

# Role of MGNREGA in the Rejuvenation of Rural Economy after Mega Flood

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**Abstract** - Kerala encountered a mega flood in August 2018. Almost every native of Kerala was affected by this disaster. Most vulnerable among them were the rural people. They lost their savings of a lifetime and even their livelihood too. In this study, we are trying to portray the increased dependence on MGNREGA in rural areas for livelihood after flood. For this study we have considered seven Grama Panchayats of Haripad block as our sample. These panchayats come under the Kuttanad region of Alappuzha district. The lives of the natives of this region mostly depends on agriculture and related activities. These people stands socially and economically weaker and very well represents the rural society of Kerala. We have collected secondary data from government sites and gram panchayat registers. This data was then analyzed using statistical and graphical tools. The analysis results evidently describes the increased dependance on MGNREGA by the rural economy after the flood in Kerala.

*Index Terms* - MGNREGA, Households (HH), Physical progress, Financial progress.

## INTRODUCTION

Kerala witnessed heavy rainfall in 2018 August, which was **116 % more than the usual rainfall that occurs in the State**. It is the most terrible flood in Kerala after the **great flood of 99 occurred in 1924**. Majority of people had been affected by the natural calamity and according to the Government's official stand **almost one sixth of the population were directly affected**. Rural people lost their livelihood and they had to rely upon relief camps for their survival. The forthcoming time after the mega flood stood as a major challenge before them as they had lost their savings and livelihood. There MGNREGA played a greater role in bringing them to normal life.

Mahatma Gandhi National Rural Employment Guarantee Act or **MGNREGA is a social security law passed by the then UPA government in September 2005**. It aims to enhance the livelihood security in rural areas by providing at least 100 days of wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work. The law is hailed by the government as **"the largest and most ambitious social security and public works programme in the world"**. In World Development Report 2014, the World Bank mentioned it a **"stellar example of rural development"**. Now this scheme is performing an imperative role in the **poverty mitigation scenario**. **After the flood maximum days of wage employment for unskilled manual work per year had been raised to 150 days from 100 days**. Here we are trying to prove how this scheme supplemented the rural economy to regain its original charisma after disastrous mega flood.

On 16 August 2018, brutal flood affected the south Indian state Kerala, due to abnormally heavy rainfall during the monsoon season. It was the worst flood in Kerala in almost a century. **Over 483 people lost their lives, and 140 are missing**. The Kerala flood was a watershed moment for Kerala and its populace in every sense, some for the good

while some for the worse. While it not only claimed several lives and shattered

properties, it also left several people looking for livelihood options. And post the floods, the **Mahatma Gandhi National Rural Employment Guarantee Scheme became a boon to the people, especially women and the elderly**. According to a MGNREGA report, the state generated more than 5crore person days in the financial year 2018-2019, a noteworthy shot from its intention.

## OBJECTIVES

To determine whether there is any financial progress before and after flood related to MGNREGA in seven panchayats of Haripad block of Alappuzha district.

To determine whether there is any physical progress related to MGNREGA in seven panchayats of Haripad block of Alappuzha district before flood and after flood.

To infer whether there is any significant association in increase of dependence between different social classes related to the MGNREGA program before and after flood.

To check whether the number of job cards added and deleted before and after food are associated or not.

## METHODOLOGY

The objective of the MGNREGA is to reduce the level of rural poverty by providing employment opportunities to the rural poor masses. However, the success of the programme depends on the level of employment and income generated to these rural masses. To do this the government has to inject a huge amount of money and create required infrastructure. The programme involves the activities of registration, issue of job card, employment guarantee, provision of unemployment allowance, etc.

For this study, secondary data was collected from Haripad block which includes seven panchayats. Also government official sites were used to collect more accurate and reliable secondary data. Secondary data was collected through qualitative and quantitative surveys. Sincere involvement of government employees, for rebuilding the rural economy to flourish again after the flood, were visible in every process of data collection. Employees of every local self-governing office under this study cooperated a lot in every part of this study to bring the role of MGNREGA, in regaining the strength of rural economy, into light.

## ANALYSIS

The secondary data collected through the sources contain a huge amount of statistical data. These data are organized in a systematic manner to compare and understand the data. In this study correlation, chi-square and ANOVA are analyzed.

### Bar Diagram

A bar graph (bar chart or bar diagram) is an illustration tool that uses bars to visualize data among categories. A bar graph may be viewed horizontally or vertically. The essential thing to recognize is that the longer the bar, the larger its value. Bar graphs have two axes. On a vertical bar graph the horizontal axis (x-axis) shows different categories of data. The vertical axis (y-axis) is the amount.

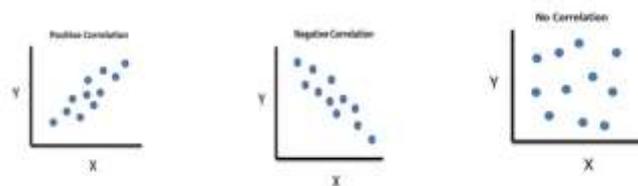
### Correlation

The idea of correlation is one of the methods used in studying relationships among the variables. Two variables are known to be positively correlated if for a raise in the value of one variable there is also a raise in the value of the other variable or for a decline in the value of one variable there is a decline in the other variable. Two variables are said to be negatively correlated; these are in the converse trend. The value of the correlation coefficient ranges from -1 to +1. If the correlation coefficient is +1 we infer that there is a perfect positive correlation. If it is -1 then it is a perfect negative correlation. Two variables are uncorrelated when the value of correlation coefficient is zero.

### Scatter diagram

Scatter plots are primarily used to observe and interpret relationships between two quantitative variables. The dots in a scatter diagram not only account for the values of individual data points, but also patterns when the data are taken as a whole.

### Interpretation of Scatter Diagram



## ANOVA

Analysis of variance is a practice used to test equality of means, when two or more populations are under consideration. ANOVA is the most profoundly used method in economic literature. This method is very useful in revealing essential information principally in translating experimental results and in establishing the authority of some factors on other controlling parameters.

## STATISTICAL INTERPRETATION OF DATA

Under MGNREGA, 100 days of wage employment is assured to every household whose adult members can do unskilled manual work. Since this is a demand-driven design, people came forward for jobs after the floods, says Divya Iyer, Director of Employment Guarantee Mission in Kerala.

After the floods in mid-August, a lot of people were rundown of their conventional employment opportunities, including farmers, small-scale farmers and people from lower economic strata of society. When the government announced 'Rebuild Kerala', livelihood reconstruction was one of the milestones under the project for the affected population.

**A. To determine whether there is any relation between the financial progress before and after flood in the seven panchayats of Haripad block.**

The following table gives the expense in lakhs for MGNREGA before floods and after flood (2017-2018 and 2018-2019) in seven Panchayathu in the Haripad block.

Table I. Data for Financial Status.

Panchayats	Expense in lakhs 2018-2019	Expense in lakhs 2018-2019
Cheruthana	232.5	382.49
Karthikappally	338.99	580.27
Karuvatta	519.09	695.02
Kumarapuram	718	973.36
Pallippad	289.58	500.55
Thrikkunnappuzha	902.66	1394.95
Veeyapuram	159.66	245.89

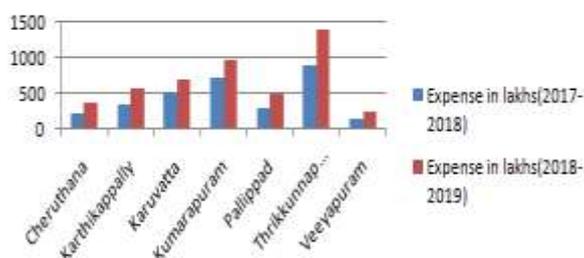


Figure 1. Bar graph showing financial progress.

From the double bar graph it is clear that financial progress is achieved in each of the seven panchayats after flood and among them Thrikkunnappuzha panchayat outstands all other six panchayats in Haripadu block (before and after flood).

Table II. Correlation of financial progress.

Correlation- Financial Progress	2017-2018	2018- 2019
2017/2018	1	
2018/2019	0.98576	1

**Interpretation:** We used the correlation concept to get the conclusion. From the table the correlation coefficient is 0.98576. This indicates that there exists a perfect positive correlation. That is, the financial progress corresponding to MGNREGA before and after the flood of these seven panchayats are positively correlated.

**To determine whether there is any physical progress related to the household in seven panchayath before flood and after flood.**

Table III. Data for physical progress.

Panchayats	No. of households completed 100 working days(2017-2018)	No. of households completed 100 working days(2018-2019)
Cheruthana	191	668
Karthikappally	273	1130
Karuvatta	696	1270
Kumarapuram	1085	1926
Pallippad	248	974
Thrikkunnappuzha	1363	2963
Veeyapuram	205	410

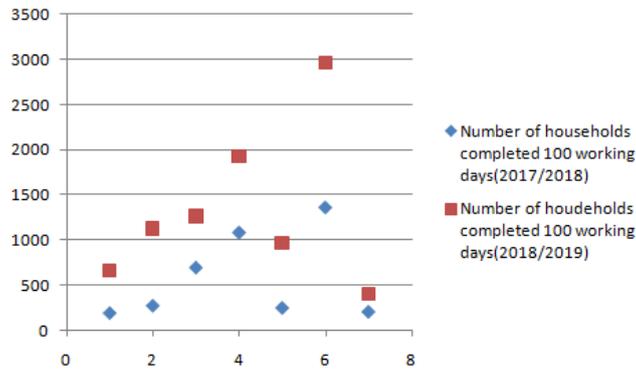


Figure 2: Scatter plot related to Physical progress.

Table IV. Correlation of physical progress.

correlation (100 days)	100 days(2017-2018)	100 days(2018-2019)
100 days(2017-2018)	1	
100 days(2018-2019)	0.948	1

**Interpretation:** We used the correlation concept to get the conclusion. From the table the correlation coefficient is 0.94807. This indicates that there exists a perfect positive correlation. That is physical progress corresponding to MGNREGA before and after flood of these seven panchayats are positively correlated.

**Set up an analysis of variance tables for different social classes related to the MGNREGA program.**

$H_0$ : There is an association between increase in the percentage of dependence to MGNREGA among different social classes (SC, ST and others) in five panchayats of Haripad block after flood.

Table V. Data for three categories.

Panchayats	Increase in percentage of SC households after flood	Increase in percentage of ST households after flood	Increase in percentage of Other households after flood
Cheruthana	1.9354	33.333	3.321
Karthikappally	0.3623	0	2.079
Karuvatta	1.6605	0	1.577
Kumarapuram	0.3508	24.390	-0.801
Pallipad	4.1666	100	1.800

Table VI. Summary output.

Groups	Count	Sum	Average	Variance
Increase in percentage of SC households after flood	5	8.475	1.695	2.437
Increase in percentage of ST households after flood	5	157.723	31.544	1682.662
Increase in percentage of Other households after flood	5	7.977	1.595	2.250

Table VII. ANOVA, Single factor.

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2979.930062	2	1489.965	2.6490	0.1114	3.8852
Within Groups	6749.402217	12	562.4501			
Total	9729.332279	14				

**Interpretation:** From the above table the calculated F value is 2.649 and the critical value of F is 3.885294. Calculated value of F is found to be less than the critical value, so we accept the null hypothesis. That is the dependence on MGNREGA after floods among different social classes of these five panchayats are associated.

### Chi-square statistic of number of job cards added and deleted in MGNREGA before and after flood.

$H_o$ : The number of job cards added and number of job cards deleted before and after flood are not associated.

Table VIII. Observed values.

OBSERVED Table	No. of job cards added	Number of job cards deleted	TOTAL
Number of households in 2017/2018	719	115	834
Number of households in 2018/2019	719	217	936
TOTAL	1438	332	1770

Table IX. Expected values.

EXPECTED Table	Number of job cards added	Number of job cards deleted	TOTAL
Number of households in 2017/2018	677.566	156.433	834
Number of households in 2018/2019	760.433	175.566	936
TOTAL	1438	332	1770

Table X. p value.

p	0%
Test statistic	25.5442

**Interpretation:** From the above table we know that the calculated value of our chi square test statistic is 25.5442 whereas the tabulated value for chi square at 5% level of significance for 1 degree of freedom is 3.841. So as the calculated value is greater than the tabulated value we reject our null hypothesis. That is the number of job cards added and deleted before and after are associated.

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