Developmental Assets as Conversion Factors of Human Development : A Conceptual Reflection

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Youth development is a cogent constituent of human development. Developmental assets approach, which has been accepted as a theoretical framework for understanding positive youth development has wide ranging potential. This conceptual paper aims at finding out whether developmental assets can be considered as conversion factors. The objective is to situate the developmental assets approach in the conceptual and theoretical ambit of human development.

Keywords : Conversion Factors, Developmental Assets, Positive Youth Development, Human Development

Introduction

Prior to 1970s, the realm of development studies upheld the definition of the concept of 'development 'or 'well-being' in line with opulence, money, utility and wealth. This traditional approach to development had come to an end since the emergence of human development approach. The origin of Human development paradigm is considered as a milestone in the refinement process of the branch of development studies. Capability approach pioneered by Amartya Sen is the underpinning theoretical framework of human development paradigm. This has emerged as an alternative approach to many traditional approaches such as happiness approach, utility approach and resource-based theories of justice.

According to this approach, development is the expansion of capabilities or freedoms or opportunities. The basic purpose of development is to enlarge people's choices so that they can lead the life they want to (Sen, 1985). Sen emphasizes that development is a multidimensional concept enveloping diverse social, economic, cultural and political dimensions, and that economic growth, although necessary, is not sufficient in itself to bring about development in this broad sense (Krishnakumar, 2007). The capability approach has made a crucial foundational contribution to the growth of the human development paradigm which is now well known, especially through conceptual extensions and elaborations in the Human Development Reports (Robeyns, 2017).

Over the past few decades, there have been significant changes in the way conceiving human development issues. This is evident in the shift from deficit-based approaches to strength-based approaches. The capabilities approach has been perceived and analysed by aligning it with strength-based approaches to human development. Positive youth development, which is intrinsically and instrumentally a strength-based approach, belongs to this fold. Youth development can be considered as a significant constituent of human development.

Across the conceptual and theoretical spectrum of positive youth development we find the framework of Developmental Assets as pliable for understanding and operationalising the former. However, the scope of developmental assets framework is relatively less explored in the realm of capabilities approach. The process aspect of capability approach emphasises the transition of capabilities to achieved functionings through a clearly defined channel. Conversion factors leverage the process of transition from resources to functionings. This paper is an attempt to explore whether developmental assets can be considered as conversion factors in the process aspect of human development with emphasis on youth development.

The Main Focus

Capability approach and positive youth development are the theoretical frameworks of human development and youth development respectively.

The construct of conversion factors is recognised as the chief aspect of capability approach and developmental assets are considered as the building block of positive youth development. As both capability approach and positive youth development uphold intrinsically strength-based aspects, their fundamental constructs of conversion factors and developmental assets ought to be connected with each other. This paper intends to figure out the research issue by developing the indications in field literature, by going into the following research questions:

i. Is there a connection between human development and youth development?

ii. Do developmental assets mediate to convert resources into the vector of potential functionings or capabilities?

iii. Is developmental asset a form of conversion factor of human development?

Theoretical Overview

Capability approach: Theoretical framework of human development

According to the United Nations, "Human Development is about giving people more freedom to live lives they value. This means developing people's abilities and giving them a chance to use them." The human development discourse is conceptually underpinned by the capability approach (Osmani, 2017).

Amartya Sen first introduced the Capability approach in his essay 'Equality of What?' delivered as The Tanner Lecture on Human Values in 1979(Saith,2001). Sen (2009) stated that capability approach "is an intellectual discipline that gives a central role to the evaluation of a person's achievements and freedoms in terms of his or her actual ability to do the different things a person has reason to value doing or being". The capability approach cares about people's real freedoms to do these things, and the level of well being that they will reach when choosing from the options open to them (Robeyns, 2017, p.8). It is a rich, multidimensional approach (ibid).

The capability approach is a broad normative framework for the evaluation and assessment of individual well-being and social arrangements, the design of policies, and proposals about social change in society (Robeyns, 2005). It has also provided the theoretical foundations of the human development paradigm (Fukuda-Parr, 2003). The core characteristic of the capability approach is its focus on what people are effectively able to do and to be; that is, on their capabilities (Robeyns, 2005).

This approach is primarily a framework of thought and a mode of thinking about normative issues; hence it is a loosely defined paradigm that can be used for a wide range of evaluative purposes (Robeyns, 2005). The pioneer of this approach in its current form is Amartya Sen; further developments and refinements was made by Martha Nussbaum, the feminist thinker and philosopher. Considerable contributions for advancing and applying this approach were made by notable capability theorists such as David Clark, Sabina Alkire and Ingrid Robeyns.

In the capability approach it is not the possession of the commodity or the utility that it provides that proxies for well-being, but rather what the person actually succeeds in doing with the commodity given its characteristics and his or her own personal characteristics and external circumstances (Saith, 2001).

Fig.1 depicts how capability approach works.

Fig 1. Relationship between resources, capabilities and functionings-adaptation by Verd & Lopez (2011) based on Bonvin (2008).

Each individual may be owned with some kind of resources or goods or commodities. Each commodity is entitled with certain characteristics. Functionings are dependent on these characteristics. For example, a person owns a bike. Here the resource or commodity is bike and its characteristic is to help that person for being able to move freely and rapidly. The functioning is mobility and capability is his real freedom or opportunity to choose whether to ride or not ride the bike. The transition from the entitlement of resources to the ultimate functioning is dependent on the range and magnitude of the available conversion factors. So, conversion factors are the elements which make a person to be capable to convert the characteristics of a resource to functioning.

Conversion factors

One of the core concepts of the capability approach is conversion factors. Conversion factors are the factors which determine the degree to which a person can transform a resource into a functioning (Robeyns, 2017). The capability approach is set amidst the understanding that individuals make choices, transforming the characteristics of goods into functionings, and choosing from the available set of functionings a particular vector that allows them to be and do as they value (Nambiar, 2013).

As conceptualized within the capability approach, a person converts the vector of commodities into functionings, and this is accomplished depending upon personal, social and environmental factors (ibid).These factors are: (a) personal characteristics; (b) social characteristics; and (c) environmental characteristics.

By personal characteristics are meant those characteristics that a person is endowed with and which affect his bodily operation as well as his psychological make-up and operation(ibid). Personal factors are actually skills and competence, intelligence, metabolism and psycho-motor skills. Thus, a person who is given a laptop cannot be able to convert it into the functioning of learning if he lacks the skill of using the laptop.

Social characteristics include gender practices in a society, social norms, social hierarchies, and governmental policies(Nambiar,2013).In a society where women are not allowed to walk along streets, an otherwise good transportation system cannot be converted into the functioning of travel(ibid). The third conversion factor is made up of environmental characteristics such as the provision of public goods (such as parks, street lighting, water supply), climate, and infrastructural facilities(ibid). For instance, the absence of street lighting can restrict the ability of people to gain the functioning of mobility at night even if they have cars(ibid).

In simple terms, conversion factors are the personal, environmental and social conditions in which the individual is embedded that determine which, and the way in which, commodities or resources can be turned into functionings (Gasper,2007).

Capabilities and Functionings-other core concepts

Functionings and capabilities are the fundamental concepts of the capability approach. Capabilities are the freedoms that people have to achieve the lifestyle that they have reason to value (Frediani, 2010). ‘Functionings’ refers to achievements, while ‘capabilities’ refers to the opportunity set (Gore.1997).

Functionings represent multiple diverse aspects of life that people value (Alkire,2005). Functionings are also known as valuable beings and doings or achieved functionings. Functionings are the various things a person may value being and doing (Sen, 1999).

The distinction between functionings and capabilities is between the realized and the effectively possible, in other words, between achievements, on the one hand, and freedoms or opportunities from which one can choose, on the other (Robeyns, 2017).

Positive Youth Development: Theory on Youth Development

The "golden age" of positive youth development research began in the mid-1990s, with burgeoning literature on topics such as civic engagement, service learning, connectedness, generosity, purpose, empowerment, and leadership (Benson, et al, 2006). Essential to positive youth development theory is a generous view of human capacity and potential (ibid). Grounded initially in the views and values of professionals and practitioners working with youth, this vision of human nature identified the possibility of active and constructive contribution to the development of self, community, and society (ibid).

Damon (2004), in his essay titled "What Is Positive Youth Development" states that this positive vision of youth potential has implications for research, education, and social policy. Positive youth development research identifies a series of additional supports, opportunities, and developmental assets whose identification emerges from investigations of environmental and individual factors that promote competence, achievement, growth, and thriving (Lerner, 2004).

The essence of positive youth development theory is explaining how such potentiality expresses itself (Benson, et al, 2006). The theory requires an appreciation of the dynamic interplay of person and context (ibid).Central to the theory of positive youth development are conceptions of the developing person, the contexts in which the person is embedded and the dynamic interaction between the two (ibid). According to Damon (2004) positive youth development takes a strength-based approach to defining and understanding the developmental process.

Developmental Assets-building blocks of positive youth development

The developmental assets approach or developmental assets framework has become acknowledged as one of the most widespread and influential frameworks for understanding and strengthening positive youth development. This conceptual framework was developed by Search Institute, a US based independent and non profit organisation. The Search Institute has built a conceptual model of adolescent and youth development based on the strengths of young people and on the resources they and the members of their families and communities can provide to enable these strengths to become the ingredients of positive development across the life span (Scales&Leffert,2004).

The concept of developmental assets emerged in 1990 (Benson, 2003). The framework of developmental assets is a theory-based model linking features of ecologies (external assets) with personal skills and capacities (internal assets), guided by the hypothesis that external and internal assets are dynamically interconnected "building blocks" that, in combination, prevent high risk health behaviours and enhance many forms of developmental success (Benson, et al, 2006).

The Search Institute researchers have identified 40 key individual and contextual resources, that is the 40 internal and external developmental assets for youth (Scales & Leffert, 2004). The assets are grouped into 20 external assets and 20 internal assets (skills, values, competencies, and self-perceptions) (ibid).

The external assets are grouped into four categories (1) support (2) empowerment (3) boundaries and expectations, and (4) constructive use of time(ibid). The internal assets are placed in four categories: (1) commitment to learning, (2) positive values, (3) social competencies, and (4) positive identity (ibid). The 40 developmental assets of youth development are explained in Table:1.

Table.1 Developmental Assets

External Assets	Internal Assets
Support	**Commitment to Learning**
1. *Family support* -Family life provides high levels of love and support.	21. *Achievement motivation*-Young person is motivated to do well in school.
2. *Positive family communi-cation*-Young person and her or his parent(s) communicate positively,	22. *School engagement*-Young person is actively engaged in learning.

and young person is willing to seek parent(s) advice and counsel.

3. *Other adult relationships*-Young person receives support from three or more nonparent adults.

4. *Caring neighbourhood*-Young person Experiences caring neighbours.

5. *Caring school climate*- School provides a caring, encouraging environment.

6. *Parent involvement in schooling*-Parent(s) are actively involved in helping young person succeed in school.

Empowerment

7. *Community values youth*-Young person perceives that adults in the community value youth.

8. *Youth as resources*-Young people are given useful roles in the community.

9. *Service to others*-Young person serves in the community one hour or more per week.

10. *Safety*-Young person feels safe at home, school, and in the neighbourhood.

Boundaries and Expectations

11. *Family boundaries*-Family has clear rules and consequences, and monitors the young person's whereabouts.

12. *School boundaries*-School provides clear rules and consequences.

13. *Neighbourhood boundaries*-Neighbours take responsibility for monitoring young people's behavior.

14. *Adult role model*-Parent(s) and other adults model positive, responsible behaviour.

15. *Positive peer influence*-Young person's best friends model responsible behaviour.

16. *High expectations*-Both parent(s) and teachers encourage the young person to do well.

Constructive Use of Time

17.*Creative activities*-Young person spends three or more hours per week in lessons or practice in music,theater,or other arts.

18. *Youth programmes*-Young person spends three or more hours per week in sports, clubs, ororganizations at school and/or community organizations.

19.*Religious community*-young person spends one or more hours per week in activities in a religious institution.

20.*Time at home*-young person is out with friends "with nothing special to do", two or fewer nights per week.

23. *Homework*-Young person reports doing at least one hour of homework every school day.

24. *Bonding to school*-Young person cares about her or his school.

25. *Reading for pleasure*-Young person reads for three or more hours per week.

Positive Values

26. *Caring*-Young person places high value on helping other people.

27. *Equality and social justice*-Young person places high value on promoting equality and reducing hunger and poverty.

28. *Integrity*-Young person acts on convictions and stands up for her or his beliefs.

29. *Honesty*-Young person "tells the truth even when it is not easy."

30. *Responsibility*-Young person accepts and takes personal responsibility.

31. *Restraint*-Young person believes it is important not to be sexually active or to use alcohol or other drugs.

Social Competencies

32. *Planning and decision-making*-Young person knows how to plan ahead and make choices.

33. *Interpersonal competence*-Young person has empathy, sensitivity, and friendship skills.

34. *Cultural competence*-Young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds.

35. *Resistance skills*-Young person can resist negative peer pressure and dangerous situations.

36. *Peaceful conflict resolution*-Young person seeks to resolve conflict nonviolently.

Positive Identity

37. *Personal power*-Young person feels he or she has control over "things that happen to me."

38. *Self-esteem*-Young person reports having a high self-esteem.

39. *Sense of purpose*-Young person reports that "my life has a purpose."

40. Positive view of personal future-Young person is optimistic about her or his personal future.

Source: Search Institute, www.search-institute.org.(2005).

Discussion of the Propositions

Developmental Assets

One of the important asset categories is support. According to Benson (1997) support means love, affirmation and acceptance needed by every youth. Support category includes family support, and positive family communication. Like this, each category of assets is very pertinent as far as the development process of a young person is concerned. As mentioned in Table 1, external assets categories are support, empowerment, boundaries and expectations and constructive use of time. Internal assets categories are commitment to learning, positive values, social competencies and positive identity.

Caring, integrity and honesty are a few assets which belong to the category of positive values. These assets are internal to a person and it is quite akin to personal conversion factors. The asset category of social competencies is also similar to the personal conversion factors. The asset category of boundaries and expectations is akin to social conversion factors. Safety is an asset belonging to the category of empowerment and achievement motivation belong to the category of commitment to learning which can be considered as environmental conversion factors.

Conversion Factors

Personal conversion factors are internal to the person such as metabolism, physical condition, sex, reading skills or intelligence (Robeyns,2017). Social conversion factors are factors stemming from the society in which one lives, such as public policies, social norms, societal hierarchies (ibid). Environmental conversion factors emerge from the physical or built environment in which a person lives(ibid).How much a bicycle contributes to a person's mobility depends on that person's physical condition (a personal conversion factor), the social mores including whether women are generally allowed to ride a bicycle(a social conversion factor), and the availability of decent roads or bike paths (an environmental conversion factor)(ibid).

Proposition 1:

There is a close and vital connection between youth development and human development.

As youth development can be considered as the integral and inevitable part of human development, both these domains are closely linked. A grand theory of positive youth development requires the integration of multiple theoretical orientations (Benson, et al,2006). Positive youth development is a "bridging" field that touches multiple academic disciplines and spheres of practice (ibid). One of the theoretical strands central to positive youth development is human development. Infact, youth development is the core component of human development as the ultimate aim is to have a life one wishes to have and be a person one wants to be. Both positive youth development and human development hold inherently strength based theoretical orientation. Because it exhorts that a person should use strengths or the real freedom to choose the functioning from a vector of functionings.

Proposition 2:

Developmental assets mediate to convert resources or goods to the vector of potential functionings.

When we meticulously analyse each developmental asset, it is understood that the role of developmental assets in positive youth development is more or less the same as the function done by conversion factors in the capability approach. The inherent nature of developmental asset itself shows that it can have an instrumental role to convert resources to potential functionings vector and from that an individual can choose her achieved functioning. How developmental assets mediate to convert resources to the potential functioning can be elucidated through an example. A mother wants to distribute three mangoes to her two kids (one is boy and another is girl). If the society is patriarchal, the girl will get something less than what the boy gets. Here we have equality and social justice, which is a developmental asset, that mediate to convert the resource (three mangoes) to potential functioning (one and half mangoes to each of them and having equal satisfaction).

Proposition 3:

Developmental asset can be considered as a form of conversion factor of human development paradigm.

As youth development is the pivotal component of human development, developmental assets are suitable to be conceived as conversion factors of human development. Since developmental assets mediate to convert resources to potential functionings in the process aspect of capability approach which is the theoretical framework of human development, it is possible to consider developmental assets as conversion factors of human development paradigm.

Conceptual Model Development

This conceptual paper tried to determine the relationship between conversion factors in capability approach and developmental assets in positive youth development approach. It is evident from the literature that there exist high degree of connection between developmental assets and conversion factors. Henceforth, developmental asset of youth development is a synonym of conversion factor of human development's theoretical framework, that is capability approach.

The proposed conceptual research framework shown below depicts how developmental assets as conversion factors of human development works out. The framework constitutes combination of vital components of both capability approach and developmental assets approach. It starts from dimensions of capabilities. Each dimension has different resources which lure an individual to the final stage of achieved functioning. Though an individual has various resources to even know or enjoy any dimension, conversion factors have its own role as the push or facilitating factors to reach into the ultimate final stage. So, with the aid of conversion factors, here developmental assets as conversion factors play an instrumental role, it is possible to move on to the next phase of potential functionings. Here the individual can choose from the capability set or vector of potential functionings and through her choice, she can make the potential functioning as her own achieved functioning. For instance, education is a dimension. There are different resources like income, and existence of excellent educational institutions. Though an individual has income as the resource to have the achieved functioning of becoming graduate, here developmental assets as conversion factors such as family support and achievement motivation have vital role to reach into the significant stage of achieved functioning.

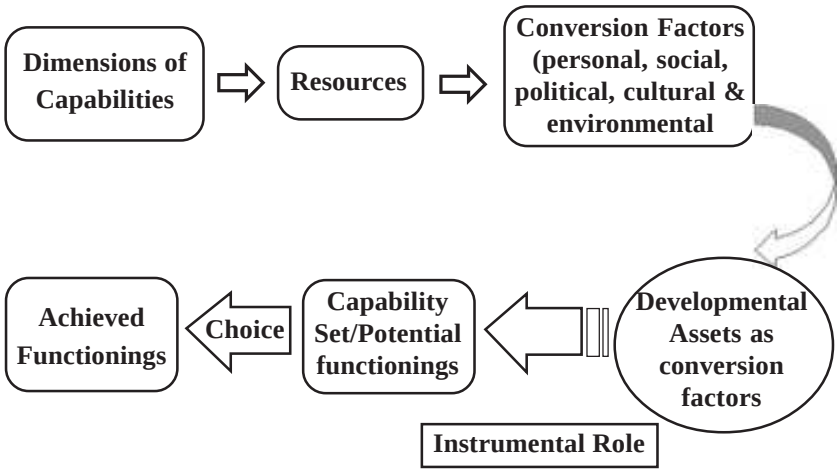

Fig 2. Proposed conceptual research framework

Conclusion

The concept of human development, when liberated from deficit-oriented approaches, gain its natural ebullience. Its reconceptualisation with strength-based approaches demand conceptual integration with complementary approaches. This paper attempted to locate the space of developmental assets, in the theoretical

and operational courses of human development. The findings suggest the scope for applying the framework of developmental assets in understanding and analysing the practical dynamics of development happening across the real planes of human lives. The mediating potential of developmental assets prove its instrumentality which in turn validates the manifestation as conversion factors and the transformative prospects in development policies and practices bearing relevance to expansion of human capabilities.

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Climate Change in Kerala: Implications on Sustainable Development

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Kerala, located in the southwestern region of India, is highly vulnerable to the impacts of climate change due to its unique geographic location, topography, and socio-economic factors. The major vulnerabilities recorded include sea-level rise, extreme weather events, water scarcity, agriculture productivity and biodiversity changes, health, infrastructure, and tourism. This paper presents a systematic review of the impacts of climate change on development and suggests adaptation and mitigation measures required in specific sectors connected to the economy and sustainable development, such as agriculture, fisheries, forestry, water resources and health.Kerala has made significant progress towards achieving the United Nations Sustainable Development Goals (SDGs) and set up a few models in adaptation and mitigation measures. However, there is a need to mainstream climate change adaptation and mitigation measures with developmental paradigms and to make appropriate policy changes to address the issue of climate change. The paper suggests a few strategies to address climate change while ensuring sustainable development practices.

Keywords : Sustainable Development, Climate Mitigation, Bio Diversity, Waste Management, Green Infrastructure

Kerala : Environmental Perspective

Kerala (long. 74.87 to 72.37 E.; lat. 8.30 to 12.80 N.), located in the southwestern part of India, is a narrow strip of land (width ranging from about 35 to 120 km) located between the Arabian Sea in the west and the Western Ghats in the east. Kerala provides a geographical and ecologically circumscribed but complex mosaic of land where the development-environment link is getting neglected and disrupted. The environmental systems here are very fragile because of the inherent nature of geography, climatic conditions and ecological characteristics. The geographic settings of the State are much different from those of other states, and the lifeline of the state is the rivers, and the complex interconnections between forests in the mountains, rivers and the ocean maintain the dynamism of life in the state, besides providing long term assets for sustainable development. The natural inclination of the land towards the sea and the lesser average width compared to other states of India demands careful land use planning, especially along the 44 river basins of Kerala.

Kerala's landscape and coastal environment are quite different from that of other states. It is believed to have originated as a result of faulting during the late Pliocene (around 3 million years ago), and in the geological past, the coastline has oscillated many times due to marine transgression, and the humid tropical coastline has been subjected to environmental dynamics of the past several thousand years that eventually led to the formation of a wide range of geomorphologic features like backwaters, bays, lagoons, salt marshes, sand dunes, and sandy shores. The coastline of Kerala extends to around 590 km, which is 10% of the coastline of India. The coast is characterized by asymmetrical topography dominated by undulating subdued hills and steep slopes, and altitude ranging from below mean sea level (MSL) to 2694 m above MSL (Jagtap et al., 2004).

Kerala, with a population of roughly 35 million, is highly vulnerable to rapid pressures on natural

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resources. Further, the land is prone to 39 types of natural hazards(KSDMA, 2016), with about15 per cent of Kerala's land and eight million people vulnerable to flooding(KSDMA, 2011). The state's population density is also higher along the coastal planes and river basins. Watersheds and floodplains of rivers are, therefore, of particular strategic importance. Against this backdrop, the predicated global shifts/vagaries in climate, especially extreme climatic events such as heavy rain, droughts, mudflows and cyclones (IPCC, 2018), would impact the sustainable development of Kerala. The recent episodes of extreme floods in 2018 and 2019 have demonstrated that scientific management of rivers and their flood planes are highly relevant in future developmental perspectives, including rebuilding Kerala- Navakeralam. While envisaging the rebuilding process of Kerala, an ecosystem approach is all the more critical, with a stronger focus on healthy rivers and richer biodiversity.

Climate Change Implications in Kerala

Global climate change predictions point towards an increase in temperature, changes in precipitation patterns, sea level rise and an increase in the severity and frequency of extreme climaticevents (IPCC, 2018). Kerala is highly vulnerable to the impacts of climate change due to its unique geographic location, topography, and socio-economic factors. Some of the significant vulnerabilities of Kerala to climate change are:

Sea-level Rise: Kerala has a long coastline of about 590 km and is highly vulnerable to sea-level rise due to its low-lying areas. A rising sea level can result in coastal flooding, erosion, and saltwater intrusion into coastal groundwater.

Extreme Weather Events: Kerala is prone to extreme weather events such as floods, landslides, droughts, and cyclones. These events can lead to loss of life and property and affect the economy and livelihoods of the people.

Water Scarcity: Kerala depends on monsoon rains for its water supply. However, climate change has resulted in unpredictable and erratic monsoons, leading to water scarcity during the dry season.

Agriculture: Agriculture is the primary source of livelihood for a significant percentage of the population in Kerala. Climate change can considerably impact agriculture due to changes in rainfall patterns, temperature, and soil moisture.

Biodiversity: Kerala has a rich biodiversity and is home to several endangered species. Climate change can affect the habitats and ecosystems of these species, leading to their extinction.

Health: Climate change can spread vector-borne diseases, such as dengue and malaria, due to changes in temperature and rainfall patterns. It can also lead to heat stress and respiratory problems.

Infrastructure: Kerala's infrastructure, including roads, bridges, and buildings, is vulnerable to the impacts of climate change. Extreme weather events can damage or destroy infrastructure, leading to disruptions in transportation and communication.

Tourism: Tourism is a significant contributor to Kerala's economy. Climate change can affect the tourism industry due to the impact of extreme weather events and changes in temperature and rainfall patterns.

The climate action plan of Kerala also projects changes in tune with the global scenario, with temperature increases in all the districts of the state and mean annual rainfall compared to the historical period, leading to extreme climatic events (DOECC, 2022). As a state is susceptible to a series of natural hazards (KSDMA, 2016), climate change exacerbates the pressures on natural capital. This paper discusses the climate change implications on the economic sector and natural capital alone. The impacts of climate change will be much more effervescent in natural resource sectors such as fisheries, forests, and water resources, and socio-economic systems such as agriculture and health and communities in Kerala (DOECC, 2022). The discussions in this paper, therefore, are limited to these sectors.

1. Agriculture

Agriculture occupies the majority share with a net area under cultivation in the State or the net sown area of 20,26,064 ha, forming about 52.13% of the total geographic area (DOECC, 2022). Kerala has witnessed significant changes in its land use pattern over the years. The important difference is the shift from the cultivation of food crops to non-food crops and the increase in area under land put to non-agricultural use, which is around 12 per cent (Economic Review, 2021). Changes in land use and cropping pattern in Kerala pose a challenge not only to food security but also to the ecological sustainability of the State.

The agriculture sector is vulnerable to climate change, and impacts yield variability, water availability, and therefore the food security and income of farmers. The rice yield decreased due to the rise in temperature and reduction in rainfall, thereby reducing the crops maturity time in the future. Several parts of thewestern ghats experience a rise in temperature of 1 to 2°C, thereby causing depletion of soil moisture and impacting agriculture. Crops with shallow root systems face water stress and a decline in productivity.

In Kerala, the livestock sector is prominent and is one of the fastest-growing sectors in the rural economy. As per the 20th Livestock Census, the livestock population in the State was 38.36 lakh. The decline is due to the reduction in the population of other animals that form the major share, especially domestic dogs, rabbits, donkeys, and elephants, by 14.69 per cent. The poultry population is 298.18 lakh, which accounts for 3.5 per cent of the total poultry population in the country. The sector registered a 25 per cent increase over the previous census. The growth rate of the poultry population in Kerala is higher than the growth rate recorded at the national level (16.81 per cent). In Kerala, small and marginal farmers own a significant share of livestock; therefore, climate change would put this sector at great risk. Since these systems have low adaptation and high sensitivity to climate change, local impacts would be considerable (NAAS 2016).

2. Fisheries

Many species in the ocean respond to climate change by shifting their distribution towards cooler polar or deeper waters, depending on their degree of mobility and chances of habitat connectivity (FAO, 2018). Further, a higher concentration of carbon dioxide in the atmosphere facilitates its speedy uptake by the ocean and may result in ocean acidification, which will of concern for all organisms with a calcareous exoskeleton (e.g. Planktonic forms such as coccolithophores, corals, molluscs) in both feral water bodies and in culture systems. Warming and acidification of seawater, changes in the direction and speed of ocean currents, expansion of areas of anoxia, changes in rainfall pattern, sea level rise and increase in frequency and intensity of cyclones are the significant changes recorded from the Indian seas (Vivekanandan, 2011). All these changes impact not only marine fisheries but also the socio-economic conditions of the fishermen communities along the coast.

The general implications of climate change on coastal and marine ecosystems are represented in Fig. 1.

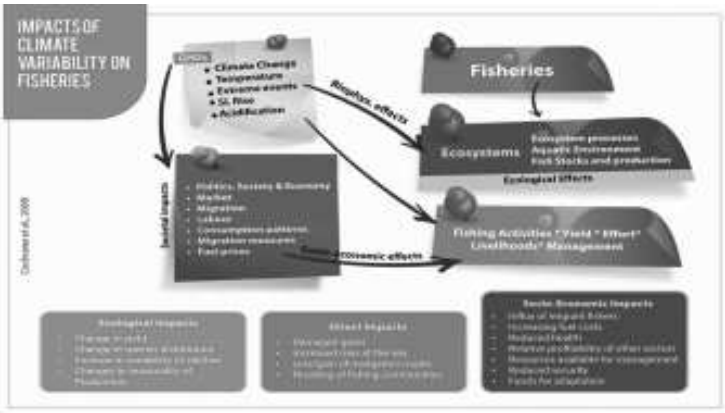

Figure 1. Impacts of climate change on coastal ecosystems and fisheries

In India, marine fish landings in2021 was 3.05 million tonnes, with Kerala occupying the third position among states, with 5.55lakh tonnes (CMFRI, 2022). From the investigations carried out by the Central Marine Fisheries Research Institute (CMFRI), the major responses to climate change observed in different marine fish species in the Indian seas include: (i) shift/extension of distributional boundary, (ii) shift/extension of depth of occurrence; and (iii) phenological changes (Vivekanandan, 2011). After 1995, oil sardine (*Sardinella longiceps*) in Kerala registered an all-time low catch of 3297 t in2021, 98.0% lower than the annual average oil sardine catch of 1,66130 to during the 1995-2020 period (CMFRI, 2022). The shift in the distributional boundary of the Indian oil sardine due to the combined effect of climate change and El Nino (Vivekanandan et al., 2009, b; Kripa et al., 2018) coupled with overharvesting pressure on fish stock contributed to this drastic decline. Zacharia et al. (2016) studied 30 important marine resources on southwest coast of India and stated that sharks such as *Sphyrna lewini,* and *Carcharhinus limbatus* and three species of shrimps are highly vulnerable and sensitive to climate change, indicating the need for management interventions.

3. Forests

In India, climate change is predicted to have strong influences on forest cover, resulting in a shift in forest types and loss of drier forest types under warmer and wetter climates (Ravindranath and Sukumar, 1998; Ravindranath et al., 2005), with forests in the Western Ghats also in risk to climate change. The forest cover of Kerala is 21,253 sq. km., which is 54.68% of the geographical area of the State (FSI, 2021). Under the National Mission for Green India, the state has done afforestation in 12,298 ha.

The projected increase in forest cover is mainly due to high CO_2 concentration in the atmosphere and CO_2 fertilisation. However, few modelling programmes that predict climate change's impact may have limitations as they may not consider soil nitrogen limitations and the potential consequences of forest pests and fire (DOECC, 2022). There are, however, reports on the increase in the frequency of wildfires from the buffer zone of Silent Valley National Park, Wayanad Wildlife Sanctuary, Attappadi Reserve Forest and Walayar Reserve Forest of Kerala, but its linkage with climate change is yet to be explored.

4. Water Resources

In the water sector, stress due to gross alteration of catchments, landuse change, deforestation, overexploitation of river sand, human interventions, floodplain encroachment, and prolonged negligence to maintain traditional water structures create additional pressure on water resources and sustainable management. The gross neglect in maintaining precious wetlands of the state is evident in the frequent reports on the decline in wetland coverage of the state and area of Ramsar wetlands such as Vembanad, Ashtamudi and Sasthamkotta lakes.

The issue of climate change needs much more serious attention in all the realms of development in the state, as the reflections of increasing temperature are much more effervescent in the forms of variations in monsoon patterns, extreme climate events such as floods and cyclones, and changes in the pattern of distribution of biodiversity. Further, it may also severely impact the livelihood and future economic sustainability paradigms of the state. There are increasing shreds of evidence in the vagaries of rainfall during monsoon and the incidence of high-intensity rain separated by more extended dry periods. This impacts the existing water management infrastructures and upsets the agricultural practices that evolved with the monsoon cycles in the region. While the reduction in rainfall affects water storage, the high-intensity rainfall will cause increased storm runoff. The extreme rain in Kerala impacted the urban areas due to the issues with water dispersion systems in cities and the entry of flood waters into the rivers, as the rivers lost most of the water-retaining wetlands and channels in the flood plains.

The State experienced three consecutive floods and landslides in 2018, 2019 and 2021. The state received the highest summer rain in 2021, which marked the best summer rainfall within 60 years. This increase in rainfall is primarily due to the changing climate in the region; the cyclones Tautae formed in the Arabian Sea and Yaas formed in the Bay of Bengal, contributed towards increased rainfall. The heavy

downpour in Kerala in August 2018 that caused massive floods and destruction has been categorised as the heaviest in the last nine decades. All these events were triggered by the extreme rainfalls in the state, a direct indication of changing climate in the region. The Kerala State Planning Board appointed the expert committee to examine the causes of the flood and suggest appropriate policy responses to repeated extreme heavy rainfall events and subsequent floods and landslides. The committee recommended the need for increasing the capability and potential for accurate forecasting of such events with sufficient lead time; reviewing indicators and methods to locate areas prone to severe landslides during such extreme events and remedial measures for minimising such hazards and their consequences; studying current maps of areas prone to flood hazards and remedial measures to minimise such hazards, and pay particular attention to the role of changing land use in these hazards.

Non-point source pollution is another major issue due to the dispersed nature of settlements and intensive agricultural practices. Surface water contamination through faecal coliforms has been reported from almost all rivers in Kerala. The heavy infestation of invasive alien weeds such as water hyacinth, Pistia and Salvinia in many water bodies, primarily due to eutrophication, reduces water quality and increase in waterborne diseases. Further, no severe interventions for maintaining environmental flows in the riverine ecosystems are essential for ensuring ecosystem services.

5. Health

Climate change affects human health due to scenarios such as heat waves, floods, landslides, drought, infectious diseases, etc. Changes and variability in atmospheric moisture content may also lead to vagaries in rainfall, drought, and extreme climatic events. The impact of these conditions on food production may jeopardise food security, leading to public health issues such as malnutrition and subsequent vulnerability to infectious diseases like malaria, diarrhoea, and respiratory disorders. Further, flooding increases the rate and spread of waterborne diseases such as diarrhoea, cholera, hepatitis E, leptospirosis, and other gastrointestinal infections, posing serious public health implications. It also increases the risk of vector-borne diseases, such as malaria, dengue fever, and respiratory and allergic diseases, such as asthma and skin rashes (Mendell et al., 2011). Stagnant water and increased precipitation produce breeding grounds for mosquitoes, bacteria, viruses, and other microorganisms like mould (Gage et al., 2008), which increase susceptibility to infectious diseases or pandemic outbreaks and lead to higher levels of morbidity and mortality. These health concerns are linked to mental health issues, including sadness, stress, and anxiety, aggravating physical problems (Akpinar-Elci et al., 2018). The subsequent health effects, combined with their economic consequences, large-scale relocation, and infrastructure disruption, can significantly deteriorate the impacted population's overall quality of life (Sekulovaand Van den Bergh, 2016).

Due to sea level rise, saltwater intrusion in coastal areas contaminates groundwater and makes it unfit for domestic and agricultural use (Sreekesh et al., 2018). Rising sea levels can lead to changes in the distribution of disease-spreading insects and have implications on nutrition owing to the loss of agricultural land and changes in fish capture and consumption. Rising sea levels may also have health implications associated with population displacement (Patil & Deepa, 2007).

Kerala is vulnerable to communicable and non-communicable diseases. Although the State has successfully controlled several communicable diseases earlier, the emergence of chikungunya, leptospirosis, hepatitis and H1N1 in recent years has led to considerable morbidity and mortality. Many districts have markedly increased instances of vector-borne diseases like dengue, malaria, Japanese encephalitis, and scrub typhus. Waterborne infections like different kinds of diarrhoeal diseases, typhoid and hepatitis are showing persistence in many Districts. Cholera has surfaced in many districts after a few years of relatively low incidence. The incidence of Malaria is strongly affected by climate change. Dengue prevalence is expanding rapidly. Transmitted by Aedes mosquitoes, dengue is a fast-growing challenge, particularly in coastal areas of Kerala in recent years (DOECC, 2022). The enhanced temperature and heat shock have been reported frequently from Kerala, especially in the past decade.

Mitigation and Adaptation

Mitigation, adaptation and nurturing leadership through climate education are the primary strategies for addressing climate change. Mitigation refers to efforts to reduce or prevent greenhouse gas emissions, which are the primary cause of climate change. This can include transitioning to renewable energy sources, improving energy efficiency, and implementing policies that encourage sustainable land use and transportation practices. On the other hand, adaptation refers to strategies and measures that help societies and ecosystems adjust to the impacts of climate change. This can include building sea walls to protect against rising sea levels, implementing drought-resistant farming techniques to cope with changes in precipitation patterns, and developing early warning systems for extreme weather events.

Climate adaptation and mitigation strategies in agriculture aim to reduce the negative impacts of climate change on food production and increase the resilience of agricultural systems. These include:

Soil management: Adopting practices such as conservation tillage, crop rotation, and cover cropping can improve soil health and increase its ability to store carbon, thereby reducing greenhouse gas emissions.

Water management: Implementing irrigation techniques that conserve water, such as drip irrigation or rainwater harvesting, can help farmers adapt to drought conditions and reduce the need for energy-intensive pumping

Agroforestry: Integrating trees into farming systems can provide multiple benefits, such as carbon sequestration, improved soil fertility, and increased biodiversity.

Crop diversification: Growing various crops can help farmers adapt to changing weather patterns, reduce the risk of crop failure due to pests or disease, and improve soil health.

Renewable energy: Adopting renewable energy sources such as solar, wind, or biomass can reduce greenhouse gas emissions from energy use on farms.

Conservation of natural resources: Protecting natural habitats and biodiversity can help maintain the ecological balance necessary for agriculture to thrive and adapt to changing conditions.

Under climate change, animals can adapt through physiological, biochemical, immunological, anatomical, and behavioural responses (Ratnakara et al., 2017). Commonly observed responses of livestock to heat stress include reduced feed intake, shade seeking, increased sweating and panting, increased water intake and drinking frequency, increased standing time and decreased lying time, and reduced defecation and urination frequency. Further, these animals are subjected to multiple stressors. Therefore, the adaptation strategies such as breeding heat-tolerant varieties, production/management system modifications, and institutional and policy changes may be followed. Changing animal diets to reduce methane emissions, improving manure management, and breeding animals better adapted to heat stress can all help reduce the carbon footprint of livestock production.

Climate adaptation and mitigation strategies in fisheries aim to reduce the negative impacts of climate change on fish populations and fishing communities and to increase the resilience of marine ecosystems. Some examples of these strategies include:

Sustainable fishing practices: Adopting sustainable fishing practices, such as reducing fishing pressure on overexploited species, implementing seasonal fishing closures, and reducing bycatch, can help maintain healthy fish populations and ensure the long-term viability of fishing communities.

Aquaculture: Expanding sustainable aquaculture practices, such as land-based aquaculture or seaweed farming, can help reduce pressure on wild fish populations and provide a more stable source of seafood.

Marine protected areas: Establishing marine protected areas can help protect vulnerable species and habitats and promote the recovery of depleted fish populations.

Habitat restoration: Restoring degraded or damaged habitats, such as seagrass meadows or coral reefs, can help support healthy fish populations and increase the resilience of marine ecosystems.

Improved monitoring and research: Improving monitoring and research can help track changes in fish populations and their habitats and inform the development of effective management strategies.

Climate-smart fishing gear: Developing and implementing fishing gear designed to reduce climate change's impacts, such as gear that is more selective or less damaging to the seafloor, can help reduce the carbon footprint of fishing.

Community-based adaptation: Supporting community-based adaptation strategies, such as diversification of livelihoods or developing alternative income sources, can help fishing communities adapt to changing conditions and reduce their vulnerability to climate impacts.

These strategies are just a few examples of how fisheries can adapt to and mitigate the impacts of climate change. The specific strategies that are most effective will depend on local conditions, the particular needs and goals of fishing communities, and the characteristics of the fish populations and marine ecosystems being targeted. In general, the current era requires diversification of species for both aquaculture and livestock production, multi-species farming, an adjustment in stocking densities, and integrated farming practices such as mixed crop–livestock or forestry–livestock and rice-cattle-duck-vegetable-fish farming.

There are mitigation measures that reduce livestock greenhouse gas emissions. It may vary greatly between production systems and regions, and the mitigation potential lies in the gap between the management techniques that result in the lowest and highest emission intensities.

The following strategies are suggested for water resources management:

Water conservation: Implementing water conservation measures, such as efficient irrigation techniques, water reuse and recycling, and public education programmes, can reduce demand for water and help ensure that water resources are used more sustainably.

Natural infrastructure: Using natural infrastructure, such as wetlands, forests, and grasslands, to store and filter water can help reduce the impacts of flooding, improve water quality, and enhance water availability.

Water storage: Increasing water storage capacity, such as through the construction of reservoirs or the expansion of underground aquifers, can help communities better manage water resources during drought or other extreme weather events.

Green infrastructure: Incorporating green infrastructure, such as green roofs, rain gardens, and permeable pavement, into urban areas can help reduce the impacts of stormwater runoff and improve water quality.

Water efficiency: Improving water use efficiency in industrial, commercial, and residential settings can reduce demand for water resources and help ensure water is used sustainably.

Watershed management: Implementing watershed management strategies, such as improving land use practices, managing stormwater runoff, and restoring degraded habitats, can help protect water quality and increase the resilience of freshwater ecosystems.

Water reuse: Developing and implementing water reuse systems, such as greywater and industrial reuse systems, can help reduce demand for freshwater resources and enhance water security.

The consecutive floods and the climate change reports that predict the increase in extreme climatic events, such as floods, necessitate urgent actions on river and floodplain rehabilitation and restoration. Although flood prediction has improved in recent years, it is not as good as earthquake prediction, as local climatic situations could also trigger the recent heavy rains due to cloud bursts. Since the casualties during

the flood in Kerala are primarily due to the settlements in flood plains or landslides, better management of flood plain and watersheds should form the priority in managing the natural environment.

'Room for rivers' is a fundamental concept in river management, popularized by The Netherlands. This programme included several measures leading to rehabilitating and restoring river beds and floodplains to create more room for the rivers and reduce water levels. The activities for creating more 'room' for rivers include lowering flood plains, relocating dikes further inland, and creating more wetlands in flood plains to receive floodwaters during peak discharges. They also aim to make the river more attractive from the perspective of recreation by facilitating nature development in the river's floodplain, mainly with nature-based solutions. In short, the methods enable reintroducing of river dynamics, and in the context of dammed rivers of Kerala, this should also include period desilting of reservoirs and ensuring minimum environmental flow in downstream areas to maintain the health of the riverine ecosystem.

While planning for facing climate change, we also have to plan for activities to combat drought. This can be done by activating all traditional water harvesting systems in the watersheds, implementing the watershed management programmes, reconnecting old streams to the river, creating artificial wetlands in river flood plains, and removing obstacles that block the free flow of water from the mountains to the sea. In this context, the river restoration campaign titled "Now, Let Me Flow" initiated as part of the Haritha Kerala Mission programme is worth mentioning, which resulted in the restoration of the Varattar River through scientific restoration plans and the involvement of Local Self Government institutions and local communities.

In Kerala, the following climate adaptation and mitigation strategies can be adopted, considering the increase in hotter days and the deterioration of water and air quality. Besides this, unscientific solid waste management and an increase in temperature in the Arabian Sea that triggers heat waves and extreme climatic events may also necessitate urgent interventions to reduce the negative impacts of climate change on human health and increase the resilience of healthcare systems.

Heatwave and extreme weather response plans: Developing and implementing heatwave and extreme weather response plans, such as emergency response protocols, can help protect vulnerable populations from the health impacts of extreme heat and weather events.

Vector control: Implementing vector control measures, such as mosquito control and rodent management, can help reduce the spread of vector-borne diseases like malaria and dengue fever, which are expected to increase due to climate change.

Air quality management: Improving air quality, such as using cleaner energy sources and transportation, can help reduce the negative health impacts of air pollution, which can worsen as temperatures rise.

Waterborne disease prevention: Implementing measures to prevent waterborne diseases, such as improving water treatment and distribution systems, can help protect populations from the health impacts of waterborne diseases that may increase due to climate change.

Food security and nutrition: Improving food security and nutrition, such as by promoting locally grown and sustainable food systems, can help reduce the negative health impacts of malnutrition and food insecurity, which can worsen due to climate change.

Disaster preparedness: Developing and implementing disaster preparedness plans, such as emergency response protocols and stockpiling of medical supplies, can help healthcare systems better respond to extreme weather events and other climate-related disasters.

Health education and awareness: Improving public education and awareness about climate-related health risks, such as through public health campaigns and outreach programmes, can help communities better prepare for and respond to climate-related health threats.

Climate Mitigation and SDGs: Linkages

There are strong links between climate change mitigation and sustainable development goals (SDGs). The SDGs were adopted by the United Nations in 2015 to guide global development efforts towards a more sustainable, equitable, and resilient future. Climate change mitigation and adaptation are vital components of the SDGs, and addressing climate change is necessary to achieve many SDGs. Some of the relationships between climate change mitigation and the SDGs are:

SDG 7 (Affordable and Clean Energy): Mitigating climate change requires a transition to clean energy sources, such as renewable energy, which is a key component of SDG 7.

SDG 9 (Industry, Innovation, and Infrastructure): Developing low-carbon infrastructure and technology is essential for reducing greenhouse gas emissions and achieving climate change mitigation goals, a key component of SDG 9.

SDG 11 (Sustainable Cities and Communities): Sustainable urban development, including low-carbon transportation and energy-efficient buildings, is essential for reducing greenhouse gas emissions and achieving climate change mitigation goals, a key component of SDG 11.

SDG 13 (Climate Action): This SDG specifically targets climate change mitigation, including efforts to reduce greenhouse gas emissions and increase the resilience of communities and ecosystems to the impacts of climate change.

SDG 14 (Life Below Water) and SDG 15 (Life on Land): These SDGs focus on protecting and restoring ecosystems, which is essential for building resilience to the impacts of climate change, such as sea level rise and biodiversity loss.

SDG 17 (Partnerships for the Goals): Addressing climate change requires international cooperation and partnerships, a key component of SDG 17.

Meenangadi Carbon Neutral Village: A Model in Kerala

Meenangadi is a small village in the Wayanad district of the southern Indian state of Kerala, which has gained recognition for its efforts towards achieving carbon neutrality. The village has implemented a range of sustainable practices that reduce greenhouse gas emissions and promote sustainable living, such as:

Agroforestry: Meenangadi has implemented agroforestry practices, which involve integrating trees with crops and livestock to provide multiple benefits, such as improved soil health, increased biodiversity, and carbon sequestration.

Renewable energy: The village has installed solar panels on the rooftops of homes and buildings, which generate clean energy and reduce dependence on fossil fuels.

Waste management: Meenangadi has implemented a comprehensive waste management system that includes composting organic waste, recycling plastics and other materials, and properly disposing of hazardous waste.

Conservation of natural resources: The village has implemented practices to conserve natural resources, such as protecting water sources, promoting water harvesting, and reducing chemical fertilizers and pesticides.

Sustainable transport: Meenangadi has encouraged the use of bicycles and public transport and has developed pedestrian-friendly infrastructure to reduce the dependence on private cars.

These practices have enabled Meenangadi to reduce its carbon footprint and march towards achieving the ambition of becoming a carbon-neutral village. The government of Kerala has recognized the efforts of

Meenangadi, and the village has become a model for sustainable living and climate action. This experiment can be repeated in other regions to ensure climate-resilient approaches to achieve sustainability.

Conclusion

The philosophy of sustainable development is centered around sustained economic growth and globalisation (Naidoo and Fisher, 2020). Rockström and Sukhdev (2016) provided a tripartite nested model of sustainability, grouping the major SDGs under environment, society and economy, the three pillars of sustainable development (Fig. 2).The looming economic scenario would force the governments to revisit the SDGs and focus on a few broad strategic goals which are of immediate concern, including the goals pertaining to reduce the likelihood of yet another pandemic, with a stronger emphasis on managing natural capital. This demands systems thinking on planetary health, and more science-based transdisciplinary solutions to prioritise action programmes to convince and 'impress' political representatives working towards implementing SDGs. Nature plays a critical role in both the survival of biodiversity in the planet and socioeconomic recovery essential for development. One Health is essentially a multidisciplinary approach to attain better health of people, animals and the planet and the approach should be the central point in future plans for achieving sustainable development, especially considering the increase in communicable diseases in Kerala. The state also requires a new green initiative in achieving better health of biodiversity and ecosystems along with the services, economic recovery and security, and resilience to climate change, besides the essential support to the policies related to green development and economic stimulus packages.

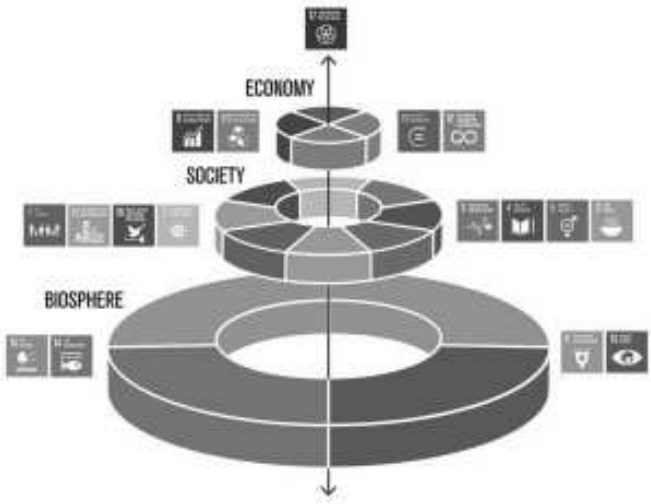

Fig. 2. The tripartite nested model of sustainability provided by Rockstrom and Sukhdev (2016) indicating the stronger foundation of natural capital and its vertical connectivity with society and economy (Image courtesy: Azote Images for Stockholm Resilience Centre)

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Book Review

Prioritizing Tribal Issues

Saurav Kumar Rai

Bharathy, Manjula, R. K. Suresh Kumar, and P. Sukumaran Nair (eds.),
Tribal World: Shifting Boundaries and Contested Terrains,
New Delhi: Manak Publications, 2022,
pp XVII + 278 + Inxex, Price: ₹ 1500.

Since the initial phase of independence to contemporary India, tribal question constitutes the vexing issue of their identity, development and survival. In fact, postcolonial India's initial response to tribal question was to insert constitutional provisions for protecting the interest of tribal people, especially in the Fifth and Sixth Schedules of the Constitution. Perhaps, this institutional accommodation of tribes emerged from the greater realisation that tribes were the victims of the long colonial exclusion and deprivation as the British put them in the Scheduled Area, often denoting them as an exclusionary category. Tribals are more often seen as an administrative category as Scheduled Tribe rather than as a social and political category. Postcolonial India considered tribe as a social and political category guaranteed by certain constitutional provisions for uplifting them to the mainstream while recognising their distinct governance system and traditional institutions. As a distinct social category, however, tribals are confronted with an identity crisis, social deprivation, and access to livelihood. The emerging view is that tribal people should be allowed to retain their cultural traits and habits, leaving them alone.

Though enough scholarship on tribal land rights, customary laws, and traditional institutional governance exists in the field, the current volume deserves special attention. The edited book is a compendium of 14 articles spread over three broad parts - Tribalscapes: Shifting Boundaries and Contested Terrains; Vignettes from the Field; Kerala. The articles in the volume are a mix of theoretical, and empirical narratives written by academicians, activists, policymakers, social workers and bureaucrats.

In post-independent India, the project of nation-building tried to address the tribal issues by way of institutional and policy accommodations. Institutionally, the Indian constitutional guarantees and policies emphasise the need for their protection and empowerment. The government initiated numerous programmes, such as the Tribal Sub Plan, to promote their welfare. However, the development project by the union and state governments further displaced them and deprived them of their land, forest and resources. The state is increasingly acquiring the tribal Private land belonging to tribals and other cultivators for such development projects. As Xaxa asserts, for most of the tribals, rehabilitation remains an elusive phenomenon (p. 8). Tribals struggle to control natural resources and protect their unique identity and culture. They continue to struggle under state laws as their community control over forest resources is waning. Displacement and lack of rehabilitation are followed by mobilisation by various actors/agencies, civil society organisations and political parties, especially left parties. VirginiusXaxa asserts that losing their autonomy over land and forest, the tribals resorted to struggles which were challenged not only by the system but also the agency (p.5).

Endorsing the view, Kunhaman asserts that "intimidating them in the name of so-called development is unavailing and total denial of justice and human rights" (p.25). According to him, tribal development should be focused on access to cutting-edge technology and modern management and marketing techniques and practices (p.27). The instances of intimidating the tribals in the name of development and denial of justice and human rights in postcolonial India also continued to be more in neoliberal India. The growing

state-corporate nexus in neoliberal development further impoverishes the tribals. The few articles in the volume are devoted to the increasing marginalisation of the tribal population in neoliberal India.

In addition to the postcolonial displacement and impoverishment caused by the state-directed development projects and the market-induced neoliberal development, the articles in the volume also analyse Hindutva's outreach to the tribals in recent years. Taking instances from contemporary India, articles highlight the Hindutva's political mobilisation of tribes through education and the social field. B.L. Biju argues that "Hindutva emerged as a divisive unifier of tribes" in India (p.11). He also unearths the intricacies of the relationship between Hindutva and tribal communities. The Hindutva's tribal mobilisation offers material incentives and cultural closeness to tribes. Further, this edited volume is a valuable addition to the existing studies on tribal development and a substantive handbook for students, academicians, policymakers and activists who work on tribal issues.

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Income as a Determinant of Access to Piped Water: A Case Study of Thiruvananthapuram District

Godwin V P &
Rony Thomas

The study is an effort to look at the relationship between income of the households and the use of piped water. Water is an inevitable part not just in sustaining life but also for the social economic development of both households and society. Availability of piped water guarantees a reliable and continuous source of water, the consumption of which was found to be based on the income of the households. The study found that the income variations had significant impact on the access of the households to piped water sources as compared to the variations in the urban rural or geographic settings.

Keywords : Income, Piped Water, Above Poverty Line (APL), Below Poverty Line (BPL), Permanent Households

Introduction

Water is essential for all the conceivable progress that can be made in the social, economic and the developmental fronts. It plays a magical role as the component aiding the production of food and thus sustaining all life. The economic development of any economy depends on the available stock of healthy population. The availability of sufficient quality water hence plays a significant role in sustaining this healthy human capital which forms the core raw material for development.

It is seen that millions of people worldwide still lack access to basic drinking water, this is especially true in the case of rural areas in low and middle income countries. The report by World Health Organization (WHO) and United Nations International Children's Emergency Fund's (UNICEF) Joint Monitoring Programme (JMP), finds that nearly 844 million people worldwide has lacked access to safe water in 2015. Across the globe one in five people does not have access to safe drinking water. Each year at least 3 to 4 million people die of water borne diseases. This includes more than 2 million children who die of diarrhoea (UN Water 2009).

The report by WHO mentions that vast majority of the individuals who lacked access to safe water were from the rural areas of the developing countries. It is also found that nearly 97% of the global urban population has access to an improved water source which is within a distance of around 30 minutes from the area of residence in urban areas whereas 86 percentage of the rural population had poor access to it. Further in rural areas of the developing countries only 28 percentage of the population had access to piped sources and this figure falls to around 3 percentage in the least developed countries (WHO/UNICEF JMP for Water Supply, & UNICEF. 2005).

A minimum amount of water is needed for survival. It is suggested that at least 2 to 2.7 liters of water a day is necessary to sustain human life (Ensminger et al., 1983). Water is used by humans for different purposes. The world consumes around four trillion cubic meters of water a year. It is also seen that the use of water varies across the globe, the average American uses around 100 to 175 gallons of water per day, an average person in France consumes around 77 gallons of water per day, in India it is 38 gallons and in Mali, the arid part of Africa it is around 3 gallons per day a (UN Water 2009).

Considerable progress has been made with regard to the access to safe drinking water through various

initiatives by United Nations including the Millennium Development and Sustainable Development Goals (Weststrate. 2019). These initiatives have been implemented in majority of countries across the globe. The progress with regard to the implementation of these goals has been greatly influenced by the specific national characters. The availability, affordability and access to safe drinking water plays an important role in influencing and sustaining the socio-economic life of households. The investment in water hence forms the core strategy for human capital development and poverty eradication. In this regard the source of water used plays an important role in determining the ability of the households to access clean and sufficient quality of water. Thus, the provision of safe and clean drinking water is an integral component of development and in influencing the socio-economic progress in the society. Hence is important to study whether the use of piped water sources vary with the level of income of the households. This work tries to look into this particular question with regard to Thiruvananthapuram District in Kerala.

Literature Review

Carmine Ornaghia and MircoToninb (2021) in the work,'The effects of the universal metering programme on water consumption, welfare and equity' looks into the importance and role of water meters in establishing efficient water usage. It is found that after installing water meters in England there was 22% decrease in water consumption. The work found that there is a correlation between income and water usage. It was found that those households who are having fixed or a reasonable income slab showed that water usage is highly elastic to income changes. It was also found that those who don't use meters in assessing the quantity of water used in the households exhibited water use that was highly inelastic to changes in income. The study also suggests that most of the households fear that the use of meters might increase the financial burden of the poor households.

Šèasný, M., and Smutná, Š. (2021), in their paper, 'Estimation of Price and Income Elasticity of Residential Water Demand in the Czech Republic over Three Decades' looks into the correlation between income level and water consumption in Czech Republic. The paper estimates that residential water demand from 1993-2016, it was found that when the price of water almost doubled in real term the water consumption decreased by a 28%, and families became considerably richer or their income increased significantly. The income and its relationshipwith the price of water is studied in this work.Such a result according to the study could be an important indicator in understanding the demand of water in the wake of water scarcity.This becomes especially important for the developing countries.

United States Environmental Protection Agency (2019) in the work,'Pricing and Affordability of Water Services', registers how pricing of water helps in ensuring efficient and uninterrupted water services to users. Connecting pricing policies with water usage it was found that the lower income households may face hardships in ensuring minimum water availability. So the affordability criterions should be consider while determining the pricing of water. The study suggests that pricing structure is an important in determining the water consumption, firstly it will direct users towards efficient water usage at the same time, if pricing is too low it will lead to inefficient water usage by consumers. As the water usage is price elastic, how to fix pricing for different categories of users emerges as the core issue in water management.

Quentin Grafton. R et al (2011) in the paper, 'Determinants of residential water consumption: Evidence and analysis from a 10-country household survey', explains how price and non-price factors influence the demand for water in the wake of water scarcity. Using the cross country analysis for 10 countries the study shows that average volumetric prices can influence the household water consumption and also factors such as water-saving devices, attitudinal characteristics and environmental concerns will act as explanatory variables. These will indirectly influence water demand of the households. It was found that the presence of low volume or dual flush toilets has statistical significance and negative effect on water consumption. The study found that though there are factors such as environment that has large impact on the water savings and consumption pattern of the household, it is this volumetric price of water which has profound influence on household water consumption.

Joachim Schleich and Thomas Hillenbrand (2009) in their paper, 'Determinants of Residential Water Demand in Germany' assess how different factors including economic, social and environmental influences water consumption in 600 water supplying cities in Germany. The study found that in older cities price elasticity to water demand is highly inelastic while in new cities it is highly elastic .The study brought out an important point that price and income highly influence water demand in the households.

Samuel Fankhauser and Sladjana Tepic (2007) in their work for European Bank for Reconstruction and Development, titled 'Can Poor Consumers Pay for Energy and Water? admits that there is a lack of available literature on how household consumption of energy and water consumption changes in relation to tariff changes. The study used household budget surveys and, living standard measurement surveys (LSMS). The study found that across the region, the poorer households spend considerably more on electricity, heating and water than average consumers. However, at current tariffs and collection rates utility payments remained surprisingly low even for households in the lowest three income deciles. The affordability constraint was found to be tightest for the poorest 10 per cent of households. The study concludes that there is a positive correlation between household's income level and their energy and water consumption levels.

Arbués, F., M. A. Garcia Valinas, and E. Martinez Espiñeira (2003) in the study, 'Estimation of Residential Water Demand : A State-of-the-art Review' looked into the price and income elasticities for the residential water demand. It was concluded that the water price, income and household consumption are the main determinants of water use in the residential area. It was also noted that water consumption was inelastic of water price. It can be easily understood that water price does not affect consumption of water.

Howard, G., Bartram, J., Water, S., & World Health Organization. (2003) in the report 'Domestic water quantity, service level and health'provides guidelines for domestic water consumption. The report points out that the health level of individual depends on the consumption of hygienic water which in turn depends on many factors such as education, income level and availability of safe drinking water facilities. The report explains why water consumption varies with income and education level. The study found that the high incidence of the water related diseases among the low income groups shows that when water authorities started pricing for the supply of fresh water, it began to be consumed by those who belong to affluent category which is a threat to human prosperity.

Antonio Musolesi and Mario Nosvelli (2007) in 'Dynamics of residential water consumption in a panel of Italian municipalities', (2005) tried to estimate residential water demand function in Italian Municipalities and calculate both long and short term price elasticities on regional panel data for 2000-2001. One of the most relevant result included the finding that the persistence of habits is usually coupled with higher long term price elasticity. It was also found that the residential water demand is relatively more price elastic in the long run period than in the short run period. This has a significant impact on the economic policy as this helps to understand that the effect of price can only be studied more effectively in the long run.

Anna Bartczak, Agnieszka Kopanska, Jan Raczka (2009) in the work,'Residential water demand in a transition economy: evidence from Poland', analyses the residential water demand in Poland and its determinants including the impact of water tariffs and the income level. An empirical analysis was used with several panel data models. In the model the price elasticity was found to be -0.22 and income elasticity 0.12. Hence it was found that in Polish conditions, water cannot be treated as a necessity good, with an inelastic demand, when consumption ranges from 90-110 liters per head per day. This means that the households do react to the changes in the real prices due to the changes in the tariffs made by the EU. The study also shows that there is a downward water consumption trend in Poland in recent years. Although there is no clear explanation of why this is happening. The water use according to the study will go down in the next several years mainly due to the impact of price effect and then it will recover due to the income effect.

Kim Littlefair (1998) in the work,'Willingness to Pay for Water at the Household Level: Individual Financial Responsibility for Water', explores individual willingness to pay for the access to domestic water

for domestic purposes. Research was done at the household level in the village of Akulam in Kerala and has revealed a diversity in attitudes amongst individuals towards WTP for water. The Households analysed in the study revealed to pay varying amount depending on the source of supply which included public taps, or non-public water utility. Households were ready to pay more money regardless of income levels, for the water from nonpublic utility which indicated an elastic demand for a continuous supply of water. It was also found in the study that a large number of people were not willing to pay anything for the public water supply.

Renwick et al. (1998) in the work,'Demand Side Management Policies for Residential Water Use: Who Bears the Conservation Burden?', estimated the price elasticity of residential water demand in the study area as "0.16 whilst the income elasticity was estimated as 0.25. The study suggests that the rising real incomes should be expected to result in increased water usage whilst increases in real prices will reduce the rate of increase in demand or yield a decrease in demand. Hence it has to be understood that it is the combination of change in income and price that will affect overall demand.

Webb and Iskandarani (1998) in the work,'Water Insecurity and the Poor: Issues and Research Needs' reports that the income elasticities of demand of water to be around 0.37 for Egypt, 1.2 for Sub-Saharan Africa, 1.0 for India, 0.8 for China, between 0.4 and 0.8 for different countries in Southeast Asia, and 0.6 for Latin and Central America. It looks into measuring the income elasrticities among different countries to bring out the country wise differences to the forefront.

Espey et al. (1997), in the work,'Price elasticity of residential demand for water: A meta-analysis', finds that household water demand is price inelastic. It was found that the most important influences on the price elasticity of the demand for residential water seemed to be evapotranspiration rates, rainfall, the pricing structure, and the seasons. It is further found that there was significant difference in the short and the long run price response with respect to residential and commercial demand of water. Even though factors like population density, size of the household and temperature would affect water use it did not significantly affect the price elasticity of water demand in the studies analysed.

A Van Schalkwyk (1996) in, 'Guidelines for the Estimation of Domestic Water Demand of Developing Communities in the Northern Transvaal', explains the importance of assessing domestic water use as the base for estimating present and possible future water demand. Domestic water is required for drinking, cooking, dish washing, house washing, clothes washing, personal hygiene, gardening, sanitation and swimming pool maintenance. The desire to use water and the volumes required is related to the living standard of the water user. This in turn is related to the disposable income, value orientation, enthusiasm for gardening, ability and willingness to pay for water used and an awareness of the scarcity of water.

Rationale of the Study

From the literature reviewed it is found that income of the households in the long run would affect the demand of water. It is also found that households use water from various sources. These sources can be divided into two which includes the external source and the internal source. Mostly the external water sources include well, ponds, stream etc. and the internal sources of water include piped sources. It is seen that some of the internal water sources are provided to the households by the institutional systems. Further it is also seen that household income determines their choices. The study hence tries to look into whether the income of the households the choice of piped water as a source of water has any realtionship. This is important as such relationships can help policy makers formulate decisions that would help in effective water management.

Objective of the Study

Exploring the relationship between income of the households and the access to piped water.

Area of Study

The study was done in the district of Thiruvananthapuram, which is the southern most district of Kerala and situated between North latitude of 8° 16' 59" and 8° 49' 59" East longitude of 76° 28' 59" and 77° 16'59",

it covers total of 2192 sq. km. As per 2011 census data, the total population is 3,301,427 with a population density of 1508 persons/ sq.km. It can also be noted that majority of the population reside in rural areas. The literacy rate in the district is 92.66 percentage (CENSUS 2011).

Administratively, the district is divided into 4 taluks which includes Trivandrum, Neyyatinkara, Chirayinkeezhu and Nedumangad. Table 1 shows the number of villages, towns and Panchayats in the district of Thiruvananthapuram.

Table 1: Division of Thiruvananthapuram District

District/ Taluk	Villages	Towns		Panchayats	Development Blocks
		Statutory	Census		
Thiruvananthapuram District	115	5	26	78	12
Chirayinkeezhu Taluk	28	2	6	22	3
Nedumangad Taluk	28	1	2	20	3
Thiruvananthapuram Taluk	30	1	9	10	4
Neyyattinkara Taluk	29	1	9	26	5

Source: Census 2011

The study uses the data from the four taluks of the district. Further the study is only based on the independent permanent households in Thiruvananthapuram district. The Permanent houses refer to those houses whose walls and roofs are made of pucca materials which includes burnt bricks, G.I. Sheets or other metal sheets, stone, cement, concrete is used for wall and tiles, slate, shingle, corrugated iron, zinc or other metal sheets, asbestos sheets, bricks, lime and stone and RBC/RCC concrete are used for roof (Census 2011).

The study uses the independent permanent households from the area of the study. The use of independent households has been done as it is necessary for keeping the nature of the sample homogeneous. The flats and the apartment complexes are not taken into consideration. The institutional households which include are boarding houses, messes, hostels, hotels, rescue homes, jails, ashrams, orphanages are not looked into. Similarly the houseless households which comprises of Households who do not live in buildings or census houses but live in the open on roadside, pavements, in Hume pipes, under flyovers and staircases, or in the open in places of worship, mandaps, railway platforms area also not taken into account for the study.

TABLE 2: Distribution of Households Living in Permanent Houses

Sub - District	Total	Rural	Urban
	Permanent	Permanent	Permanent
Chirayinkeezhu	116,324 (100)	80,056 (68.82)	36,268 (31.18)
Nedumangad	107,713(100)	86,416 (80.22)	21,297(19.78)
Thiruvananthapuram	234,285(100)	15,722(6.71)	218,563(93.29)
Neyyattinkara	158,807(100)	83,735(52.72)	75,072(47.28)
District	**617,129(100)**	**265,929(43.09)**	**351,200(56.91)**

The Table 2 shows the distribution of the permanent households across the district of Thiruvananthapuram.From the table it is clear that the maximum number of permanent houses are in the sub district of Thiruvananthapuram, followed by the Neyyattinkara, Chirayinkeezhu and Nedumangad.

The study is made with the help of 500 samples. The sample size of houses to be surveyed is determined based on confidence interval and precision rule. During 2019-20, the total number of households living in

permanent buildings in Thiruvananthapuram district spread across all Taluks is 6, 17,129. The data set has been collected from the independent permanent households from the district.

Methodology

While collecting data primary sources are used. The details from the primary survey were collected by supplying a detailed structured interview schedule. The primary data was collected from all sub Taluks of Thiruvananthapuram district including the urban and rural areas by using proportional random sampling. The study used various statistical measures such as descriptive statistics, Chi-square statistics, F-statistics. The income of the households was measured on the basis of Above Poverty Line (APL) and Below Poverty Line (BPL) category.

The following is the formula used for determining the sample size for selecting houses.

$$n = \frac{z^2.p.q.N}{e^2(N-1) + z2.p.q}$$

Here 'p' gives the probability of selecting the house with the required characteristics, 'q' is equal to (1-p). The value of 'z' represents the standardized normal value for the given level of the confidence interval, 'e' shows the percentage of expected error and N is equal to the total number of population. Here, N is equal to 6,17,129. To get the maximum number of sample size within the population, the value of 'p' is assumed as 0.5 and hence 'q' is also equal to 0.5. The value of Z is 1.96 which is equal to the standardized value for 95 percent confidence interval and 'e' or percentage error which is assumed to be 5 percent. The arrived sample size using this method is 385. An additional 10 percent of the arrived sample size is collected to take account the issue of non-response of the sample respondents and hence the total number of sample size arrived is 425. However, a total sample of 500 was collected as a round figure. The sample beneficiaries are selected randomly and proportional weight is given while collecting sample from urban and rural areas from each sub district level.

Geographic Distribution of the Households

The Table 3 depicts the geographical distribution of the sample households. For the analysis the study has been categorized into six geographical locations. Of these in six areas majority of around 56.4 percentage of the households located in the plain area, and 18.4 percentage located near a water body. Only 1.6 percentage households in the sample were residing in low lying areas of the district.

Table 3 : Geographical Distribution of Households

Location	Frequency	Percentage
Hilly Area	**63**	**12.6**
Coastal Area	**53**	**10.6**
Near a water body	**92**	**18.4**
Plain Land	**282**	**56.4**
Low Lying Area	**8**	**1.6**
Other	**2**	**4**
Total	**500**	**100**

Source: Primary Survey

Ranking of Water Usage for Various Purposes

The literature identifies twelve different uses of water which ranges from use in drinking to use for

religious purposes. The study made an attempt to rank these uses with the help of weighted average. Each household was ranked on a scale ranging from one to twelve where one represented the highest use and twelve represented the lowest use.

Table 4 ranks the daily use of water in the household. It was found that the purpose, 'bathing' ranked first in the rating and 'religious purpose' last. Among the twelve uses of water it was found that Bathing, Drinking, Washing, Sanitation and Cooking were the uses that consumed the maximum amount of water. The table below shows the ranking of water usage for different purposes.

Table 4: Ranking of Water Usage for Various Purposes

Purpose for which water is Used	Weighted Average Rating	Ranking
Bathing	**1.2**	**1**
Drinking	**1.238**	**2**
Washing	**1.286**	**3**
Sanitation	**1.37**	**4**
Cooking	**1.55**	**5**
Cleaning inside the house	**2.915**	**6**
Gardening	**6.36**	**7**
Agriculture	**7.874**	**8**
Vehicle cleaning	**9.492**	**9**
Animal husbandry	**10.228**	**10**
Recreation	**10.597**	**11**
Religious Purpose	**10.998**	**12**

Source: Primary survey

Location and Income

On analyzing the location of the households on the basis of Urban Rural classification it was found that majority 65.4 percentage were from rural areas and the rest from urban areas. The Table further depicts the APL / BPL categorization of the households in the study areas where in it was found that the majority of households belonged to the APL category. The percentage of APL and BPL families are 72 and 28 percentage respectively. The following table depicts the location and income of the households.

Table 5: Location and Income of the Household

Location	Number (%)	Income Category	Number (%)
Rural	327 (65.4)	**APL**	360 (72.0)
Urban	173 (34.6)	**BPL**	40 (28.0)

Source : Primary survey *Note : Figures in the parenthesis shows the percentage*

Important Sources of Water

The study could find that households depended on various sources of water which included piped, well, borewell, common well, ponds, river/stream, common tap, tanker and other sources. From among these sources the study categorised these sources into internal and external. The internal sources which were inside the boundary wall of the independent household and the external water sources includes those that fell outside

the boundary wall.Further from the literature it was found that the households that depend on internal water sources have a better social and economic wellbeing as compared to households that depend on external water sources. Among the households nearly 276 (55.2 %) use piped source, 259 (51.8%) use well, 47 (9.4%) use Bore well , 39 (7.8%) use common well, 29 (5.8%) use pond, 26 (5.2%) use river/stream, 0(0.0%) use common tap,48 (9.6%) use tanker, 2 (0.4%) use other sources of water. It can found that the maximum number of households depend on piped sources of water followed by well water. It is seen that none of the households use common tap as a source of water as is clear from the following table.

Table 6: Households and Water Source

Source				Households	
				Number (%)	TOTAL
Internal Sources	**Piped water**	**No**	224	(44.8)	**500**
		Yes	276	(55.2)	
	Well water	**No**	241	(48.2)	**500**
		Yes	259	(51.8)	
	Borewell	**No**	453	(90.6)	**500**
		Yes	47	(9.4)	
External Sources	**Common well**	**No**	461	(92.2)	**500**
		Yes	39	(7.8)	
	Pond	**No**	471	(94.2)	**500**
		Yes	29	(5.8)	
	River/stream	**No**	474	(94.8)	**500**
		Yes	26	(5.2)	
	Common tap	**No**	500	(100)	**500**
		Yes	0	(0.0)	
	Tanker	**No**	452	(90.4)	**500**
		Yes	48	(9.6)	
	Other sources	**No**	498	(99.6)	**500**
		Yes	2	(0.4)	

Note: (1) 'No' refers the absence of the source of water and 'Yes' refers the presence of the source of water.
(2) Figures in the parenthesis shows the percentage Source: Primary Survey

Monthly Expenditure on Water

In order to analyse the monthly expenditure on water by the households the study categorises the usage of water into two broad categories mainly agriculture and domestic. The survey reveals that among the sample households water is mostly used for those purposes which area categorised as domestic usage and less for the agricultural purposes. The average monthly expenditure for the domestic purpose of the majority was found to be less than 100, there was a significant number (27.8 percent) who were spending between Rs 500-1000. The expenditure for agriculture usage for the majority (97 percent) was found to be less than 100 per month.

Table 7: Monthly Expenditure Incurred on Water

Monthly expenditure Amount in Rupee	Agriculture use Number (%)	Domestic use Number (%)
> 100	483 (96.6)	249 (49.8)
100-500	5 (1.0)	102 (20.4)
500-1000	11 (2.2)	139 (27.8)
1000-2500	1 (0.2)	9 (1.8)
2500-5000	0 (0.0)	1 (0.2)
5000-10000	0 (0.0)	0 (0.0)
< 10000	0 (0.0)	0 (0.0)

Note: Figures in the parenthesis shows the percentage *Source: Primary survey*

Source of Water and Income Category

The Table 8 given below looks into the sources of water and the income category of the households. In terms of economic status, households are categorized into Above the Poverty Line (APL) and Below the Poverty Line (BPL). Among the 500 samples selected for the study around 360 households belong to APL category and 140 to the BPL category. The study made an effort to analyse as to whether there exists significant differences between the two income groups, mainly APL and BPL, in their access to the nine different sources of water which was considered by the study. To this the study could understand majority of households depended on multiple sources of water. This finding was quite different from the various literature on the preferences/access of water by different income groups or geographical locations.

Among the various sourcespiped water, well water, and tanker were found to be most used sources of water for the APL households compared to the BPL ones while the BPL households were found to depend more on well and sources such as river/stream. It is evident that the sources for which APL families depend incurred more expenditure compared to the sources on which the BPL families depend. Thus it is evident that increased income alters the preference for the source of water.

There is significant difference between the income groups in the use of different sources of water. This is significant with respect to the piped water sources as compared to other sources. Here the value of Chi- Square Statistic is less than 5%.

Table 8: Source of Water and Income Category of the Households.

Source		Income category				Pearson Chi-Square Value		
		APL Number(%)	BPL Number(%)	TOTAL		Chi square Value	df	Sig.
				APL	BPL			
Piped water	**No**	**131** (36.4)	**93** (66.4)	**360**	**140**	**36.782**	1	**.000**
	Yes	**229** (63.6)	**47** (33.6)					
Well water	**No**	**183** (50.8)	**58** (41.4)	**360**	**140**	**3.571**	**1**	**.059**
	Yes	**177** (49.2)	**82** (58.6)					
Borewell	**No**	**326** (90.6)	**127** (90.7)	**360**	**140**	**.003**	1	**.956**
	Yes	**34** (9.4)	**13** (9.3)					

Common well	**No**	**326** (90.6)	**135** (96.4)	**360**	**140**	**4.835**	**1**	**.028**
	Yes	**34** (9.4)	**5** (3.6)					
Pond	**No**	**335** (93.1)	**136** (3.6)	**360**	**140**	**3.082**	**1**	**.079**
	Yes	**25** (6.9)	**4** (2.9)					
River/stream	**No**	**346** (96.1)	**128** (91.4)	**360**	**140**	**4.483**	**1**	**.034**
	Yes	**14** (3.9)	**12** (8.6)					
Common tap	**No**	**360** (100.0)	**140** (100.0)	**360**	**140**			
	Yes	**0** (0.0)	**0** (0.0)					
Tanker	**No**	**320** (88.9)	**132** (94.3)	**360**	**140**	**3.383**	**1**	**.066**
	Yes	**40** (11.1)	**8** (5.7)					
Other sources	**No**	**358** (99.4)	**140** (100.0)	**360**	**140**	**.781**	**1**	**.377**
	Yes	**2** (0.6)	**0** (0.0)					

Note: (1) 'No' refers the absence of the source of water and 'Yes' refers the presence of the source of water.
(2) Figures in the parenthesis shows the percentage Source: Primary survey

From the analysis it is evident that there is a significant relationship between the piped water sources and the income of the households. It is found that the piped water sources are used mostly by the APL households as compared to the BPL households. Income, thus plays an important role in the selection of source of water. With higher incomes the households are able to cover the cost of installing and maintaining the piped water infrastructure. The initial high cost in establishing the piped water infrastructure at home clubbed with the monthly bills acts as the primary impediment in the use of this source as far as the BPL households are concerned.

Conclusion

The study finds that the APL households depend more on piped sources when compared to the BPL households. This would mean that the BPL households have less access to the institutional water supply and this in turn affect the socio economic development.Since uninterrupted water supply is identified as one of the major factor contributing to individual, social and economic development the factor that hampers its access for the BPL household is the high initial cost of water connection. It is to be noted that the access to piped water sources can have a positive effect on the health, productivity and also provide the individuals engaged in water management in the households with more time to pursue their passions. The stakeholders should design and implement policies that would aid access to piped water sources to the low income households. This can include subsidies and policies to ensure that the cost incurred in the piped water are made affordable to the low income households.

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Introducing New Book

Tracing the Small Voices of History

Saurav Kumar Rai

Shahid Amin, Tridip Suhrud, and Megha Todi (eds.),
***Thumb Printed: Champaran Indigo Peasants Speak to Gandhi*,**
Volume I, National Archives of India, New Delhi and Navajivan Trust,
Ahmedabad, 2022, lxv + 307 pages, ₹ 500/-

It is well known that on the request and pursuit by Raj Kumar Shukla, a petty landlord from Champaran, Mahatma Gandhi reached Champaran in April 1917 to witness and enquire elaborately the plight of indigo peasants in the region. An unsuccessful attempt was made to stop him midway by the colonial rule. However, Gandhi not only recorded the sufferings of the indigo peasants with the help of Rajendra Prasad, Anugrah Narayan Singh, Maulana Mazrul Haque, etc. but also led his first satyagraha in India which is known in history as 'Champaran Satyagraha'. Through the autobiography of Mahatma Gandhi, this episode has been memorably recorded in the pages of history. What has been left out is the 'small voice' of the peasants. After all, what did these indigo peasants tell Gandhi! The statements, originally given in Bhojpuri, by the illiterate peasants and their immediate translation and verification in English by Rajendra Prasad, Anugrah Narayan Singh, etc., are present in eight folios/bound volumes in the National Archives of India. Two of the finest scholars of Gandhi and his politics, Shahid Amin and Tridip Suhrud, joined hands with a young associate, Megha Todi, to embark upon the work of compiling and editing a total of 378 such statements and presenting them to the readers. The result of their labour has come out in the form of the present book, published jointly by National Archives of India and Navajivan Trust.

This volume contains 378 testimonies, with 165 principal testators and 213 supportive, collaborative testimonies. There are 9 women testators. 76 testimonies are signed including one in English, 21 have no indication and the remaining 281 have thumb impressions. The journey of these documents reaching the National Archives is no less historical, which has been discussed by Shahid Amin. From its dramatic discovery in mid-1950s by the Commissioner of Tirhut Division, these testimonies were handed over to the National Archives in November 1973. Thus originally produced by Gandhi for immediate use, it eventually turned out to be a valuable archive on peasant studies.

This volume includes two well-crafted introductory essays on the connected theme: one by Shahid Amin, and the other by Tridip Suhrud and Megha Todi. Shahid Amin's essay delineates the significance of these peasant testimonies in tracing 'the small voice of history'. The fine weave of stories emerging out of these peasant testimonies, argues Amin, help us to visualize these peasants walk – or rather work – the indigo fields in flesh and blood, tilling, weeding, watering, carting the indigo crop to the *kothis*, getting shortchanged, fined, literally pilloried and beaten into submission; and as Hira Rai's and Dhuni Rai's (two of the testators) career graphs show, often with dramatic role-reversals (p. xxx). On the other hand, the essay by Tridip Suhrud and Megha Todi is more elaborate one encapsulating the entire history of indigo plantation in the region, plight of the peasantry, minutest details of the tinkathia system, and the eventual arrival of Gandhi and his encounter with the colonial administration while carrying the inquiry and thereafter. As Suhrud and Todi argue, the *raiyat* of Champaran had finally enabled him (Gandhi) to inhabit India (p. lxv).

The Appendices contained in this volume are no less significant. This includes Raj Kumar Shukla's letter of invitation to Manyavar Mahatma, facsimile of the diary of Raj Kumar Shukla, *sattas* (contracts)

for cultivation of indigo, list of *abwabs* (cess) which were in vogue in the region, statement made by Gandhi before the court refusing to leave the region, and report of Champaran Agrarian Enquiry Committee as well as the Champaran Agrarian Bill, 1917. Most interestingly, Shahid Amin has tried his hands at reverse translation of three of the testimonies from English to Bhojpuri, which have been put in Appendices (pp. 220-22). This allows the reader to somehow feel the original flavor of statements made by the indigo peasants in their own language, which was subsequently translated into English by Rajendra Prasad and others for Gandhi.

This volume comprising testimonies of illiterate peasants should be read by all conscious citizens interested in people's history; since as Shahid Amin says: 'When the peasant speaks, a whole world speaks.'

Beyond Liberal and Illiberal, Towards a Post-Marxist Enquiry into the Understanding of Multipolarity and International Relations

Nirjhar Mukherjee

Post-Marxism has emerged as a major theoretical paradigm in the social sciences. However, in international relations it is relatively a new theoretical approach which is gaining popularity only recently. This paper seeks to discuss the emergence and relevance of Post-Marxism as a theory of emancipation and progress and how this theory can be useful in explaining the question of multipolarity in international relations. The paper grounds itself in the theoretical mooring of post-Marxist principles and proposes some critical insights into the understanding of international relations. The paper questions the emergence of far-right politics and traces it into the failure of the liberal hegemonic order created in the aftermath of the Cold War. It goes on to discuss the idea of pluralism and multipolarity as espoused by the theory of agonism as espoused by Chantal Mouffe (one of the most prominent post-Marxist thinkers). The paper concludes by deliberating that the liberal failure to accommodate popular aspirations has resulted in a backlash against the liberal international order in the form of far-right populism. However, the solution to such a menacing situation is a strong, principled, plural and popular left-wing alternative which must be based on an intersectional platform.

Keywords : Post-Marxism, Authropocentrism, Agonism, Radical Democracy, Illiberal

Introduction

The liberal international order as established by the post-cold war hegemony in besieged. The discontents of the liberalisation, privatisation and globalisation are visible across the world. One can definitely argue that liberalisation has given this world its share of benefits but there are many who would like to disagree. We shall not delve into its details as this is beyond the scope of this paper but it needs to be mentioned that the liberal dream that the triad of liberalisation, privatisation and globalisation would bring peace, prosperity and stability across the globe has not materialised. It has met with what can be at best called partial success for particular people at particular places, mostly from privileged backgrounds.

Post-Marxism emerged as an intellectual trend in the mid 80s through Laclau and Mouffe's (1985) seminal text-Hegemony and Socialist Strategy, which marked a break with Marxism. Wading through much debate and criticism, post-Marxism has established itself as a theoretical paradigm to be reckoned with. Post-Marxism emerged as a distinct theoretical paradigm which acknowledges the contributions of Marxism in history of emancipatory movements but identifies the shortcomings of economic determinism, fixation with the industrial proletariat as the exclusive revolutionary subject, authoritarianism, lack of plurality among other issues. Post-Marxism has sought to increase the scope of the left by incorporating the politics of plurality where a number of emancipatory movements are brought on a common platform.

Post-Marxism has made a significant impact on the disciplines of political science, sociology and others. However, in the discipline of International relations post-Marxism is a relatively new theoretical perspective. This paper argues that there is much that post-Marxist perspectives can contribute to international relations. The paper would critically analyse on certain areas especially on the concept of multipolarity. It must be noted that post-Marxist literature has blossomed into various strands in the past three decades or so. For the

purpose of conciseness, the paper would focus mostly on Chantal Mouffe's theory of agonism which is one of the most prominent expositions of Post-Marxism. The paper would trace the development of post-Marxist political discourse, it's origins along with it's difference with and dissociation from Marxism. The paper will go on to discuss Chantal Mouffe's theory of agonism and it's core tenets. This will be followed up with a discussion on the concept of multi-polarity in international relations. The paper would discuss these themes at the backdrop of contemporary politics which is marked by the rise of far-right populism and the preposterous claim of so called 'illiberal democracy'. The paper deals with the post-Marxist response to this challenge and posits an intersectional left response to the same.

Marxism and its Discontents

The breakup of the Soviet Union was a major blow for the left project worldwide. However, other than disappointment, it was also an opportunity. How does one interpret a setback? The anti-socialist hysteria quickly gained traction as the bourgeois media announced the death of the socialist project. The problem deepened when the contagion of anti-communist hysteria caught other left-wing (read social democratic) parties as well. A number of left-wing parties, well outside the realm of the erstwhile Soviet bloc, moved rightwards. Like the liberals they too subscribed the line that free market capitalism is the 'only way' of governing societies. The process known as globalisation ensued. Liberalisation, privatisation and globalisation became the triad on which international politics and economics aligned worldwide since the nineties (India being no exception). Socialism and its ideals of collective ownership, social security and welfare state were discredited and even demonised. The social Democrats who played a pivotal role in creating welfare states across Europe moved rightwards as conformist to the neoliberal order theories such as 'the third way' caught the imagination of policy makers of the left. This is not just true for European social democratic parties but also left-wing parties across the world. Ruling communist parties in China and Vietnam took the neo-liberal turn while the Communist Party of India (Marxist) also supported policies such as Special Economic Zone or SEZ.

As self proclaimed socialist and communist parties moved to the right, the ideas of the left faced rejection, repudiation and remonstration due to the political defeat of the USSR and its allies in the Cold War. However, it must be noted that left-wing political theory is vast and diverse. Even Marxism, which is only one variety of left-wing theory, is much broader in scope than the political line and practice of the erstwhile USSR.

The question that naturally emerges is- can the political defeat of the Soviet Union be equated with the defeat of the entire spectrum of left-wing politics? The answer is a resounding no. However, the introspection that must follow is much more complex. It is these nuances, issues and subsequent debates that have led to the popularity and expansion of Post-Marxism as a political discourse. In the decades following the end of the Second World War, the Cold War dynamics played a very important role in the intellectual sphere. The international balance of power between two superpower led blocs had their ramifications in academia as well. The 19th century witnessed large scale labour movements in Europe. Marxists emerged as one of the most important and revolutionary sections of that movement. With the Bolshevik revolution in 1917, the world witnessed the first state where an officially communist regime came to power and was to endure the tumultuous days of gestation. After the end of the Second World War, the USSR emerged as one of the two Superpowers. The Soviet Union led communist bloc was able to bring under its control many countries. In 1949, communists were able to seize power in China. The ideology of Marxism animated a large number of rebellions and insurrections across the world. Communist parties were active across the world. This led Marxism to become an important, even leading theory in academia, especially the humanities and the social sciences. It must be noted that Marxist theory in academia was much broader in scope than the Soviet practice. However, from a popular perception it was the USSR which was seen as a reference point for 'actually existing socialism.' Even though it was criticised by a large section of the left, the existence of a powerful state flying the red flag represented an important reference point for possibilities of socialism.

The defeat and disintegration of the USSR was indeed a major setback for the leftists. The political defeat had a corresponding pejorative effect on the intellectual world as well. However, this scenario provided a lot of opportunities as well. First, the Soviets had monopolised the name of Marx and Marxism. Within Marxist political thought, Marxism-Leninism became the dominant ideology. Orthodoxy had emerged within the Marxist project. As mentioned above, there were a number of important critics of this kind of politics. The hegemony of the orthodox Marxists was challenged by many within the Marxist tradition. However, the criticism of the orthodox Marxism largely remained an academic and intellectual exercise. With the fall of the USSR, there arose an opportunity for the heterodox tendencies within the left to burgeon and make an impact on politics.

There was also reason for hope on another ground. The neoliberal dream has not been able to create a utopia. The decades since 1989 gave the world incredible advances in technology, massive trade and so many other material wonders. However, it has not been able to solve the contradictions within society. It has failed miserably in terms of distributive justice. In the past few decades, we have witnessed unprecedented concentration of wealth in the hands of few individuals and corporations. Forget eradication, poverty has remained chronic in certain ways in many parts of the world. In the political realm, extreme nationalism and insurgencies in the name of religion have drenched blood in the fabric of world peace. Capitalism maintains its global hegemony but is unable to bring about a world of peace, sustainability and equitable prosperity. The economic crisis in 2008 was a grim and pertinent example. Remaining within the ambit of this paper we may say that capitalism cannot make an empirical or perfectionist claim that there is no alternative. It is in this scenario, keeping in mind the failings of orthodox Marxism, the understanding of politics in a neoliberal world, the corresponding technological paradigm of this age, that we must formulate a radical politics of change.

Post-Marxism has remarked that there needs to be a shift in the way left-wing politics is perceived. Marxism has been a major source of critique of capitalism and revolutionary politics of the left for the past one hundred fifty years or so. However, in the light of the changing times, technological paradigms and also certain shortcomings, Marxism by itself is an inadequate theory of insurrectionary, anti-capitalist politics of the left today. While lessons from Marxism are important, the left must move beyond Marxism towards a radical democratic post-Marxist politics. This paper reflects on some of these pertinent thoughts and their impact on international relations.

Post-Marxism: More Than Rethinking Marxism

Marxism, as discussed earlier, has been an efflorescent theory which has produced eclectic tendencies. The Soviet version of Marxism was never the only Marxism. Heterodox tendencies have always existed within the Marxist pantheon, despite sometimes acerbic criticism, persecution and dismissal from its own ranks. Many of these tendencies have played an immense role in the formulation and advancement of theory. However, we can discern that as long as these theories limit themselves to the pantheon of Marxism, they remain inadequate as a theory of radical change in today's world. This is because Marxism as a whole suffers from certain limitations which need to be taken into account.

Marxism is a theory which has some salient features. These pillars are essentially its strengths. However, they are also its weaknesses. We must make a proper assessment of the theory of Marxism and see how relevant they are to our circumstances. Marxism was an emancipatory project, rooted in its times and technological paradigm. However, orthodoxy and mindless devotion has rendered some of its own salient features to be impediments to radical theory and praxis today.

Marxism's foremost feature is its class-based analysis. It is based on a theory of economic determinism where class relations, class interests, class antagonism and class struggle determine politics. Marxism understands the world through a prism of class. In order to study the dynamics of any polity, Marxists would try to discern the class fissures of a society. It is exclusively on the basis of class conflict that Marxism tries

to explain a political situation. There is no denial that class plays a very important (in many circumstances a pivotal) role in the shaping of a polity or a political situation. However, what is problematic is the exclusivity of class-based analysis in Marxism. It is as if only class-based fissures are fundamental in a political situation. It is not that Marxism denies the existence of other fissures and antagonisms in society. However, the primacy that Marxism accords to class leads to a kind of orthodoxy that any other axis of discord, oppression or exploitation is ultimately rooted in class dynamics. This is not always true. It has led to Marxism being unable to understand complexities of other forms of exploitation such as caste, race, gender and other issues. No wonder, Marxist parties have been dominated by privileged sections of the society – eg- cis-white males in USA, Savarna males (upper castes) in India.

One may say that oppressions based on caste, race and gender are connected. Yes, they are and that is the essence of intersectional politics. However, to reduce everything to class dynamics is problematic. This simple reductionism lacks efficacy as it is unable to correctly interpret the other important nuances involved. Revolutionary class-based politics has not been able to eradicate patriarchy-even within communist circles. It has not been able to provide adequate representation to people from marginalised backgrounds such as Dalits in India, people of colour in the West etc, even within the communist circles. These questions of identity are important questions which cannot be explained simplistically through a monolithic theory of class. To address these concerns, one needs to adopt an intersectional approach to politics. Similarly Marxism is often at odds with environmental concerns as Marxists often posit developmentalist positions.

The Radical Must be Intersectional

The connection between different axes or forms of oppression must be understood in terms of intersectionality. The theory of intersectionality says that power imbalances and oppression happen in many ways (or forms) along various axes. A person has a number of identities. Based on each identity he or she is oppressed or privileged in different ways. The term ‘intersectional’ was coined by Kimberle Williams Carenshaw, an African American woman who was a scholar of critical race theory. In 1989 her famous work ‘Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics’ argued about the salience and equivalence of a number of modes of oppression. Crenshaw succinctly says that every person possesses many identities. Each identity is enmeshed in a web of power. In the case of every person, a number of identities intersect with each other and affect the person’s position in society. For example, a dalit, poor woman has an identity which is defined neither exclusively by her caste, class or gender identity but a combination of all the three identities. For someone like her, all three axes of oppression (caste, class, gender) have an impact. Moreover, the three are inter-connected and operate in connection with one another.

This theory of intersectionality is a development of feminist theory which had for years argued that gender is not the only factor that determines a woman’s position in society. Black feminists have argued that White women are more privileged than Black women. Classical/orthodox versions of Marxism focus on only one axis of oppression which they deem to be the determining element of power imbalance in the society. Intersectionality, provides a more holistic view and tries to find a link between these forces of oppression and seeks to say that these varied forces are cumulatively responsible for oppression in a society.

A radical politics of our times must not be limited exclusively to class-based analysis. A project for emancipatory politics must be much more nuanced towards intersections and different axes of identities. Other than the question of identities, the question of the environment is also important. A radical theory must not only be looking at intersections of identity but also the question of the environment and sustainability. This is a major issue of our times. Ecological disaster is currently underway, and we are living under the threat of extinction. The capitalist system of profits and rampant use of resources without caring about the impact on the environment is a threat to one and all. As mentioned earlier, the fantasy of development has even painted the imaginations of many leftists. This needs to be addressed.

Moving Beyond Science

The problem of Marxism as discussed in the previous section is rooted in the enlightenment tradition of Marxism. Claiming to be a 'scientific' discipline, Marxism posits a metanarrative based on class. Marx called his version of socialism to be 'scientific socialism.' The claim to 'science' puts Marxism in choppy waters. The scientific claim to the theory of class-based analysis becomes a limitation. In order to live up to its 'scientific' credentials, Marxism proclaims class-based analysis and political organisation/action to be the panacea to every situation across the world. This has clearly not yielded desired results. Class analysis is a very important method of analysis of political situations. However, the claim to science limits the radical possibilities of Marxian class analysis as it seeks to accord primacy and supremacy to class. This either invisibilises or underestimates the role of other factors. To create an intersectional theory of radicalism, we must move out of the scientistic claim of Marxism.

The scientistic myth of Marxism also creates a number of other problems. Through theories like that of historical materialism, Marxism seeks to make some historical prophecies which clearly have not been proven in the affirmative in history. Say for example the idea that history is in favour/on the side of the working class. These ideas seem to echo metaphysical statements which sometimes look like polemics and sometimes like religious fundamentalism. However, these broad generalisations, statements and other predictions which 'scientific-socialism' seeks to make render it ineffective in creating an intersectional theory of radical change today. The claim to science becomes a canonical orthodoxy, creating mental blocks which limit creative thinking. Nevertheless, Marxism has inspired creative variants which have gone on to create creative, democratic radical theories. They will be discussed subsequently.

Anthropocentrism

In resonance with the scientistic ethos of Marxism, it is also an anthropocentric theory. Keeping some heterodox tendencies like environmental-Marxism aside, Marxism (especially that in practice) has been highly mechanical and burdensome on the environment. Other than the theory of metabolic rift in early Marx, the environment has largely been seen as something for use by humans in Marxist theory. In the USSR and other communist countries there were high levels of environmental exploitation. This nefarious practice was little different from that in the capitalist countries. A radical theory of contemporary times must talk about sustainability as we live in a time when we will either have a sustainable world or there will be mass extinction.

The Ills of Soviet Practice

The paper has clearly stated the Soviet Union did not and does not represent all Marxists. However, a scholar of left-wing politics cannot afford to ignore the Soviet experience. The Soviet Union was the first state where a communist party seized power and was able to hold on to it for more than seven decades, transforming it into a superpower. The USSR needs to be studied as an experiment in socialist politics. It provides a picture of what a socialist regime can bring and also to what nadirs can it degenerate into. Any experiment in socialist politics must learn from the failures of the USSR and try to avoid the same fate.

The Soviet Union was guided by the ideal of dictatorship of the proletariat. However, this in effect turned into dictatorship of the party. The USSR turned into a massive totalitarian bloc. The question of democracy and political liberty was snuffed out in the Soviet polity. The trajectory of the fate of Soviet Russia can be traced to the scientific claim of Marxism where the 'science' has an exclusive claim over truth. Armed with the idea of 'science' and 'history by our side' (refer to the previous section), communists have an aura that only they are correct (as they are scientific) and all others are wrong. This gave the communists, especially where they were in power an aura of arrogance. These myths must be broken.

Marxism is a theory which calls for the withering away of the state. The idea of socialism is in the Marxist lexicon, one of a transition phase, where the workers' state will exist for the perpetuation of the revolution. It would wither away as the society moves from socialism to communism. However, the Soviet

experiment shows how, far from withering away or even weakening, the Communist state had turned more and more bureaucratic and ultimately it turned into a totalitarian state. The word 'communist state' is itself an oxymoron. How did this come into being? This has been the tragedy of the USSR and many other communist regimes across the world.

The problem also lies in the question of democracy. Due to the belief in the scientific nature of Marxism, communists are unable to tolerate dissent. This creates a totalitarian tendency within Marxist praxeology. Communists in power are unable to deal with dissenting views. First, opposition parties are banned. The country is turned into a one-party state. The country slowly degenerates into orthodoxy under the command of the communist party. Eventually, heterodox and dissenting factions within the communist party are also thrown out. The dominant faction within the communist party becomes the self-proclaimed voice of the proletariat. Anyone who begs to differ is tainted as a class-enemy. Their opinion is branded unscientific. Thus, they are not to be tolerated.

If socialism is to liberate the people of the world, then it must be a democratic theory. A democratic theory cannot be monolithic. It must be pluralistic. It cannot privilege one sort of opinion to be scientific at the cost of others. Thus, a real socialist project must be democratic. A truly democratic project must be pluralistic. A pluralistic project is not a scientific monolith, it is a multi-tendency practice. Thus, a radical theory of emancipation must be a radical democratic theory. It cannot be a dictatorial theory of dictatorship. The dictatorial degeneration in the name of Marxism has committed heinous crimes and stifled political rights in many parts of the world. Correspondingly, people have rejected such a doctrine across the world. What they long for is a theory and practice of liberation, dignity and justice.

Post-Marxism: A New Beginning

In the seventies new paradigms were being established in philosophy. It came to be known as post-modernism. On one hand postmodernism championed the idea of relativism and on the other the idea of plurality. An intellectual journey had started way back in the twenties when thinkers of the critical paradigms questioned orthodox Marxism. In various contexts they creatively sought to deploy Marxist ideas to newer possibilities. Theories such as critical theory, Western Marxism were established. However, these schools of thought remained well within the realm of Marxism. However, in the melieu of postmodern political theory Post-Marxism emerged as a break from Marxism. A complete discussion of Post-Marxism is beyond the scope of this paper. The major tenets of Post-Marxism have been discussed earlier. However, as per Tormey and Townshend (2006), it is important to note the key points of departure of Post-Marxism from Marxism. They are

1. Marx's theory of history. The grand narrative of historical teleology is rejected by post Marxists.
2. Rejection of the idea that workers will inevitably unite. Post Marxists stress upon the importance of ethical deliberation and human agency. They also highlight the role of both the conscious and the unconscious mind.
3. Rejection of positivism as a methodology.
4. Rejection of the idea of vanguardism and leadership of the communist party as the 'vanguard of the proletariat'
5. Rejection of the role of the proletariat as the exclusive revolutionary subject.

More importantly, as discussed earlier, post-Marxist theory seeks to highlight and defend the idea of democracy. This was something which Marx did talk about but has been actually ignored by Marxists resulting in totalitarianism.

Agonism and Radical Democracy

Chantal Mouffe, one of the foremost post-Marxist thinkers laid out her theory of radical democracy

also known as agonism or agonistic pluralism. The origin of the word 'agonism' is in the ancient Greek word 'agon' meaning conflict. Her journey as a post-Marxist can be traced back to 1985 where she along with Ernesto Laclau denounced the orthodoxies of Stalinism and also pointed out the inadequacies of western social democracy. She has developed a theory of agonistic pluralism as an attempt to radicalise democracy. Mouffe has introduced some very important concepts in the post-Marxist theoretical tradition. First, one can identify the concept of the 'political' which is an ontological domain of antagonism, constitutive of human societies. The 'political' is thus different from everyday empirical and administrative domain of 'politics', related to factual or 'ontic' levels. Mouffe departs from Marxist class essentialism and seeks to emphasise the political which is something that creates a 'we/them' divide in society (which may not exclusively be economic). Mouffe maintains that it is impossible to try to find a rational solution to the antagonism between opposing projects of hegemony. This brings to her fundamental proposition- conflict is at the heart of every polity. It is naive and dangerous to ignore this reality and try to build a consensus based polity which would amount to asking for forms of apolitics, anti-politics and post-politics. She has accused neoliberalism of trying to do that and severely rebuked it for the same.

In order to understand the nature of the political, she has used the Schmittian concept of 'friend/enemy' to show the futility of trying to reconcile the irreconcilable. She combines Schmitt's understanding with that of the Gramscian concept of hegemony and seeks to inspire the left to create an alternative hegemonic project to the neoliberal one. She has flayed the Social Democrats for being unable to grasp the true nature of the political and for having collaborated with the neoliberal hegemonic order which has gained popularity after the end of the Cold War.

Mouffe's emphasis of conflict (as opposed to consensus), and reference to Schmitt might indicate as if she is trying to create an antagonistic project. But she intends to reduce antagonsim to agonism. She seeks to channelise the conflict from a battle to death type fight into a one within a broad democratic framework. Her fundamental proposal is for an adversarial model of agonistic politics, which gives recognition and legitimacy to the opponent unlike the antagonistic model of elimination/annihilation of political enemy. Agonism advocates that it is possible to establish a pluralist society and polity where the contest between alternate concepts of hegemony can take place without a monist outcome. This brings us to agonism's relevance to international relations.

Agonism in International Relations

The theory of agonism has a number of implications as far as the field of international relations is concerned. As the theory states that conflict is at the centre of human societies, the theory has much to say about the inherent conflicts and rivalries that persist among states and other actors that operate within the international system. The theory postulates an alternative perspective to well-established IR theories like realism or liberalism. As an alternative perspective, agonism articulates the constructive and even transformative nature of conflicts and advocates for an effective approach to their management.

The fundamental principle of agonism is rooted in the philosophical notion of 'agon', which denotes the competitive struggle or contestation that occurs between individuals or groups. As stated previously, agonism acknowledges the existence of conflicts as an inherent characteristic of human societies, and further recognizes their likelihood of transpiring in the international sphere due to contrasting interests, values, and power dynamics.

The fact that agonism recognises the centrality of conflict in IR, seemingly brings it close to realism. However, there are some major differences. Contrary to the perspective of realism, which perceives conflicts as a situation of zero sum game in a power struggle, the theory of agonism proposes that conflicts are not so. Moreover, conflicts may potentially yield constructive consequences. For agonists dissensus has the capacity to prompt creativity, novelty, and advancement within the context of global affairs. For Mouffe, agonism is about contestation between two opposing projects of hegemony. Agonists conceptualise conflicts

as avenues for actors to elucidate their interests, articulate their identities, and negotiate their differences, culminating in enhanced comprehension and collaboration.

Agonism presents a critique of liberal international relations theories that give priority to consensus, cooperation, and harmony. While recognizing the benefits of collaboration, proponents of agonism contend that an overemphasis on unanimity can stifle divergent viewpoints and impede the examination of novel concepts and perspectives. The significance of upholding a salubrious measure of disagreement and competition to question established norms and power hierarchies is underscored by the authors.

In the field of international relations, the concept of agonism highlights the criticality of acknowledging and respecting the presence of numerous perspectives and varied identities. This highlights the importance of embracing pluralism and diversity within the global context. The aforementioned statement acknowledges the presence of several actors within the global system, each possessing unique values, interests, and perspectives. In lieu of striving towards the elimination or domination of individuals, agonism advocates for the recognition and regard of divergent actors alongside purposeful dialogue and negotiation.

Agonism places emphasis on the significance of institutions and processes as tools for conflict management. The paradigm being put forward favours the creation of inclusive and deliberative platforms that promote the free exchange of ideas, providing an avenue for conflicting parties to engage in respectful debates and negotiations. The central objective of this approach is to restructure conflicts that are entrenched in harmful and antagonistic dynamics, thereby facilitating the realisation of positive and transitory outcomes.

Multipolarity: Beyond Liberal and Illiberal

Mouffe's agonism is a theory which retains the activist and transformative spirit. The theory has been born out of the criticism of the neoliberal hegemony. As far as international relations are concerned, Mouffe (2005, 2009) clearly talks about contesting the neoliberal hegemony in the world. She emphasises the need for a democratic alternative. An alternative conception of democracy, one which is emancipatory, more inclusive and egalitarian.

Internationally, the rise of China, a revanchist Russia and other 'illiberal' powers have emerged as a challenge to the liberal world order. It is perhaps too early to say that the US led unipolarity has ended but the challenge from illiberal Bloc is substantial. From the perspective of realism this contentestation can be analysed as a struggle for power. A post-Marxist analysis would say that this is a contest between alternative hegemonic projects. However, a post-Marxist critique will simply not end there. This is because post-Marxism or agonism doesn't simply talk of plurality. It also talks about some ideological concerns- the question of human emancipation, social security among others. The challenge that the illiberal bloc poses to neoliberal unipolarity cannot be an acceptable alternative to post-Marxists.

Post-Marxism would talk of building alternatives to both neoliberalism and authoritarian far-right populism. Mouffe (2005, 2018) supports a theory of left populism, a left-wing alternative to both neoliberalism as well as far-right populism.

In order to realise such ends Mouffe talks about deepening democracy. Mouffe (2005, 2018) has consistently remarked that while capitalism and liberalism as ideologies are problematic, liberal institutions are not necessarily reactionary (Mouffe, 1999). In other words, institutions which have been created by liberalism can be transformed and must not be rejected. Such institutions can be used for emancipatory ends. In her works (2005, 2015, 2018) she elaborates upon the needs to defend democratic institutions which have been adversely affected by the onslaught of neoliberalism. She writes that the situation is worse than it was when Laclau and she wrote Hegemony and Socialist Strategy back in 1985 (Laclau and Mouffe, 1985). The book talks about deepening democratic institutions to secure rights and social security. However, neoliberal hegemony has weakened the democratic institutions in many ways, especially in terms of social security. Mouffe (2005, 20151 2018) talks about the need to defend them.

Towards Progressive Alternatives

Post-Marxism, as we have discussed, has thus emerged as a theoretical paradigm which has great relevance for international relations. It is not just a theory which deals with power politics but also with conflict resolution and management. The paper sought to make an assessment of Post-Marxist possibilities on the concept of multi-polarity in IR. We can understand that post-Marxism is not a value neutral theory. While it yearns to build an alternative to neoliberal hegemony, as an emancipatory theory, it cannot subscribe to far-right illiberal politics as a worthy alternative to liberalism. While being critical of liberalism, Post-Marxism makes a principled stand in defending liberal democratic institutions against both neoliberal and illiberal assault. As a theory of international relations there is much that post-Marxism has to offer. Further research would provide more valuable insights.

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Development Expenditure and Its Utilization Efficiency in Urban Local Bodies in Kerala

Shency Mathew

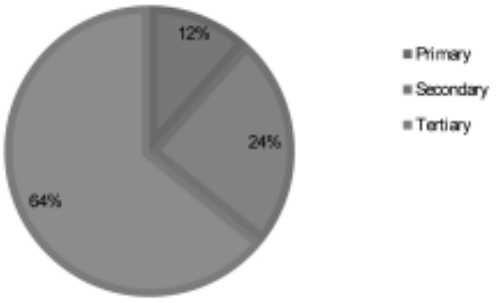
The growing urbanization and its attendant development and welfare issues, increase the importance of efficient utilization of allotted funds by urban local bodies (ULBs). Though there has been a gradual increase in funds received by ULBs, the funds are not utilized efficiently. This indicates the need for attention to strengthening ULBs in Kerala. In addition to that, there has been a drastic shift of expenditure towards the service sector with complete neglect of productive sector activities. The neglect of the productive sector especially the primary sector will adversely affect the sustainability of commodity-producing activities in the state of Kerala. These raises facts to question the success of decentralized planning exercises in the state.

Keywords : Urbanisation, Urban Local Bodies, Fiscal Devolution, Plan Funds, Development Funds, Expenditure Efficiency

1. Introduction

Kerala is challenged with the unprecedented pace of urbanization fuelled by the demographic transition in recent decades. As per the 2011 Census, the urban population in Kerala has increased to 47.72 per cent from 25.96 per cent in 2001 with a decadal growth rate of 82.23%. Based on the State Urbanisation Report (SUR), urbanisation in Kerala is an urban spread rather than the result of structural changes. This urban spread with low population growth and high population density would mainly lead to a scarcity of labour (SUR, 2011). In other words, there is a paradoxical situation that exists with the increase in state income and urbanaisation. The state showed a significant increase in GDP after the sluggish growth till the 90s. But this has not been reflected in the work participation rate. When Tamilnadu and Karnataka have high work participation rate at 45.58 per cent and 45.62 per cent respectively in 2011, Kerala has a work participation rate of only 34.78 per cent (Census, 2011). The shift in the share of the contribution of the primary sector to the tertiary sector, in GDP shown in Figure 1 below also is an indication of the high level of urbanisation in the State. But it failed to create proportionate employment opportunities.

Figure 1: Contribution of Sectors in GSDP - 2021-22



Source: Department of Economics and Statistics

Today, the impact of urbanaisation increased the role of ULBs and it has transformed from a traditional civic service provider to growth-promoting institutions by way of improving the income generating and welfare-oriented activities. Urbanasation adds to the responsibilities of the local self governments. Inhabitants

of the urbanized area will demand more and better public services to deal with the changed infrastructure needs, social services to tackle social issues like unemployment immigration, etc. To deal with urbanaisation, European countries have decentralized their administrative approaches by giving Urban Local Bodies (ULBs) adequate autonomy to frame their policies and fix their financial resources (OECD, 2020). Indian ULBs failed to provide a range of civic services and necessities to their clients, because of the non-availability of financial resources. The fiscal status of Indian ULBs is the worst and these are the weakest ULBs in the world (Mohanty, 2016). Data shows that the urban population of India in 1951 was a mere 64 million, which increased to 286 million in 2001 and within a decade, urbanisation reached 377 million in 2011. As a result, ULBs in India are under tremendous strain on their fiscal health due to rapid urbanization to meet citizens' development and service needs (Meyer &Auriyacomb, 2019).

The success of these roles of ULBs in the new context depends on how the funds are utilized. Thus, it is high time for evaluating the trends, patterns, and efficiency levels of expenditure incurred by ULBs. In this context, it is important to have a look at the efficiency status of ULBs in Kerala in utilizing the development expenditure. This paper is an attempt in this direction.

2. Structure of Local Bodies in Kerala

The success of decentralized planning in Kerala is unparallel in India particularly after the 73rd and 74th Constitutional Amendment (CA). These initiatives were augmented by the enactment of new Panchayat Raj Act and Kerala Municipal Act in 1994. The 74th Constitutional Amendment provided the structure and mandate of Urban Local Bodies (ULBs) to transform them into effective democratic self-governing institutions. The fastest growth of urban population in the state of Kerala as compared to any other states in India is an added factor for strengthening the ULBs.

The existing structure of local bodies are broadly classified into Rural and Urban Local Bodies. The Urban Local Bodies (ULBs) are decomposed into Municipalities and Municipal Corporations. As the urban sprawl increases in Kerala, there has been an astronomical increase in ULBs in Kerala. Today ULBs consists of 6 Municipal Corporations and 87 Municipalities. The following Table shows the change in the number of Rural and Urban Local Bodies in Kerala.

Table 1: Number of Rural and Urban Local Bodies in Kerala (1995 - 2020)

LG	1995	2000	2005	2010	2015	2020
Rural Local Bodies (RLBs)						
Grama Panchayat (GP)	990	991	999	978	941	941
Block Panchayat (BP)	152	152	152	152	152	152
District Panchayat (DP)	14	14	14	14	14	14
Urban Local Bodies (ULBs)						
Municipality	55	53	53	60	87	87
Municipal Corporation	3	5	5	5	6	6
Total	**1214**	**1215**	**1223**	**1209**	**1200**	**1200**

Source: https://lsgkerala.gov.in

3. Fiscal Devolution to ULBs

The functional and financial decentralization are the integral components of decentralized planning and efforts are initiated based on Sen Committee recommendations as part of 73rd and 74th constitutional amendments. The discord in functional relations between the Municipalities and state, acute shortage of staff (technical and general) at all levels, frequent transfer of officers, lack of state level resource institutions

which would be better equipped to handle local needs and absence of dedicated municipal cadre (National Institute of Urban Affairs, New Delhi, 2015) were the challenges experienced in local bodies. To deal with these concerns, the State made a path breaking Amendment to 42 Acts dealing with subjects which are in the functional domain of local governments (Vijayanand, S.M., 2009). The transfer of functions to the lowest tiers paved the way for functional decentralization. Along with the functional devolution, adequate funds to local bodies are ensured through devolution of plan funds.

As per the State Finance Commission (SFC) recommendations, the three types of funds devolving to the LBs are General Purpose Fund (to meet the expenditure on traditional functions and establishment), Maintenance Fund (maintenance of the assets of LBs) and Plan Fund (Plan allocation - for meeting the development expenditures). Plan allocation to LBs is in two streams such as; the untied Plan grant (Development Fund) and the plan assistance for specific sponsored schemes such as Centrally Sponsored Scheme (CSS) and State Sponsored Scheme (SSS). In addition to this, the other available fund sources in LBs are own fund, loan from financial institutions, loan from cooperative institutions, voluntary contribution, beneficiary contribution in both kind and cash, contribution from other Local Bodies (LBs), externally aided scheme, maintenance fund and others. The following Table shows the total fund received by ULBs from all sources.

Table 2: Total Funds to Urban Local Bodies (ULBs) – in crore

	Corporation		Municipality		Total funds to ULBs		Total funds to all LBs	
Year	**Allot.**	**Exp.**	**Allot.**	**Exp.**	**Allot.**	**Exp.**	**Allot.**	**Exp.**
2007-08	265.2	127.8	436.3	154.6	701.5	282.4	4419.4	2297.2
2008-09	262.3	119.0	446.5	171.4	708.8	290.4	4934.0	2497.1
2009-10	315.1	144.6	504.3	201.7	819.4	346.3	6843.3	3010.8
2010-11	554.7	169.5	540.1	220.6	1094.8	390.1	8223.4	3523.8
2011-12	636.6	265.5	663.0	344.2	1299.6	609.7	8300.1	4297.6
2012-13	681.2	246.2	832.6	353.6	1513.8	599.8	8594.2	4061.5
2013-14	755.3	353.0	1022.1	570.4	1777.4	923.4	10680.3	6091.2
2014-15	816.0	402.2	1189.6	586.3	2005.6	988.5	11917.3	6135.5
2015-16	987.7	491.6	1571.4	786.5	2559.1	1278.1	12523.7	6872.3
2016-17	1160.8	435.5	1966.0	705.0	3126.8	1140.5	12549.7	5437.6
2017-18	1382.9	660.4	2140.5	989.1	3523.4	1649.5	14946.9	7889.5
2018-19	1436.0	656.2	2447.6	1034.5	3883.6	1690.7	19608.8	9999.9
2019-20	1552.4	416.5	2475.3	727.1	4027.7	1143.6	19889.5	7479.8
AAGR (%)	17.1	13.7	16.0	16.6	16.0	15.3	14.0	12.6
CV (%)	53.5	54.2	62.4	58.6	58.6	56.8	44.8	43.5

Percentage of utilization (in %)

Year	**Corporation**	**Municipality**	**ULBs -Total**	**LBs - Total**
2007-08	48.2	35.4	40.3	52.0
2008-09	45.4	38.4	41.0	50.6
2009-10	45.9	40.0	42.3	44.0
2010-11	30.6	40.8	35.6	42.9

2011-12	41.7	51.9	46.9	51.8
2012-13	36.1	42.5	39.6	47.3
2013-14	46.7	55.8	52.0	57.0
2014-15	49.3	49.3	49.3	51.5
2015-16	49.8	50.1	49.9	54.9
2016-17	37.5	35.9	36.5	43.3
2017-18	47.8	46.2	46.8	52.8
2018-19	45.7	42.3	43.5	51.0
2019-20	26.8	29.4	28.4	37.6
Avg. (%)	42.4	42.9	42.5	49.0
CV (%)	17.5	17.4	15.6	11.3

AS-Average Share; AAGR-Average Annual Growth rate; CV-Coefficient of Variation

Source: Computed from the data collected from Sulekha, IKM

It shows that there is an increasing trend of total fund allotment and expenditure in the LBs in Kerala from 2007-08 to 2019-20. But the expenditure side shows a declining trend for two years, i.e., 2016-17 and 2019-20. Also, the fund utilization in these two years is low as compared with the other years. Demonetization in 2016 and Covid-19 in 2020 were responsible for this.

The analysis of the percentage of utilization of funds shows that only 50 percent of the total funds are utilized by the LBs.The fund utilization of Urban Local Bodies (ULBs) especially Municipal Corporations never crossed 50 percent. This decreased utilization of funds raises the question of efficiency and effectiveness of decentralization process at local level. Again, the coefficient of variation (CV) show that the fluctuation in fund allotment and its utilization is greater among the ULBs especially in municipalities. Though the resources generated by the LBs are not sufficient to meet their expenditure requirements, LBs especially ULBs such as municipalities are inefficient in utilizing the available resources (Goel M.M. & Garg, I., 2021).This inefficient fund utilization, 'affect their performance in the efficient discharge of their duties' (Aijaz, 2007).

4. Structure and Trends in Development Fund in Urban Local Bodies (ULBs)

LBs have full autonomy with development fund – the untied plan grants, in deciding their priorities, formulating and implementing the projects subject to the plan guidelines issued by the State Government. The following Table reveals the trends in the development fund devolved to various strata of ULBs.

Table 3: Development Fund in ULBs (in crores)

	Corporation		**Municipality**		**Development funds to ULBs**		**Development funds to all LBs**	
Year	**Allot.**	**Exp.**	**Allot.**	**Exp.**	**Allot.**	**Exp.**	**Allot.**	**Exp.**
2007-08	121.4	99.52	140.9	114.6	262.3	214.0	1713.8	1378.3
2008-09	129.4	85.5	163.2	125.8	292.6	211.4	2008.2	1476.6
2009-10	166.0	109.8	187.1	140.9	353.1	250.7	2368.3	1749.0
2010-11	205.0	126.3	230.3	161.9	435.3	288.2	2885.6	1918.3
2011-12	284.2	197.0	338.6	253.1	622.8	450.1	3530.0	2728.3

2012-13	322.6	186.8	411.6	254.9	734.3	441.8	3870.0	2736.9
2013-14	438.4	258.8	541.0	396.5	979.3	655.4	5056.9	3919.4
2014-15	563.5	301.5	633.4	406.4	1197.0	708.0	5914.9	4034.5
2015-16	674.8	345.1	755.0	518.2	1429.8	863.3	6069.6	4467.8
2016-17	788.5	348.3	978.6	534.9	1767.1	883.2	6630.0	3839.9
2017-18	962.4	525.5	1217.7	736.0	2180.1	1261.6	8168.1	5293.9
2018-19	990.8	504.0	1227.7	742.6	2218.5	1246.6	8492.7	5696.3
2019-20	1031.3	327.8	1236.4	491.3	2267.6	819.2	8558.4	4035.1
AAGR(%)	20.1	13.5	20.5	15.6	20.2	14.6	14.7	11.4
AS (%)	9.0	7.5	11.1	10.5	20.1	18.0		
CV(%)	66.8	55.7	68.4	58.9	67.6	57.5	49.5	43.2

% of utilization

Year	Corporation	Municipality	ULG	Total
2007-08	82.0	81.3	81.6	80.4
2008-09	66.1	77.1	72.2	73.5
2009-10	66.1	75.3	71.0	73.9
2010-11	61.6	70.3	66.2	66.5
2011-12	69.3	74.7	72.3	77.3
2012-13	57.9	61.9	60.2	70.7
2013-14	59.0	73.3	66.9	77.5
2014-15	53.5	64.2	59.1	68.2
2015-16	51.1	68.6	60.4	73.6
2016-17	44.2	54.7	50.0	57.9
2017-18	54.6	60.4	57.9	64.8
2018-19	50.9	60.5	56.2	67.1
2019-20	31.8	39.7	36.1	47.1
AS (%)	57.5	66.3	62.3	69.1
CV (%)	21.6	16.8	18.5	13.0

AS-Average Share; AAGR-Average Annual Growth rate; CV-Coefficient of Variation

Source: Computed from the data collected from Sulekha, IKM

This examination of the recent data shows that the share of development fund allotted to and spent by the ULBs is increasing. The increase in the number of ULBs can be a reason for the increase in allotment and expenditure of development fund towards ULBs. Average annual growth rate (AAGR) of the allotment of development fund in ULBs is 20 percent. Likewise, though the AAGR in the expenditure side also shows the same trend, the rate is less than that of the allotment (15 percent). From this, it can be inferred that, though the allotted share towards ULBs has increased at a higher growth rate, it could not realize the proportionate expenditure growth in the 13 years' period of analysis. Among the ULBs, a major share of the

development fund is allotted to and spent through the Municipalities. As compared to Municipal Corporation, the Municipalities are performed better with respect to percentage of fund utilization.

5. Sectoral Decomposition of Expenditure by ULBs

Development outcome of expenditure depends on its sectoral composition. The sectoral decomposition of allocated funds and its utilization for Municipal Corporation and Municipalities are given in following analysis.

5.1 Sectoral decomposition of expenditure at Municipal Corporation

The sectoral breakdown of expenditures from development funds in Kerala's municipal corporations is depicted in figure 2 below.It shows that a major share of development expenditure of Municipal Corporation is earmarked for service sectors and infrastructure activities, though with fluctuations. While the share of the service sector fluctuates between 43 percent and 67 percent, the share of infrastructure fluctuates between 29 percent and 48 percent from 2012-13. The share of primary sector spending fluctuates between 3 percent and 5 percent. In the latest year, the respective shares of service, infrastructure and productive sectors are 66.6 per cent, 28.6 per cent and 4.9 per cent, which indicates the dominance of service sector in the development fund expenditure in Municipal Corporations.

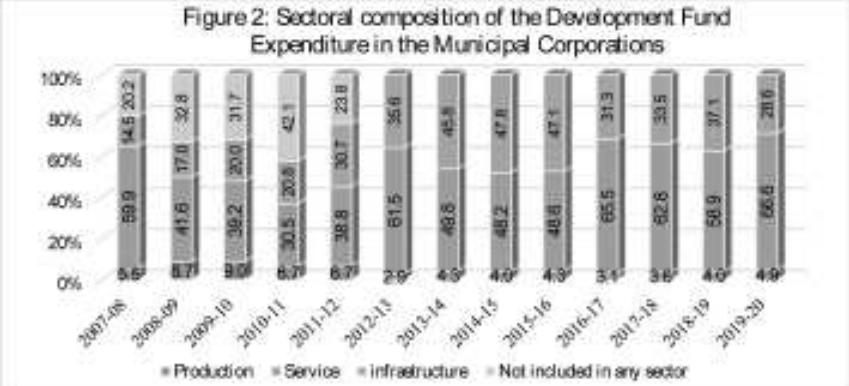
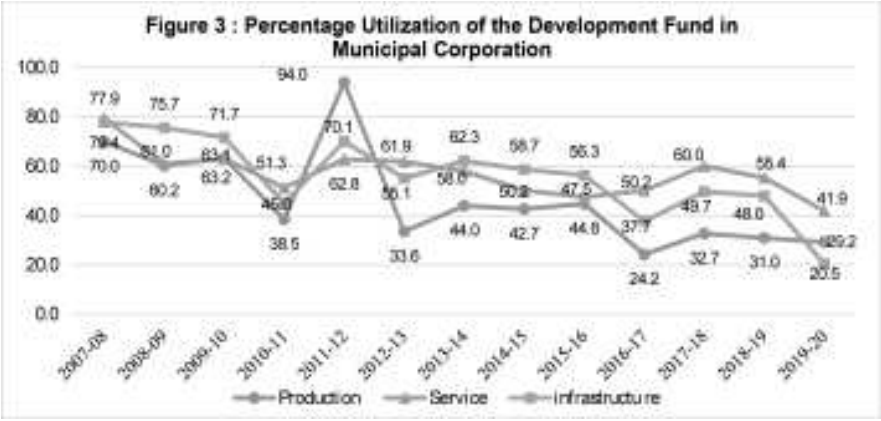


Figure 3 given below shows the utilization of development funds at sectoral level. There is underutilization of development funds in all sectors, albeit with some differences. In contrast to the services and infrastructure sectors, the reduction in fund utilisation is more apparent in the productive sectors. In 2010-11 and 2012-13, the fund utilized for productive sector activities are only 38.5 percent and 34 percent respectively. Though, only around 10 percent of total funds are allocated to productive activities, out of this 2/3 are not utilized in recent years. Performances of the other two sectors are also not much impressive in Corporations. The infrastructure and service sectors utilized only 21 percent and 42 percent respectively of the total allotment to those sectors in 2019-20. This is a clear indication of utilization inefficiency in Municipal Corporations.



5.2 Sectoral decomposition of expenditure at Municipalities

The following Figure shows the sectoral share of development funds utilized by Municipalities. More than 50 percent of funds are flowing toward the service sector activities. While the share of the service sector fluctuates between 51 percent and 67 percent, the share of the infrastructure sector fluctuates between 27 percent and 44 percent for the last eight years. At the same time, the primary sector share fluctuates between 5 to 7 percent during the same period. The respective shares of service, infrastructure and primary sectors in the latest year are 67.2, 26.9 and 5.8 percent, which is an indication of the dominance of service sector in the development fund expenditure in Municipalities.

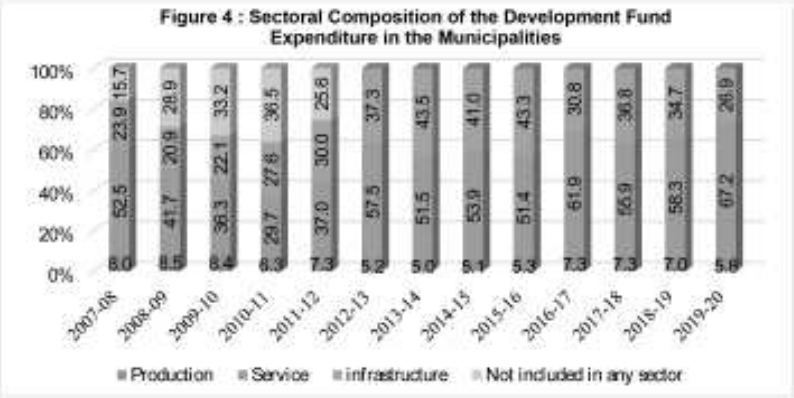
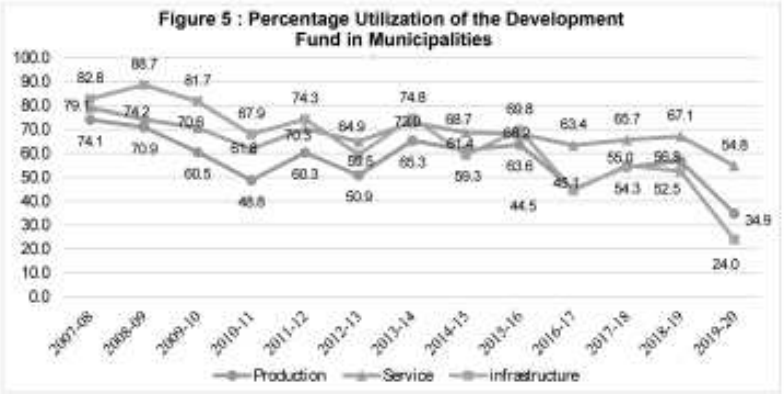


Figure 5 given below shows the utilization rate of development funds by Municipalities at the sectoral level. There has been a steady decline in expenditure levels for all sectors in Municipalities in Kerala. This decline is drastic in the case of infrastructure spending. While 82.8 percent of infrastructure fund was utilized in 2007-08, it declined to 24 percent in 2019-20. While the percentage of utilization of funds for service sectors and primary sectors were 79 and 74.1 percent respectively in 2007-08, the respective figures for 2019-20 are 34.9 and 24 percent. The latest figures show that out of the allocated funds, the respective utilization level of the service sector, infrastructure and productive sectors are 54.8 percent, 34.9 percent and 24 percent. The expenditure inefficiency drags the development process of Municipalities in Kerala.



6. Conclusion

The sectoral shift happened in the ULBs in Kerala in planning strategies and their implementation is clear from the analysis of the trends and patterns of the fund allocation and its utilization. The decomposition of plan fund utilization in sectors highlights that the emphasis has shifted towards service sector with complete neglect of productive sector activities. The neglect of productive sectors in ULBs raises a real concern about the sustainability of productive sector activities such as urban farming activities, small-scale industries, soil conservation, dairy development, fisheries, etc. It also raises doubts about the success of decentralized planning exercises in the state as compared to the stated objectives.

In general, the funds received by urban Local Bodies show a gradual increase, mainly because of the increasing number of urban Local Bodies as part of growing urbanization in the state. Though there is a normal yearly increase of funds to the ULBs over the analysis period, the share of the plan fund to the ULBs in the total state plan shows a declining trend. Not only this, the current share is less than that of the mandated proportion. Not only the allotted funds but the allotment of development funds also witnessed a declining trend. Also, fund utilization is very poor in ULBs. This will lead the ULBs to remain incapable of solving the urbanisation issues and focusing on the real development of urban infrastructure. Taking their economic contribution to the process of urbnaisation, there is a desperate need for attention to strengthening ULBs in India especially in Kerala to ensure time-bound delivery of services.

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An Overview of Tribal Education in Kerala

Shereen Beula.L.Jose
& Prasad.A.K

Education plays an important role in human life. It is necessary for the empowerment of marginalized sections in the society. Even in Kerala, the educational status of tribals is not satisfactory. They lag far behind the mainstream society in terms of educational attainment and literacy. This study is based on secondary data. The main objective of this paper is to understand literacy rate, educational attainment, accessibility, enrolment and major programmes for tribals in Kerala.

Keywords : Tribals, Education, Literacy, Development

Introduction

Education is the basic requirement for human development. The progress of a nation and the development of an individual lay on education (Bhanupratap Singh Chouhan, 2017). It not only enhances man's knowledge and skills but also changes his beliefs and thoughts (Dayanand Dongaonkar, 2004) which can keep him away from all evils. According to B.R. Ambedkar, "Education is not only the birthright of every human but also a weapon of social change". Education of tribals has been receiving much attention from time to time because their empowerment is an integral part for development of any society. They are the most marginalized social group in the world and for their overall development, education is a necessary tool.

Even in Kerala, which stands high in human development, there are constraints for achieving educational development of tribals. Since the formation of the State, government introduced various measures for their education, with a view to improve their socio-economic status. The introduction of National Policy on Education in 1986, aims to improve the educational accessibility for the tribals living in remote areas. Moreover, universalizing primary education continued through Sarva Shiksha Abhiyan (SSA) programme. Despite these efforts by the central and state governments their literacy rate is only 75.81 percent which is lower than the general literacy rate of 93.91 percent in 2011. The educational status of tribals is not praiseworthy. No doubt they lag far behind the mainstream population in educational attainment. Studies show that various steps to reduce dropout rates are not sufficient to solve their problem completely. They are still the poorest of the poor and low in educational status.

Review of Literature

Haseena V.A & Ajims P.Mohammed (2014) in their article, studied the scope of education and dropout among tribal students in Attappady, Kerala. The most important instrument for human resource development is education. But tribal education has many problems to face. The study found that one of the main reasons for dropout was lack of interest in study. They concluded that emphasis should be on quality and equity rather than quantity education.

Anbuselvi G. & John Leeson P. (2015), studied the education of tribal children in Idukki district. The study mainly focused on the problems they face and assistance given by the government, for their education. A total of 250 tribal students studying in government schools from two panchayats were selected randomly. The study reveals that more than 33 percent of them are facing with inadequate bus facilities to reach school because most of them live in isolated hill areas. Inadequate infrastructure facilities, poor communication system and lack of transportation facilities force the teachers to hesitate to work in tribal areas. About 22 percent of

them feel that poverty, imbalanced diet, poor medical facilities etc. are the major reasons for tribal children's absenteeism. The study concluded that it is necessary to ensure a high quality education to tribal students. Moreover there is a need to modify the existing educational schemes and ensure the involvement of NGO's in tribal literacy programmes.

Lenin Thangadurai P. S. (2015), studied the empowerment of tribal children in Attapady, Palakkad District of Kerala. The main objective of the study is to find out the educational problems of the tribal children. A total of 100 tribal students from 10 hostels were selected purposively for the study. The study shows that hostel facilities available for tribal students are inadequate. Early marriage of tribal girls was adversely affecting their education. Drug addiction of tribal parents, poor financial conditions and lack of interest towards learning are other factors that hinder their education. It is suggested that motivation and counselling should be provided to all tribal children to tackle this problem in the District

Manojan K.P (2018), in his article tried to find out how far the indigenous knowledge is important to the Paniya tribals in Mananthavady and Panamaram Grama Panchayats of Wayanad District, Kerala. By using a mixed methodology, a total of 152 people were surveyed which includes tribal students, teachers, parents, community leaders and social activists. He found that tribal students are facing difficulties in understanding subjects taught in the class. They are unaware of traditional art forms and no encouragement is given for those interested to perform it in the schools. Teachers agreed that the students are interested to have the indigenous knowledge in the curriculum. So it should be included in the curriculum for the effective practice of education for them. The study concluded that inclusion of indigenous knowledge is very necessary for educational development of tribals in the District.

Asha C.M (2020), tried to understand the level of education among tribals in Wayanad, Palakkad and Idukki Districts of Kerala. A total of 150 young tribal children who are constrained from going on with their formal education and students of 9^{th} or 10^{th} classes were surveyed for the study. The study shows that 82 percent of the respondents opined that in their areas anganwadis are functioning without basic infrastructural facilities. About 12.6 percent of the respondents are studying in single teacher school. It is seen that 31.7 percent of the surveyed childrens were drop outs. It is concluded that inaccessible educational institutions, difficulty in comprehending taught subjects and disinterest in studies are the major reasons for dropout among tribals in Kerala.

Abhisek Panda & Laxipriya Ojha (2021), in their article analyzed the reasons for drop outs among tribals in India. The study identified problems such as language problem, unavailability of books, geographical barriers, poverty, unemployment, caste problem, negative attitude towards education as reasons behind their dropout. They concluded that government should be more careful where dropout rate and gender gap on literacy are very high. Moreover, it is necessary to introduce counseling programmes for students and parents to reduce dropout rates in India.

Rajkumar Velusamy V. (2021), studied the issues for tribal education in India. The study was based on secondary information from various research studies and government sources. Though central and state governments are providing special attention for their development, the results are far away from the expectation. They still lag far behind in education, employment, health and empowerment. The drop – out rate was 70.9 percent among tribes. This is mainly due to the language barrier, schooling expenses, lack of motivation for teachers, lack of inspection etc. The paper concluded that it is the time to think seriously about tribal education and inclusive growth.

Objectives of the Study

The main objective of the study is to understand the level of education among tribals in Kerala by analyzing literacy rate, educational attainment, accessibility, enrolment and major programmes for their educational development.

Methodology

The present study was based on secondary data. The sources of the secondary data are mainly from reports of State Planning Board Kerala, Census Reports and Scheduled Tribe Development Department. Publications of other departments and institutions, books, journals, and other relevant materials were also used as secondary data.

Educational Programmes and Schemes for Scheduled Tribes in Kerala

In Kerala, the introduction of various programmes and policies for the educational development of tribals started since the formation of the State. All these efforts made by successive governments for uplifting tribals educationally can be viewed from their socio-economic development. Apart from the above mentioned centrally sponsored schemes and policies for tribal education, government of Kerala implemented various measures for their educational upliftment.

Model Residential Schools were set up in different parts of the State with a view to provide quality education to tribal students. There are 20 model residential schools functioning under Scheduled Tribe Development Department. Only two Model Residential Schools follow Central Board of Secondary Education (CBSE) syllabus. It is estimated that about 5,500 students are studying in these schools.

The Peripatetic Education to the Primitive Tribes scheme aims to provide lower primary education to PVTGs and other tribes living in the State. About 7 peripatetic centres and 23 single teacher schools were set up in tribal dominated inaccessible areas through this scheme. The scheme was based on single teacher programme. The teachers visit the identified settlements and provide education to the tribal students. Then the students will evince great interest in education without being uprooted from their isolated settlements.

The Tutorial Scheme for Students focuses to improve pass percentage of students studying in high schools and higher secondary by providing special coaching to them. For that monthly tuition fee would be directly given to parents for providing tuition through nearby tutorials. 'Gothra Sarathi' Scheme provides transportation facilities to tribals living in interior and inaccessible tribal areas.

Another scheme introduced by the government namely Samuhya Patanamuri (Community Study Centre in Tribal Hamlets), aims to solve linguistic problems and dropout rates and to create an environment suitable for education in tribal hamlets. This scheme was launched in 2017-18. The Scheduled Tribe Development Department (STDD) started 100 community study centres in tribal hamlets of the State. For the implementation of this scheme, one educated tribal youth from same community was selected and he/she works as a facilitator and social worker. All the community study centres are equipped with computers with internet, LED TV, furnitures, reading materials etc. Only 30 students are accommodated in each study centre.

Under the scheme Ayyankali Memorial Talent Search & Development, all the talented tribal students studying from 5th standard to 10th standard are given financial assistance to excel in academic and extracurricular activities. Through an intelligence test, 200 students study in 5th standard will be selected every year.

Assistance to orphans scheme provides financial assistance to care takers of tribal children who have no parents. Each beneficiary is given Rs.1000/- per month. Assistance for Study Tour to School and College Going Students scheme provides assistance to post matric students for participating in excursions and study tours. This scheme also intends to conduct Bharat Darshan/ All India Tour for selected tribal students.

The Supply of Laptop to Students Scheme gives laptops to scheduled tribe students studying professional courses in approved university/institutes. The courses includes MBA, M.Sc Computer Science, MCA, MBBS, BDS, BAMS, BVSc. & AH, B.Tech and M.Tech and other Post graduation degrees.

The Gothrabandhu (Engaging Tribal Teachers in Primary Schools) scheme aims to provide proper education to tribal children. Under the scheme one educated tribal youth (men/women) with TTC/ B.Ed degree from the same locality having knowledge in tribal dialect and Malayalam is selected and trained to function

as mentor teacher in primary schools. In 2017-18, about 241 qualified tribal youth were appointed in Wayanad District.

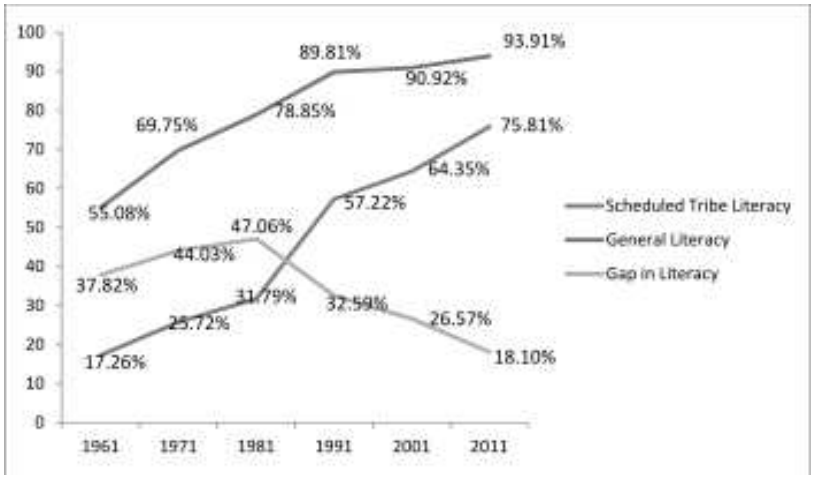
In Kerala, there are 13 nursery schools, 10 kindergartens, 4 balavadies, 3 balavijnanakendras and 1 vikasvadi are running under the Scheduled Tribe Development Department. It aims to provide pre-primary education to tribal students living in very remote and inaccessible areas. They are given food, uniform, bag and umbrella. Moreover incentives to parents of ST students were also given. All the parents of ST students studying in Lower Primary (LP) classes are given an amount of Rs.50/-per month that have 75% attendance in an academic year.

Both the central and the state government introduced various educational schemes, programmers and policies etc for the promotion of literacy and elementary as well as higher education among tribals in the state. These measures introduced by the governments for the tribals are notable but desired results in their educational development could not be achieved.

Literacy among Tribals in Kerala

Kerala is regarded as an educationally forward state than any other state in India. This is evident from high literacy rate, improved enrolment of students etc. But tribal literacy rate shows their underdevelopment. Inaccessibility to educational institutions is the major reason for their educational backwardness. Despite efforts of the central and state governments, literacy rate of scheduled tribes is only 75.81 percent, which is lower than the state average literacy of 93.91 percent (Census, 2011). **Figure 1** shows literacy rate and gap in literacy between the general population and tribals from 1961 to 2011.

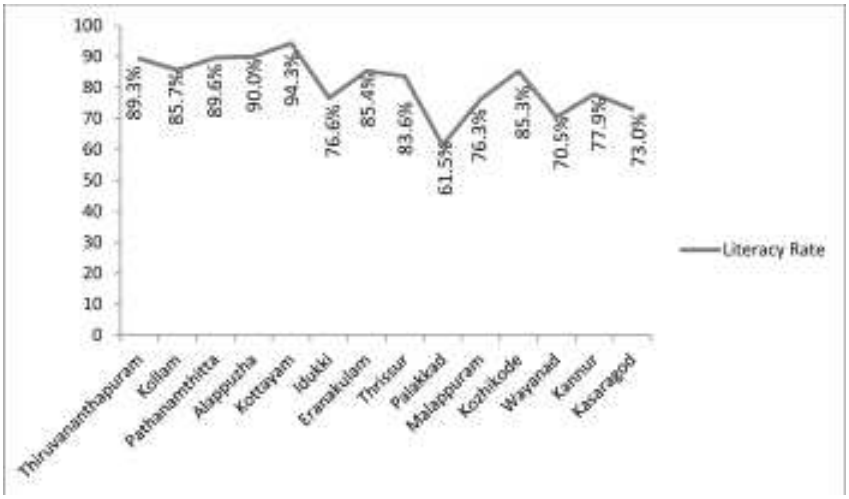
Figure 1 : Literacy Rate and Gap in Literacy between Scheduled Tribes and General Population in Kerala (in percent)



Source: Census various reports

In 1961, the literacy rate of tribals in Kerala was only 17.26 percent. But the general literacy rate was 55.08 percent. The gap in the literacy rate of general population and scheduled tribe was 37.82 percent. In 1971, 1981, 1991 and 2001 tribal literacy rate was 25.72 percent, 31.79 percent, 57.22 percent and 64.35 percent respectively. But the general population literacy rate was 69.75 percent, 78.85 percent, 89.81 percent and 90.92 percent respectively. The literacy gap was 44.03 percent, 47.06 percent, 32.59 percent and 26.57 percent for the above mentioned years. In 2011 tribal literacy rate increased to 75.81 percent against general literacy rate of 93.91 percent. The gap in literacy reduced to 18.10 percent. The analysis of data shows that gap in literacy rate between general population and tribals are high which needs proper implementation of literacy measures. It is clear that tribals are backward because they are much far away from the general population. Only education can give light for the development of tribal people. The following **Figure 2** shows the district-wise details of tribal literacy in Kerala.

Figure 2 : District-wise Literacy Rate in Kerala (in percent)



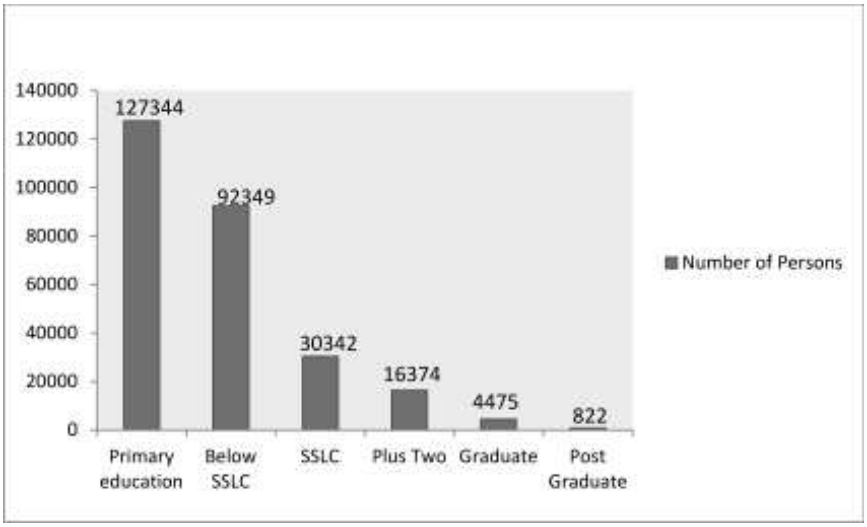
Source : Census 2011, Office of the Registrar General, India

Among the districts Kottayam stands highest in literacy rate of scheduled tribes with 94.3 percent followed by Alappuzha with 90.0 percent and Pathanamthitta with 89.6 percent. The lowest literacy rate reported from Palakkad district as 61.5 percent. The district-wise data shows that the districts Palakkad, Wayanad and Idukki constitute the three least tribal literate districts in the Kerala.

Educational Attainment of Scheduled Tribes in Kerala

Various study reports shows that tribes lag much behind other social groups of Kerala in the attainment of higher levels of education. **Figure 3** given below shows educational attainment of scheduled tribes in Kerala.

Figure 3 : Educational Attainment of Scheduled Tribes in Kerala

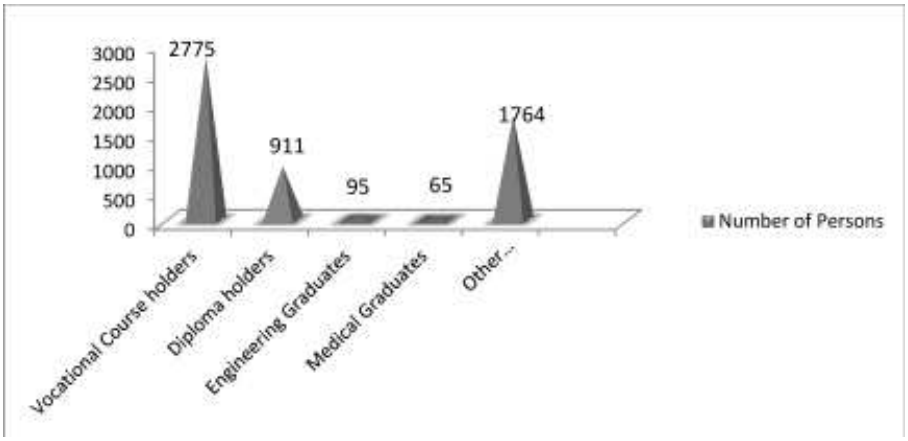


Source: Scheduled Tribe Development Department Report 2013, State Planning Board, Thiruvananthapuram, Government of Kerala

The Scheduled Tribe Development Report 2013, reveals that scheduled tribes with formal education as 2,72,034. Of them 127344 have only the primary level education. They constitute 46.81 percent of the scheduled tribes with formal education. About 92349 (33.95 percent) have education below SSLC. But the SSLC and Plus Two holders are 11.15 percent and 6.02 percent respectively. The graduates and post- graduate holders are only 1.64 percent and 0.30 percent of the tribals with formal education. However, the educational attainment of scheduled tribes is not satisfactory compared to their population proportion. The technical or

professional educational attainment of tribals in Kerala presents a worse scenario. **Figure 4** seen below shows technically or professionally qualified scheduled tribes in Kerala.

Figure 4 : Technically or Professionally Qualified Scheduled Tribes in Kerala



Source: Scheduled Tribe Development Department Report 2013, State Planning Board, Thiruvananthapuram, Government of Kerala

The professionally or technically qualified scheduled tribes in Kerala consist of 2775 vocational course holders, 911 diploma holders, 95 engineering graduates and 65 medical graduates and 1764 other professional or technical qualification holders. About 21 tribal communities have no engineering graduates. Major communities paniya, adiya, hill pulaya, malai pandaram, malai vedan, koraga, cholanaickan etc were not able to provide engineering education to their children. Altogether 26 tribal communities have no medical graduates (STDD, 2013). In spite of central and state government measures for educational development of scheduled tribes, medical and engineering education remains a distant dream for tribal students.

Access to Educational Institutions

Lack of accessibility to educational institutions is a major reason for educational backwardness. **Table 1** shows the poor access to educational institutions for the tribals in Kerala.

Table 1 : Access to Educational Institutions

Educational Institutions	Number of Settlements					
	Within Settlement	Within 0.5 km	0.5-1.0 km	1.0-2.5 km	2.5-5.0 km	Above 5km
Anganwadis	1236	356	938	1686	244	117
LP School	68	220	423	2046	1318	576
UP School	26	137	240	1519	1442	1301
High School	4	76	120	906	1394	2197
Higher Secondary School	2	53	88	668	1123	2762

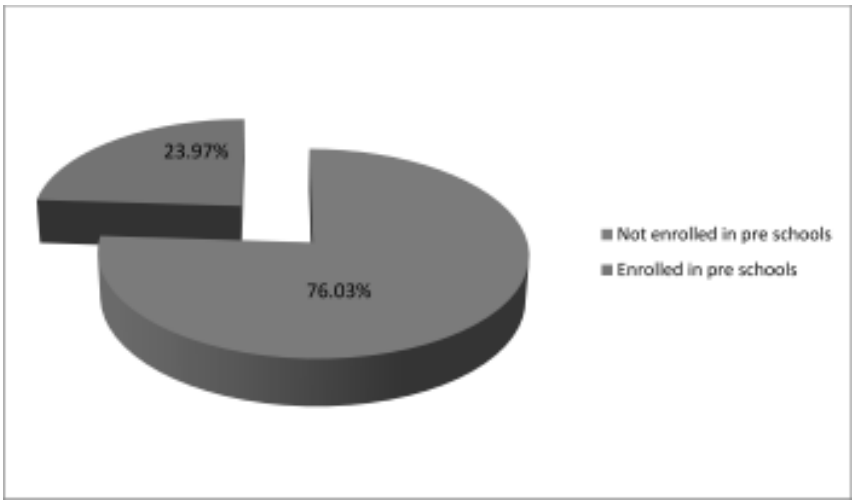
Source: Scheduled Tribe Development Department Report 2013, State Planning Board, Thiruvananthapuram, Government of Kerala.

Out of 4762 settlements in Kerala, only 1236 settlements have anganwadis within settlement. For 117 settlements, anganwadis are above 5 km away. The accessibility of LP schools, UP schools, High Schools and Higher Secondary schools shows that they are available within settlements for only 68, 26, 4 and 2 settlements respectively. About 2197 settlements have access to high schools above 5 km away. 2762 settlements have higher secondary schools above 5 km away. The major constraints to tribal tertiary education are affordability, availability and accessibility (Kiran Dung Dung & Pattanaik.B.K, 2013).

Enrolment of Tribal Students in Pre-schools and Schools

The enrolment of tribal students in pre-schools (anganwadis) is very low compared to other sections of the society. **Figure 5** shows enrolment of tribal students in pre-schools in Kerala.

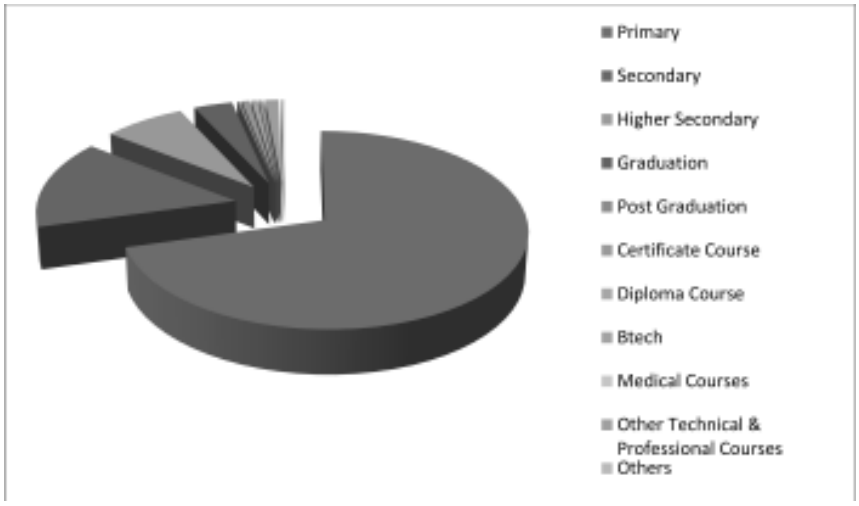
Figure 5 : Enrolment of Tribal Students in Pre-schools



Source: Scheduled Tribe Development Department Report 2013, State Planning Board, Thiruvananthapuram, Government of Kerala.

The total number of tribal students in the age-group of 4-5 is 16,233 in Kerala. But only 3,891 children have enrolled in anganwadis. They constitute only 23.97 per cent of total tribal students in the age group of 4-5. A total of 12,342 (76.03%) children have not enrolled in any pre-school institutions. Non-availability of anganwadis within settlements, inconvenient location of pre-schools and lack of facilities in pre-schools are the major reasons for very low enrolment of tribal students in pre-schools. The enrolment of tribal students in schools shows better performance than pre-schools. **Figure.6** given below showing enrolment of tribal students in schools.

Figure.6 : Enrolment of Tribal Students in Schools



Source: Scheduled Tribe Development Department Report 2013, State planning Board, Thiruvananthapuram, Government of Kerala.

In Kerala, there are 90,902 tribal students. They constitute 21.33 percent of the total tribal population of the State. The students in primary class were 70.64 percent (64,216) and secondary class 14.91 percent (13,552). About 3.81 percent of the tribal students are in graduate and post-graduate courses. It can be understood that in higher education tribal enrolment is very low. Their poor living conditions, inaccessible educational institutions, language problems etc make their situation more pathetic.

Conclusion

In Kerala also educational status of STs remains poor. Though educational progress of tribals is improving they are not satisfactory. They lag much behind the mainstream population in literacy rate and among the literates, majority are with low level of educational attainment. There is a drastic decrease in the enrolment of tribal students in high school and higher secondary levels. There are many reasons for this low education status among tribals. One major reason is the existence of poverty and the other is their over dependence on natural resources. Many tribal families cannot afford the cost of education because of their low income. Moreover lack of motivation, problems in the family and language barriers also affect tribal education. A strong monitoring system to oversee policy implementation is necessary for the educational development of this marginalized section.

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