across income groups. As shown by F-ratio and its significance, the variation of the monthly food expenditure among various income groups is statistically very significant. This variation of the monthly food expenditure is also applicable for individual food items. The average food expenditure of higher-income groups is significantly greater than the lower-income groups. Since the

significance of F-ratio for all individual food items is significant, it can be inferred that there exists a statistically significant variation in all items of food expenditure among income groups.

The pattern of expenditure to various food items gives the relative importance attached to various individuals' items by different income groups. The values in Table 2 shows that though there is an absolute difference in the average amount spent by different groups on various items, the percentage expenditure on these items does not find much variation. The difference in percentage of expenditure earmarked on various items is very negligible. However, in the case of high protein content food like meat and fruits, percentage spending by lower-income is much lower than higher-income groups.

2.6 Food consumption expenditure and employment diversification

Employment status is another factor influencing the level and pattern of consumption expenditure. A good proportion of agricultural labourers earn income from other sources also. The sample households are categorised into two groups: those having single employment and those having multiple employment status. Table 4 reveals the level and pattern of consumption expenditure on food items on the basis of the number of employment sources.

Table 4 Average monthly food consumption expenditure by sources of employment (in Rs)

Food items	Number of employment source			ANOVA results		
	Single employment	Multiple employment	Total	F-ratio	DF	Sig.
Cereal	599.87 (11.62)	801.29 (13.43)	747.58 13.00)	19.97	1 and 448	0.00*
Meat	399.21 (7.73)	427.52 (7.165)	419.97 (7.30)	1.57	1 and 448	0.21

Fish	726.33 (14.08)	808.87 (13.55)	786.86 (13.56)	7.95	1 and 448	0.005
Edible oil	184.80 (3.58)	196.50 (3.29)	193.38 (3.36)	3.67	1 and 448	0.056
Vegetables	223.83 (4.33)	231.68 (3.88)	229.59 (3.99)	1.24	1 and 448	0.265
Fruits	107.63 (2.08)	112.81 (1.89)	111.43 (1.94)	0.52	1 and 448	0.471
Pulses	244.65 (4.74)	270.53 (4.53)	263.63 (4.58)	18.88	1 and 448	0.00*
Tea/coffee	167.08 (93.23)	182.78 (3.06)	178.59 (3.11)	11.77	1 and 448	0.001*
Milk	552.11 (10.70)	595.19 (9.97)	583.70 (10.15)	5.41	1 and 448	0.02*
Sugar	58.78 (1.13)	63.37 (1.06)	62.14 (1.08)	4.83	1 and 448	0.028*
Spices	415.06 (8.04)	471.34 (7.90)	456.33 (7.94)	27.27	1 and 448	0.00*
Bakery sweets	320.02 (6.20)	338.16 (5.66)	333.32 (5.80)	1.86	1 and 448	0.173
Beverages intoxicated	217.47 (4.21)	439.31 (7.36)	380.15 (6.61)	19.03	1 and 448	0.00*
Beverages non intoxicated	79.76 (1.54)	143.06 (2.40)	126.18 (2.19)	27.01	1 and 448	0.00*
Fast foods	425.2 (8.24)	429.85 (7.20)	428.61 (7.45)	0.02	1 and 448	0.877
Other food items	436.18 (8.45)	453.69 (7.60)	449.02 (7.81)	0.94	1 and 448	0.331
Amount of total food expenditure	5158.05 (100)	5966.03 (100)	5750.57 (100)	26.34	1 and 448	0.00*

Source: primary data

Note: Significance at 5% level. Figures in the bracket show the percentage

There is a direct relation between the number of sources of employment and expenditure on various food items. The sample population is divided into two major groups: households having single employment and households having multiple employment as a source of income. The average monthly food consumption expenditure of the single employment household is Rs 5158/- while

it is Rs 5966/ for multiple employment group. The differences in food consumption expenditure between these groups are statistically very significant as revealed by the F-statistics.

Item-wise also, the average monthly consumption expenditure of multiple employment group is much higher than the single employment group. In the case of cereals, meat, edible oil, pulses, tea/coffee, milk, sugar, spices and beverages, these differences between social groups are statistically very significant as shown by the significant value of F-statistics in the Table 4.

2.7 Adequacy and accessibility of food articles

The standard of consumption maintained by a person is determined not only by the level of consumption but also by the adequacy and accessibility of various items consumed. The adequacy can be either adequacy of the quantity or quality. Individuals from the marginalised community can be ensured a minimum level of consumption, provided the persons must get food in adequate quantity and quality. In addition to this, the level of consumption is also influenced by the accessibility of the concerned items. In the following section, the issue of adequacy and accessibility of food items are addressed.

Adequacy or sufficiency simply means the availability as per requirement for consumption by a consumer. The adequacy and accessibility ensure the minimum required consumption. While analysing adequacy, both adequacy in quantity and quality are taken into account. These aspects of adequacy and accessibility of food articles are examined with the eleven important food articles as given in Table 5. The adequacy is assessed by four responses such as not adequate, less adequate, adequate and very adequate. The accessibility dimension is evaluated with the help of the responses such as difficult, moderately difficult and easily available. Table 5

shows the responses on the adequacy and accessibility of selected food articles by the sample respondents. As shown in the Table, in the case of cereals, sample respondents are not adequately satisfied with the quantity of food consumed. In the case of cereals, the majority of respondents get this item from the public distribution system (PDS) either free of cost or at a highly subsidised price, as these people belong to the marginalised community in the society. Their response to the inadequacy of quantity can be found on items including cereals, meat, vegetables and fruit. Majority of people opined that the quantity of food articles consumed by them is either less adequate or adequate. It can also be inferred that the households' response to the adequacy of food articles are greater for those items supplied through the public distribution system.

Table 5 Adequacy of quantity and quality of food articles consumed

Food Items	Adequacy of quantity				Adequacy of quality				Accessibility		
	Not adequate	Less adequate	Adequate	Very adequate	Not adequate	Less adequate	Adequate	Very adequate	Difficult	Moderately difficult	Easily or readily
Cereal	17 (3.77)	174 (38.67)	259 (57.56)	0 (0)	29 (6.44)	189 (42)	232 (51.56)	0	128 (28.44)	275 (61.11)	47 (10.44)
Meat	190 (42.22)	231 (51.33)	29 (6.44)	0(0)	188 (41.77)	124 (27.56)	38 (8.44)	0	188 (41.78)	124 (27.55)	38 (8.44)
Fish	176 (236)	236 (52.44)	38 (8.44)	0 (0)	181 (40.22)	241 (53.56)	28 (6.22)	0 0	47 (10.44)	167 (37.11)	236 (52.44)
Edible Oil	173 (38.44)	234 (52)	43 (9.56)	0 (0)	122 (27.11)	244 (54.22)	84 (18.67)	00	76 (16.89)	258 (57.33)	116 (25.77)
Vegetables	186 (41.33)	216 (48)	48 (10.67)	0 (0)	157 (34.89)	224 (54.22)	69 (15.33)	0	42 (9.33)	229 (50.89)	179 (39.77)
Fruits	181 (40.22)	243 (54)	26 (5.78)	0 (0)	158 (35.11)	229 (50.89)	63 (14)	0	126 (28)	248 (55.11)	76 (16.89)
Pulses	132 (29.33)	223 (49.56)	95 (21.11)	0 (0)	137 (30.44)	184 (40.89)	129 (28.67)	0	86 (19.11)	218 (48.44)	146 (32.44)

Tea / Coffee	149 (33.11)	272 (60.44)	29 (6.44)	0 (0)	32 (7.11)	286 (63.56)	132 (29.33)	0	49 (10.89)	233 (51.78)	168 (37.33)
Milk	193 (42.89)	222 (49.33)	35 (7.78)	0 (0)	93 (20.66)	253 (56.22)	104 (23.11)	0	98 (21.78)	196 (43.56)	156 (34.67)
Sugar	152 (33.78)	222 (49.33)	76 (16.89)	0 (0)	21 (4.67)	277 (61.56)	152 (33.78)	0	72 (16)	239 (53.11)	139 (30.89)
Spices	142 (31.56)	234 (52)	74 (16.44)	0 (0)	96 (21.33)	268 (59.56)	86 (19.11)	0	69 (15.33)	247 (54.89)	134 (29.78)

Source: Primary data Note: Figures in the bracket show the percentage

Along with the adequacy of quantity, the quality adequacy also influences the standard of consumption maintained by a person. Here again, the majority of opinion is either less adequate or adequate in quality of food articles consumed by sample households. It implies that the perspective on the quality of food items consumed by the respondents is not high. In short, the consumption of food articles by agricultural labourers does not meet the test of adequacy both in quantity and quality. As the agricultural labourers are marginalised and economically depressed, this inadequacy of food articles for their consumption has serious implications.

Accessibility of food means whether sources of healthy food are easy to get and at a manageable distance from home or work, using affordable and convenient personal or public transportation. Consumer choices about food spending and diet are likely to be influenced by the accessibility of food retailers, travel time to shopping, availability of healthy foods, and food prices. Agricultural labourers, especially those in rural regions and with low income, may face greater barriers in accessing healthy and affordable food retailers, which may negatively affect diet and food security. The accessibility of food articles by 40 to 50 percent of the households is moderately difficult. This may be because of the fact that retailers are not available in rural regions where the agricultural labourers mostly reside. This may reduce the consumption of agricultural labourers.

2.8 Index of Adequacy and accessibility of food articles

A measure of the index of adequacy and accessibility of food articles is prepared as mentioned in the methodology. In the following session, the index of adequacy and accessibility of food articles are evaluated with reference to social groups, income status and employment diversification status.

2.9 Index of Adequacy and accessibility of food articles for different social groups

Indices representing adequacy of quantity, quality and accessibility for food articles are prepared. Before preparing the concerned indices, scores representing adequacy of quantity, quality and accessibility are prepared. As mentioned previously, the adequacy of quantity and quality are assessed by options such as not available, less adequate, adequate and very adequate. These options are assigned a value equal to zero, one, two and three respectively. The sum of values of these options for all food articles gives the adequacy score for quantity and quality. Similarly, the accessibility of food articles is assessed by levels such as not at all, difficult, less easily and easily or readily. These options are assigned values such as zero, one, two, three and four respectively. The sum of these options for all food items gives the accessibility score. The adequacy and accessibility scores are converted into a normative index. The formula used for calculating the index from the score is explained in the methodology of this paper. The values of the index lie between the minimum of zero and the maximum of one. Table 5 shows the mean score and mean index value for the adequacy of quantity, adequacy of quality and accessibility among the social groups. The mean score shows the absolute position of each social group with respect to adequacy and accessibility, while the index value shows the relative position of each group in relation to others. The degree of variation with respect to

adequacy and accessibility among the social group can be assessed with the help of these indices.

The inference in the Table 6 reveals that the average mean score of adequacies in quantity and quality and accessibility of food articles are less than the value two. Since the minimum and maximum values of the adequacy and accessibility of food articles are zero and three, the given mean score reveals that the sample households are not satisfied with the adequacy of quantity and quality and accessibility of food articles. The mean score of adequacies is only 0.782, which implies that in general, agricultural workers experience inadequacy in the consumption of food articles. The level of adequacy of quality and accessibility of food articles is a little higher than the quantity adequacy. However, the mean score is not uniform across different social groups. The position of SC/ST households with respect to these dimensions are lower than other social groups. In the case of the adequacy of quantity and quality and accessibility, the position of General community households is the highest followed by OBC.

The relative status on adequacy and accessibility and their variation among communities are revealed by the mean index value. Here again, the relative position of the SC/ST community is lower as compared to others. It indicates that the position of the SC/ST community within agriculture labourers is inferior with respect to adequacy and accessibility of food items. The difference in adequacy and accessibility indices between OBC and General community is not much. The difference in adequacy and accessibility indices between OBC and General community is not much. The variation in adequacy of quantity among the various communities is statistically significant as it is revealed from the significant value of F-statistics as given in the Table. In the case of adequacy of quality and accessibility, such variation among the communities is not very significant.

Table 6 Index of adequacy and accessibility of food articles by social groups

Social Groups	Quantity adequacy		Quality adequacy		Accessibility	
	Mean score	Mean index	Mean score	Mean index	Mean score	Mean index
SC/ST	0.6221	0.3494	1.4871	0.5298	1.5244	0.3974
OBC	0.8120	0.5393	1.5022	0.5437	1.5505	0.4213
General	0.8227	0.5500	1.5119	0.5526	1.5835	0.4515
Total	0.7822	0.5095	1.5041	0.5455	1.5618	0.4317
ANOVA results on the index of quantity adequacy by the social group: F ratio 27.207, DF 2 and 447, sig. 0.000						
ANOVA results on the index of quality adequacy by the social group: F ratio 0.386, DF 2 and 447, Sig. 0.680						
ANOVA results on the index of accessibility by the social group: F ratio 1.776, DF 2 and 447, Sig 0.171						

Source: Primary data

2.10 Index for adequacy and accessibility on the basis of household income

The adequacy and accessibility of food articles greatly influenced by the income status of individuals. Table 7 shows the mean score and mean index values of adequacy and accessibility of food articles among various income groups.

The values are given in the Table clearly highlights that there exists a positive relationship between the mean score of adequacy and accessibility of the food article and income status. The mean score representing adequacy and accessibility is lowest for low-income groups and highest for high-income groups. The mean index value also shows the same trend of increasing the relative status on adequacy and accessibility with respect to income. However, as shown by the F-ratio and its significance, these differences in indices of adequacy and accessibility among income groups are not statistically significant.

Table 7 Index of adequacy and accessibility of food articles by income groups

Income group	Quantity adequacy		Quality adequacy		Accessibility	
	Mean score	Mean index	Mean score	Mean score	Mean index	Mean score
Monthly income below Rs15000	0.7498	0.4771	1.5416	0.5798	1.5286	0.4012
Monthly Income between Rs15000 and Rs 20000	0.7915	0.5188	1.4785	0.5219	1.5523	0.4229
Monthly Income between Rs 20000 and Rs 25000	0.7955	0.5227	1.4864	0.5292	1.5618	0.4317
Monthly Income above Rs 25000	0.8011	0.5284	1.5102	0.5510	1.5994	0.4661
Total	0.7822	0.5095	1.5041	0.5455	1.5618	0.4317
ANOVA results on the index of quantity adequacy by income group: F ratio 1.208, DF 3 and 446, Sig. 0.306						
ANOVA results on the index of quality adequacy by income group: F ratio, 1.841, D F 3 and 446, sig. 0.139						
ANOVA results on the index of accessibility by income group: F ratio 1.561, DF 3 and 446, sig. 0.198						

Source: Primary data

2.11 Index for adequacy and accessibility on the basis of employment status

Employment status also influences the adequacy and accessibility of food items. The sample households are classified into single employment and multiple employment groups. As given in Table 8, the multiple employment group has a slight edge over the single employment group with respect to the adequacy of the quantity of food articles. Both in terms of the mean score and mean index. At the same time, the single employment groups have a slight edge over multiple employment groups on adequacy of quality and accessibility. However, as revealed by the F-ratio and its significance, there are no significant differences in adequacy and accessibility

on food articles between households having single and multiple employment.

Table 8 Index of adequacy and accessibility of food articles by employment groups

Employment group	Quantity adequacy		Quality adequacy		Accessibility	
	Mean score	Mean index	Mean score	Mean score	Mean index	Mean score
Single	0.7773	0.5045	1.5314	0.5705	1.5720	0.4410
Multiple	0.7840	0.5113	1.4942	0.5364	1.5581	0.4283
Total	0.7822	0.5095	1.5041	0.5455	1.5618	0.4317
ANOVA results on the index of quantity adequacy by employment group: F ratio 0.074, DF 2 and 447, Sig. 0.785						
ANOVA results on the index of quality adequacy by employment group: F ratio, 2.494, D F 2 and 447, sig. 0.115						
ANOVA results on the index of accessibility by employment group: F ratio 0.250, DF 2 and 447, sig. 0.617						

Source: Primary data

2.12 Inequality in food consumption expenditure

As agriculture workers are socially and economically deprived and marginalised in society, they have homogenous characteristics in many respects. However, a number of socio-economic factors differentiate people within the same marginalised section such as agriculture labourers. These factors create a wedge in socio-economic status within the concerned group. Among the various aspects of consumption expenditure, its inequality status is an important aspect that is influenced by various socio-economic factors. The value of the Gini coefficient is used for evaluating the existing inequality in consumption expenditure on food articles among various groups within the agriculture labouring class.

Table 9 gives the value of the Gini coefficient for consumption expenditure on food items among various groups of agriculture workers. The factors considered for evaluating inequality are the

monthly income, employment status and social group. It shows that inequality is high among the low income group as compared to the high-income group. Within the social groups, inequality is highest among the SC/ST agriculture households. Inequality is lowest among the General community followed by the OBC category. Also, within the employment groups, inequality is high among the single employment category of households. It is found that the existing socio-economic factors determine the inequality status in consumption expenditure of agricultural workers. Thus, SC/ST households with single employment and low income, not only suffer from a lower level of consumption expenditure, but also experience a higher level of inequality.

**Table 9 Inequality in food consumption expenditure:
Value of Gini Coefficient**

Indicators	Status	Gini coefficient
Monthly income	Low	0.1447
	High	0.1078
Employment	Single	0.163
	Multiple	0.132
Social group	SC/ST	0.1781
	OBC	0.1323
	General	0.1368

Source: Primary Data

Part 3

Conclusion

The above analysis reveals that the food consumption of agricultural labourers is still the bare minimum and they depend on the public distribution system and other govt outlets for maintaining the low levels of consumption. It is also found that monthly income, employment and social groups influence food consumption of these marginalised sections. There exists inadequacy both in quantity and quality and low accessibility in consumption. It is also found that

there are disparities among the sample households in consumption of food articles. Thus, a multi-pronged approach is required to tackle the issue of low consumption expenditure among agriculture workers. The measures for redressing the inequality in consumption expenditure among agriculture workers deserve special attention along with the measures for improving the level of consumption expenditure.

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STRATEGIC PARTNERSHIP: A CONCEPTUAL UNDERSTANDING WITH REFERENCE TO INDO-US RELATIONS

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Abstract

The paper attempts to analyse the traditional and modern dimensions of the concept of the strategic partnership. Various theories are there based on the concept of strategic partnership. How strategic partnership is used over the years is one prominent thing to understand. This paper also explains the interchangeable terms of the concept of strategic partnership in International Politics. It evaluates the features of US foreign policy and observes how force is one important component in her foreign policy.

Key words: Strategic Partnership, strategy, security, strategic culture, foreign policy.

Introduction

The term 'strategic relationship' is used in a wide variety of senses in International Politics. There is lot of ambiguity associated with the meaning of the term on account of its indiscriminate usage. There is also a need to understand the meaning of the term and nature of the relationship it refers to. The concept of a strategic partnership or a strategic relationship has a deeper meaning than what we understand it especially in the context of globalization. Strategic relationship as a concept has developed from the roots of the term 'strategy'. The oxford concise dictionary means 'strategy' as a plan designed for a particular purpose, it is a process of planning or carrying out a plan in a skillful way. The term strategic means forming a part of a plan or an aim to achieve a specific purpose or to gain an advantage. In this paper, the author focuses on the

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meaning, definition, and patterns of the concept strategy and strategic relationship. This paper also tries to explore historically and analytically the true nature of Indo-US relationship on the basis of the concept and theory of strategic relationship.

The Traditional Understanding of 'Strategy' and 'Strategic Relationship'

The concepts of strategy and a strategic partnership are used mainly in two dimensions; traditional and modern. The conventional definition of strategic relationship is based on military and political aspects. Its origin can be traced back to the Greek, Chinese and Ancient Indian perspectives. In a close analysis of the roots of the concept, it is stated that it was discussed by Homer, Euripides and many other early writers. The word strategy comes from Greek strategies, a “general” which in turn comes from ‘army’ and ‘lead’(Honnby,1995). The Greek verb ‘stratego’ means to plan the destruction of one’s enemies through the effective use of resources. The concept of strategy in a military or political context has remained prominent throughout history and has been discussed by major writers such as Shakespeare, Montesquieu, Kant, Mill, Hegel, Clausewitz, Liddell Hart, and Tolstoy. The strategic concepts developed by these writers have been used by numerous militarists and political theorists such as Machiavelli, Napoleon, Bismarck, Yamoto and Hitler(Chen, 2013).

The conventional method of using force on various occasions has a clear link with the term strategy. The use of force is historically a notable phenomenon. The proposition that force is considered a necessary instrument of diplomacy and have a role to play in foreign policy. It is part of the conventional wisdom of statecraft. Ancient states and empires used force to dominate internal and external sovereignty. Colonial powers greatly depend upon the use of force

to control the wide regions they acquired and the organized strength of the force was used to resist protests. Andre Beaufre, an eminent scholar stresses the term strategy as "the art of the dialectic of force, or the art of dialectic of two opposing will use force to resolve their dispute" (Beaufre, 1983). Thinkers mainly focus their views on the military dimension of strategic alliance or the core emphasis is on the strategic relationship or formulations related to war situations. Military background is the peculiar feature of the origin of the term strategy.

In several occasions the state or non-state actors (NGOs, group etc, tries to adopt different methods to achieve their interests. These methods are actually different strategic connections or decisions based on certain strategic calculations. In particular, it is a way of organizing available resources to achieve one's goals. The strategy in this context is the linkage or channel respectively as the armed forces and policy interests of the nation-states. Basil Liddell Hart (1991), a British strategic thinker, defines strategy as 'the art of distributing and applying military means to fulfil ends of policy'. The definition related to strategy mainly focuses on military capability and its implementation. Carl Von Clausewitz a Prussian general and military theorist in the 18th century said, 'war is not merely an act of policy but a true political instrument, a continuation of political intercourse' (Clausewitz,2001).

But, modern strategic thinkers consider the use of force as an instrument of last resort. In the traditional mode of thinking, the use of armed force was an essential tool in the nation-states options, but in the modern way of thinking, there are plenty of other tools which can also be used. This new approach describes a wide level of use of strategy or a strategic partnership. In the opinion of Lawrence Freedman's 'strategy involves the search for the optimum relationship

between political ends and the means available for obtaining them' (Freedman,1998)

Modern Concept of Strategic Relationship

The scope of the term strategy has drastically changed in modern times. Non-military dimensions such as political, economic, technological are part of the strategic relationship. The traditional definition of strategy is confined within military dimensions and is very much related to war in International Relations. The broad notion of strategy is intimately connected with some of the non-military and military aspects. It was after the industrial revolution, the term strategy came to acquire non-military connotations. Trade expansion, the explosion of economic activities throughout the world facilitated the development of the new concept of strategy. New terms originated in the realm of international politics, economic strategy, trade strategy, business strategy etc came to operate. Peace strategy is a term originated and developed into different dimensions(Chen,2013) According to Edward Mead Earle, 'strategy is the art of controlling all the resources of a nation or a coalition of nations in order to effectively promote and secure its vital interests against actual or potential enemies'(Earle,1943). Effective management of resources to protect the national interest is a strategy. Regional economic groups offer a clear example of controlling the resources of nation states and strategic economic zones will help to tackle the use of forces. After the Second World War strong economic alliance greatly influenced the healthy political relationship of the European states.

Economic statecraft is one important alternative in the modern era. The use of economic sanctions and embargos against the states is a clear example. For instances, the Western economic sanctions against Iran, actually worsened the Iranian economy and finally they

concluded treaties with the major economic powers and now Iran is ready for a healthy discussion related to their nuclear programs. The non-military elements of national power are effective and powerful to a healthy strategic partnership. The United States recently developed more creative policies to deal with the opponent states. A Combination of diplomatic, economic, technological assistance and military is the clear example. This is a kind of grand strategy, and this idea of grand strategy has come to include the peacetime management of overall governmental resources for wider policy purposes, it has its roots in the more specific notion of utilizing that range of resources for the conduct of war.

According to Liddell Hart, 'the role of grand strategy is to coordinate and direct all the resources of a nation, or band of nations, towards the attainment of the political object of war-the goal defined by fundamental policy' (Hart, 1991). This argument may be broadly applicable to military and non-military situations. The ardent use of military and non-military resources by the US for their global interests is significantly important. As a state, US implement its resources against several states on various occasions, for example, US action against Vietnam, Cuba and direct military actions against Iraq. On the other side US formed alliances which include military and non-military alliances. NATO formation and its various military operations is a kind of combined use of resources of a band of nations. Recently the United States under the leadership of Donald Trump influenced GCC countries to take an embargo against Qatar. In this context, US played a major role in current regional politics, tactically coordinated the band of nations in favor of US interest and also for its allies.

The usage of the concept strategic partnership is widely used in modern era. The Strategic economic engagement or strategic relations between the two international actors is a familiar term

in international politics. Today, strategic partnership is a form of relationship between international political actors, but this relationship is formulating within the framework of foreign policy strategies of the actors. The usage of the word 'strategy' in different contexts for various field are noteworthy. There are Business strategies, financial strategies, research strategies and climate problem-solving strategies are now considered as the regular usages. In the case of an organization, the concept strategy is based upon its mission or goal, or its long term programmes based on a vision; assessment of existing resources. An organization forms its own strategies to find out the alternative ways to meet scarce resources. It is a fact that development of a coherent strategy is absolutely essential to national security in times of both war and peace. The term strategy is closely associated with concept national security. In the 21st century international system, the need and importance of security for the nation states is inevitable. The demands or the security requirements promote a clear cut development of national-level strategies that are designed with objectives. Today states have always had a variety of strategies that were intended for use the strategic or national level of government. Modern states forms new strategies to deal their different issues, sometimes it is very vibrant and applicable and at the same time, strategies may fail, and it will create a great impact on the political position of particular states.

The State government forms strategies frequently and most of these strategies existed in formal documents that were classified and not open to public scrutiny. The main issue that these strategies mainly focused on key security concerns of the state or on the other side the revelation may cause the breakage of the diplomatic relation between other states. For instance, the Wikileaks document revelation led by Snoden shook the strong relationship of the United States and its

natural allies. Today, there are several challenges faced by the modern nation states. From terrorism to environmental insecurity from health security to territorial security issues are examples. The current years witnessed the emergence of a spectrum of comprehensive national security strategy related documents. These things created in part to institutionalize the existence of national-level direction for a variety of national security issues.

Strategic ideas and creative approaches then went to the modern business world also. When dealing with trade and business, strategic approaches adopted. Such an approach also links to a strategic management theory in the international business world, these linking theories or the base idea borrowed heavily from military-strategic theories. This method is evident in the management texts which seek to apply Sun Tzu's wisdom to the operations of the modern corporation.

Strategic Partnership: Divergent Views

The emergence and the use of the term strategic partnership in the international realm started very vibrantly after the year of the 1990s. Since 1990s the use of the term cooperative relationships gets changed in the International Relations vocabulary. In International politics the most often used interchangeable terms are strategic partnership, strategic alliance, strategic cooperation, close partnership, special relations etc. These are the pertinent terms used in the vocabulary of the discipline.

According to Lucyna Czechowska, to establish strategic cooperation, it is enough to find one priority that is expressed by subjects in an equal or similar way. Convergent strategic goals are the starting point to form special relations. Czechowska argues that a relation becomes a strategic partnership through with the presence of authentic and

long-term cooperation between the parties (Czechowska, 2013) The economic engagement is the prominent area, and that includes free and flexible access to national market. Advanced institutionalization of mutual relations between partners both on the interstate and inter-human level is one important aspect of the relationship. Cultural cooperation of youth and their academic exchange constitute inevitable factors in this context. The third necessary condition mentioned by the theorists is the nationwide sympathies that lead to the creation of relations similar to human friendship, which is based on trust and loyalty. The good practice in solving contemporary conflicts is inevitable in the strategic partnership of states.

Lucyna Czechowska (2013) identifies seven important features of the strategic partnership.

- (i) The Partnership character of the relation
- (ii) Convergence of strategic goals of parties
- (iii) Mutual conviction that combines the efforts for the probability of implementing cohesive strategic goals.
- (iv) Authentic and long-term cooperation in order to fulfill common goals.
- (v) The preference and intensity of contacts that surpasses the ordinary level (for those states) of closeness with other partners.
- (vi) A Highly developed infrastructure of relations
- (vii) The positive atmosphere of bilateral relations is the key component of the concept of strategic partnership

A common high priority objective is the exuberant thing in the conceptual framework of a strategic partnership. Which values and goals should be shared within the 'strategic partnership' is also important. Antonio Lessa (2010) observes that while discussing the use of this expression in the context of Brazilian foreign policy, he

argues that 'strategic partnerships' are priority political and economic relations, reciprocally compensating, established on the basis of an accumulation of bilateral relations of a universal nature. In the Brazilian foreign policy experience, the concept strategic partnership acquired a healthy and viable meaning. In the 1970s and 1980s a rapid change happened in United States within the conceptional frame work of strategic partnership. Moreover, the author argues that the concept as it was ceased "to be an expression of a bilaterally defined agenda around political convergence and economic projects and becomes a more label" (Lessa,2010) the strategic partnership framework demands capable and powerful state actors and they should take actions together.

The strategic theorist, Marius Vahl states that the presence of common values, common interests and mutual understanding are essential criteria for a partnership as opposed to mere cooperation' (Vahl,2006) According to Vahl one of the prerequisites for a good partnership is the need for a roughly equal size of state actors. This feature is an important factor in the conceptual framework. Strategic thinker, Rajesh Basur(2017) explains that strategic partnerships carry certain characteristic features falling short of alliances. The first prominent thing is, unlike alliances they do not demand commitments to a partner's disputes with other countries. India does not take a strong position on Japan's territorial disputes with China and Russia. On the other side, Japan does not openly side with India in its disputes with China and Pakistan. For instance Japan's reaction to the Doklam stand though critical of China implicitly, did not go beyond saying that "all parties involved should not resort to unilateral attempts to change the status quo by force". India's response to the verdict of the arbitral tribunal on the South China Sea is that "all parties to show utmost respect for the UNCLOS".

This reflected a kind of similar response despite Japan's pressure for a strong statement from India. There was no explicit mention of the South China Sea in the Joint Statement between India and Japan.

Rajesh Basur states that strategic partnership means, first both retain the flexibility in political engagement and economic cooperation with their common adversary. Moreover, the state actors exclude and avoids the partner's disputes and keep a distance from it. Another fact identified by the author is, the regular high-level political and military interactions facilitate a collaborative approach to strategic policies over a range of economic and military activities (Basur, 2017) India and Japan are not only moving forward on economic and defense resonance, but are also cooperating on other major issues. For instance, the civil nuclear energy and Security Council reform are clear cooperative engagements between the two states.

Experience in the Indo-U.S. Relations

While dealing with the conventional understanding of the concept, an important definition of strategic relationship is based on the military and political aspects. This conventional or the traditional understanding of concept is closer to American acts and policies than the Indian approach. Moreover, with regard to the theory of force as it is a necessary instrument of diplomacy and have a role to play in foreign policy is part of the conventional wisdom of statecraft. Force is integral to statecraft and policy strategy of the United States. It is not so in the case of India even in the South Asian region or in the Indian Ocean region. The coercive diplomacy is a technique of statecraft that clearly used by the United States than India. Foreign policy theorist Alexander George termed this is a technique of 'forceful persuasion'. Basil Liddell Hart, a British Strategic thinker and his conventional theory of strategy is more

linked with American acts and policies. He defines strategy as the art of distributing and applying military means to fulfil ends of policy'. This theoretical base is mainly focused on military capability and its implementation (Hart, 1991).

In the traditional strategic relationship theory dimension, the Prussian military theorist Carl Von Clausewitz says the war is not merely an act of policy but a true political instrument, a continuation of political intercourse. This conventional viewpoint is linked with both approaches of the U.S. and at a certain level that of India's foreign policy. Lawrence Freedman's strategy theory says that 'strategy involves the search for the optimum relationship between political ends and the means available for obtaining them. This theoretical stance by Freedman is evident in the current Indian foreign policy approaches in the United States and India. India and the United States involved in a relationship that searches a certain optimum level of the relationship. The changed international context prompted the United States and India stand together. There are certain consenses between the political ends within the relationship. The Indian foreign policy option was widened and seeks a long term relationship with the United States in the changed international system. The political, economic and security ends of the United States and the political aspirations of India are important factors that bring together the new world order. There are several converging factors within the relationship framework.

The conventional dimension of national security is mainly related to the physical protection of the state. The physical protection of the state from the external threats is primarily military in Character. Barry Buzan places more emphasis on conventional military threats to national security. While dealing with this conventional national security measures India adopted a cooperative approach with the

United States in the war period. But this is a tactical alliance method adopted by India which did not address its long term interests, and never went into a strategic relationship framework.

The non-military dimension of strategic relationships includes political, economic and technological aspects. One major modern argument comes from Edward Mead Earle (1947) as he argued "strategy is the art of controlling all the resources of a nation or a coalition of nations in order to effectively promote and secure its vital interests against actual or potential enemies". This modern understanding of strategic relationship theory is more connected with American policies and are linked with United States security alliance patterns and the economic grouping led by the United States. Economic alliances and policies of the United States are connected with Edward Mead Earles theory, effective management of resources through a proper economic alliance is a notable feature of American policies.

The relevance of policy in a strategic relationship is a pertinent thing. The influence of policies on foreign relations is an inevitable factor. Bernard Brodie (1959) eminent strategic scholar point out that 'strategic theory is a theory of action and strategic studies is policy-relevant'. Both India and United States have its own domestic determinants in foreign policies. In the US foreign policy issues force is integral to statecraft. Use of force in various occasions in world politics and intervention is a key feature of American statecraft, whereas Indian approach is different. But the policy relevance in Indian foreign policy is an inevitable factor.

Sun Tzu, the Chinese strategic thinker pointed out that "To subdue the enemy without fighting is the acume of skill"(Tzu,1971). This overview contains a kind of modern contents. This is a modern idea supported by SunTzu. Economic statecraft is one pertinent

alternative to the force and other kinds of traditional methods. The major economic statecraft like economic sanctions and embargos against opponent states is more used by United States. Indian approach is different from United States economic statecraft.

According to Liddell Hart, the 'role of grand strategy is to coordinate and direct all the resources of a nation, or band of nations, towards the attainment of a political object of the war, the goal defined by fundamental policy'. Liddell Harts theory is more linked with the acts and policies of the United States. The US formed an alliance that includes military and non-military alliances. NATO formation and its various military operations is a kind of combined use of resources of a band of nations. Recently the United States under the leadership of Donald Trump influenced GCC countries to take the embargo against Qatar. In this context US played a major role in West Asian regional politics, by tactically coordinated the nations in favor of US interest and also for its allies.

Strategic theorist Rajesh Basur says, unlike alliances, strategic partnerships do not demand commitments to a partner's disputes with other countries. Secondly, state actors avoid any type of entrapment. Moreover, the regular high-level political and military interactions facilitate a collaborative approach to strategic policies over a range of economic and military engagements. This observation mainly comes under the modern understanding of the concept of strategic partnership, but regarding Indo-United States relations the current engagements demand more commitments.

Conclusion

Strategic partnership is an important terminology in international relations and is becoming more popular in the contemporary world. The concept of strategic partnership has its

root in the word strategy; that can be traced back to one thousand years in ancient Greece and had been used as a way to train 'generalship'. Strategy is a plan designed for a particular purpose; it is a process of planning or an aim to achieve a specific purpose or to gain an advantage. When we look into theories like Game theory and Decision-making theory the term strategy has an unavoidable acceptance in them. Relevant terms like goals, gains, plans, strategic movements, rational decisions etc can be found commonly used in these two major theories.

Today, the new realities of power distribution in the international system explain the importance of the concept. The Indo-US strategic partnership, Indo-European Union strategic partnership, Indo-Russia strategic partnership are examples that uphold a certain kind of power relation. How strategic partnerships will be formed in international politics is an important matter of concern.

It is pertinent that India's foreign policy is very much related to the traditional dimension of Strategic relationship. Several issues faced by India in history shows that India does not oversee those issues in a strategic dimension. We had no committed strategic relationship even in the South Asian context. After independence, we haven't evolved a strong commitment with any state, and only with the Soviet Union, that too is out of compulsion and can see the feature of a tactical alliance. Traditionally we had a tactical alliance to meet the compulsions of particular developments in domestic and international politics. So a kind of tactical foreign policy making can be traced. On the other side American strategic culture is entirely different as they have to claim a strong strategic cultural history itself. Two perspectives can be found out. Then it is observable that our bilateral relationship and the strategic foreign relationship

will be restrained, influenced or conditioned by certain theoretical underpinnings. These theoretical foundations could explain the nature of the Indo-US strategic partnership.

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THE ELEVENTH FIVE YEAR PLAN OF KERALA: AN ANALYSIS OF UTILIZATION AND PERFORMANCE

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Abstract

The Eleventh Five - Year Plan (2007-12) was formulated against the background of a profound crisis, which affected categories of people like petty producers, agricultural labourers, rural workers and workers in traditional industries. The pervasive crisis was not only affected the backbone of the state economy but also led to breaking the real structure of the economy. This study makes an attempt to explain the utilization of plan outlay and performance of major sectors during the 11th plan period. The share of productive sectors like agriculture and allied sectors, industry, irrigation and energy are very low during the plan period. The utilization of eleventh plan indicates that rural development, industry and minerals, transport and communication have achieved better plan utilization. The sectors such as power and social sectors achieved poor plan utilization during the plan period. It is disturbing to note that, despite the implementation of many schemes in agriculture and industrial sectors, the growth rate of GSDP of these sectors are showing a declining trend during the plan period.

Economic planning is a technique of utilization of resources in predetermined goals within a time limit. A development plan may contain any or all of the following features(i) a survey of current economic conditions;(ii) proposals for improving the institutional frame work of economic activity;(iii) a list of proposed Government expenditures;(iv), a review of major industries;(v) a set of targets for the private sector;(vi) a macroeconomic projection of the whole economy (Lewis, 1996). The plan must include a forecast of

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government revenue and expenditure on current account. A review of public expenditure is an essential part of any plan. The review of the likely developments in the private sector is also made because private and public sectors are interrelated and government planning consists of establishing intelligent priorities for public investment programme and formulating a sensible and consistent set of public policies to encourage the growth in the private sector.

Since the state of Kerala came into being in 1956, it had witnessed remarkable progress of social and economic transformation. The petty and small scale production constitutes the backbone of the state economy. These sectors are facing an unprecedented crisis. The most tragic and explicit manifestation of this crisis is in the form of peasant suicides. The Eleventh Five - Year Plan (2007-12) was formulated against the background of a profound crisis which affected categories of people like agriculture labourers, rural workers and workers in the traditional industries. The low level of investment, the low level of productivity, general lack of competitiveness and inefficiency are the major reasons behind this crisis. The pervasive crisis was not only affected the backbone of the state economy but also led to breaking the real structure of the economy. The plan had to deal with massive unemployment, both among males and females, skilled and unskilled and labourers, rural and urban workforce.

Therefore, the objective of the 11th plan was to reverse this trend and to take bold and positive steps to increase investment and provide an immediate relief package to promote the welfare of the weaker sections especially those affected by the crash in commodity price in the world market. The 11th plan of Kerala was therefore drawn up with a perspective of balanced growth or in other word balance in the planning process. It envisaged a balance between the infrastructure project and non infrastructure projects, between social sector outlay and non social sector outlay, between support

and stimulation of traditional sectors and encouragement for most modern sectors, between development from below and the entry of cooperative capital from above, between LSGI plan outlay and non LSGI- state sector outlays.

Objectives and Data Source

The main objectives of the study are to examine the utilization of plan outlays and to examine the performance of major sectors during the Eleventh plan of Kerala.

The major indicators for evaluation of plan performance used in the study are the following.

- a. The percentage of plan expenditure to yearly outlay (aggregate and sector wise and /sub sector wise)
- b. Sector wise plan expenditure
- c. Physical targets and actual achievement. Plan expenditure of 90 percent or above the plan outlay is used as an indicator of better performance.

The study is based on secondary data from plan documents of the Kerala State Planning Board, Government of Kerala, Reports of the Kerala Expenditure Review Committee (KPERC), articles, print and electronic media. This study is based on simple statistical tools.

The study is divided into four sections. Following the introduction the second section examines the sector wise outlay and expenditure of the eleventh plan period. The third section examines the subsector wise utilization and performance of major sectors like agriculture, rural development, energy, industry and social services and fourth section gives the conclusion of the study

Sector wise Outlay & Expenditure of the 11th Plan Period (Aggregate)

The components of 11th plan were agriculture and allied services,

rural development, the special area programme, irrigation and flood control, energy, industry, transport, science and technology, general economic services, general services and social services. The Table 1 shows the aggregate sector wise outlay and expenditure of the state plan for the Eleventh Plan (2007-12). The aggregate outlay of this plan period was Rs.4560547lakhs and expenditure was Rs.4339687lakhs. The sector wise outlay shows that general service and LSGIs utilized funds above 100 percent against the outlay. Agriculture and allied sector, the rural development sector and the general economic sector utilized above 90 percent of the outlay during the plan period. The sectors like special area development (70percent) Social Services (74percent) and energy (82percent) recorded poor utilization.

It is disturbing to note that the share of productive sectors like agriculture and allied services, irrigation and flood control, energy are very small during the 11th plan period. The share of agriculture to total expenditure is 6.21percent and the share of the rural development sector is 3.44 percent. Another important sector, irrigation and flood control the share to aggregate expenditure is 2.76 percent. The share of power sector to total expenditure is 9.64percent. Industry and mineral sectors are recorded only 4.77 percent of total expenditure.

Table 1
Sector wise Outlay & Expenditure during the 11th plan (₹in lakhs)

SL NO	SECTORS	OUTLAY	EXPENDITURE	%	%
1	Agriculture and allied sectors	276312	26980	98	6.21
2	Rural Development	157585	149289	95	3.44
3	Special area programme	42653	286672	67	0.66
4	Irrigation and flood control	170743	119909	70	2.76
5	Energy	507734	418557	82	9.64
6	Industry	149288	207010	139	4.77

7	Transport	445881	658046	148	15.16
8	Science and technology	119207	1262737	106	2.9
9	General economic service	130796	130022	99	2.99
10	Social service	1495711	1100690	74	23.36
11	General service	12203	30422	249	0.7
12	Plan assistance to LSGI	1052434	1100994	105	25.37
	Total	4560547	4339687	95	100

Source: Twelfth plan document Sector wise plan Outlay and Expenditure (Yearly)

A sector wise outlay gives an idea about priority and allocation of outlays to different sectors. Table 2 gives the yearly outlay of 12 sectors. The share of sectoral composition of outlay is given in Table 3. It shows that agriculture and allied sectors, rural development, irrigation and flood control registered an increase in the share during the plan period. It should be noted that the share of the power sector registered a decline. The transport and communication sector also show a declining trend. This means that plan gives low priority to the infrastructure sector. The sectors like industry and minerals, the social service sector which registered a decreasing trend in plan outlay during the plan period.

Table. 2
Sector Wise Plan Outlay (in Lkhs)

SECTORS	2007-08	2008-09	2009-10	2010-11	2011-12
Agriculture and allied sectors	33801	37061	41432	67755	96263
Rural Development	24188	26475	29122	31673	46127
Special area programme	5467	6427	6930	7678	16151
Irrigation and flood control	21527	25762	35065	33286	55103
Energy	99793	93435	97506	104700	112300
Industry	10730	22100	27932	41898	46628

Transport & communication	87564	90093	75145	79640	113439
Science and technology	15025	19100	21289	29753	34040
General economic service	18051	18258	42444	18268	33775
Social service	198414	24158	304092	364981	386639
General service	1440	2000	2530	3103	3130
Plan assistance to LSGI	179000	187751	208513	219765	257405
Total	695000	770047	892000	1002500	1201000

Source: Twelfth plan document

Table 3
Sector Wise Plan Outlay as Percentage to Total

SECTORS	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Agriculture and allied sectors	4.86	4.81	4.64	6.75	8.01
Rural Development	3.48	3.43	3.26	3.15	3.84
Special area programme	0.78	0.83	0.77	0.76	1.34
Irrigation and flood control	3.09	3.34	3.93	3.32	4.58
Energy	14.36	12.12	10.93	10.44	9.35
Industry	1.54	2.86	3.13	4.17	3.82
Transport	12.59	11.69	8.42	7.94	9.44
Science and technology	2.16	2.48	2.38	2.96	2.83
General economic service	2.59	2.37	4.75	1.82	2.81
Social service	28.54	31.37	34.09	36.40	32.19
General service	0.20	0.25	0.28	0.30	0.26
Plan assistance to LSGI	25.76	24.38	23.38	21.92	21.43
Total	100	100	100	100	100

Source: Calculated from the table 2

Table 4 shows the percentage utilization of plan outlay. For agriculture and allied sectors, the plan utilization was better except

for the year 2007-08. For rural development, the plan utilization was better for all the years in the plan period except in the year 2011-12. The plan utilization of irrigation and flood control shown an unsteady trend and it was very poor in the year 2011-12. The plan utilization of, power sector was poor in the year 2007-08. The sector industry and minerals achieved better plan utilization for all the years of the 11th plan period. The plan utilization of transport and communication was better during all the years of 11th plan period except in the year 2008-09. The plan utilization of social and community sectors was very poor (below 80 percent) during all the years of the 11th plan period.

Table 4
Percentage of Sector Wise Plan Outlay and Expenditure

SECTORS	2007-08	2008-09	2009-10	2010-11	2011-12
Agriculture and allied sectors	61	114	120	95	96
Rural Development	101	102	121	91	72
Special area programme	80	41	105	70	54
Irrigation and flood control	90	107	75	78	37
Energy	58	86	80	89	97
Industry	201	194	121	137	109
Transport	95	88	166	204	183
Science and Technology	144	91	106	111	92
General economic service	97	94	95	124	96
Social service	77	79	77	63	75
General service	341	242	220	225	258
Plan assistance to LSGI	78	97	105	123	112
Total	82	93	98	100	98

Source: Calculated from Table 2

Plan Utilization and Performance of subsectors

To examine the plan utilization and performance we take certain major sectors like agriculture and allied service, rural development sectors, energy sectors, industry and minerals, social service sector and their components.

Agriculture and Allied services

Though agriculture is one of the productive sectors, its share to total outlay during the 11th plan was only 6.21 percent. The components of this sector are agriculture, crop husbandry, animal husbandry, soil and water conservation, dairy development, fisheries, marketing storage and ware house.

In this section, let us analyse subsector wise plan utilization of the 11th plan for the sector agriculture and the allied service (Table 5). Crop husbandry is one of the important subsectors; the plan utilization was better during the entire plan period. Important subsector, soil and water conservation the plan outlay was better utilized in the year 2008-09. For animal husbandry sector plan utilization was better for all years of the plan period except in the year 2007-08. The plan utilization for fisheries sector is better for all the years of the plan period except in the year 2008-09.

Table 5
Plan Outlay & Expenditure of Agriculture & Allied Services of the 11th Plan

Total plan outlay(₹ in lakhs)					
Agriculture & Allied sectors	2007-08	2008-09	2009-10	2010-11	2011-12
Crop Husbandry	5378	6100	6349	11000	13661
Soil& water conservation	2542	2667	2770	3685	3710
Animal Husbandry	5435	6300	7415	11800	19093
Diary Development	550	700	1050	2250	2600

Fisheries	5166	9069	5000	6500	12266
Food storage and wear housing	25	50	50	50	50
Agriculture research and education	2000	3025	3275	5100	4725
Investment in agriculture finance institution	50	50	50	100	100
Cooperation	1480	1530	2000	4250	4300
Other program me- a)Agriculture marketing	5175	1905	1020	1520	1750
Others, including debt relief	6000	5665	12453	21500	34008
Total	33801	37061	41432	67755	96263
Expenditure as the percentage of outlay					
Crop Husbandry	109	284	99	98	97
Soil and water conservation	75	97	77	72	79
Animal Husbandry	59	95	98	105	93
Diary development	100	183	114	65	88
Fisheries	99	77	171	127	131
Food storage and wear housing	100	100	100	0	100
Agriculture research and education	100	100	10	86	93
Investment in agriculture finance institution	286	186	100	100	120
Cooperation	52	90	160	134	87
Other programme- a) Agriculture marketing	7	39	47	63	97
b) Others including debt relief	1	51	139	80	89
Expenditure as percentage of outlay	61	114	120	94	96

Source: computed from the Twelfth Plan Document, State Planning Board

The major schemes of the sector for the 11th plan are given below. One of the important schemes for agriculture sector is the launching of food security project in 2008-09. Under the scheme, the procurement price of paddy also has been increased and paddy

land and wet conservation act was passed and the pension scheme for paddy farmers introduced. The Kerala State Farmers Debt Relief Commission was set up in 2007 for providing debt relief to debt stressed farmers in Wayanadu. The Rakshtriya Krishi Vikas Yojna launched in 2007-08 to incentive state to enhance public investment.

The major scheme for the subsector, soil and water conservation are the implementation of hariyali project, stabilization of the landslide area scheme, soil and land resources inventory report and water conservation under Rural Infrastructure Development Fund (RIDF). The major scheme for the sub sector animal husbandry include the introduction of food security project with the objective of augmenting milk production by 70 percent and doubling of egg production, increased milk production and establishment of separate university for animal science. The major scheme for fisheries, another important sector include construction of new fishing harbor and programme assuring the social and livelihood security of fisherman population, modernization of fish market, community capital institutional credit insurance coverage of implements, matsyakeralam projects etc.

It is disturbing to note that despite the implementation of many schemes in agriculture sectors, the growth rate of GSDP from this sector has been negative for three years in the plan period, 2007-08, 2009-10, 2010-11. The share of agriculture sector to GSDP has also declined steadily from 10.51 % in 2007-08 to 7.81% in 2011-12. (Economic Review 2014)

When we examine the physical targets and achievements of various crops like rice, coconut, pulses, tapioca, banana, cashew and pepper, the achievement in terms of production of the most crops are far from the target. The target of rice production was 9.50 (lakhs tones), the percentage of achievement was 60 percent only, which indicates that the performance of the crop was not better during the plan period. The crops like tapioca and coconut showed better

achievement in targeted production. The other crops like pulses, cashew and pepper could not achieve the production targets of the plan period (Twelfth Five Year Plan Document 2013 the State Planning Board).

Rural Development Sector

The Rural Development sector has been divided into three sectors including rural development, Community Development and Panchayath and Land Reforms. Table 6 gives the plan outlay and utilization of rural development sector during the eleventh plan period. From the table it is clear that the plan utilization of rural development was poor for three years in the 11th plan 2007-08, 2010-11 and 2011-12. For another subsector, community and the Panchayath, the utilization of plan outlay was better during the entire plan period. It should be noted that the plan utilization of the sub sector, land reform was very poor for the last two years of the 11th plan.

Table. 6
Plan Outlay & Expenditure of the Sector Rural Development of the 11th Plan

Total Plan Outlay (₹ in lakh)					
Rural Development	2007-08	2008-09	2009-10	2010-11	2011-12
Rural Development	10189	12053	12549	14973	28102
community Development & panchayath	13796	14218	15773	15700	17200
land reforms	203	203	800	1000	825
Total	24188	26475	29122	31673	46127
Expenditure as the percentage of outlay (%)					
Rural Development	79.60	121	138	75	41
Community Development & Panchayath	119	118	110	113	127
Land Reforms	17	128	62	0	0
Expenditure as percentage of outlay	102	102.	121	91	72

Source: computed from the Twelfth Plan Document, State Planning Board

The Centrally sponsored programmes like Mahatma Gandhi National rural Employment Guarantee programme (MGNREP), Indira AwasYojna (IAY) and National Rural Livelihood Mission (NRLM) were introduced by the Department of Rural Development for rural development in rural areas during the 11th plan period. The focus of the programmes are wage employment, are a development, infrastructure development and poverty alleviation in rural areas

Energy Sector

The large scale capacity addition to meet the increasing demand, reducing cost of power, development of efficient transmission network are the focus for energy sector during the 11th plan period. The main objective of 11th plan was to develop small hydro power projects and biomass based power generation and to integrate entire non-conventional energy sector in the overall plan period. Priorities of the sector for the eleventh plan include completion of ongoing projects, strengthening project management as well as transmission and distribution system to match installed capacity. The major strategy during the 11 plan was the improvement of efficiency in all operation of the Kerala State Electricity Board (KSEB).

Table 7 gives the plan outlay and utilization of energy sector during the 11th plan period. From the table it is clear that plan utilization was poor in the year 2007-08. The physical target and achievement of power sector in the 11th plan was examined (Table 8). The physical achievement of generation was not satisfactory during the plan period. One of the main targets for the plan period was anticipation of an additional installed capacity of 610.15 MW during the plan period. But actual achievement was only, 34 percent.

Table 7
Plan outlay and Expenditure of the Energy Sector (₹ in lakh)

Years	Total Outlay	Expenditure as percentage to outlay
2007-08	99793	58
2008-09	93435	86
2009-10	97506	80
2010-11	104700	89
2011-12	112300	97

Source: computed from the Twelfth Plan Document, State Planning Board

Table. 8
The physical target and achievement in the energy sector during the Eleventh plan period

Item	Target	Achievement	% Achievement
	Generation		
Capacity addition- Hydel	606.4MW	143.55MW	24%
Wind	3.75MW	31.65MW	
Up rating of Hydel Stations	-	15MW	
CPPs	-	20MW	
Total	610.15MW	210.2MW	34%
	Transmission		
220KV Sub station	6Nos	3 Nos	50%
110 KV	54Nos	23Nos	43%
66KV	6Nos	2Nos	33%
33 KV	56Nos	61Nos	109%
	Distribution		
Service Connection	23.38lakh	22.3lakh	95.4%
11 KV LINES	19528Km	14898Km	76.3%
Distribution Transformers	21245Nos	2263Nos	106.5%
LT Lines	27634Km	34395Km	124.5%

Source: computed from the Twelfth Plan Document, State Planning Board
Industry and Minerals

The industrial sector is divided into three components like the village and small scale industries, medium and large industries and mining. The major village and small scale industries in Kerala are handloom, coir, khadi and cashew industries. The Table 9 gives the plan outlay and utilization of state plan for the sector industry and minerals. For the subsector village and small scale industries the plan allocation was better for all the years of the 11th plan. For medium and small scale industries, plan utilization showing an unsteady trend. It should be noted the mining sector the plan utilization was very poor in the year 2011-12.

Table 9
Plan Outlay on Industry

Total Plan Outlay(₹ in lakh)					
Industries Minerals	2007-08	2008-09	2009-10	2010-11	2011-12
Village industries	8031	15325	21027	24636	24436
medium & large industries	2659	6675	6800	17100	22030
Mining	40	100	105	162	162
Total	10730	22100	27932	41898	46628
Expenditure as the Percentage of outlay (%)					
Village industries	114	100	100	108	97
medium & large	457	412	310	173	122
Mining	217	97	73	688	35
Expenditure as Percentage of Outlay	201	194	121	137	109

Source: computed from the Twelfth Plan Document, State Planning Board

The major highlight in the industry and mineral sectors are the following. The major schemes for the handloom industry are introducing technology up gradation, professional marketing, developing regional brand and encouragement of private sector investment. The cashew industry was rejuvenated in the 11th plan by up gradation offacilities, modernization of cashew factories, expansion of the

domestic market of the cashew, value addition of cashew kernels, International brands building and export market development.

Kerala State Industrial Development Corporation (KSIDC) and Kerala Industrial Infrastructure Development Corporation (KINFRA) promoted projects in Tourism, Manufacturing, IT, Health, Logistic Infrastructure, Agro and Food Processing Sector. Special Economic Zone for food processing, electronic, animation and gaming have been initiated by KINFRA.

It should be noted that the share of GSDP of manufacturing sector to total GSDP has declined from 8.54 percent in 2007-08 to 7.84 percent in 2011-12. The growth rate was just 0.29 in 2008-09 mainly due to the impact of global crisis. (Economic Review 2014)

Social Service Sector

Social and Community services comprises subsector viz. general education, higher education, art and culture, sports and youth affairs, medical public health and sanitation sewage and water supply, housing, urban development, labour and labour welfare, welfare of SC/ST and OBC, social welfare and nutrition. The performance of social service sector is the following.

The major schemes for the general education include noon meal for high school children, scholarship for higher secondary and college students and industry institute interaction cell. Schemes for higher education include scholarship for degree and post graduate students and conservation of heritage value of colleges. Schemes for technical education include development of general polytechnics, the institution of research and development cell in major engineering colleges and establishment of model finishing school. The major schemes for the sector medical and public health include strengthening of the institution under the Department of Health Service (DHS), setting up of the Kerala Medical Services Corporation

to make available medicines at reasonable cost, establishment of the Health Management Information System (HMIS), floating dispensaries to provide medical services to inaccessible water logged areas, implemented Ayurrogyam schemes for promoting the health of people above 65, and starting of medical university, starting of Kerala Emergency Medical Service Projects (KEMP) etc. during this plan period.

The major schemes implemented for the urban development were aimed to create infrastructure facilities in urban areas. Housing, sewerage, drinking water, drainage facilities, disposal of waste and sanitation activities are the major development activities carried out under the 11th plan period.

The 11th plan also implemented various schemes for the welfare of SC/ST and OBC relating to health, housing, and education. The e-Grants scheme is introduced to the distribution of educational concession to the SC students. The scheme for Scheduled Tribe includes educational betterment programme, housing and health care programme. The post matriculation studies, pre matriculation studies, educational concession to pre-metric students and construction of hostels for boys and girls are the major schemes implemented for the welfare of OBC students.

Social security and welfare programme play a vital role to improve the living standard of families from among the weaker section of society. The 11th plan aimed at giving more attention to the welfare measures for marginalized groups in particular to mentally challenged and aged by giving additional facilities in the welfare institution. The scheme Snehasparsham was introduced to address the problem of unwed mother. Cancer Suraksha for child patients and Thalolamare the major child specific programmes introduced during the plan period. The 'Sruthitharangam' project was introduced for cochlear implantation for children in 2011-12.

Table 10 gives the plan utilization of the social service sector. For the subsectors like technical education, medical and public health, housing, information and publicity, welfare of SC/ST and OBC plan utilization was better during all the years of eleventh plan. The important sector like general education was better except in the year 2007-08 and 2011-12. For urban development sector utilization was below 80 percent during all the years of the plan period. For another important sector, social security and welfare plan utilization was better only in the year 2007-08.

Table 10
Plan Outlay and Expenditure of the sector Social Services of 11th Plan

Total Plan Outlay (₹ in lakh)					
SOCIAL SERVICE	2007-08	2008-09	2009-10	2010-11	2011-12
General education	11186	14139	15854	30654	33868
Technical education	2996	4441	5006	6446	7919
Sports & youth service	482	1778	2205	9450	5550
Art & culture	1426	2602	2750	3405	3755
Medical& Public health	8380	11536	11200	17134	41665
Water supply& Sanitation	91295	96960	102300	105800	90897
Housing	3128	12724	3330	4222	4400
Urban Development	47970	55000	85463	90136	58036
Information& publicity	286	765.00	930	1600	2000
Welfare of SCs, STs & OBC	20469	25722	45731	52971	73968
Labour& Employment	1820	2520	9225	23950	35355
Social Welfare	8972	13388	20086	17563	27560
Nutrition	4	10	12	1650	1666
Total	198414	241585	304092	364981	386639

Expenditure as the percentage of outlay (%)					
General education	72	126	133	110	83
Technical education	128	133	118	155	145
Sports & youth service	252	136	109	40	65
Art & culture	85	82	78	105	103
Medical& Public Health	125	133	137	141	102
Water supply& Sanitation	83	57	63	36	51
Housing	104	113	107	271	85
Urban Development	35	75	48	38	49
Information& publicity	205	187	193	106	196
Welfare of SCs, STs & OBC	95	91	100	87	90
Labour& Employment	100	150	50	56	66
Social security& Welfare	100	48	52	42	89
Nutrition	75	80	167	123	192
Expenditure as percentage to outlay	77	79	76	63	75

Source: computed from the Twelfth Plan Document, State Planning Board

Conclusion

The objectives of the 11th plan was to take bold and positive steps to increase investment and provide an immediate relief package to promote the welfare of the weaker sections especially those affected by the crash in commodity price in the world market. But the state was not able to make much progress in the attainment of the above objectives.

A component wise analysis of plan outlay and expenditure reveal the following. The aggregate outlay of 11th plan was recording 95 percent. The share of productive sectors like agriculture and allied services, the rural development, irrigation and flood control, energy, industry and social service sectors are a very small to the total outlay.

A review of sectoral outlay shows that the sectors, agriculture and allied services, rural development sector, irrigation and flood control, industry and minerals registered an increase in the sectoral share during the plan period. But the share of a power sector showing a declining trend.

An analysis of sector wise plan utilization indicates that sectors like rural development sector irrigation and industry achieved better plan utilization. The sectors like power sector and social service sector achieved poor plan utilization. Agriculture and allied sectors performed better except in the year 2007-08.

The share of agriculture and allied sector to total expenditure was only 6.21 percent. The plan utilization of this sector was generally better during the plan period. The share of the agriculture sector to the GSDP showing a declining trend.

For rural development, plan utilization was better for all the years of the plan period except in the year 2011-12.

A disturbing development was the very poor utilization of power sector .The plan was failed to achieve a physical target for generation and transmission. Although the plan utilization of industrial sector was generally better during the plan period.

The plan utilization of the social and community services were poor (below 80 percent) during all the five years of the 11th plan. The sub sectors like medical and public health, water and sanitation, housing, urban development, social security and welfare registered poor plan utilization.

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HANDLING THE CHALLENGE OF DISASTER RISK MANAGEMENT: A POST SENDAI FRAMEWORK

Prayaga M.A*

Abstract

Disaster management is as old as the mankind itself is. The impression of vulnerabilities upon our societies has become a major impediment in our vision for attaining sustainable socio-economic headway. Over the last two decades, there has been an incidental recognition that calamities enfeeble our efforts to achieve sustainable development, albeit various risk management initiatives came into limelight. The situation of Kerala alarms the necessity of scientific approach towards the matter. The Sendai Framework reminds the requirement to build the knowledge of civil society, communities and volunteers on disaster risk reduction. There is a clear identification that one requires to proceed away from disaster management to disaster risk management. This entails us to pursue all development ventures in a routine that it marshals in curtailment of disaster risk. This article explores the challenge in carrying out the risk management of disaster by shedding light on the recent initiation like Sendai Framework, New Delhi Declaration, Sustainable Development Goals and so on.

Keywords: *Vulnerability, Disaster Management, Bureaucracy, Public policy, Challenges*

Introduction

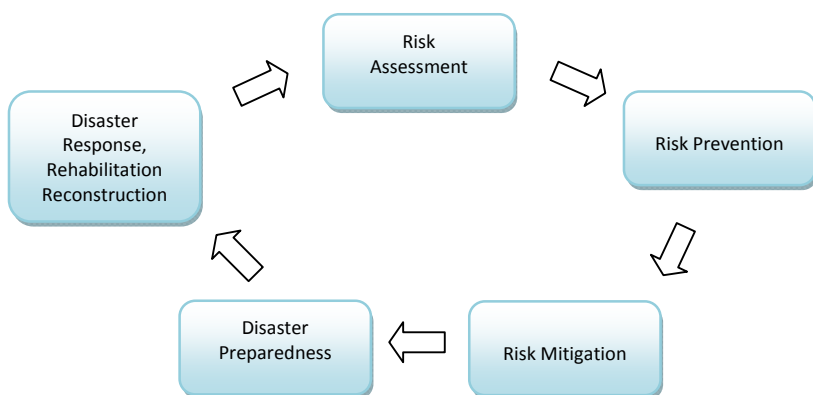
Disaster management is that the discipline of coping with and avoiding risks. It is a discipline that involves preparing for disaster before it occurs, disaster response and supporting and rebuilding society after natural or human made disasters have occurred.

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Disaster is outlined as ‘catastrophic state of affairs within which the traditional pattern of life or scheme has been discontinuous and extraordinary emergency interventions are needed to avoid wasting and preserve lives and or the environment’ (Ministry of Home Affairs, 2011).

However, disaster management can’t be left to human effort alone. Some element of preparedness and planning is necessary to handle disasters on the part of both governments and the community because when disaster actually strikes, the time to prepare would have passed. Care should not start in the emergency room. Organisations like the National Institute of Disaster Management and National Disaster Management Authority are mandated to prepare pre- disaster management plans. Risk management approach to disasters means that the underlying hazards and vulnerabilities, natural or anthropogenic are assessed scientifically and necessary measures are taken to prevent the creation of risks ab initio. (Thummarukudy, 2012: p.78)

From Disaster Management to Disaster Risk Management



Source: NDMA, 2005

It additionally implies that existing risks are reduced through a mixture of varied structural and non-structural measures together with innovative mechanisms of risk sharing and risk insurance. For the residual risks that are neither prevented nor reduced nor insured, there is no other alternative but to get prepared for disasters. Preparedness any means that having policies, strategies and resources in place for 'building back better' livelihoods, houses and infrastructures devastated during disasters. Disaster risk management has assumed analytical importance for sustainable development as harm and losses as a result to disasters are helical despite the in ordinances of measures taken to scale back such losses. The impact of disasters upon our societies has become a major impediment in our vision for achieving sustainable socio economic development. (Chakrabarti, 2017:p.13).

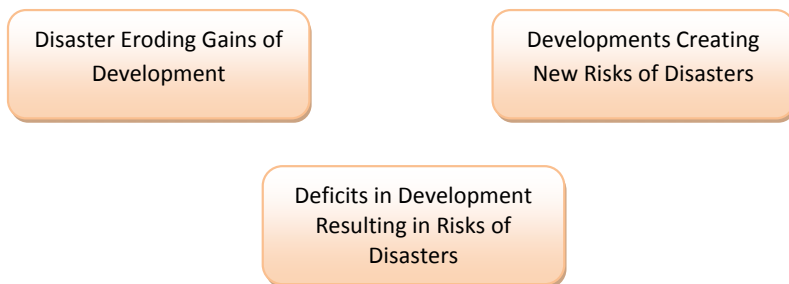
Kerala Floods 2019

Incessant rain accompanied with the raise of water level in rivers and other water bodies have resulted in flooding in different regions of Kerala. Kerala State Disaster Management Authority, Kerala police alongside the Indian Air Force, civilians, volunteers, fishermen from coastal Kerala actively participated in the rescue operations in flood-affected regions. The effects of floods are far-reaching going beyond their immediate impacts. Floods have devastating effects on the economy. They bring about huge human and economic losses by causing severe damage to life, property, livelihood systems, infrastructure and public utilities. Since floods have devastating effects on the affected region and people, therefore it is necessary to adopt measures for preventing floods and minimizing losses. The Indian sub continent follows integrated administrative machinery for management of disasters at the national, state, district and sub-district levels. State Governments concerned have primary responsibility for taking up rescue, relief

and rehabilitation measures in the event of natural disasters. The Central Government supplements the efforts of the States by giving financial and logistic support. (Mishra & Singh: 2013)

Year 2015, has been very significant where three major global agreements have been signed. Sustainable Development Goals (SDG), Paris Agreement on Climate Change- COP 21 and Sendai Framework Disaster Risk Reduction 2015-30 all adds to the list. International communities have committed themselves for achieving goals and targets set in all three agreements. Disaster risk reduction cuts across different aspects and sectors of development. There are 25 targets related to disaster risk reduction in 10 of the 17 SDGs, firmly establishing the role of disaster risk reduction as a core development strategy. (Kumar, 2017:p.17) Disasters are intertwined with development in a three dimensional nexus.

Three Dimensions of Disaster – Development Nexus



Source: Yojana 2017, p.12

Firstly, disasters hinder hard-earned gains of development of years and decades. Secondly, a development less society exposes vulnerable communities to the risks of disasters. Third and ironically in an opposite direction, development creates new risks of disasters, such as houses and infrastructure without compliance

of zoning and building regulations are vulnerable, mining and industries in ecologically sensitive zones may destroy the natural buffer to disasters, while fossil based production and consumption enhance risks of climate related disasters.

It is essential that the process of development planning identifies and analyses the underlying causes of current and future social and economic risk and factors in measures to reduce the risk. If national targets for growth and development as well as employment and trade are to be realised, the shift from managing crisis to managing risk must be reflected in public policy frameworks and decisions related to planning processes thus on modify risk-informed investment and practice. (William, 2000: p.78) Main streaming disaster risk reduction into every aspect of development had been in the agenda of disaster management for quite some time, but not much headway has been achieved in this direction. Neither the National Disaster Management Authority has come back with any general or specific tips for main streaming nor the sectoral ministries and departments of the central or state governments developed concrete plans of action for building disaster resilience in their various sectors. Implementation of the Sendai Framework in conjunction with the sustainable development goals and Paris Climate Agreement provide opportunities for addressing this hitherto neglected but challenging task of disaster management in India.(Kumar, 2017: p.15)

Sendai Framework 2015-30

Growing global concerns for disaster resilient sustainable development found a new direction and momentum in 2015 when three parallel yet interdependent processes converged to define the development agendas for the next one or half decade and beyond.

The first was the Sendai Framework for Disaster Risk Reduction 2015-2030 (UNDRR, 2015). The Sendai Framework for the first time ever, fixed a set of seven outcome based global targets of disaster risk reduction. These include substantially reducing number of disaster mortalities and affected people and reducing direct economic loss and damages to critical infrastructure, besides increasing access to multihazard early warning systems and enhancing international cooperation for disaster management.

It identified four priorities of action for disaster risk reduction at local, national, regional and global levels. These are,

- i. Understanding disaster risks
- ii. Investing in disaster risk reduction for resilience
- iii. Strengthening risk governance to manage risks
- iv. Enhancing preparedness for effective response, recovery, rehabilitation and reconstruction (Chakraborty, 2017).

The 2030 agenda for Sustainable Development adopted by the UN General Assembly in September 2015 embedded disaster risk management in as many as eight out of 17 Sustainable Development Goals (SDG) with specific targets for building disaster resilience across totally different sectors of development (Rijiju, 2017: p.9).

Sustainable Development Goals	Targets on Disaster Risk Resilience
Goal – 1: Ending poverty in all its forms	Target 1.5: Reduce exposure of the poor to climate related extreme events and disasters
Goal-2: Ending hunger, achieving food security and promoting sustainable agriculture	Target 2.4: Strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters
Goal-3: Ensuring healthy lives	Target 3.6: Develop early warning and reduce risk of health related disasters
Goal-4: Ensuring inclusive and equitable quality education	Target 4a: Build and upgrade educational facilities that are safe from disasters
Goal-9: Building resilient infrastructure	Target 9.1: Develop quality and reliable infrastructure that are resilient to disasters
Goal-11: Making cities and human settlements safe, resilient and sustainable	Target 11.5: Significantly reduce the number of deaths, affected and economic losses by disasters

Goal-13: Combating climate change and its impacts	Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters
Goal-15: Reversing land degradation	Target 15.3: Restore land affected by drought and floods

Source: UNISDR, 2015

Interestingly, it is the first major UN agreement on the post 2015-development agenda consisting of 4 major priority areas and 7 targets to be met by 2030. The expected outcome of the framework is to prevent creation of new disaster risks and to substantially reduce disaster risks.

Sendai Framework for Disaster Risk Reduction (SFDRR)

SFDRR is an international Treaty that was approved by UN member states in March 2015 at the Third World Conference on Disaster Risk Reduction held in Sendai, Japan. It is a voluntary and non-binding pact that acknowledges that the UN member State has the first role to cut back disaster risk. It has framework for 15-year i.e. 2015 to 2030. This calls for sharing the responsibility with other stakeholders including local government, the private sector and other stakeholders. It is successor of the Hyogo Framework for Action (2005- 2015), which had been the most encompassing international accord on disaster risk reduction. This sets of common standards, a comprehensive framework with doable targets, and a legally based instrument for disaster risk reduction. It imply adopting integrated and comprehensive institutional measures for preventing vulnerability to disaster, increase readiness for response and recovery and strengthen resilience(Thummarukudy, 2015: p.149).

7. Global Targets of SFDRR are:

REDUCE	INCREASE
Mortality/Global population (2020-2030 Average <<2005-2015 Average)	Countries with national & local DRR strategies (2020 Value >> 2015 Value)
Affected people/Global Population (2020-2030 Average <<2005-2015 Average)	International cooperation to developing countries (2030 Value >> 2015 Value)
Economic Loss/ global GDP (2030 Ratio << 2015 Ratio)	Availability and access to multi- hazard early warning systems & disaster risk information and assessments (2030 Values >> 2015 Values)
Damage to critical infrastructure & disruption of basic services (2030 Values << 2015 Values)	

Source: National Plan of Action, NDMA, Govt. of India.

The Sendai framework has set targets for substantial reduction in losses together with reduction in variety of deaths from disasters, variety of individuals suffering from disasters, economic losses and infrastructure losses. At the same time, it calls for increase in capacities through national and local strategies, international cooperation and improved access to early warning. The new Framework necessitate concrete indicators of progress towards these targets to be measured against the disaster losses within the decade following the adoption of the 2005 Hyogo Framework in built on parts, which ensure continuity with the work done by states and other stakeholders under the HFA and introduces a number of innovations. For India, the framework reaffirms our commitment to deal with disaster risk reduction and building of resilience to disasters with a revived sense of urgency. In furtherance to its commitment to the Sendai Framework, government has taken up several important initiatives post Sendai Declaration. Firstly, as committees during the Sendai Conference, India has successfully hosted the Asian Ministerial Conference on Disaster Reduction (AMCDRR) in Nov 2016 and adopted 'New

Delhi Declaration’ and ‘Regional Action Plan for Implementation of the Sendai Framework.’ (Palanithurai, 2009: p.78). In line with the all- of- society approach for disaster risk reduction enshrined within the Sendai Framework, the AMCDRR also provided an opportunity for multiple stakeholders to come together and make specific commitments to the implementation of Sendai Framework in Asia and the Pacific.

These outcomes of the AMCDRR can guide the implementation of the Sendai Framework in Asia and also the Pacific. On one hand, these outcomes will help contextualize Sendai Framework in Asia and the Pacific, and on the other hand, these will infuse a sense of urgency about its implementation in the region. At the AMCDRR, Prime Minister outlined a ten point agenda, to pursue the implementation of disaster risk reduction efforts in the region with renewed vigor. This ten purpose agenda is included is enclosed in Box A.

Box: A

10 Point Agenda

1. Ensure that all development projects- airports, roads, canals, hospitals, schools, bridges – are built to appropriate disaster resilient standards and contribute to the resilience of communities they seek to serve. Build a coalition to support disaster resilient infrastructure.
2. Work towards risk coverage for all – starting from poor households to small and medium enterprises to multi – national corporations to nation states.
3. Encourage greater involvement and leadership of women in disaster risk management.
4. Invest in risk mapping globally for all hazards.
5. Leverage technology to enhance the efficiency of our disaster risk management efforts.
6. Develop a network of universities to work on disaster issues.
7. Utilize the opportunities provided by social media and mobile technologies.
8. Build on local capacity and initiative.
9. Ensure that the opportunity to learn from a disaster is not wasted. Establish a facility for technical support to post disaster reconstruction of houses.
10. Bring about greater cohesion in international response to disasters.

Source: PM speech of 2016, AMCDRR, India.

Secondly, government of India has issued a collection of priority actions to any or all the regime supported the goals, targets and priorities of Sendai Framework 2015- 2030. Government of India during AMCDRR, 2016 has extended the grant of \$ one million to UNISDR towards effective implementation of the Sendai Framework for disaster risk reduction within the Asian region. Thirdly, in line with Sendai priority for National Disaster Response Force (NDRF) is strengthened, both in terms of state-of – the art training and equipment so as to further empower it as a knowledgeable disaster response force.

Fourthly, the government expressed keenness to share India's expertise and facilitate alternative countries in disaster response because it did throughout Japan Earthquake in 2011 and Nepal earthquake of 2015. SAARC disaster management exercise (SAADMEX) 2015 held in Delhi provided ideal platform for sharing the government's ideas and experience and reaffirmed its commitment to strengthen the institutional mechanism of regional cooperation on disaster response among the member countries. Similarly, the Indian National Centre for Ocean Information services (INCOIS) in Hyderabad provides early warning not only to India but also to 28 countries in the Indian Ocean Rim.

Fifthly, in an effort to augment the capacity building in the field of Disaster Management in august 2015, NIDM has signed a memorandum of Understanding (MoU) with Jawaharlal Nehru University (JNU) for financial assistance and academic cooperation for establishment of a centre for excellence in Disaster Research and Resilience building at JNU for promoting higher education and research within a multidisciplinary framework. In addition to this as a part of institutional strengthening, the government of India has constituted the National Disaster Response Force

Academy at National Civil Defence College, Nagpur for training personnel involved in disaster management and response. The government has also allocated Rs 205 crores for strengthening and up gradation of National Fire Safety College to make it a state-of-art facility (Rijiju, 2017: p.7).

Further the government has implemented the recommendation of 14th Finance Commission and approved an allocation of Rs 61,220 crore (comprising of Rs 47,029.50 crore as central share and Rs 14, 90, 50 crore as state share) in State Disaster Response Fund (SDRF) to all the states for 2015-16 to 2019-20 which is significantly higher than the allocation of Rs 33,580.93 crore recommended by thirteenth Finance Commission for 2010-11 to 2014-15.

Lastly, while re-emphasizing that state has a primary role in reducing the disaster risk, the Sendai framework also calls upon stakeholders including the private sector to be involved in disaster preparedness and mitigation designing similarly as relief and recovery part. In the mission of Disaster Risk Reduction there is need of collaboration by all entities, public and private, to strengthen the mechanism for disaster risk reduction by using and sharing of reliable and cheap fashionable technology for capability building. The government of India believes that the sustainable infrastructure should take under consideration all factors, as well as secondary hazards that resulted from fast urbanization.

Need of Quick Disaster Response in India

International developments like the Yokohama Strategy and the Hyogo Framework coupled with national developments in the form of serious calamities in quick succession, like Odisha Super Cyclone (1999), Gujarat Earthquake (2001) and Indian

Ocean Tsunami (2004), brought about the realization of the need of having a specialist response mechanism at the national level to effectively respond to disasters. This led to the enactment of the Disaster Management (DM) Act on December 26, 2005. This Act provides for the effective management of vulnerabilities. Consequently, National Disaster Management Authority was formed in the year 2006 to supervise disasters in India. A multi skilled, highly professional “National Disaster Response Force” comprising of eight battalions (two battalions each from BSF, CRPF, ITBP and BSF) were raised to tackle/ mitigate all types of disaster. In 2010 two battalions (one from CRPF and BSF respectively) and in 2015 two a lot of battalions from SSB (Sashastra Seema Bal) were charged into NDRF. As on date, NDRF is having strength of 12 battalions each with authorized strength of 1149 personnel.

Disaster response calls for humanitarianism, fortitude and professionalism which are the hallmark of National Disaster Response Force. NDRF is possibly the single largest dedicated disaster response force in the world, trained and equipped as per international standards to handle and manage disaster situations across the country or region. It has played a pivotal role in disaster management in the country. The emergency response as well as community capacity building programme conducted by NDRF has installed a sense of confidence in the countrymen regarding responsibility of Government machinery in providing quick response during disaster or disaster like situations.

It is appropriate to mention here that, the frequency of disasters and the operational commitment of NDRF are increasing day by day. The present strength of NDRF is not adequate to give an immediate response across the country due to its vast geographical

area and huge population. The area of responsibility of few battalions is too big for quick response. Hence after analyzing the vulnerability profile of the country carefully, there is a need to raise more effective disaster response mechanism. Capacity building is an important component of investing in disaster risk reduction. In the domain of disaster risk management, the Sendai Framework emphasizes the need for enhancing the technical, financial, and administrative capabilities of institutions, governments, and communities to deal with the identified risks at different levels. (William, 2000: p.66). The Framework calls for reinforcing the capacity to implement and enforce risk reduction measures.

The primary responsibility for managing disasters lies with the state governments. The local self governments also have a major role to play. The role of the central government is supportive and supplementary. The disaster management systems differ across the States in India. While almost all the States have set up State Disaster Management Authorities, post-disaster response and relief is mainly with the Commissioner of Relief. While many states have set up State Disaster Response Forces, some of them still depend on the Fire and Emergency Response Services. Again, there are variations within the system of Fire and Emergency Responses Services across different States. While most of the States have centralized Fire Services under the State Government, in some States, it is with the Municipal administration. Depending on the structural and institutional arrangements, the network for capacity building is different in each States.

Government of India, in order to support the State Governments, has set up several institutions which undertake a wide range of activities for capacity building. The overall coordination of disaster

management vests with the Ministry of Home Affairs (MHA). The National Disaster Management Authority (NDMA), set up in 2005 as the nodal agency for disaster management in India, is chaired by the Honorable Prime Minister. It lays down policies, plans, and guidelines for disaster management for ensuring timely and effective response to disaster and long- term disaster risk reduction. NDMA conducts mock drills and simulation exercises at the district, state and the regional level to improve the response capacity of the State governments.(National Act of Disaster Management, 2015) The National Cyclone Risk Mitigation Project, the largest cyclone risk mitigation project under implementation, aims not only to empower the governments but also the communities. Another important initiative is the National School Safety Programme to build the capacity of students and teachers for better guiding other ministries in preparing their disaster management plans.

While NDMA's main focus is on building the capacity of organizations, the National Institute of Disaster Management (NIDM) also undertakes training along with research, documentation and development of a National level information base. Trainings on various aspects of disaster management are also given by Lal Bahadur Shastri National Academy of Administration, Indian Police Academy and other premier national level institutions.

State Disaster Management Authorities, the Disaster Management cells in all Administrative Training Institutes, Police Academies, State Institutes of Rural Development, and Institute of Local Self – Governments also provide training on issues related to disaster management. The focus of these training programmes is on building the capacity of the lower tiers of government such as Districts, Municipalities and Panchayats and

also the officers and employees engaged in disaster management, particularly emergency response.

Statement of Cooperation on Sendai Framework

India and United Nations Office for Disaster Risk Reduction collaboratively signed a Statement of Cooperation (SoC) of the Sendai Framework on Disaster Risk Reduction (SFDRR). It was signed during the period of the Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) 2016 which was held in New Delhi.

Features of SoC

- The cooperation aims to ensure effective implementation and monitoring of the SFDRR through Training and capacity building for Asian countries.
- It also seeks at promoting international and regional cooperation to reinforce political commitment.
- It facilitates knowledge sharing and strengthens the capacity of UNISDR for monitoring and review of the Sendai Framework.
- Underlines the guiding principles, objectives and areas of cooperation between India and UNISDR towards effective implementation and monitoring of SFDRR.
- India will partner with UNISDR to work towards strengthening the capacity of Asian countries in ensuring risk resilient development.
- It facilitates sharing of knowledge and experiences and collaborative efforts towards addressing critical regional challenges.

The Asian Ministerial Conference for Disaster Risk Reduction was held in 2016 in New Delhi with the aim of providing a

platform to member countries for sharing best practices in the field of Disaster Risk Reduction which was inaugurated by Prime Minister Narendra Modi. 2016 AMCDRR is seventh edition of the conference once it had been established in 2005 and therefore the 1st major inter-governmental event once the adoption of the Sendai Framework for Disaster Risk Reduction of March, 2015.

About 4000 participants from the Asian Region participated in this conference. The conference has been organized by Union Government in collaboration with the United Nations Office for Disaster Risk Reduction (UNISDR). This was the first Asian Ministerial Conference for Disaster Risk Reduction (AMCDRR) after the advent of the Sendai Framework for DRR (SFDRR). It identifies targets and priority action areas towards reducing disaster risk by 'reducing the injury caused by natural hazards like earthquakes, floods, droughts and cyclones, through an ethic of prevention'. Established in 2005, the AMCDRR is a biennial conference jointly organized by different Asian countries and the United Nations Office for Disaster Risk Reduction (UNISDR). The next AMCDRR are going to be command in Mongolia in 2018. Two necessary documents – 'New Delhi Declaration' and the 'Asian Regional Arrangement for Implementation of the Sendai Framework' were adopted at the 3-day Conference.

New Delhi Declaration

The 'New Delhi Declaration' is a political statement that dwells out the commitment of taking part governments towards preventing and reducing disaster risk, and strengthening the resilience of communities, nations within the Asian region. Recognising the need to accelerate the implementation of global framework, it commits to a people- centered and whole-of-society approach towards DRR. It also emphasizes the need to

enhance the capacity of communities and ensure participation of all stakeholder groups towards achieving resilience.

Asian Regional Plan

The 'Asian Regional Plan for Implementation of the Sendai Framework' focuses on the 'How to' reduce disaster risk at national and local levels. It has arrived at a longer term road map of cooperation and collaboration, spanning the 15-year horizon of the Sendai Framework, as well as a two-year action plan to further disaster risk reduction with specific, actionable activities.

Among the actions highlighted in support of the implementation of the Sendai Framework was a focus on developing national and local strategies, policies and plans for Disaster Resilience and implementing them, together with well increasing investment in disaster preparedness and to push and strengthen education on disaster risk reduction. Risk assessment, the quality and availability of data and effective risk information systems for communities were referenced as a cornerstone for community participation and resilience even for those located in exposed areas. The Conference additionally commemorated the primary World Tsunami Awareness Day to unfold awareness on wave. The observance of the day stressed on the importance of early warning systems and preparedness of communities so as to mitigate harm from the customarily devastating natural hazard.

Challenges and opportunities: Post Sendai effect

The World Bank had estimated that the economic losses due to disasters during the late 90's and early years of this century were close to two percent of the GDP, whereas similar amount was not invested for public health in the country. India played crucial role in the finalization of all 3 global agreements of 2015. India has

put in place legal and institutional mechanism at various levels and deployed scientific and technological capabilities for disaster risk management with clearly visible impacts on loss of lives, as was incontestable throughout a number of the recent earth science disasters like cyclones (cyclones Phailin and Hudhud).

However, similar results were not seen in hydrological disasters like floods or cloudbursts (Uttarakhand, Srinagar and Chennai) or geological disasters like landslides (Malin and North Sikkim). Technological disasters like industrial or road accidents continue still spiral; threats of biological disasters like epidemics and pandemics loom giant, whereas environmental disasters like depleting water resources and rising level of air pollution in rapidly growing urban settlements are causes of major concerns.

India has embarked on the pathway of rapid economic growth, which is expected to be propelled by some of the new initiatives like Make in India, Skill India, Digital India, Swachh Bharath Abhiyan, Smart Cities Mission etc. Probably it would not at all be an exaggeration to say that during the next one and half-decade public and private investments for social and economic development of India would far exceed the investments made during the past 4/5 decades. This provides opportunities for planning, designing and implementing the development projects in different sectors in manners that do not compound the risks but contribute to the process of mitigating the risks of disasters.

India, after the Sendai framework adopted in 2015, hosted first Asian Ministerial Conference in the month of November 2016, to draw a Asian road map for disaster risk reduction, predominantly pre-disaster activities, for the Asian and Pacific nations.

Disaster response is visible with high accountability but and hence everyone is willing to respond. On the opposite hand, disaster readiness and risk reduction is invisible however of high outcomes go unattended. Not much has been done despite lot of conventions and declarations across the globe. Global community have accomplished with heap several evidences supported success stories that hindrance pays. India too had witnessed such example. In case, more than 13000 live with huge damage to the property. Whereas, in 2013, when cyclone Phyllin hit, which was kind of repeat story of 1999 cyclone, with almost similar intensity. Nevertheless, the impact was entirely opposite of 1999.

The number of death toll reduced to merely twenty two. Of course, damage to property was enormous. This event becomes the Global Best Practice as how India has been able to reduce the death too substantially low level. Recent Cyclone in Tamil Nadu Vardha has conjointly shown the similar results wherever death toll is simply fourteen though the injury to property is big as just in case of cyclone Hudhud. Hence, it is clear that with our sincere efforts made in making ex- ante investment in building capacity has demonstrated a positive result in reducing the death toll. Now the concern is how to address the losses occurring to property-roads, bridges, housing, hospitals, electricity, productive capital loss etc. (Kumar, 2017)

Globally, regionally and at the native levels, mainstreaming risk reduction in development process has been an important agenda but remains complex undertaking with many challenges. We have to learn from our past if we are to build a resilient future.

There remains a requirement for data sharing among the larger disaster management community and that we need a typical

platform to form a flexible interface among policy- makers within the Government and disaster managers at all administrative levels.

This means that at national and native levels, plans should be harmonized to incorporate awareness generation of adopting disaster resilient building byelaws, land use zoning, resource planning, establishment of early warning systems, and technical competence. To this end, it is also necessary to take help of and disseminate new science and technology innovations, early warning systems, and capacity development and integrate them into national, sub national and sectoral policy planning. We need to document and learn from our experiences and to use these to reduce vulnerabilities at regional, national and local levels. Kutch earthquake 2001 of Gujarat, in long-term reconstruction programme mainstreaming DRR was the key principle which leads to an exemplary recovery programme as Build Back Better. It has also been conferred UN Sasakava Award for best practices and recognized globally. (Deolankar, 2010: p.45)

The Sendai framework is made on parts that guarantee continuity with the work done by states and different stakeholders underneath the HFA and introduces variety of innovations as called for during the consultations and negotiations. Many commentators have known the foremost vital shifts as a robust stress on disaster risk management as against disaster management, the definition of seven global targets, the reduction of disaster risk as an expected outcome, a goal focused on preventing new risk, reducing existing risk and strengthening resilience, as well as a set of guiding principles, including primary responsibility of states to stop and cut back disaster risk, all-of-society and all-of-State institutions engagement. In addition, the scope of disaster risk reduction has been broadened considerably to concentrate on

each natural and synthetic hazards and connected environmental, technological and biological hazards and risks. Health resilience is strongly promoted throughout.

For reducing disaster impact, in resource scarce nations or states, it is important to make ex- ante risk reduction investment in development planning. Moving from risk blind to risk informed decisions for making investment would be a prudent choice. Projects planned for the longer term in high disaster prone areas ought to obligatorily undertake disaster risk audit of the projects. Whether it is private or public investment it should be made as basic principle for protecting development gains and attaining resilience. There has to be a broader and a more people- centered preventive approach to disaster risk. Disaster risk reduction practices got to be inclusive and accessible so as to be economical and effective. Governments should facilitate, incentivize and engage with relevant stakeholder's especially private sector in the design and implementation of policies, plans and standards. There is a need for engaging women as leader, youth, children, civil society, and academia for making it inclusive. In addition, all states should be engaged with scientific and research institutions, to work more closely together and to create opportunities for collaboration and for businesses to integrate disaster risk into their management practices for making SDG achievable.

Conclusion

Disaster response calls for humanitarianism, fortitude and professionalism which are the hallmark of National Disaster Response Force. NDRF is possibly the single largest dedicated disaster response force in the world, trained and equipped as per international standards to handle and manage disaster situations

across the country or region. A long term plan is needed for building sustainable capacities of all stakeholders. Networking among the various institutions involved in capacity building within and outside the country is also essential. The programmes, projects and trainings for capacity building should be constantly evaluated to make them relevant and suitable. The Sendai Framework underlines the need for this capacity development of men and aim at social inclusion by developing the capacity of the vulnerable population in disaster management and building their ability to participate effectively in managing disaster risk. Building capacity for reducing risk is also necessary for achieving the Sustainable Development Goals (SGDs).

The Sendai Framework notes the need to build the knowledge of civil society, communities, and volunteers on disaster risk reduction capabilities in terms of plans and strategies, international cooperation and access to early warning. The Sendai Framework has set targets for substantial reduction in losses together with reduction in range of deaths from disasters, number of people affected by disasters, economic losses and infrastructure losses. In the two years since the Sendai Framework for Disaster Risk Reduction was agreed by member states, much progress has been made in reducing disaster risk. Numerous countries have aligned their national strategies with the Sendai Framework, early warning systems have been strengthened, disaster risk management legislation has been enacted and public education and training has intensified. At a similar time, the Global Platform for Disaster Risk Reduction, hosted by North American nation in 2017 in Cancun, highlighted the big challenges that stay.

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ECOLOGICAL STRUGGLE: THE KERALA SASTRA SHITHYA PARISHAD PERSPECTIVE

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Abstract

The Kerala Sasthra Sahitya Parishad (KSSP) is a unique NGO championed in the field of popularization of science and scientific temper in the society. It has a long history of creating awareness on the major environmental issues in Kerala including brutal exploitation of land and the environment by vested interest forces. Its struggle has a two-wing strategy viz. to promote public awareness and initiate alternative development models. The popular movements against Chaliyar river pollution and the Silent valley forest protection are the prominent ecological preservation struggle of KSSP. Its alternative strategies include energy conservation and prevention of air pollution models like building and popularization of Pipe composts, hot boxes, steamless stove, clay products, biogas products, model of well recharging, and manufacture of vermin compost etc got wider popularity in the state and outside. This article observes the achievements of KSSP in promoting ecological struggle, and evolving of alternative technology for the preservation of environment.

Keywords: Lion tailed macaque, Dynamite Blasting, Well recharging, Coliform bacteria, Rainwater harvesting, Flood mapping, and Sustainable development.

The Kerala Sasthra Sahitya Parishad (KSSP) is one of the few scientific organizations that emerged in the 1950's and 1960's with the idea of spreading science in the society raising the slogan "science for social revolution". The practice of Parishad is to develop scientific consciousness in the society and evolve popular resistance

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by spreading alternative development models. In 1960's, the Parishad has become a popular scientific movement with its affiliations to the movements of teachers, students, youth, farmers, agricultural labor and political parties. The Parishad has always sought to provide a humanitarian face to developmental activities with the ultimate objective to create a society free from exploitation. It wanted to evolve at least some alternatives to the anti-people developmental activities of corporate business giants without human face.

One of the earliest achievements of Parishad was its involvement in the publications of science in mother tongue, Malayalam. During its fourth annual conference, it initiated the publication of science periodicals in Malayalam in the periodicals like Sastragathi, Sastrakeralam, and Eureka monthly. Its commitment to the future generation and to the society is very much evident in the fact that its involvement in generating scientific curiosity among school children continues to operate successfully in the form of 'Euraka encyclopedia examination' commonly known as 'vijnanolsav' successfully organising for the last five decades in Kerala. At the 16th annual state conference (1968) of KSSP, the slogan of "people for science" was introduced. The ecological convictions of the Parishad compelled it to put forward the slogan as "science for social revolution" at the 19th annual state conference. The Parishad began its activities for conservation of environment through the organization of numerous lecture classes, public discussions and direct actions. For example, they discussed the topics such as continuum of time, matter and space, and solar system. The Parishad, met with the people in the streets of Kerala, discussed on various topics ranging from renaissance to evolution and the Industrial revolution to the age of information revolution. It upheld the magnificence of human labour as the real sources of human prosperity and questioned superstitions and false notions that hurdle human progress. At various points, it faced opposition from

conservative forces during its campaigns criticising it as atheistic and opposed to believers.

The Concept and Theory of KSSP in Ecological Struggle

The hallmark of this non-governmental organization is its human face in development and people friendly attitude toward the use of science and technology. We can evaluate the social perspective of KSSP with the theory of Abraham Maslow. The aim of KSSP is to create a non-exploitative social system through voluntary service activated in the general community. Abraham Maslow's theory clearly manifests the highest level of human being is to achieve the self-actualization; it is equal to identify the potential of KSSP to resolve the issues of Society and Individual. The social commitments and human values of the KSSP are heightened by its social, scientific, ecological, and economical functions. The core of its volunteer group work is aimed at upliftment of the individual and society with a true left political urge. This kind of a collective will and activities of individuals have gained people's common interest in KSSP. Rousseau's collective will theory is another most important theory that stood for the common good. A collective will shows a homogeneity or heterogeneity of common group for collective interest, the common good of the society is the theoretical foundation of all NGO's. The 'Social Contract' (1962) of Rousseau argues that freedom and authority are not contradictory, since legitimate laws are founded on the general will of the citizens. It is also a common good to stick with the idea of Mahathma Gandhi's Rama Rajya. Gandhi strongly criticized the growing gap between rich and poor; he stood for the concept of trusteeship. The idea of Sarvodaya by Ghandhiji is in favor of 'greatest good for all'. The fundamental rights of man and its common good are also explained the Declaration of Human Rights, which was accompanied by the French revolution. The

concept of welfare state also emphasized the concept of common will, because it ensures the idea of state as an agency to ensure the common well-being of individuals. The idea of selflessness is the core component of all NGOs that are working for the common good. Karl Marx's theory of class struggle also advocates a non-exploitative society. Parishad deliberately thought of the forthcoming injury and hesitation to scientific thinking during the era of globalization. These stands taken by Parishad against unscientific faith in rituals and inhuman superstitions has a significant contribution for Kerala renaissance. The effort of the KSSP to emphasise the need for the scientific consciousness in generating social values has greatly influenced the Kerala society. The publication wing of the KSSP has played a significant role in bringing the whole Kerala society to scientific knowledge and realistic thinking. Through the execution of government projects Parishad gain working capital. Lakhs of classes regarding various subjects and issues are the sum total of the common good of the KSSP. The kalajadhas (literature Marches) of the Parishad are unforgettable memories injecting the public with true scientific knowledge on different subjects. The discussions opened by the KSSP against violence towards women and children, for the building up of a class conscious society and for gender equality are the driving forces of social progress of Kerala in the twenty first century. A modern state that lacks the idea of egalitarianism causes growth of corporate culture and business motive in the field of education, technology and health care generating distrust towards social activism. There is no inequality and discrimination in the democratic system envisaged by the Parishad and its idea of people's engagement starts from the bottom floor of democracy. That is why they could participate in various movements like movement for total literacy and decentralized planning with the help of voluntary

activists. The inciting of involvement and contribution of the common man in public interest is the evidence of KSSP's public good and democratic conviction. All the constructions and tools of the KSSP are 100% valid in their pursuit of the common good, ecofriendly and cost effective.

Parishad believes that the over exploitation of natural resources and misuse of land should be minimized at the benefit of the upcoming generation. KSSP's conception of sustainable development clearly exemplifies its importance. The environment specified books and periodicals of Prishad point out that, if we do not maintain the biological structure, by controlling and preserving it, the food chain will be destroyed and it will lead to serious ecological imbalance. The destruction of the food chain results in threat of the very existence of humanity. It recognises that the personal environment and social environment of an individual are interconnected and mutually depended Parishad was always acting as a stake holder of the environment wherever such issues emerged in Kerala ever since its Birth and take a people friendly position favoring eco-friendly development. It is worth mention that recently, Parishad has moved up same approach in the Keezhattoor national highway development issue also.

Chaliyar River Protection

The Chaliyar river protection movement was one of the most important environmental interventions accomplished by Parishad. It was an effective drive against the feudal ecological conceptions then prevalent in Kerala. The Parishad started its first campaign in Kerala in the 1970's focusing on the need for river protection. Parishad's awareness campaign on industrial waste, which had been dumping into the Chaliyar river by the Mavoor Gwalior Rayon's

factory, has led to many organisations came in the field. Parishad has also put forward alternative scientific proposals for the resolution of the Chaliyar pollution together with public campaigns. The most important of these include conducting of informal talks and orientations for the local people who are directly affected by the issue of river pollution. Workers and residents around Mavoor Gwalior Rayons factory have not met any safety standards to come out against the move. The movement lasted to the indefinite close of the factory. Today, in the new environment of frequent flood and calamities in Kerala, the need of protection and preservation of rivers are well recognized and many movements recently flourished in Kerala to revive rivers and traditional water-bodies with the help of public support.

Subsequently, the contamination of the Mothi chemicals factory at Kannur, Vellore news paper factory and companies like Titanium became topics of discussion. The locals went on a struggle against the carbide being thrown out of Mothi chemicals in Kannur district. The Parishad had raised awareness against the refusal of deadly Carbide smoke from factory and their access to the drinking water sources. Poster propaganda was the weapon, but unfortunately the factory was closed down due to various protests organized by different political parties. Former state secretary of KSSP, T. Gangdharan master has said that the strike was not to shut the deadly carbide smoke factory; it was for the safety of the public and for the safe usage of Carbide. The Parishad had introduced several alternatives to lock it down. The issue raised the public awareness on the environment and need to treat chemical waste.

Experience from Kannur District:

During 1980-1985, the landed property which was under the

ownership of Alakkod King, Kannur District was transferred its sole authority to state government. At the eastern side of the landed property called “Manjapullu”, mass unauthorized deforestation has occurred. Parishad continued a thorough study about this deforestation and occupation of the land. Parishad made a protest rally inside the vested land, and submitted a memorandum to the Kannur district collector. KSSP district committee organized a forest protection march that resulted in the ban of deforestation. The other environmental strike in the Kannur district was against the mild dynamite blast for fishing in the Chapparapadvu River. Dynamite fracturing of the river bank and lose of fish resources prompted Prishad to start this struggle. It organized a river march to mobilize ordinary people around Chapparapadavu Village. The march was organaized in 1984 from Chegalayi River to Kooveri River. The march moved on a country boat fitted with Jet Horse motor sailed through Chegalayi-Perugunnu-Mattool-Kannapuram-Cherukunnu-Kuppam-Vellavu-Panagattor via Pacheni, and it ended at Kooveri River plane. The march had an exciting reception which resulted in the breakdown of Dynamite blasting in Chapparapadvu River. In addition to this, a detailed study conducted by the activist Mr. T.P. Sreedharan (late), Professor Payyanur College on the encroachment, shore annexation of Valapattnam River, resulted in a serious awareness of river protection. The Parishad was also at the forefront of the people’s agitation against Peringom Nuclear power plant, Kannur. After the study report, it cleared the doubts of locals about the usage of Naphtha in Enron project at Kannur proving that the plant is harmless.

Innovative Contributions: Parishad Hot box, Pipe Compost, and Wormy Compost

Some of the notable contributions of Parishad to the ecosystem

are the smokeless oven, steam oven, Pipe compost and wormy compost. By the mid 90's, the Parishad has found out a praiseworthy solution to fuel shortage by building energy efficient and smoke-free stoves. The sand covered stove reduced the use of firewood significantly in the kitchen. In most districts, smokeless firewood burning stove has been widely used for cooking. Parishad's trained workers were assigned to build smokeless stoves for homes especially for those of low income groups. This comparatively reduced smoke from the firewood and saving of huge quantity of firewood resulting in an ecological protection and sustenance of environment. At the same time, the hot box built by Parishad was a huge success in terms of fuel saving. Boiling the eatables, rice, vegetables in this hot box will result in fuel saving. Integrated Rural Technology Centre, Palakkad (IRTC) is the brain and construction unit behind the hot box revolution. Similarly, Parishad's pipe compost is one of the best tools for treating organic waste in domestic kitchen, produced by IRTC after a curious experimentation and observation. Most Pachayahths in Kerala use this pipe compost for organic waste management. Vermi-composting is another architectural master piece of KSSP. Manufacturing of pure soap and soap products by using domestically produced coconut oil and the biogas plant models launched by Parishad have revolutionary impact on the developmental outlook of common people of Kerala. The Samatha Kitchen Bins developed by the IRTC experienced very useful for easy processing of kitchen waste. Keep the bin water-proof and fill it with ten centimeter coconut coir pith. Fill the organic waste from the kitchen in the bin after filtering its water. Continue this process up to four days; you can use best organic fertilizer. Parishad promotes high quality, affordable products that are environmentally fit. Likewise the Mulamthuruthi village (Eranakulam district) people

repaired the fused Light Emitting Diode bulbs from their Village Rural Science Centre of KSSP, Thuruthikkara. All these process are done through cost effective methods. By this, Parishad could be able to repair thousands of LED bulbs in that village. If the Government will take initiative in this regard with the organizational ambit of Parishad, no doubt we can bring innovative changes in the field of energy conservation and waste management in Kerala. Most of these kinds of scientific experiments are part of the common good.

Silent valley campaign

Silent valley of Palakkad district was one of the best ecologically related topic of discussion in Kerala at the end part of 1970's. Parishad was against the KSEB's plan to build a dam across the Kunthipuzha in the silent valley. The issue was a subject of various discussion in all the meetings of Parishad during this period. The annual meeting of Parishad 1978 passed a resolution that the construction of dam will ultimately cause destruction of Silent valley, the rare natural rain forest in the western ghats. Study Report of the Parishad on silent valley brought serious public concern on the environmental impacts of the dam project. In addition, agencies like Botanical survey of India also reported the potential environmental impacts of the projects. In fact, the public discussions initiated by Parishad was biodiversity oriented; mainly about the oldest biodiversity of the Western Ghats and the protection of these lush rainforest etc. The Silent valley hydroelectric project was intended to pose a threat to lion tailed macaque. KSSP's study concluded that, if the dam was constructed, it would destroy 830 hectares of protected rain forest. KSSP also submitted a detailed study report on its socio-economic and technological factors. The environmental catastrophes that caused the project were discussed all over the state. It is also learned that it will not provide enough electricity to Kerala's total population.

The persistent one-man struggle of the Parishad had made the Silent valley stand out. Prolonged marches and several classes are the proof that the borough will go to great length to preserve this biodiversity.

Finally, the sanction for the central government scheme was cancelled in 1983. The Parishad had already recognized the importance of the Western Ghats including the Silent valley before the Gadgil committee and the Kasthoori Ragan committee reports were published. Parishad was the first organization that noticed the importance of Western Ghats none other than before. This epithet here indicates the planning excellence of the Parishad. This incident refers to the Parishad's stance against uncontrolled environmental exploitation in Kerala.

The Parishad has already indicated that the changes in the Western Ghats would result in human intervention in an unpredictable manner. It continues to teach people about the flood in Kerala through Small Jathas. The recent flood in Kerala (2018-2019) is similar to the flood in 1924. The Parishad Jatha teaches that such phenomenon can be reported in Kerala as the nature of monsoon rains has changed. Needless to say, these are the detrimental effects of unscientific intervention of humans in nature. The rise of greenhouse gases in to the world, widespread deforestation and cloud blasts in different places of Kerala, have caused massive rolling bursts. This is the reason why we had a rupture in Kavalappara and Puthumali where even the bodies of injured could not be recovered. The Parishad and experts point out that more than 100 millimeters of rain fall in one place in one hour causes them to descend to the ground without any guarantee. The downpour of rain is that, the soil is soaked when the entire area is suddenly flooded with water. Villages in Puthumali-Waynad, Kavalappara-Malppuram are soaked

by over 40 feet of soil. The most common cause of degradation of soil is the drastic change in soil structure.

The main function of the Parishad in September and October 2019 was to educate the public about the danger of continuously occurring flood and calamities in Kerala. Jathas were conducted at the main centers of the districts; the man made causes of flood and their prevention were educated and discussed with the people. The main reason for the overflowing of our rivers and streams is, the Parishad points out, many of them have been ravaged and destroyed. The Parishadjatha explained that the extensive filling of paddy fields, dwelling of hills, the construction of large walls in front of houses and sand dunes will lead a further flood in Kerala. The malayalee's recent activity on setting up huge houses is unjustifiably exploring the natural resources. This affects the flow of rain water to the earth, diversion of rivers during monsoon season and the earth is unable to contain the water. The Parishad finds that about one fifth of the average rainfall (310c.m) in Kerala occurs in just three days is quite unnatural. The monsoon rainfall received in the month of June and July has now changed itself into August, maybe as a result of the clear evidence of the Global climatic change pointed out by Parishad. The Parishad has found out that Kerala's poor land management pattern, inappropriate developmental strategies, changes of soil structure and usage, plastic burning, widespread of fuel consumption and carbon emission have changed the environment. The Western Ghats prevent the drier winds from coming to the north and prevent drought, as well as it is the reason of poring south west monsoon clouds in Kerala. The Parishad indicated that it was human itself who backed down to the protection of the Western Ghats. Southwest monsoon rains produce about 85% of the rainfall received annually in Kerala. In that Western Ghats play a major role, as said by KSSP and various

agencies. Flood level mapping had been done in all flood affected districts after the flood by the help of KSSP. No such marking has been done in the past. It is interesting to note that the flood level mapping has been done by Parishad on the river banks at 275 places in Kannur district. Parishad also recorded the number of casualties and number of relief camps opened at every districts. Through the flood march, the Parishad submitted a number of directives to the disaster management authority and the government to take action in advance of the disaster potential in each flood prone area. The Parishad also suggested that disaster prevention activities should be included in the interim development documents prepared by local bodies, and to set priority for disaster alert and evacuation. It also suggested ways to deal with the disaster during the peak period of flood.

Kerala Sastra Sahithya Parishad sees ecological struggle as a part and Parcel of the general social struggle (Isaac&Ekbal, 1988). Parishad was always mobilizing people for social transformation through people's involvement in developmental projects. Parishad has attempted to evolve an alternative set of development policies in the context of Kerala(Isaac & Ekbal, 1988).The recent floods of Kerala shows that the importance of a speedy interference of Non-Governmental Organizations and state coordination in almost all sectors, especially in public sanitation. Flood troubles or pollutes the major sources of water bodies such as rivers, ponds, tanks, and wells in the major districts of Kerala. The density of Coliform bacteria was very high in wells during and after flood. Toxic chemical substances, plastics and human waste deposits etc. were spread in our natural water resources, it naturally created several illnesses around the flood affected districts, and so the government machinery tried their level best to control and monitors such deceases. Like pure air,

pure water, we need pure environment as one of the basic needs of any living creatures (Kunhikkannan, 2008). Getting pure water and natural environment is the basic right of all organisms including humans in the new environmentally debatable global scenario (Kunhikkannan, 2006).

Living with dignity is the main concern of the state that has been always emphasized in welfare concept. The human development index of Kerala, compared with that of the developed countries was higher in earlier time stages. (<https://www.sbi.co.in>) Earlier in this article reference was made on the Kerala model that emphasized such a kind of development experience, which has given a new development perspective to other states in India and outside. But now, the Kerala model is being questioned because of the downfall of agriculture, cultivation of vegetables, water pollution, and preservation of land and water resources, encroachment of river belts, soil looting, and lack of eco-friendly industries, unemployment and also brain drain. The involvement of productive sector was comparatively very less in the last decades. New illness like Nippa, and several virus caused fevers also created troubles in an average Malayalee's life in depth.

Rain water Harvesting

Rain water is the only pure water source in Kerala. Approximately Kerala gets 3070 Millimeter rain in each monsoon season. Mostly the duration of monsoon rainfall in Kerala is happening between 30 to 40 hours. (Jalam Janmavakasham, 2013) Kerala is facing severe water shortage during dry seasons. In 2003 KSSP initiated an empirical study covering the whole of Kerala known as "Kerala Padanam" It pin pointed to know how Kerala think on various issues of Kerala in the changed context. The Kerala Padanam very clearly pointed out that 95% of the Kerala total population has strong and comfortable home stay. While taking this survey 43.3% of houses are

having concrete roof in Kerala and 47.3% of houses having tile roofs (Aravindan,2006). This shows the rapid increase of concrete houses in Kerala. Kerala padanam pointed out that the, houses having their own wells are 53.8% in 1987, 65.1% in 1996, 51.5% in 2004 (Aravindan, 2006). So it is very easy to use rain water harvesting during rainy season especially in monsoon time from concrete roof houses and others houses with tile roof.

Santhosh George Kulnagara, a world wide traveler from Kerala once in an interview revealed of the importance of rain water harvesting by noticing the example of the initiative by the people of Fiji rainy season. Fiji bottled rain water and send it to Las Vegas in America. Fiji is a country surrounded by water. It is a very clear example of processing of rain water and its economic utilization and marketing. He doubted why people of Kerala can't do it. He said that during June, July, August and September we have abundance of rain water, we simply spoil it without conserving it. In an average home of Kerala during monsoon season we simply waste around 1000 liters of water. He said that we can use this water through rain harvesting, by the imitative Kudumbasree units and bottle this water and market it in Gulf countries when they vigorously need water in hot climates(<http://youtu.be/q1BQPrmbO0Q>).

Kerala padanam provides a table that shows the yearly expenditure in the state for health care and medical treatment in 2004 as Rs. 1722 crores and it also shows the tendency of large scale hike every year. (Aravindan, 2006). In that study they pointed out that Malayalees are destined to spend huge amount for clinical tests as Lab charges. Recent studies show that the presence of coliform bacteria and its spreading rate is high in wells and ponds of Kerala (wgbi.ces.iisc.ernet.in). The increasing cases of Hepatitis B, Dengi,

Dysentery, and several virus affected illness are caused by pollution of water. Rapid urbanization in Kerala naturally resulted in increase in the number of hotels and restaurants and number of travelling people for their livelihood. Most of the travelling people used to take food from outside, so they are forced to drink water from outside. Our towns and Hotels loose to keep cleanliness in and out of their surroundings. Today the bottled water is also not safe to use, the impure water for cooking, washing and drinking creates several water based illnesses in the State. Change in life style and culture compelled an average Malayalee to eat and drink from outside home and small tea shops (thattukada) spread fast all over the state. The problem of toilet and well under water connectivity during monsoon was another big problem which an average Malayalee face today, especially in Alapuzha and nearby districts face threats due to lack of hygenity. The culture of building compound wall of each Malayalee house blocked the smooth flow of rainwater from their land to the rivers and ponds, this also created severe health problem to Malayalee because of the connectivity of toilet water and well water.

All these situations changed Kerala, the Gods' own country in to a land of water pollution, waste dumping and air pollution. This pathetic situation compelled Kerala Sastra Sahithya Parishad to think over a viable solution and as a result Parishad introduced a new technique to convert terrace water into pure water useful to recharge the well water. By the end of January every year the well will be dry in Thruthikkra at Mulamthuruthi panchayath, Eranakulam district. They used to bring water from the tanker lorry and pum water in to the well. But this summer the situation changed where the wells were full of water. The reason for this kind of a change was because of rain water harvesting on the terrace and that water was purified

and flown to the wells. This is a simple four pipe mechanism got enough popularity in Kerala. It needs only baby metal, activated carbon; river sand, fiber net, steel net, etc. as materials essential for this process.

We can use the rain water that fall on the terrace of a house with four pipes having a length of 45 centimeter and a diameter of four inch. At the bottom of the pipe fix a steel net. The fiber net also placed next to its on top, and use washed baby metal deposit above it. Later fiber net and river sand are also placed. Again put a fiber net, then activated carbon, river sand and also baby metal deposit in it. Similarly when we fill four pipes, the rain water that falls on our building can be converted to well water. This project cost only 4000 rupees. Even though the well is far away from the home we need only 6000 rupees cost. The people of Mulamthuruthi spend around 6000 rupees in a year to bring water in Autoriksha and tanker lorry. Now there is no crises of water in well during the peak seasons, means January, February to May. Hence, now recharging the well has been taken over by the local people as an important activity (<http://youtu.be/xwugOXOBar4>).

Mulamthuruthi/Thuruthikkara model was a viable example that helped to resolve the problem of Water pollution in Kerala. While channelling the terrace water in to well water, the terrace water sources push out the polluted water inside the well and recycle the water within. So the chance of entering polluted water from outside the well blocked because of the forcefull channelization of water from the roof of the house. This is a low cost process invented by KSSP with the help of Integrated Rural Technology Centre, Palakkad. Thankachan a Parishad coordinator is the organizer and technical manager of the well recharging project. IRCT Palakkad is

the back born of this innovation and it also promoted cost effective products such as hot box, Steamless stove and projects for mushroom growing and Sericulture.

KSSP tried to spread this program through out the state with the objective of resolving scarcity of water during summer season in Kerala by providing training for their resource persons and organised camps at various places. KSSP's Kannur Annual convention 2018 April 21, 22 held at panchayath auditorium Mathil clearly stated in their report the importance of well recharging and rain water harvesting. The Kannur district committee of KSSP ensured well recharging training class for forty people from various parts of Kannur district (Annual report KSSP, 2017-18). Apart from in various localities that KSSP created a team of experts who give training in well recharging. They organized a demonstration class, and then the experts provided training to all needy persons of well recharging around Kannur district. KSSP's district convention report revealed that, the work of those trained persons could not reach out every nook and corner of Kannur district. This spread an awareness of well recharging throughout Kannur district. KSSP also organized training as second round programe of the training process for panchayath Presidents and KSSP's voluntary members of Kannur districts. Forty persons including eight panchayath presidents participated the training programme.

Conclusion

Experience impress that the best model for common people to preserve, recycle and use well water is the Parishad model. It is a real alternative model for purification of drinking water with a low cost. Again and again Parishad mobilized its social commitment through innovative projects. Well recharging helps to preserve

and protect the 80% of simple flow of terrace rain water during monsoon in Northern Kerala and 70% of rain water from Southern Kerala. According to the State Underwater Decision Committee's data, approximately 6029 million cubic foot under water source is available in Kerala (Parameswaran, Rajesh 2015). So while ensuring the conversion of terrace water in to well water through KSSP's well recharging model, changes in the simple flow of surface water bodies may also be made.

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SYNTHESIS OF MATTER AND SPIRIT IN SRI AUROBINDO'S PHILOSOPHY

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Abstract

In 'Philosophy' Materialism and Idealism are major opposite extremes in their explanations of the ultimate reality in which the former negates all spiritual aspects whereas the latter negates the reality of material world vice versa. Giving more importance to anyone by denying the other will make negative impact to the mankind. Philosophy of Sri Aurobindo addresses this problem by believing that undermining the reality of the external world leads people to asceticism and renunciation of the world where as extreme materialism is also dangerous to human beings as it leads to self-destruction. Sri Aurobindo's theory of spiritual evolution solved the problems arising out of these extreme standpoints and synthesized it for the common cause of the humanity. This paper tries to survey this profound academic endeavor.

Keywords: Sachchidananda, Evolution, Involution, Supermind, Spiritual Evolution, Integral Yoga, Gnostic Being, Devine life.

Introduction

Aurobindo's philosophy aims the perfection of the individual and the world through the process of spiritual evolution. He accepted the evolution of consciousness as the central motive of terrestrial existence. His theory of evolution is the pivot round on which his whole philosophy moves on. An outward visible process of physical evolution and an invisible process of soul evolution are mentioned as a double process of the evolutionary working of nature. The process of cosmic evolution and individual evolution are one and the same. Here Evolution happens with in oneself is yoga.

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Aurobindo's philosophy put forward a necessity of immediate evolution from Mind to Supermind considering it as a need of the hour. Aurobindo understands that as a transitional being man only can do this conscious activity because of his spiritualistic nature. Realizing this importance of man for upcoming evolution, Aurobindo suggests Integral Yoga as the means to reach the goal of evolution, the divine life upon Earth. He reminds man has the responsibility to drag Supermind downwards by entering into it. He calls such man as Gnostic Being who can bring divinity to Earth and save the future of mankind. This article limits its scope only to understand and analyse how the concept of spirit and matter is discussed by Sri Aurobindo in his philosophy and how he makes a synthesis of these opposite entities by his theory of spiritual evolution.

Matter as the Lowest Level of Reality

In Aurobindo's philosophy, Reality has different codes of beings or different stages when it is viewed from the point of view of creation. These different cords of beings are expressions of reality or grades of reality which are mentioned as the order of Involution and Evolution. "The descending order in Involution takes its direction in the following manner: Existence, Consciousness Force, Bliss, Supermind, Mind, Psyche, Life, Matter. But in the case of evolution the ascending order goes in the reverse manner, that is, Matter, Life, Psyche, Mind, Supermind, Bliss, Consciousness force, Existence'. (The life Devine, p.264). For Aurobindo Matter is the starting point of the evolutionary process. The process of involution of *Sachchidananda* through lower realities ends at the matter. According to Aurobindo, Consciousness rests in the matter in sleeping form. It is from matter the return journey of consciousness begins to itself. "Matter is the form of substance of being which the existence of *Sachchidananda* assumes when it subjects itself to this phenomenal action of its own consciousness and bliss." (The Life Devine, p.263)

***Sachchidananda* - The Ultimate Reality**

The absolute reality of Sri Aurobindo is described as *Sachchidananda*, a triune principle including *Sat* or Existence, *Cit* or Consciousness and *Ananda* or Bliss. It is the “one with a triple aspect-*Sat*, *Cit* and *Ananda*” (Letters on Yoga, P-239). This transcendental, non-temporal and non-spatial principle is the ultimate source and object of creation. It happens due to the two fold principles of unity and multiplicity.

Aurobindo's concept of Ultimate reality is very much similar to the Brahman concept of Advaita Vedanta. It is the One besides whom there is nothing else existent. It is the One without second and it is All. It is the Supreme spirit, the time, the timeless self, the self-possessing Time, Lord of Nature, creator and continent of the cosmos and immanent in all existence, the soul from whom all souls derive and to whom they are drawn. Aurobindo writes, “Absolute is something greater than ourselves, greater than the Cosmos which we live in, the Supreme Reality of that Transcendent being which we call God, something with out which all that we see or are conscious of as existing could not have been, could not for a moment remain in existence.” (The Life Devine, p.375).

The triple aspects of *Sachchidananda* are not distinct at all. They exist as triune in the supramental planes of manifestations and inseparable in the ultimate sense in a way that Existence is Consciousness and Consciousness is Bliss. *Sachchidananda* is the same always which connects with everything impartially. The power behind the life force is the will of the manifesting *Sachchidananda*.

Supermind

Supermind is a principle which mediates the two realm of reality the higher realm and the lower realm. The self-illuminating Supermind causes the gradual ascending of matter in its series towards

Life, Mind and ultimately to *Sachchidananda*. It is responsible for the creation of the Cosmic being which is the outcome of the play of the conscious force owing to descend of the divine.

One aspect of Supermind is that it is Truth consciousness, as the spiritual principal having complete knowledge of *Sachchidananda*. Aurobindo writes, "By the Supermind is meant the full Truth consciousness of the Devine Nature in which there can be no place for the principle of division and ignorance; it is always a full light and knowledge superior to all mental substance or mental movement." (Letters on Yoga, p.257.) As Supermind transforms everything below it to divinity, it becomes the agency of creation or creative principle. Another aspect of Supermind is that it is the ideal and culmination of mind. To reach the realm of Supermind, the Supramental plane is a possibility in Aurobindo's philosophy after entering various mental levels of the world respectively in ascending order such as Higher Mind, Illumined Mind, Intuitive Mind and Over Mind.

Mind exists in their appearance and phenomenal divisions. But Supermind is a superior principle than Mind which exists and performs in fundamental truths and unity of things and it sees truth as a single whole. It is an eternal reality of the divine being and the divine nature. Supermind is completely free from ignorance as knowledge is its very nature. It gets the knowledge which is inherent in it by identity, a pure awareness of the self-truth of things. Aurobindo calls Supermind as "the all-seeing and all-powerful wisdom and will of the Divine or Knowledge - will of the divine conscious Force." (The Life Divine, p. 159)

Mind is not the final point of the evolutionary stage in Aurobindo's philosophy. He believes that Evolution is preparing for its next leap into the realm of spiritual principle. It is Supermind the next level of the evolutionary stage where the transformation starts from mind, the present evolutionary stage we live in. The evolution of

Supermind too is not the final point or end in Aurobindo's spiritual evolution. On the basis of spiritual thirst, the being can evolve into different Supramental levels or gradations of divinity. It can finally reach at the Supreme Supermind or even beyond it to yet uncharted levels of Being, consciousness and Bliss, that is *Sachchidananda*.

Involution & Evolution

Aurobindo's creation has a double process, the process of decenting and ascending. Aurobindo calls it Involution and Evolution respectively. Aurobindo's spiritualistic theory of evolution declares Evolution can be started only when Involution has already been happened. There should be a corresponding involution for all stages of evolution. Matter is considered as a form of concealed Life which means Life is already involved in Matter. In this respect Life is considered as concealed consciousness also. Aurobindo writes, "Evolution is an inverse action of the involution: what is an ultimate and last derivation in the involution is the first to appear in the evolution; what was original and primal in the involution is the evolution the last and Supreme emergence." (The Life Divine, p-853)

Involution is a process of self-negation of *Sachchidananda* into Matter, Life and Mind. It is the downward descend of it into *Apara prakriti*. *Sachchidananda* is very much evident in Supermind where the perfect blend of *Sakthi* and *Njana* co-exists. After the journey from Supermind to Mind, the intensity of this illumineness of *Sachchidananda* disappears by the influences of the conditions of mind where the perfect blend of *Shakti* and *Jnana* is not that much perfect. According to this way in the process of involution *Sachchidananda* has come down to Life and then finally from Life it reaches to Matter in which the differences will become completed concealing the oneness. In evolution, this *Apara-prakriti* is gradually ascends into *para-prakriti*. Here the process goes in the same way but

in a reverse manner. While the former is as a process of the creation of cosmos whereas the latter is the process of its divinization journey.

Spiritual Evolution

Evolution belongs to the lower sphere transforms itself and enter into the higher spiritual sphere. "All evolution is in essence, a lightening of the force of consciousness in the manifest being so that it may be raised to the greater intensity of what is still unmanifest, from matter into life, from life into mind, from mind into the spirit," (The Life Devine, p.726) The Matter is evolved to life only when the concealed consciousness in matter is inspired to become life through a long period. When such a 'call' from concealed matter is getting a proper 'reply' from its higher reality, then life is originated in the universe. Like in this way Mind has evolved from life when life is subjected to the evolutionary process. In these evolutionary stages there is an evolutionary jump which consists of three factors such as 'call from the bottom', 'reply from the above' and 'resultant transformation' respectively. Aurobindo explains it as the triple process of transformation in evolution named widening, heightening, integration.

In creation, *Sachchidananda* goes towards the lower realities and in evolution that *Sachchidananda* is getting more manifested from lower to higher realities. In evolution process the divine principle of consciousness will be unfolded from where it has already involved itself into the different grades of lower principles. Aurobindo says that it is the destiny of the lower reality to become one with *Sachchidananda*. Aurobindo writes, "The material universe was bound in the nature of things to evolve from its hidden life apparent life, from its hidden mind apparent mind, and it must in the same nature of things evolve from its hidden Supermind apparent Supermind and from the concealed spirit within it the triune glory of *Sachchidananda*" (The Life Devine, p-269)

Conclusion

On the basis of this spiritualistic evolution, there is no fundamental opposition between Spiritual reality and Material reality in Sri Aurobindo's philosophy and they are, in essence, the two aspect of the same thing. His integral approach gives possibilities for both the descent of the Devine into the lowest forms of reality, the matter and the ascent of the lowest entities into the higher, spiritual and Supramental grades of realities of consciousness, the spirit. Here Matter is nothing but the involution of the conscious delight of existence in self- oblivious force and the foremost aim of it is to be the evolved and developed towards perfection from the concealed possibilities within it. The evolution of matter happens due to the fact that the spirit must involve into matter and this matter possessing the spirit should emerge to the higher grade of reality.

Understanding Reality is spiritual and the spirit is embedded in everything Aurobindo exclaims matter too spiritual. In cosmic consciousness matter becomes real to spirit and spirit becomes real to matter. This cosmic consciousness tends towards a transcendental consciousness in which the consciousness of the unknowable appears to us as something supreme, amazing and unreachable, which constantly constructs itself to our consciousness.

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