



Adapting to Change: Hunter-Gatherers in Kerala's Nilambur Valley

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ABSTRACT - Hunting and gathering are regarded as the earliest form of subsistence. As a subsistence strategy, it combines animal hunting, fishing, foraging for wild foods, and mobility. During colonial times, there was a trend of undermining hunter-gatherer identity, culture, belief, worldview, and practices through the implementation of various policies such as capitalization of nature as a natural resource and displacement-led development. It has also been observed that the post-colonial government has not only re-enacted colonial marginalisation policies and politics, but has also legalised them in the name of development, service, national obligation, legislation, institution, civic responsibility, citizenship, and morality. This act of local government can be described as civic-colonization. The study is centred on the hunter-gatherer tribes of Kerala's Nilambur Valley, specifically the Cholanaickan, Kattunaickan and Aranadan. It aims to theoretically understand the concept of civic colonization and explore how it affected the current hunter-gatherer communities there.

Keywords: Civic-Colonization, Hunter-Gatherers, Marginalisation, Development, And Health.

Introduction- More than 600 tribal communities reside in India and many of them are nomadic, family-level foragers or hunters. Their subsistence production can be rendered as a need-orientated means of production in which ecology itself functions as storage. In ordinary cases, they are having low population density but at the time of hardship or scarcity of natural resources, a group of families functions as a single unit for the better management of resources and subsistence activities. Division of labour is elementary (among them) and based on age and gender. In short, their socio-cultural characteristics exhibit an informal and flexible social relationship between families.

In colonial times, hunter-gatherers were viewed as social fossils for reconstructing past socio-cultural history. With the end of colonialism, local governments (all over the world) have implemented various welfare programmes and policies to integrate hunter-gatherer communities with national development goals. Despite

being exemplary in comparison to colonial smears and isoelastic policies, this approach has consciously or unconsciously supported the homogenization of hunter-gatherer socio-cultural diversity. This integration model (with an overall goal of economic growth) has somehow diluted the complexities of the other issues, making it difficult to see the larger outcomes of policies on the front of the philosophy of life, which include dimensions such as knowledge system, identity, culture, belief, health, and human-nature relationship.

Over time, there has been a shift in the policy-making approach, with a trend toward bottom-up approaches, involving community perspectives in policy draughts. For example, in India, the Forest Rights Act (FRA) 2006 advocates for the recognition of traditional forest dwellers' right to forest resources. However, this supplementary approach to policymaking has left unbridged trenches of colonial legacies, such as treating nature as natural resources and exercising control over spaces and species. Before colonisation, for example, hunter-gatherers were used to cater for all kinds of needs through sustainable exploitation of nature, but with the creation of an additional space out of nature called "forest" - as a nation-state property, the colonial and post-colonial governments had fenced the autonomy of hunter-gatherer within confined geography. In India, the colonial authority established the additional area known as the "forest" in a memorandum released in 1855 (Suresh 2020). This legal measure was enacted to give the state sole control over the newly created space- "forest", which had previously been managed by local communities. Furthermore, the Indian Forest Acts (IFA) of 1865 and 1878 established the state as a supra-local body and sole stakeholder in the forest and natural resources. Additionally, by designating the forest as a reserve, protected, and village forest, IFA1927 strengthened the control of a single stakeholder (state). It is significant to note that the IFA of 1927 continues to serve as the fundamental legal framework for India's forests (Damodaran, 2006). In a nutshell, the IFA 1865, 1878, and 1927 transferred control of the forest's spaces (in a geopolitical sense) and species (human and non-human) to the state as a sole regulator, of which hunter-gatherer communities were custodians and integral parts. Furthermore, the colonial demarcation and rules of "forest" were (are) still required to be followed by the hunter-gatherers of the post-colonial era. By enforcing various new laws, such as the Wildlife Protection Act (WPA) of 1972 and the Forest Conservation Act (FCA) of 1980, the post-colonial government (currently in power) continues to regulate the movement of hunter-gatherers within forest spaces (Damodaran, 2006).

In addition to forest acts, poorly designed development programmes such as technology-based development, industrial modernity, displacement-based development, and capitalisation of nature (i.e., exploitation of natural recourse for goods and services sector) have destroyed hunter-gatherer subsistence practices. As earlier outlined, hunter-gatherers are communities that are relatively isolated or semi-isolated, with an economy and cultural system defined by self-sufficiency and political autonomy. However, the legislation and acts covered above have disrupted their way of life, economy, culture, eating habits, mode of subsistence, and settlement pattern. For instance, the hunter-gatherer's subsistence strategy was (is) based on mobility that includes hunting animals, fishing and foraging for wild foods and nutrients. Due to capitalization of nature (CoN), acts and regulations like those that forbid hunting animals and restrict people from freely moving through forests to gather food and other necessities have forced STCs to give up their political independence, self-sufficiency, traditional diet, cultural practices, and nomadic lifestyle. They have also been forced to adopt sedentary lifestyles, submit to modernization, and confine themselves to a particular

geography. Additionally, it led to shifts in eating habits, a lack of food and medication, resource-related conflict, environmental deterioration, and a variety of new health issues. It is important to note here that epidemiological studies (of previous hunter-gatherer communities) have shown that the transition or transformation in subsistence model and settlement practices has a negative effect on health; the core elements of the philosophy of life (Orman, 1971) (Armelagos, Brown, & Turner, 1961).

In summary, poorly planned and intensive development policies have led to a wide range of problems for hunter-gatherer communities, including conflicts over natural resources, health problems, identity crises, the loss of traditional knowledge, onto-epistemic confusion in life philosophy, distress in the pattern of subsistence and living conditions, a problem of negotiation with the environment, proximity with animals, and displacement of beliefs, logic, and values.

This research article focuses on the hunter-gatherers of Kerala's Nilambur Valley and examines the impact of civic-colonial politics and policies on the way of life and philosophy of today's hunter-gatherer communities. It's divided into three sections. Part one discusses the structure, nature, and components of civic-colonization; part two discusses the status of the hunter-gatherer community in pre-colonial, colonial, and civic-colonial times; and part three presents a case study of Nilambur valley hunter-gatherer tribes in Kerala, India.

1. **Study Area and Study Population-** The study was carried out in the Nilambur valley of Malappuram district of Kerala. In the 1951 Census Handbook of Malabar District, the present Nilambur taluk and its surroundings were collectively referred to as Nilambur Valley (Government of Madras, 1951). Four tribal communities—Cholanaickan (C), Kattunaickan (K), and Aranadan (A)—were chosen for the study from a total of seven in the Nilambur valley. These groups were, and to a large extent still are, family-level gatherers and hunters. The subsistence practices of the Cholanaickan and Kattunaickan include hunting, food collecting, and fishing. It is important to note that many members of the Cholanaickan group live in the Alai, a naturally occurring rock-cut cave. The Aranadan, on the other hand, obtained their food with microlevel foraging. Cholanaickan and Kattunaickan are categorised as Particularly Vulnerable Tribal Groups (PVTGs) among the chosen tribal communities, whereas Aranadan is categorised as Scheduled Tribes (STs).
2. **Material and Method:** The current study is based on a traditional systematic review and ethnographic investigation of hunter-gatherer communities of Nilambur valley Kerala. The ethnographic data was collected from hunter-gatherer communities of Nilambur valley Kerala in Kerala.
 - a. **Data Collection:** The source of primary data is in-depth interviews (IDIs) and focused group discussions (FGDs). Whereas, for secondary data existing texts, reports and photos have been referred to. The data were collected with the application of the mixed method. It contains both quantitative and qualitative data. A total of 18 colonies of PVTGs (An=4, Cn=2, Kn=6, Pn=6) were visited between December 2019 and March 2020. The schematic diagram (Fig 3) gives an overview of the opted method and methodology of this research. total 26 IDIs (An=4, Cn=2, Kn=10, Pn=10) and 6 FGDs (An=1, Cn=1, Kn=2, Pn=2) were collected. IDIs and FGDs were collected with the help of semi-structured and open-ended

questions. However, the FGDs have an average of 6-7 respondents, mostly men and a few women, with an age group between 45-65yrs.

- b. **Data Analysis:** To interpret the collected qualitative data, an abductive approach¹ was undertaken. After multiple revisiting and shorting, the qualitative data were analysed using the steps discussed in Fig.1. However, quantitative data were analysed using IBM-SPSS v.26.
3. **Civic-colonialism?** Colonialism has been understood as the practice of domination, which involves the act of subjugation of one group of people by another. Scholars have discussed various levels at which colonisation can be experienced like territory, culture, language, politics, mental and epistemic, economy, and socio-biology (Murrey, 2019). With time, colonialism has mutated itself into neo-colonial means of indirect domination and control by using concepts like transitional corporations and financial aid. From the evolutionary context, the act of colonialism seems to be started with the history of homo-sapiens domination (Harari, 2014). Whereas, historical studies have shown that world history is full of examples of the powerful group subjugating the adjacent weaker social group. Both the evolutionary and historical descriptions oppose the idea of colonialism as a modern phenomenon (Kohn, Kavita Reddy, & Margaret, 2017). But at the same time, it is also important to consider that the above-mentioned act was more like territorial conquest because of annexation, unlike colonization in which a country controls the political and economic decisions of another country. But in a post-colonial context, literature seems silent to define the act of domination of local government in power in the name of progress, service, national obligation, developmental goals, legislation, institution, nationalism, civic responsibility, and morality. The above-mentioned act of subjugation by the local government in power can be described as civic-colonization. It is important to note here that the boundary of civic-colonization is not only limited to the government but its various forms can be observed in any power relation, hierarchical system and socio-economic organization.

In civic-colonization, the domestic government in power fosters an incipient relationship of dependence and subservience unlike servitude but rather through the doctrine of national obligation. It has both the elements of the colonial rationale and Jean-Paul Sartre's neo-colonial component of economic-cultural imperialism (Sartre, 2001) (Nkrumah & Nkrumah, 1965). For example, in India, policies like National Housing Schemes (NHS) have introduced the indirect dependency by forcing hunter-gatherers to change their settlement pattern and opt to live in a permanent colony within the confined geography along with the dominant population group (as recommended by Dhebar Commission 1960). Whereas, regulations like WPA 1972 and FCA 1980 prohibit hunting of species on a large scale which has left hunter-gatherers with no choice but to clutch schemes like Public Distribution Systems (PDS) as obligatory and shift their food habits. It is important to note that this phenomenon is not customary in India or any specific country but is in practice throughout the globe. It has been documented in the case studies of Australian Aborigines, New Zealand's

¹ It starts with an observation or set of observations and then seeks to find the simplest and most likely conclusion from the observations. This process, unlike deductive reasoning, yields a plausible conclusion but does not positively verify it.

Maori, Canadian First Nations, African Bushman, Indian Tribes and American Indigenous people (Bétéille, 1998) (United Nations. Dept. of Economic, Permanent Forum, 2009). These poorly designed development programmes enforce transition and displacement that eventually results in (a) destruction of the knowledge system, worldviews, life-philosophy, native beliefs and logic; (b) health problems; (c) altered relationship with environment and proximity with animals; (d) identity crisis; and (e) inter-generational conflicts.

Before delving deep into the consequences of civic-colonisation, it is important to contextualize and analyse the practice of civic-colonization first. In the post-colonial context, there can be seen a wave of politics of assimilation and reconciliation towards the hunter-gatherer group and other marginalised communities. For example, in India, National Forestry Policy (1988) has been implemented to reduce the monopoly of singular stakeholders (over forest) through community management. The other example can be the Forest Rights Act (FRA) 2006 which aims to recognize the right of the traditional forest dwellers to forest resources on which these communities were dependent for a variety of needs, including livelihood, habitation and other socio-cultural needs. These waves of policies look for the institutional accommodation of hunter-gatherers by recognising them as ethnic minority citizens of a nation-state. But underlying this politics of assimilation and reconciliation there exist two problems. (a) it is always loaded with the idea of either ethnocentrism or xenocentrism that ultimately upraise the social problems created by cultural lags, and (b) it is guided by the logic of the capitalist approach and structured by its attendant hierarchies that oppose the hunter-gatherer's historic practice of being politically autonomous and economically independent. Audra Simpson (2014) in her book *Mohawk Interruptus: A Political Life Across the Borders of Settler States* has discussed in detail that how the politics of reconciliation arises the struggle for self-government and the chaotic problem of refusal. Whereas scholars like Taiaiake Alfred (2005) in his book *Wasáse: Indigenous Pathways to Action and Freedom* states have discussed how the capitalist approach made the western liberal framework fail to integrate indigenous and nomadic hunter-gatherer communities with so-called mainstream society. However, Leanne Simpson (2011) in *Dancing on Our Turtle's Back: Stories of Nishnaabeg Re-Creation, Resurgence and a New Emergence* has argued for the bottom-up approach, which includes the re-establishment of pre-colonial history and customs and also the reintroduction of the traditional governance.

In nutshell, civic-colonization can be encapsulated as a form of subjugation of a socio-cultural group or sub-group having a non-dominant position by a dominant ethnic population in power in the name of progress, service, institution, national developmental commitments and priorities. Some of the characteristics have been identified below but it should be made clear that all the attributes may or may not be profound in every action of civic colonization. The main attributes are as follows:

- Inflicting uniform by-laws by the domestic government in power over a group or sub-group with discrete socio-cultural practices, distinct subsistence strategy and are anomalous compared to so-called "civilization"

- Devising and implementing policies that serve the national developmental promises and ignore group/sub-group historicity, code of ethics, cultural beliefs & rites, rights, worldviews, philosophy of life, livelihood pattern and palpable relationship with nature
- Renewal of policies that were made to serve the peculiar motives of the colonial government
- The subjection of politically autonomous and economically self-sufficient groups/subgroups, who are having a distinct name and exhibiting a strong sense of belongingness or identity, in the name of citizenship and civic responsibilities
- Western capitalist framework for the politics of reconciliation
- Inducement of indirect dependency on government aid via regulations and deposition of cultural imperialism

4. Civic-colonization and its impact on the pillars of hunter-gatherer life: A case study of Nilambur Valley hunter-gatherers in Kerala

Scholars from disciplines such as anthropology, historical epidemiology, and archaeology have extensively discussed how family-level foragers or hunter-gatherers were (and continue to be) vulnerable to various diseases and illnesses as a result of direct/indirect exposure to or interactions with toxic plants, animals, insects, and parasites. The following activities may result in contact with disease vectors: gathering wild plants, hunting, bringing prey home after hunting and consuming contaminated prey/food, or from the bite of insects, snakes, and other organisms (Armelagos & Barnes, 1999) (Armelagos, Brown, & Turner, 61). Other elements like seasonal change, temperature variation (both high and low), diet change, accidents, and injuries can also have a significant negative impact on health (Black, 1975) (Cockburn, 1971) (Groeneveld, 2018) (Ungar & Grine, 2006) (Barnes, Armelagos, & Morreale, 1999) (Fábrega, 1997) (Ackerknecht, 1946).

Recognizing the complexities and multiple dimensions of hunter-gatherer lifestyle, the researcher identified the four pillars on which hunter-gatherer life is built. The pillars are as follows:

- a. Personal core: self, body-mind, health & wellbeing, and philosophy of life
- b. Professional core: Subsistence practices and economic pursuit
- c. Cultural core: Culture, belief, ideology, worldviews, rituals, and practices.
- d. Social core: adaptability to change, social network, and social capitals

4.1. Civic-colonization and personal core

Hunter-gatherers not only have different subsistence strategies, but they also have different ideas about their belief system, logic, worldview, values, and philosophy of life. Their hunter-gatherers' traditional way of life included thousand-year-old traditional law, language, religion, ritual, and other socio-cultural practices. The dimensions of life for hunter-gatherers, like others, are body, mind, spirit/self, emotion, and environment/ecology. A minor change in any of these factors resulted in the total collapse of the hunter-personal gatherer's core and philosophy of life.

According to studies, colonial practices of undermining and suppressing traditional lifestyles have a negative impact on the physical, mental, social, emotional, and spiritual dimensions of hunter-gatherer life. Not only has the local government in power failed to achieve successful reconciliation, but it has also stepped on colonial policies and politics, legalising slavery in the name of institution, development, national obligation, rights, and services. The cultural imperialist approach and social categorisation of hunter-gatherers as an

ethnic minority are a few examples of civic-colonial politics and policies that have not only continued the marginalization of hunter-gatherer communities at the social, economic and political levels but also affect the idea of self. The civic colonialism practices have resulted in cultural alienation, identity deficit, and loss of knowledge and language. Which down the line created self-doubt, inferior self-imaging, depression, anxiety, and various problems e.g. mental health, suicide, the problem of social cohesion, violence etc.

Another important aspect of the hunter-gatherer's personal core is health. The hunter-gatherer perceives health as a bio-cultural phenomenon. It is rooted in local cultural experience, and their ethno-philosophy of health differs from the western concept of health. Hunter-gatherer health and healing models incorporate knowledge of plants, animals, and landscape as well as a unique set of skills, and faith in natural and supernatural power, and it is associated with their subsistence practise, and their knowledge of plants and animals is mostly stored as collective knowledge in the ecological context.

Despite the pronounced diversity of indigenous communities worldwide, epidemiological data indicate that many modern-day indigenous groups are burdened by similar types of diseases (e.g., chronic diseases). It also emphasises that the health disparities between the benchmark population and the indigenous population of the country are widening (based on the bio-statistical definition of health). Michel Gracey and et al. find the reason for indigenous health inequalities in poverty, malnutrition, population growth beyond the carrying capacity of a region, poor hygiene and environmental contamination (Gracey & King, 2009). But it seems the root cause lies in the forceful lifestyle transition by civic-colonial practices (as discussed above). The moving from traditional and nomadic lifestyle towards permanent settlement and modern lifestyle. The transition in settlement pattern and subsistence strategy had caused diet shift, brought a change in living conditions, relationship with the environment and proximity with animals. The transition from nomadic to permanent colonies may expose colonists to diseases caused by poor waste management and contaminated water. Additionally, the transition from a traditional diet to modern food may increase the risk of nutritional imbalance, chronic diseases, and rapidly acquiring lifestyle diseases such as obesity, cardiovascular disease, and physical-social-mental disorders (Armelagos, Brown, & Turner, 1961). (Orman, 1971).

4.2. Civic-colonization and professional core- It is well established in the literature that hunter-gatherers are careful custodians of the environment due to their subsistence strategy and traditional lifestyle. They tend to protect their local environment in order to ensure a long-term supply of food and shelter, making their practice more sustainable. By imposing acts and regulations over natural resources, colonial competition for natural resources choked the traditional practice and forced them to rely on an unfamiliar lifestyle. It has not only forced hunter-gatherers to abandon their traditional roots and way of life, but it has also introduced the population to poverty, inequality, and indirect reliance on government aid.

On the other hand, proponents of civic-colonial politics presented an intriguing debate between developed and underdeveloped countries to justify the approach of reconciliation and integration chosen by local governments in power. It is important to note that the term "development" is highly contested. Anthropologists have strong and diverse views on development. Marc Edelman and Angelique Haugerud (2007) have extensively discussed the development debate. The development debate is examined here

because it is the subject of a separate article and falls outside the scope of the current article. However, in order to contextualise the debate between developed and underdeveloped in the discourse of hunter-gatherers, a cost-benefit analysis of development in that context is required. On the one hand, development denotes an improvement in one's life circumstances, well-being, and opportunities. On the other hand, it becomes a tool or a medium to legitimise undesirable strategies (Edelman & Haugerud, 2007). Though, over time, the neoclassical unidimensional measure of GDP has been replaced by Sen's Happiness indexes and UNDP (United Nations Development Indexes) measures of development, which include health indicators, life expectancy, literacy, formal education, political participation, access to resources, and human rights. However, these parameters appear to be exclusive to the hunter-gatherer because they minimise their worldviews, knowledge system, customs and culture, lifestyle, and values. For example, scholars have discussed the inadequacy of development in the post-development context and tries to find the answer for widespread poverty, suffering and all-pervasive inequalities at various levels like social, health, opportunity etc. Hereby no means, it is intended to discredit the development efforts but the sole purpose of the argument is to highlight the unthoughtful formulation and execution of the developmental programme in the context of the hunter-gatherer.

4.3. Civic-colonization and cultural core- As discussed in the preceding sections, self-destructive development has shattered the hunter-gatherer lifestyle, which includes culturally specific knowledge, experience, belief systems, empirical apprehension, and worldviews. Because of bi-culturalization, cross-border exchange, and geophysical relocation, the transition in subsistence and settlement patterns brought about by civic-colonial developmental policies has resulted in changes in the socio-economic practices, demography, and social relations. It has transformed their experience and transmuted the meaning, experience, values, and belief system, resulting in various confusion, emotional and social dysfunction, and cultural drift.

4.4. Civic-colonization and social core- It is a well-established hypothesis that the transition from a nomadic to a sedentary lifestyle causes population explosion (under normal conditions), which has a negative impact on the socioeconomic core of life. For example, it causes unsustainable growth, worsening food and water scarcity, large-scale migration, and pushes vulnerable communities (e.g., hunter-gatherers) into intergenerational poverty. Which has subsequently influenced the social choices, boundaries, and dynamics in a social network. For example, population growth-induced problems such as unemployment and poverty lead to robbery, beggary, intra-community resource competition, murder, prostitution, and total collapse of the collective mode of production and social caregiving system. The population explosion has altered not only human-to-human relationships but also relationships with the environment and proximity to animals. In conclusion, civic-colonial developmental policies and politics have undermined the traditional social network and social capital of hunter-gatherer socio-cultural structure and space.

Result- The ethnographic data collected were classified into 50 categories, including Total Main Workers in the Forestry Sector in the Community (TMWoC), Population Involved in Traditional Occupation (TrO), Workers in Forest Area (WFA), Workers in Non-Agriculture Sectors (WNaS), Family Affected by Malnutrition (FAMln), People with Chronic Diseases (PwCD), etc. The scatter plot below displays the

distribution of the categories among the Nilambur Valley's selected hunter-gatherer in a cross-community comparison. Supplementary files contain complete data as well as the full form of the abbreviation.

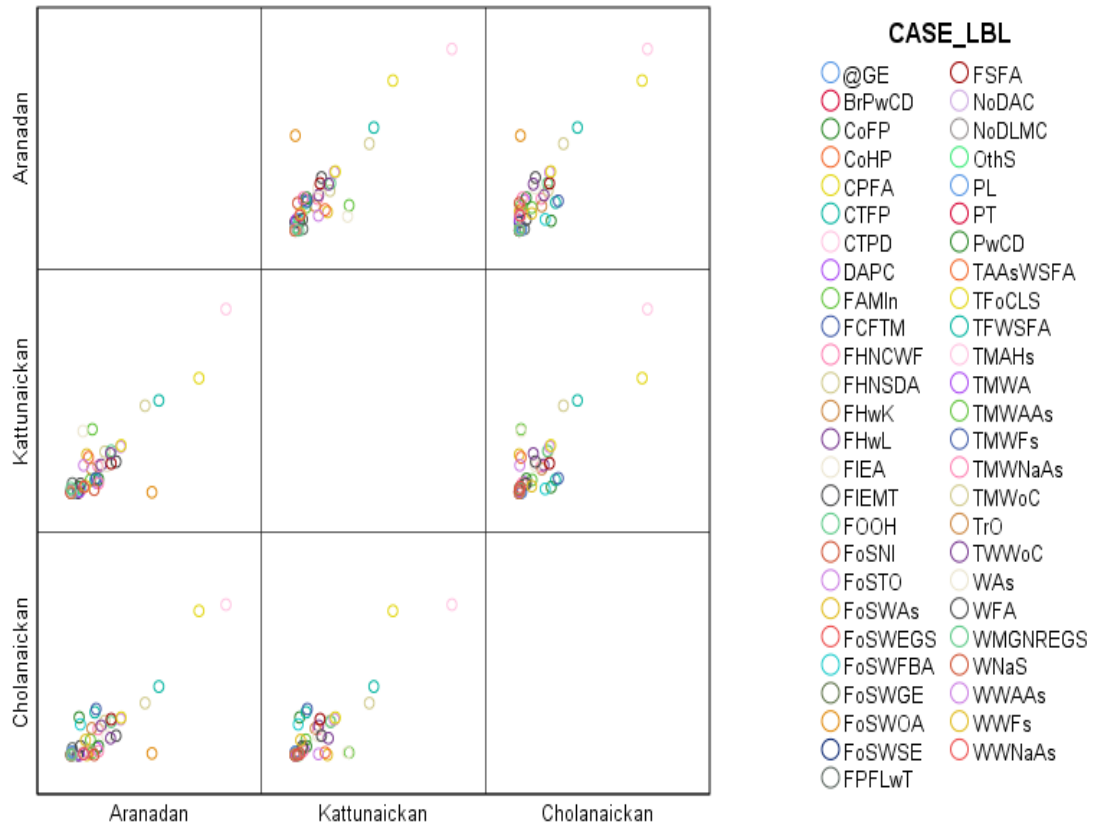


Figure 2 Scatterplot (Matrix) of Aranadan, Kattunaickan and Cholanaickan by categories.

Pearson product correlation (Table 1 and 2) of the family of community living in government provides settlement (TFoCLS) and families with malnutrition (FAMln) was found to be perfect positive and statistically significant ($r= 1, p < 0.01$). This shows that an increase in settlement practice with current food habits (i.e. limited to food provided by the PDS system) would lead to a higher case of families with malnutrition. A similar result was found between FAMln and FoSWAs ($r= 1, p < 0.01$); FAMln and FoSWEGS ($r= 1, p < 0.01$); FAMln and FoSNI ($r= 1, p < 0.01$); FAMln and FoSWGE ($r= 1, p < 0.01$) and FAMln and FoSTO ($r= 1, p < 0.01$). However, the Pearson product correlation of FAMln and families' Family collecting food by the traditional method (FCFTM) ($r= 1, p > 0.01$) was found to be very high positive but statistically not so significant. However, the Pearson product correlation between people with chronic diseases (PwCD) and various subsistence methods revealed a perfect positive and statistically significant association ($r= 1, p < 0.01$). Furthermore, a cross-community comparison of malnutrition cases (Fig.3) and chronic disease cases (Fig.4) shows that communities that have undergone the most transformation in their subsistence and settlement practices are comparably more vulnerable to these diseases. It also resulted in a food shortage for the forest tribes, as well as the loss of their culture, knowledge (medicine), and other livestock material required to continue with traditional subsistence practices and survive in the forest.

	TFoCL S	FoSWFB A	FoSWA s	FoSWS E	FoSWEG S	FoSWG E	FoSWO A	FoSNI	FoST O	FAMI n	FCFTM
TFoCLS	1										
FoSWFB A	0.986	1									
	0.105										
FoSWAs	1.000**	0.985	1								
	0.006	0.110									
FoSWSE	0.663	0.532	0.670	1							
	0.538	0.643	0.533								
FoSWEG S	1.000**	0.984	1.000**	0.672	1						
	0.008	0.112	0.002	0.531							
FoSWGE	1.000*	0.983	1.000**	0.678	1.000**	1					
	0.012	0.117	0.007	0.526	0.005						
FoSWOA	-0.299	-0.451	-0.291	0.516	-0.288	-0.280	1				
	0.807	0.702	0.812	0.655	0.814	0.819					
FoSNI	1.000**	0.984	1.000**	0.672	1.000**	1.000**	-0.287	1			
	0.008	0.113	0.002	0.531	0.000	0.005	0.814				
FoSTO	1.000**	0.986	1.000**	0.663	1.000**	1.000*	-0.299	1.000*	1		
	0.000	0.105	0.005	0.538	0.007	0.012	0.807	0.008	*		
FAMIn	1.000**	0.987	1.000**	0.661	1.000**	1.000*	-0.302	1.000*	1.000*	1	
	0.002	0.103	0.007	0.540	0.009	0.014	0.805	0.010	0.002	*	
FCFTM	0.992	.999*	0.991	0.561	0.990	0.989	-0.419	0.990	0.992	0.992	1
	0.082	0.023	0.088	0.621	0.090	0.094	0.725	0.090	0.082	0.080	

Table 1 Correlation matrix for family wise

	TMWoC	CoFP	TrO	WFA	PT	WMGNREGS	TMWNaAs	TMWA	TMAHs	WAs	TMWAAs	TAAWSFA	TFWSEA
TMWoC	1												
CoFP	0.99	1											
	0.09												
TrO	1.000**	0.99	1										
	0.001	0.092											
WFA	1.000**	0.991	1.000**	1									
	0.003	0.087	0.005										
PT	1.000**	0.99	1.000**	1.000**	1								
	0.001	0.092	0	0.005									
WMGNREGS	1.000**	0.99	1.000**	1.000**	1.000**	1							
	0.001	0.092	0	0.005	0								
TMWNaAs	.999*	0.985	1.000*	.999*	1.000*	1.000*	1						
	0.02	0.111	0.019	0.024	0.019	0.019							
TMWA	0.995	0.97	0.995	0.994	0.995	0.995	.998*	1					
	0.065	0.155	0.064	0.068	0.064	0.064	0.045						
TMAHs	1.000**	0.988	1.000**	1.000*	1.000**	1.000**	1.000*	0.996	1				
	0.009	0.1	0.008	0.012	0.008	0.008	0.011	0.056					
WAs	1.000**	0.989	1.000**	1.000**	1.000**	1.000**	1.000*	0.995	1.000**	1			
	0.002	0.093	0.001	0.006	0.001	0.001	0.018	0.063	0.007				
TMWAAs	1.000**	0.989	1.000**	1.000**	1.000**	1.000**	1.000*	0.995	1.000**	1.000**	1		
	0.004	0.094	0.002	0.007	0.002	0.002	0.017	0.061	0.005	0.001			
TAAWSFA	1.000**	0.989	1.000**	1.000**	1.000**	1.000**	1.000*	0.996	1.000**	1.000**	1.000**	1	

Table 2 Correlation matrix for population wise

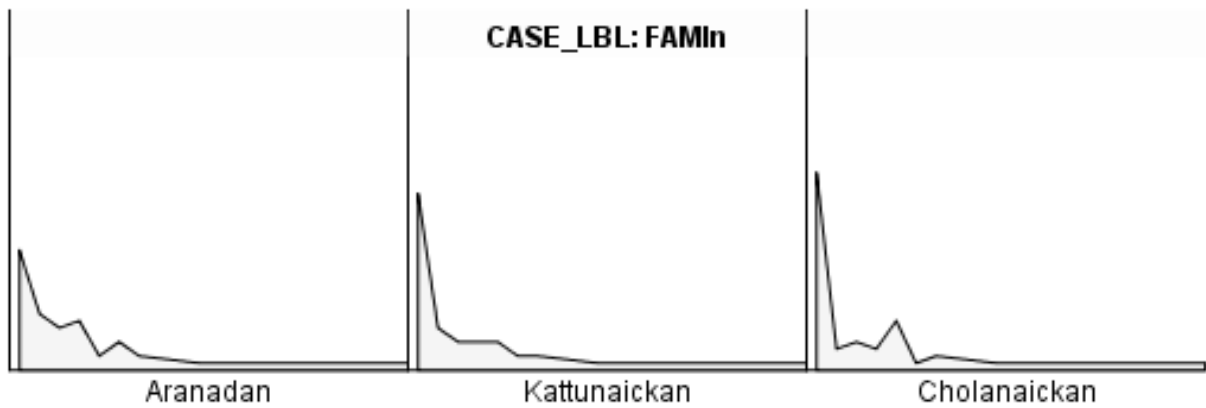


Figure 4 Families with malnutrition in different communities

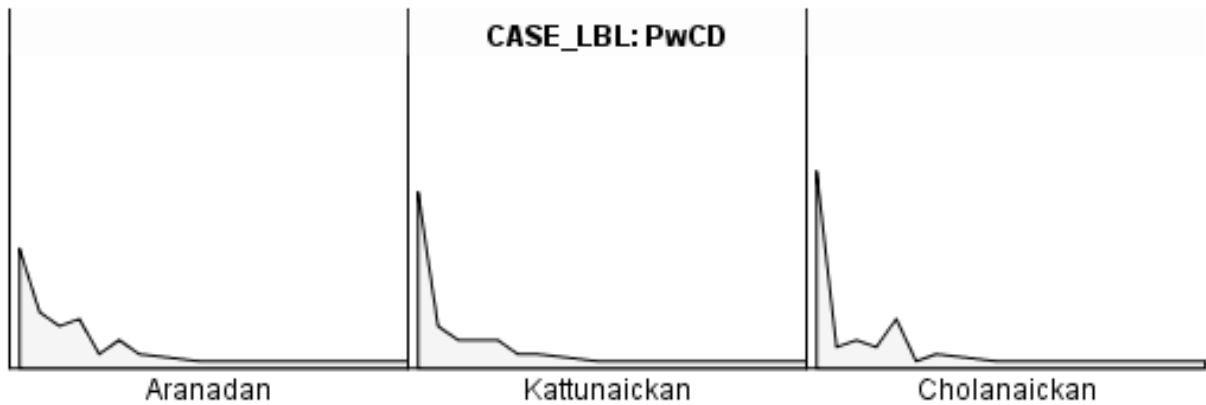


Figure 4 Families with malnutrition in different communities

Following a systematic review of the literature, the researcher identified that developmental policies such as the promotion of settlement colonies, developmental aids, food through the PDS system, and other superficial designs such as residential housing plans can have a negative impact on the health of PVTGs. Members of communities that have abruptly adopted a sedentary lifestyle are more vulnerable to chronic diseases. The table below shows how various services can (have) affected (have) the health of PVTGs. While Fig. 5 depicts the ongoing development strategy among PVTGs and its impact on PVTG health.

Types of Developmental programmes and policies	Effect of developmental policies	Domain of Health	Relationship with health	Possible victims	Risks	References for all
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Land appropriation and forest regulations	Forced to change subsistence strategy and food habit Increased competition over resources leads to inter and intra-community violence	Physical , mental and social	It causes nutritional imbalance-led diseases, chronic diseases and rapidly acquiring lifestyle diseases like obesity, cardiovascular diseases etc.	Infant, young, adults, pregnant women etc.	High mortality, malnutrition , mental morbidity, premature birth, low birth weight, immature growth, anaemia, the problem of social cohesion etc.
Promotion of settlement colonies	Expose people to diseases originating from poor waste management and contaminated water Change the relationship with the environment and proximity with animals	Physical , mental and social	It changes the social dynamics and increases the risk of infectious and zoonotic diseases. Examples are microbial contamination from poor waste management , contaminated food, water, utensils, person to person etc.	All population	Chronic infractions, gastrointestinal infections, renal diseases, skin diseases, respiratory diseases, illnesses caused by identity deficit because of renegotiation with land and environment , mental health, suicides etc. (Willis, Jackson,

Develop- mental Aids	Promotes indirect dependency on government aid which in turn leads to stopping traditional practices and causing health problems.	Physical and mental	It leads to a change in settlement patterns and subsistence strategy. For example, the Public distribution system led to a change in diet and created a health problem. All kinds of health problems discussed in the first two sections are common for this category.	Though all populations are vulnerable but mostly adult males are the prime victims.	Apart from the risk listed in the above two-section diseases led by addictions like alcoholism and other addiction are widespread, and depression and anxiety are also common because of the absence of work and motivation after stopping the traditional occupation	Nettleton, Good, & Mugarura, 2006) (Kunitz, 1996) (Stephens, Porter, Nettleton, & Willis, 2006) (King, Smith, & Gracey, 2009) (Gracey & King, 2009) (Page, Minter, & Migliano, 2018) (Orman, 1971) (Armelagos, Brown, & Turner,
Politics of nomenclatur e and social categorizatio n	This resulted in cultural alienation, identity deficit, loss of language, knowledge etc.	Physical , mental, emotion al and social	It creates self-doubt, racism, marginalizati on, inferior self-imaging, the victim of blaming ideology etc.	All population	depression, anxiety, Illnesses caused by identity deficit, mental health, suicide, the problem of social cohesion,	Evolutiona ry, historical and political economic perspective s on health and disease, 61)

violence etc.

Unthought plans like residential schools Disruption of families and communities carries over physical and social abuse, loss of culture, language and knowledge system

Physical , mental, emotional and social alienation, identity crisis, violence, abuses etc.

It resulted in a health problem caused by cultural alienation, identity crisis, violence, abuses etc.

Mostly young population

PTSD, depression, anxiety, mental health, suicide, addiction etc.

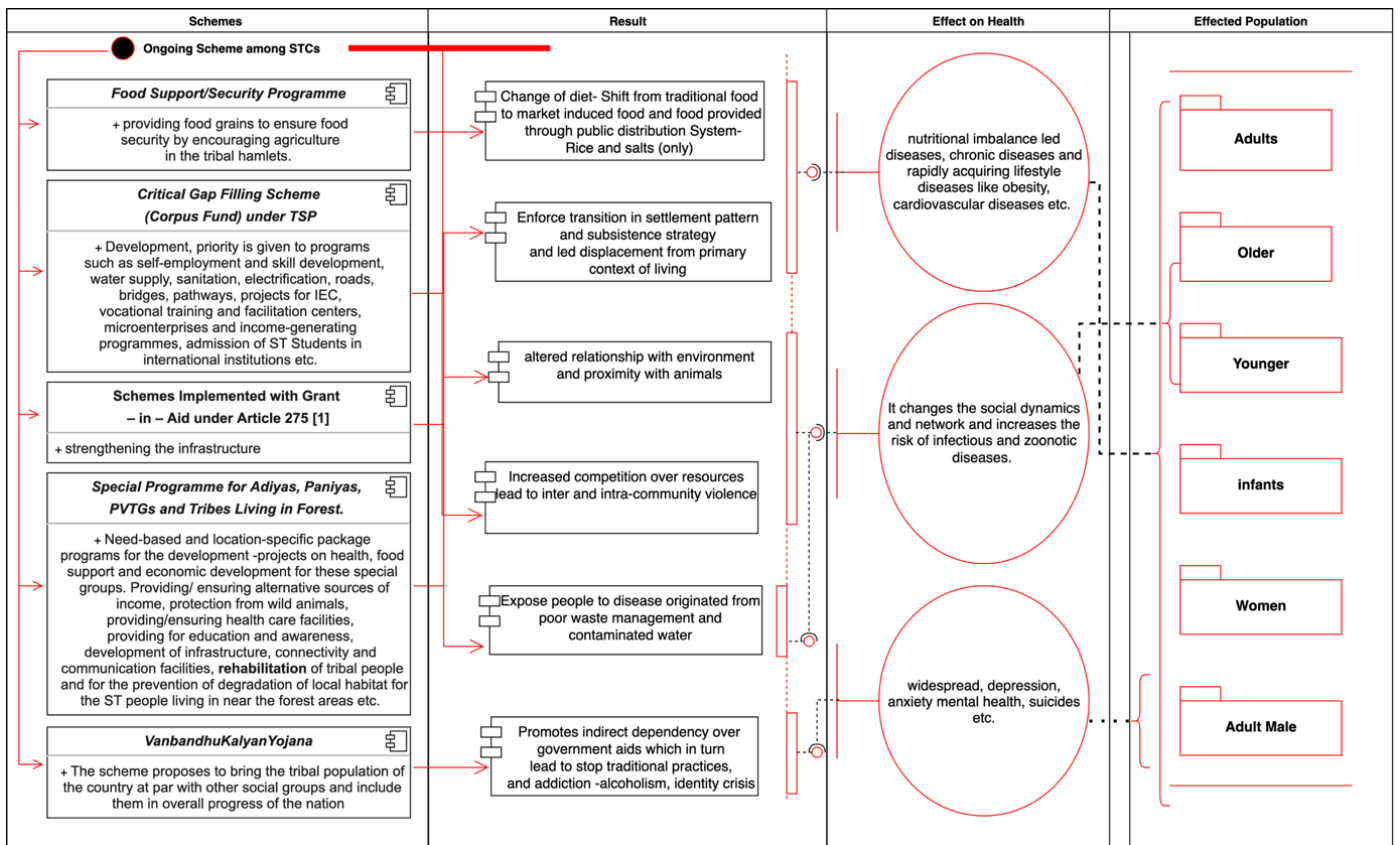


Figure 5 Ongoing development programmes of Kerala and their effect on the health of PVTGs

5. Discussion and Conclusion- The argument presented here demonstrates how the local government in power has extended the colonial experience by administering civic-colonial policies and politics while using the colonial approach as a future political roadmap. It has not only reinstated hunter-gatherers'

social, economic, and political marginalisation but has also harmed their health. The widespread health disparity between the benchmark population and the hunter-gatherer population must be bridged. Underlying factors such as violent land appropriation, displacement, forced settlement, discrimination, and cultural stereotyping must be addressed.

According to statistics, development initiatives and policies not only expose hunter-gatherers to a variety of new circumstances that increase their susceptibility to disease and illness, but they also have the potential to directly cause significant illnesses and diseases. In a nutshell, the enforced implementation of the politico-economic model for development not only removes hunter-gatherers' self-sufficiency on their own territory and converts them into productive labour for industries, but it also silently replaces their socio-cultural practices through cultural imperialistic approaches.

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