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Tribal Agriculture and Local Government Spending in Three Grama Panchayats of Idukki District, Kerala

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Abstract

This study examines cropping patterns, constraints reported by tribal farming households, and the utilisation of Tribal Sub-Plan (TSP) funds for agricultural development in three grama panchayats of Idukki district, Kerala. Structured interviews with 320 households selected through stratified random sampling were analysed alongside panchayat expenditure records for 2012–2022. Coffee and pepper were the most widely grown crops, while few households cultivated rice, arrowroot or wild ginger. The principal constraint differed across panchayats. In Adimaly, 76.2% of households reported inadequate government support. In Velliyamattam, 77.6% cited inadequate marketing facilities, while in Arakulam, 75.0% identified inadequate transport. All three panchayats recorded lower mean annual TSP utilisation in the production sector than in services. Production-sector utilisation averaged 25.67% in Adimaly, 51.37% in Arakulam and 69.56% in Velliyamattam, with a statistically significant overall difference across panchayats. Velliyamattam's comparatively high utilisation alongside widespread marketing difficulties illustrates why expenditure reviews should incorporate farmers' assessments of project priorities. The findings also provide a starting point for identifying, with growers, the traditional crop varieties they wish to sustain.

Keywords: tribal agriculture, Tribal Sub-Plan, fund utilisation, decentralised planning, grama panchayats, Idukki district, Kerala

1. Introduction

Tribes are groups of people living in primitive conditions away from the mainstream population. They live in remote forest regions, absolutely illiterate, impoverished, typically dark and fragile, entirely living inside their community, occupied with hunting and looking for stems, plants, and fruits for vegetarian food and grilled meats for non-vegetarian food, utterly unaware of the country's political and economic status (Majumdar, 1950). They are commonly designated as ethnic minority groups, savages, barbarians, slaves, original people, indigenous people, Adivasis, Divas, and Scheduled Tribes. They live in a common territory, speak a distinctive language or dialect and possess a unique culture. Their socio-cultural distinctiveness makes them attractive to populations (Vidyarthi and Rai, 1977). According to the Dictionary of Anthropology, a tribe is a "social group, typically with a definite area, dialect, cultural homogeneity, and unifying social organisation. It could have several sub-groups, such as sibs or villages. It may or may not have a common ancestor and may or may not have presiding deities". According to Indian Anthropologist S. C. Dubey (1960) tribes are "isolation groups keep away from the mainstream

society and they lack historical depth (resulting in the early merging of history into mythology) and overall tradition orientation. Distinct cultural character of tribes gave them a separate cultural identity and they often possess some latent or manifest value attitude and motivational systems which are remarkably different from those of the other people".

Kerala is home to a diverse number of tribal communities spread throughout the Western Ghats' hills and valleys. The majority of these communities live in clusters and are culturally, politically, socially, and educationally backward. The tribes face a variety of issues that will have an effect on their economic well-being. These communities experience fundamental issues such as unemployment, poor income, and poverty. As most tribes reside within or near the forest, their primary source of income is the collecting of forest products and cultivation of their land. In the past, they used shifting agriculture, which involved the periodic relocation of farmland. This practise has ceased as a result of the modification of social and institutional conditions. Therefore, they now reside in designated zones and engage in settled agriculture. Throughout the time, a number of new developments entered their agrarian system, resulting in a fast alteration of both their agrarian economy and their whole way of life. Integration with the outside world and the demonstration effect have altered their traditional method of subsistence farming.

2. Relevance of the study

Kerala's achievements in the social sector, particularly in health and education, are widely associated with the "Kerala Model of Development." Yet the benefits of this progress have reached tribal communities unevenly. Agriculture and forest resources remain important sources of livelihood for many tribal households in Idukki. Changing climatic conditions and crop damage caused by wild animals make cultivation uncertain. Where the commercial exploitation of forest resources contributes to soil erosion and declining soil fertility, farmers face the additional challenge of sustaining productivity while conserving the land on which they depend. Such pressures can increase reliance on wage work, including migrant labour, and heighten vulnerability to exploitative arrangements such as bonded labour.

Although many tribal households own cultivable land, the crops they can sustain depend on both local growing conditions and access to agricultural support. Idukki's high ranges are suited to the cultivation of cardamom, pepper and tea, while rubber, cocoa and coffee also feature in the district's agricultural economy. The prominence of commercial crops raises concerns about the continued cultivation of traditional crops such as ragi, lemongrass, wild ginger and arrowroot. The limited cultivation of wild ginger and arrowroot among the surveyed households gives particular relevance to the question of what enables farmers to retain these crops.

These concerns call for an assessment of the adequacy of government support for tribal agriculture and the scope for governmental and non-governmental organisations to assist farmers in conserving traditional varieties and farming practices. Grama panchayats are particularly relevant because their decisions influence irrigation, the distribution of planting material and the use of Tribal Sub-Plan funds. Examining these decisions alongside the experiences of farmers in Adimaly, Velliyamattam and Arakulam can help identify where agricultural assistance falls short and how local institutions can support the crops and practices that tribal households wish to sustain.

3. Objectives of the study

The objectives of the study are:

1. To understand the current status of tribal agriculture in the selected panchayats.

2. To investigate about the various problems encountered by tribal farmers in the study area.
3. To examine the utilisation of Tribal Sub-Plan funds for agricultural development across the selected grama panchayats.

4. Research Methodology

The study used both primary and secondary data. Secondary data were collected from articles, books, journals, magazines, reports of the Kerala State Planning Board, project reports of government agencies at the local, district, and state levels, panchayat expenditure reports, and research studies on tribal communities. Primary data were collected from selected tribal households using a structured interview schedule.

A multistage sampling technique was adopted to select the sample households. In the first stage, Idukki district was selected because it has the second-highest proportion of tribal population in Kerala. In the second stage, three Grama Panchayats—Adimaly, Velliyamattam, and Arakulam—were selected based on their high proportion of tribal population and the presence of major indigenous tribal groups. In the final stage, stratified random sampling was used to select households from the different tribal groups.

Household data were analysed using simple percentages, while expenditure on agriculture and allied sectors was analysed using descriptive statistics and one-way ANOVA.

5. Findings of the study

The study conducted in the sample panchayats have analysed the current status of agriculture, issues faced by tribal households and steps taken by the local self-government bodies for the agricultural development. The following are the findings of the study.

5.1 Land owned by tribal households

Table 1

Land owned by tribal households

Area	Adimaly		Velliyamattam		Arakulam		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
10-25 cents	3	2	16	12.8	1	2.1	20	6.25
26-50 Cents	15	10.2	14	11.2	5	10.4	34	10.6
51-100 Cents	32	21.8	51	40.8	9	18.8	92	28.8
1-1.5 Acre	39	26.5	32	25.6	13	27.1	84	26.3
1.51-2 Acre	27	18.4	11	8.8	8	16.7	46	14.4
More than 2 Acre	31	21.1	1	0.8	12	25	44	13.8
TOTAL	**147**	100	**125**	100	**48**	100	**320**	100

Source: Field survey

The study reveals that the 28.8 percent of the tribal households own 51-100 Cents of land for cultivation. Another 26.3 percent of the respondents have 1-1.5 Acres of land, 14.4 percent have 1.51-2 Acres of land, and 13.8 percent of them have more than 2 acres of land. Only 6.25 percent of the tribal respondents have less than 25 cents of land. Thus, the study found that tribal households have sufficient land for cultivation as far as the topography and density of tribal population are concerned.

5.2 Crops cultivated by tribal farmers

Table 2

Crops cultivated by tribal farmers

Item	Adimaly		Velliyamattam		Arakulam		Total Respondents	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Rubber	32	21.8	42	33.6	26	54.2	100	31.3
Pepper	84	57.1	28	22.4	12	25.0	124	38.8
Coffee	92	62.6	38	30.4	15	31.3	145	45.3
Cocoa	35	23.8	52	41.6	4	8.3	91	28.4
Cardamom	72	49.0	0	0	9	18.8	81	25.3
Nutmeg	23	15.6	24	19.2	5	10.4	52	16.3
Tapioca	10	6.8	7	5.6	12	25.0	29	9.1
Banana	14	9.5	12	9.6	6	12.5	32	10.0
Coconut	14	9.5	7	5.6	19	39.6	40	12.5
Areca nut	18	12.2	2	1.6	3	6.3	23	7.2
Vegetables	14	9.5	2	1.6	5	10.4	21	6.6
Rice	1	0.7	0	0	0	0.0	1	0.3
Arrowroot	10	6.8	0	0	0	0.0	10	3.1
Wild Ginger	10	6.8	0	0	3	6.3	13	4.1

Source: Field survey

The study found that the majority, 45 percent of the tribal households cultivate coffee, 38.8 percent of the respondents cultivate pepper, 31.3 percent of them cultivate rubber, 28.4 percent of them cultivate cocoa, and 25.3 percent cultivate cardamom in their land. The rubber is cultivated on large scale in Arakulam Grama Panchayat (54.2 percent), followed by Velliyamattam (33.6 percent) and Adimaly (32 percent). It is understood from the study that pepper is widely grown by majority of the tribal households in Adimaly Panchayat (57.1 percent) followed by Arakulam Grama Panchayat (25 percent), and Velliyamattam Grama Panchayat (22.4 percent). Coffee is widely cultivated in Adimaly Grama Panchayat, followed by Arakulam (31.3 percent) and Velliyamattam (30.4 percent). The Velliyamattam Grama Panchayat is leading in the cultivation of Cocoa (41.6 percent), followed by Adimaly (23.8 percent), and Arakulam (8.3 percent). The production of traditional crop varieties appears to be negligible in tribal areas.

5.4 Problems Faced by Tribal farmers

Table 4

Problems Faced by Tribal farmers

Problems	Adimaly		Velliyamattam		Arakulam	
	Frequency	%	Frequency	%	Frequency	%
Change in climatic conditions	**88**	**59.9**	**45**	**36.0**	**7**	**14.6**
Increased cost of cultivation	**47**	**32.0**	**36**	**28.8**	**28**	**58.3**
Lack of transport facility	**81**	**55.1**	**12**	**9.6**	**36**	**75.0**
Lack of marketing facility	**32**	**21.8**	**97**	**77.6**	**18**	**37.5**
Wild animal attacks	**62**	**42.2**	**33**	**26.4**	**22**	**45.8**

Insufficient subsidies	**54**	**36.7**	**12**	**9.6**	**7**	**14.6**
Lack of irrigation facility	**12**	**8.2**	**23**	**18.4**	**16**	**33.3**
Poor treatment of tribal farmers	**111**	**75.5**	**38**	**30.4**	**14**	**29.2**
Unequal distribution of agricultural services	**102**	**69.4**	**47**	**37.6**	**21**	**43.8**
Lack of government supports	**112**	**76.2**	**63**	**50.4**	**23**	**47.9**

Source: Field survey

The study has identified several problems faced by tribal farmers in their settlement. The farmers in each Panchayat face different problems in accordance with easiness in the production and marketing; and also the working of the agricultural support systems. In Adimaly Grama Panchayat, the 76.2 percent of the tribes responded about the lack of government support towards agriculture. Similarly, 75.5 percent of them also replied about the poor treatment of tribal farmers in various situations. The unequal distribution of agricultural services like, distribution of seeds, tools, fertilizers tec., is another issue which is to be addressed properly. Lack of transportation facility seems to be a hurdle in front of the tribes. 55. 61 percent of the tribes in Adimaly Grama panchayat and 75 percent of the tribes in Arakulam Grama Panchayat are affected by lack of transportation facility in their settlement. Another issue is lack of marketing facility for the agricultural produce. Since they are living away from the mainstream population in remote areas, they don't get enough opportunity to market their products efficiently. 77.6 percent of the tribes in the Velliyamattam Grama panchayat, 21.8 percent of the tribes in Adimaly Grama Panchayat, and 37.5 percent of the tribes in Arakulam Grama Panchayat face this issue.

5.5 Tribal Sub Plan Fund of the Panchayat and the Agriculture Sector

The Tribal Sub Plan Fund (TSP) of the Grama Panchayat is exclusively allotted for the development of tribes and their settlements. The amount earmarked for this purpose is allocated and utilized under three sectors: Production Sector, Service Sector, and Infrastructure Sector. The fund allocated under production sector is used for the development of agriculture and allied activities in the tribal settlements. Tribes in the district have sufficient land to cultivate, and the land use pattern reveals they are following a mixed farming practice, cultivating three or more crops at a time. Their unique traditional crop varieties and agricultural practises have now been replaced by the rise of cash crops and new agricultural methods. The selected panchayats in the district, therefore, give importance to developing tribal agriculture by initiating numerous steps such as: improving irrigation facilities; supplying electric motor pumps; subsidised fertilizer; seedlings of major cash crops; and distributing vegetable seedlings for developing kitchen gardens in the settlement. Along with this, the panchayats have been promoting dairy farming by distributing calves, goats and cattle feed at a subsidised rate to the tribes. Despite doing all this, there are still problems in the agriculture sector of the tribal economy.

The major initiatives in this service sector include improving living conditions and improving health and education services for the tribes. A significant portion of the TSP fund is allocated to the construction of houses, toilets, electrification and the provision of drinking water in the settlement. Infrastructure Sector demands the highest fund allocation among the different sectors. Since the tribal hamlets are backward in terms of infrastructural developments, a substantial share of the TSP fund has to be spent in those areas

for the construction and maintenance of public roads, check dams, public water tanks, community halls, public toilets, drainage, educational institutions, and health centres.

5.6 Utilization of TSP fund across sectors during 2012-2022

The year-wise analysis of the utilisation of TSP funds by the panchayats is not sufficient to fully understand the competence of the local self-government bodies in the fuller utilisation of allotted resources. The timely utilisation of TSP funds in these sectors is mandatory and the panchayats should comply with the guidelines issued by the government regarding the usage over time. The funds allocated under TSP are non-lapsable and cannot be underutilised in any case, and therefore, special attention should be given to ensure their timely usage. This necessitates the relevance of having a detailed investigation into whether the selected panchayats comply with the norms of the government in the timely usage of funds. Moreover, the comparative study will throw light on the sectors where maximum funds are utilised and also identify the panchayats that upkeep with proper utilisation of funds. The following table exhibit the discrete statistics through which the average utilization of funds by each panchayat in the three sectors are evaluated over a period of ten years.

Table 5
Sector-wise Analysis of TSP Fund of the Panchayats

Panchayat	Sector	N	Minimum	Mean	Std. Deviation	Maximum
Adimaly	Infrastructure sector	10	0.000	67.927	35.451	99.947
	Production Sector	10	0.000	25.673	26.116	69.221
	Service Sector	10	70.665	87.460	12.277	98.712
Arakulam	Infrastructure sector	10	41.178	74.099	22.100	99.640
	Production Sector	10	12.377	51.369	30.432	98.760
	Service Sector	10	74.073	81.299	5.933	92.884
Velliyamattam	Infrastructure sector	10	29.979	62.913	20.178	94.326
	Production Sector	10	0.000	69.557	29.825	96.009
	Service Sector	10	70.869	83.026	8.503	99.689

Descriptive Statistics

The data reveals that the Adimaly panchayat is having an average utilization of 67.92 percent in the infrastructure sector over a period of ten years from 2012-2022 with a standard deviation of 35.35. The minimum utilization is zero percentage and maximum utilization under this head is 99.44 percent. The fund utilization rate is higher in the service sector which amounts to 87.46 percent with a standard

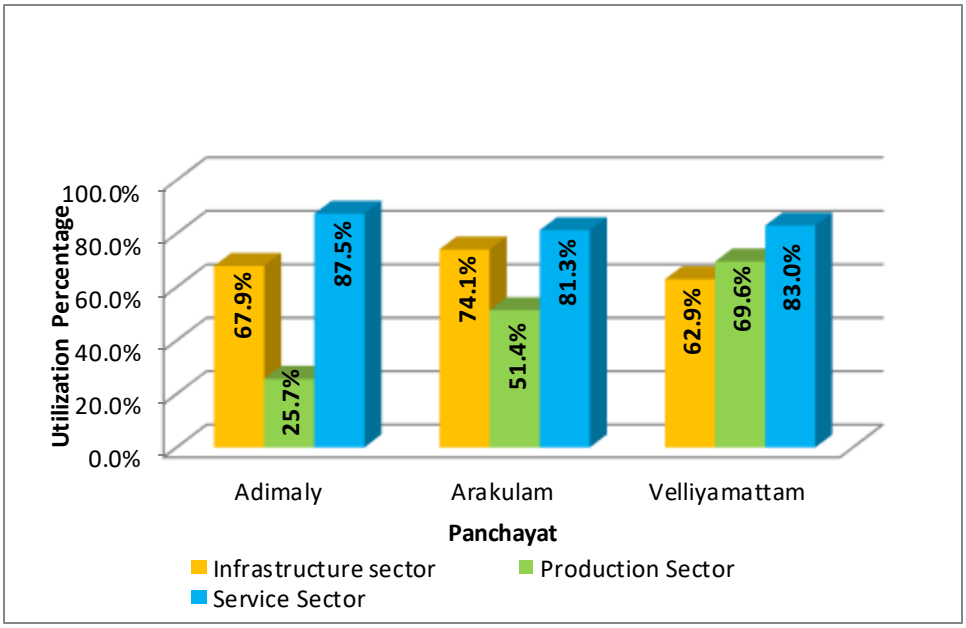
deviation of 12.27. Under this sector, the minimum utilization is 70. 66 percent and maximum utilization is 98.71 percent. This is the only sector in Adimaly Grama Panchayat where a positive minimum fund is utilized over the years. The utilization very low in the production sector because of the non-allocation and non-utilization of funds to this sector. The utilization rate is 25.63 percent with a standard deviation of 26.11 and maximum utilization is found at 69.22 percent over the years.

With regard to Arakulam Grama Panchayat, the service sector dominates in the utilization of funds keeping an average utilization rate of 81.29 percent with a standard deviation of 5.93. The lowest utilization rate is happened to observed in the production sector amounting to 51.36 percent with a standard deviation of 30.43. The infrastructure sector in the panchayat is marked with an average utilization of 74.09 percent with a standard deviation of 22.10.

The average fund utilization of the Velliyamattam Grama Panchayat shows that the service sector is identified as the leading sector holding 83.02 percent with a standard deviation of 8.50. The fund utilization rate is very low for the infrastructure sector amounting to 62.91 percent with a standard deviation of 20.17. Under production sector, the fund utilization rate is 69.55 percent with a standard deviation 29.85. The minimum average utilization rate is zero percent and maximum utilization is observed as 96 percent.

After making a comparative analysis of the fund utilization by the panchayats across the sectors, it is found that the fund utilization is maximum in the service sector, followed by infrastructure sector and the production sector. Since the health, nutrition, housing, sanitation, drinking water etc. comes under the service sector, the increased demand and human pressure force the panchayats to ensure their timely utilization. The fund utilization in the production sector is low due to the lack of proper agricultural planning, non-allocation of funds and the failure of the local bodies to spent the allotted amount in time.

Figure 1
Sector-wise utilization of TSP Fund of the Panchayats



5.7 Difference in the Utilization of TSP Fund Across Sectors by the Panchayats

An attempt is also made to test whether there is a significant difference exists in the utilization of TSP

fund between the three sectors namely, namely Infrastructure Sector, Production Sector, and Service Sector in each panchayat over the years. For this purpose, the following hypotheses are formulated:

H_0: There is no significant difference in the utilization of TSP funds between sectors in each panchayat.

H_1: There is a significant difference in the utilization of TSP funds between sectors in each panchayat.

The one-way analysis of variance (ANOVA) is used here to examine the differences in the TSP fund utilization across sectors by each panchayat. Statistically, the significant difference in the use of TSP fund across sectors is estimated by computing the F value and p value. If the p value is less than 0.05, it means that there is a significant difference and if p value is more than 0.05, then there is no significant difference in the use of funds between sectors by the panchayats. Thus, the decision rule of the test is reject H_0 if the p-value is less than 0.05.

Table 6
Difference in the Utilization of TSP Fund Across Sectors by the Panchayats

Panchayat	Sectors	Mean	Std. Deviation	Std. Error	F value	p value
Adimaly	Production Sector	25.673	26.116	8.259	14.321*	<0.001
	Service Sector	87.46	12.277	3.882		
	Infrastructure Sector	67.927	35.451	11.21		
Arakulam	Production Sector	51.369	30.432	9.623	5.05*	0.014
	Service Sector	81.299	5.933	1.876		
	Infrastructure Sector	74.099	22.1	6.989		
Velliyamattam	Production Sector	69.557	29.825	9.432	2.301	0.119
	Service Sector	83.026	8.503	2.689		
	Infrastructure Sector	62.913	20.178	6.381		

One-way ANOVA, *Significant at 0.05 level

The above table 4.10 depicts that in Adimaly Grama Panchayat, the mean fund utilisation percentage in the production sector is 25.67 percent with a standard deviation of 26.11. Likewise, the average fund utilisation in the service sector is 87.46 percent with a standard deviation of 12.27 and the mean fund utilisation in the infrastructure sector is 67.92 percent with a standard deviation of 35.45. The calculated F value is 14.321 with a p value equals to 0.001 which is less than 0.05. So, there is a significant difference in the average utilization of funds between sectors in Adimaly panchayat.

The production sector in the Arakulam Grama Panchayat has a mean fund utilization of 51.36 percent with a standard deviation of 30.43 Similarly, in the services sector, the mean utilization of fund is 81.29 percent with a standard deviation of 5.93, and the mean utilization of infrastructure fund over the years is 74.09 percent with a standard deviation of 22.1. The calculated F value is 5.05 with a p value 0.014 which is less than 0.05. So, there is a significant difference in the average utilization of funds between sectors in Arakulam Grama Panchayat.

In Velliyamattam Grama Panchayat, the mean fund utilisation percentage in the production sector is 69.55 percent with a standard deviation of 29.825. Also, the average fund utilisation in the service sector is 83.02 percent with a standard deviation of 8.503 and the mean fund utilisation in 1 percent with a standard deviation of 20.178. The calculated F value is 2.301 with a p value 0.119 which is more than 0.05. Thus

it is clear that there is no significant difference in the average utilization of funds between sectors in Velliyamattam Grama Panchayat.

It is concluded form the analysis that there is a significant difference in the average utilization of funds between sectors in Adimaly and Arakulam Grama Panchayat. However, there is no significant difference in the average utilization of funds between sectors in Velliyamattam Grama Panchayat.

5.8 Difference in the Utilization of TSP fund in the Production Sector between panchayats

An analysis of the Utilization of TSP fund in the Production Sector is made to examine whether there is a significant difference exists in the utilization of TSP fund in the production sector between the panchayats during the year 2012-2022. The following hypotheses are formulated in this regard:

H_0: There is no significant difference in the utilization of TSP fund in the production sector between panchayats.

H_1: There is a significant difference in the utilization of TSP fund in the production sector between panchayats.

The one-way analysis of variance (ANOVA) is used here to examine the differences between panchayats. Statistically, the variations in fund utilization is estimated by computing the F value and p value. If the p value is less than 0.05, there is a significant difference and if p value is more than 0.05, then there is no significant difference in the use of funds between panchayats in the utilization of TSP funds in the production sector. Thus, the decision rule of the test is reject H_0 if the p-value is less than 0.05.

Table 7

Difference in the Utilization of TSP fund in the Production Sector between panchayats

Panchayat	Mean	Std. Deviation	Std. Error	F value	p value
Velliyamattam	69.557	29.825	9.432	5.839*	0.008
Adimaly	25.673	26.116	8.259		
Arakulam	51.369	30.432	9.623		

one way ANOVA, *Significant at 0.05 level

The analysis of the utilization of TSP fund in the production sector by each panchayats shows the fact that none of the panchayats have fully utilized the allotted fund during the period from 2012-2022. The mean average utilization of Velliyamattam Grama Panchayat is 69.55 percent with a standard deviation of 29.825. The Adimaly Grama Panchayat has an average fund utilization of 25.67 percent with a standard deviation of 26.116. And the Arakulam Grama Panchayat has an average utilization of 51.36 percent with a standard deviation of 30.432 over the years. The calculated F value is 5.839 with a p value of 0.008, which is less than 0.05. Therefore, H_0 is rejected and there is a significant difference between the panchayats in terms of the mean average utilization of TSP fund in the production sector during the year 2012-2022.

5.9 Difference in the Utilization of TSP Fund Between Projects in each Panchayat

Here also an attempt is made to test whether there is a significant difference exist between the various projects in each panchayat in terms of fund utilisation over the years. For this purpose, the following hypotheses are formulated:

H_0: There is no significant difference in the utilization of TSP funds across various projects in each panchayat.
H_1: There is a significant difference in the utilization of TSP funds across various projects in each panchayat.
To test the above hypotheses, one-way analysis of variance (ANOVA) test is used. This test is conducted to analyse the variations in the use of TSP fund in various projects like agriculture, Provision of Livestock and allied services, Education, Health Care Services, Nutritious Food, House Construction, Drinking Water Project, and Road concrete and maintenance of each panchayat by measuring F value and p value. The decision rule of the test is that reject H_0 if the p-value is less than 0.05

Table 8
Difference in the Utilization of TSP Fund Between Projects in each Panchayat

Panchayat	Projects	Mean	Std. Deviation	Std. Error	F value	p value
Adimaly	Agriculture	15.039	31.811	10.060	5.098*	<0.001
	Provision of Livestock and allied services	27.578	27.444	8.678		
	Education	64.982	41.595	13.153		
	Health Care Services	50.000	52.705	16.667		
	Nutritious Food	99.918	0.259	0.082		
	House Construction	66.263	46.860	14.818		
	Drinking Water Project	74.741	42.647	13.486		
	Road concrete and maintenance	69.042	34.171	10.806		
Arakulam	Agriculture	46.949	31.504	9.962	6.175*	<0.001
	Provision of Livestock and allied services	42.941	42.088	13.309		
	Education	82.959	11.729	3.709		
	Health Care Services	91.530	9.124	2.885		
	Nutritious Food	19.713	41.560	13.142		

	House Construction	81.796	16.161	5.111		
	Drinking Water Project	57.112	49.513	15.657		
	Road concrete and maintenance	74.935	21.945	6.940		
Velliyamattam	Agriculture	64.557	45.787	14.479	5.282*	<0.001
	Provision of Livestock and allied services	66.693	32.220	10.189		
	Education	80.809	14.058	4.446		
	Health Care Services	94.789	12.948	4.095		
	Nutritious Food	63.623	48.113	15.215		
	House Construction	87.782	16.501	5.218		
	Drinking Water Project	18.833	39.799	12.586		
	Road concrete and maintenance	64.365	20.275	6.411		

One-way ANOVA, *Significant at 0.05 level

The above table shows the differences in the use of TSP fund in various projects by the panchayats during 2012-2022. The variations in fund utilization among projects is determined by measuring the p value significant at 0.05 level. For Adimaly Grama Panchayat, the F value is 5.098 with p value is equal to <0.001. Since p value is less than 0.05, H_0 is rejected and there is significant difference exist in the use of TSP funds in various projects of the panchayat.

Similar variation in the use of funds is seen in the case of Arakulam Grama Panchayat for which the F value is 6.175 and p value is <0.001. Since the p value is less than 0.05, H_0 is rejected and found that there is a significant difference in the use of TSP funds in various projects of the panchayat. When it comes to Velliyamattam Grama Panchayat, the calculated F value is 5.282 and p value is <0.001. Here also H_0 is rejected and conclude that there is a significant difference in the use of TSP funds across projects of the panchayat.

Finally, it can be stated that the selected panchayats fail to fully utilise the funds allotted for the projects. There have been significant variations in the utilisation of funds across projects by each panchayat during 2012–2022.

6. Discussion

In the three grama panchayats studied, the utilisation of funds earmarked for agriculture under the Tribal Sub-Plan (TSP) and the difficulties reported by farming households illuminate different aspects of local government support. Over 2012–2022, mean annual utilisation was higher in services than in production

in all three panchayats. The difference was particularly pronounced in Adimaly, where utilisation averaged 87.46% in services and 25.67% in production. Within the production sector, utilisation for agriculture projects averaged just 15.04%. The records establish the size of this gap, although they do not explain why it arose.

In Adimaly, the fiscal evidence takes on particular significance alongside farmers' accounts. Of the 147 households interviewed, 112 (76.2%) reported inadequate government support and 102 (69.4%) reported unequal access to agricultural services. Taken together, these findings raise two questions for planning: how much of the approved agricultural programme was implemented, and which settlements received the inputs provided? Comparing the timing and location of seedling, fertiliser and equipment distribution with farmers' accounts could help the panchayat distinguish delays in delivery from disparities in access.

Velliyamattam and Arakulam illustrate why an agricultural project can be implemented while a major constraint on farming persists. Velliyamattam recorded the highest mean utilisation for agriculture projects (64.56%), yet 97 of 125 households (77.6%) reported inadequate marketing facilities. Only 12 households there identified transport as a difficulty. In Arakulam, by contrast, 36 of 48 households (75.0%) reported inadequate transport. The distinction matters for project design. Discussions with growers in Velliyamattam could establish where they sell their produce and how many buyers they can reach. In Arakulam, identifying the routes on which farmers struggle to move produce would give agricultural and infrastructure planners a common basis for selecting projects.

The crop profile also clarifies what panchayats would need to know before designing conservation measures. Coffee and pepper were widely grown, while only one of the 320 households reported cultivating rice, ten reported arrowroot and thirteen reported wild ginger. These counts describe cultivation at the time of the survey. Establishing whether commercial crops displaced particular local varieties would require information on varieties and cultivated area over time. In Wayanad, Rasheed et al. (2021) found that household consumption and cultural preferences helped explain why farmers continued to grow traditional paddy varieties. Asking Idukki growers which varieties they wish to retain and how they obtain planting material would give conservation proposals a locally grounded starting point.

The household and expenditure evidence applies to three purposively selected panchayats. Annual utilisation rates indicate the proportion of funds spent, but reveal little about the amount reaching individual settlements or the benefits growers received. For local planning, a practical extension would be to review each agricultural project against a question that farmers can answer directly: whether inputs arrived in time for planting, whether produce reached a buyer, or whether planting material remained available for the next season.

7. Conclusion

Across the three grama panchayats studied in Idukki, mean annual utilisation of Tribal Sub-Plan funds during 2012–2022 was lower in production than in services. The implications for agriculture differed by locality. In Adimaly, low utilisation of agricultural project funds coincided with widespread reports of unequal access to assistance. Velliyamattam recorded the highest utilisation for agricultural projects among the three panchayats, yet growers most often identified marketing facilities as inadequate. In Arakulam, transport was the most frequently reported constraint. These findings support reviewing expenditure with farmers to identify which settlements receive inputs in time for planting and where growers face difficulties selling their produce.

Conserving traditional crops requires a further distinction. Few surveyed households grew rice, arrowroot or wild ginger, but a single survey cannot establish whether cultivation has declined. Panchayats could work with tribal farmers to identify the varieties they wish to retain, document how planting material is obtained and track cultivation over successive seasons. This would give growers a direct role in setting conservation priorities and provide panchayats with a way to assess progress.

References

1. Dube, S.C. 1960. "Approaches to Tribal Problems." In Indian Anthropology in Action edited by Vidyarthi L.P, 411-426. Ranchi: Council of Social and Cultural Research
2. Majumdar, D.N. 1950. The Affairs of a Tribe: A Study of Tribal Dynamics. Lucknow: Universal Publishers Ltd.
3. Vidyarthi, L.P., and Rai, B.K. 1977. The Tribal Culture of India. Mumbai: Concept Publishing Company