



Research Article

IMPACT OF 'KERALA FLOOD - 2018' ON THE ARTISANS OF ARANMULA METAL MIRROR

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ABSTRACT

Heritage and Handicraft industry was one of the major sectors of economy which was affected by the Kerala flood-2018. This study was carried out with the objective of examining the impact of flood on the lives of artisans of Aranmula metal mirror. Survey was conducted in 10 randomly selected clusters of workshops of Pathanamthitta district of Kerala State, India. All the artisans from the selected workshops were surveyed. It was found that the primary occupation of all the artisans was manufacturing of metal mirror. The study revealed that there was a significant difference in the income of artisans during pre-flood, flood and post flood period. They became unemployed around 2 months due to flood. The artisans are highly vulnerable community since they depend on daily wages for living. Floods and other natural calamities hindering their daily work would adversely affect their livelihood and further lower their standard of living. Hence interventions are essential to bring back the artisan community to normal life during such calamities.

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INTRODUCTION

Aranmula metal mirror is a very distinctive type of fully handmade metal mirror produced by a specified group of artisans in Aranmulagramapanchayat (village panchayath) of Pathanamthitta district, Kerala, India. Aranmula metal mirror is famous for its metal reflecting surface which takes appearance like a glass reflecting surface. Aranmula metal mirror manufacturing was staged in the early 18th century (Sreekumar, 2016). Mystery of the production method of this traditional handcraft is a secret handed over through by generations of a particular family in Aranmula. The secretive construction method and uniqueness have been protected by Geographical Indication tag. GI Protection Act enables producers to build a reputation and goodwill around their products that will fetch a premium price as well as helps the end-user to receive the right product (Jha, 2017).

The workshops and the artisans who are engaged in the production of this marvellous craft are now seen in two nearby panchayats- Aranmula and Mallapuzhashery of Pathanamthitta district, in the banks of the river, Pampa which is a suitable place for collecting a special type of clay found in the paddy fields there, which is used in the secretive construction method of this mirror. To protect the quality of this unique product and to eliminate duplicate products, legal right to produce Aranmulametal mirror is given only to the

members of a society called 'Vishwabrahmana Aranmula Metal Mirror Nirman Society'. Authenticity of the mirror is ensured with the hologram of this Society.

Kerala, a state in south-west India, recorded 36 per cent excess rainfall than normal levels from 1 June to 29 August 2018, leading to widespread floods and landslides and resulting in 445 deaths (Vishnu et al., 2019). Rainfall occurred on August 15 and 16 was anomalously higher as a large part of Kerala received more than 200 mm rainfall each day (Mishra and Shah, 2018). The extreme precipitation and associated flooding in Kerala in August 2018 had a remarkable impact on all the aspects of the social life of millions of people (Mishra et al., 2018). This flood which collapsed the entire Kerala also affected Aranmulametal mirror manufacturing industry. (Ya'acob et al., 2014) reiterated that the increase of development and human activities can have significant influence on the process that contributes to disaster of flood. This calamity has washed away the machinery and raw materials of artisans and also damaged several finished metal mirrors. So it is very important to carry out studies to rebuild this precious heritage and handicraft of Kerala. With this backdrop, the present study was undertaken with the objective of examining the impact of the Kerala flood-2018 on the lives of artisans of Aranmula metal mirror.

METHODOLOGY

The study area was the two gramapanchayats (village panchayaths) of Pathanamthitta district of Kerala, India viz.,

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Aranmula and Mallappuzhashery, where artisans who are legally entitled to make Aranmula metal mirror reside. These two places are the main source of the major raw material, a special type of clay used for making Aranmula metal mirror which is protected by Geographical Indication. Mallappuzhashery is an area through Pampa river flows and the remaining area is hilly. Aranmula was declared as a global heritage village by the Department of Tourism, Government of Kerala. At a time when culture, traditions, beliefs and rituals are becoming a mere concept and are getting wiped off, Aranmula brings to daylight its culture, myths, folklore and tradition that they hold closer to their heart even after thousands of years with its entire luster (Santhosh, 2017).

Artisans registered under 'Viswabrahmana Aranmula Metal Mirror Nirman Society' (VAMMNS) constituted the sampling frame. There were a total of eighteen registered units across the two gramapanchayats, Aranmula and Mallapuzhashery in which eight units were in Aranmula and ten were in Mallapuzhashery. Each unit was considered as a cluster and equal weight age was given to both the gramapanchayats to select five units randomly from each gramapanchayat. Thus a total of ten units were studied. The unit head (major craftsman) as well as every worker in the selected cluster (workshop) were interviewed for the study. Altogether a total of 55 artisans including 10 major craftsmen constituted the sample. Primary data were collected through pre-tested structured interview schedule.

Descriptive statistics, One-Way Analysis of Variance (ANOVA) and Independent sample *t* test were used for data analysis.

Findings

In this study on the impact of flood on the artisans' life, their personal profile and work profile were examined. Finally the impact of flood was analysed by comparing selected impact variables during the pre-flood period, flood period and the post flood period.

Personal profile of Artisans

The personal profile of the artisans was analysed to know their social, demographic and economic characteristics.

Table 1 Personal profile of artisans

Sl. No.	Characteristics	Artisans	
		No.	%
Age (Years)			
1	Up to 35	13	24
2	36-55	38	69
3	Above 55	4	7
	Total	55	100
Gender			
1	Male	49	89
2	Female	6Gov	11
	Total	55	100
Educational status			
1	Illiterate	1	2
2	Upper Primary	6	11
3	SSLC	6	11
4	HSS	34	62
5	ITI / Diploma	3	5
6	Degree	5	9
	Total	55	100
Monthly income (Rs)			
1	Up to 15000	9	16
2	15001-25000	46	84
3	Above 25000	0	0
	Total	55	100

Primary occupation			
1	Artisan work	55	100
2	Others	0	0
	Total	55	100
Type of family			
1	Nuclear family	55	100
2	Joint family	0	0
Sl. No	Number of years of experience as artisan		
1	< 1 year	0	0
2	1-5 years	25	45
3	6- 15 years	22	40
4	> 15 years	8	15
5	Total	55	100

Around 69 per cent of the artisans were in the age category between 36 and 55, that is, middle aged group. This increases the vulnerability to job loss and other adverse impacts. All the artisans (100 %) were engaged in artisan work as their primary occupation and major source of income. It was seen that 84 per cent of them were having an average monthly income in the range of INR15001 to 25000. For majority artisans, this was the only source of income for the entire family. With regard to the gender, majority were male (89 %). This indicates that even though this skill is inherited through family, the males are taking up this responsibility. Only a few workshops were run by females in the position of major craftsman. Females are usually taking up the responsibility only when there is no male head in the family to continue this tradition.

Work profile of artisans

The work profile of the artisans were analysed in this study in terms of the number of man-days of work per month, the overtime work done and the wage details of artisans. The Aranmula metal mirror was having seasonal demand, with a high sale during August to December. Many workshops had shop sale as well as wholesale sale according to the orders received. The artisans were paid their wage at the end of every week. Wage varied based on their experience, skill and difficulty level of their work. So every artisan in the same workshop may not get the same wage. For doing the overtime work, they were paid with double the normal wage.

Table No. 2 Work profile of artisans

Sl. No.	Particulars	Artisans	
		No.	%
Man-days per month			
1	Less than 20	0	0
2	20- 23	2	4
3	24- 27	30	54
4	30 28-31	23	42
	Total	55	100
Frequency of overtime work			
1	Frequently	15	27.27
2	Seasonally	22	40
3	Rarely	9	16.36
4	Never	9	16.36
	Total	55	100
Wage range			
1	Below 500	0	0
2	500-650	28	51
3	651-750	14	25
4	Above 750	13	24
	Total	55	100

Majority of the artisans (54 per cent) had an average of 24 man-days of work per month. But 42 per cent worked throughout a month without regular weekend holidays. This category of artisans considered their work as family labour and worked irrespective of man days. This includes majority of the craftsmen and their family members. The number of man-days per month differed according to each workshop. Whenever there was extra demand, the artisans did overtime work. In the

night time also, the artisans would work, for which the workshops paid double the normal wage per day. The number of man-days is an important factor which contributes to the volume of production of mirror. The four per cent people who were having only 20-23 man-days per month were the artisans who were engaged for helping the main artisans.

Further, it is found that around 84 per cent of the artisans were doing overtime work, of which 40 per cent were doing it seasonally. Many of the workshops were getting wholesale orders for mirrors in bulk from India and abroad. Aranmula metal mirror (Aranmulakannadi) is a unique product which has been gifted to the guests of other countries in official ceremonies of our country. Aranmulakannadi is well known nationally and internationally for its uniqueness and it is always connected with tourism also. Hence the sale of AranmulaKannadi is more during tourism season associated with Onam, Vallamkali, Sabarimala pilgrim season (ceremonies/pilgrim unique to Kerala) etc. In order to meet the increased demand, many artisans were doing the overtime work during these seasons.

It was revealed in the study that 51 per cent of the artisans were getting an average wage of Rs. 500 to 650 per day. According to the Labour Commission Order 2018, the minimum wage per day for semi-skilled artisan working in Handicrafts shall be Rs.510, that for skilled artisans shall be Rs.580 and for highly skilled craftman, it shall be Rs.650 (Government of Kerala, 2018). Here, 24 per cent artisans were getting a wage of more than Rs.750 and they belonged to the highly skilled artisan category.

Effect of flood on the lives of artisans

The flood affected the lives of almost all people who were directly or indirectly connected with the metal mirror manufacturing sector. The Flood-2018 hit Aranmula on the mid night of 14 August 2018. Almost all areas of the two gramapanchayats were either fully or partially submerged under water for several days. The effect of the flood on different workshops and showrooms varied according to their nearness to the river, Pampa and various canals. Though water dried out in around one week, all the places became filled with heavy mud deposits and waste materials. Cleaning process and maintenance work took about a month in many places. Many workshops could be repaired only after three to four months. Many workshops could restart their work after three to four months since they lost their tools and equipment, stock of raw materials etc. Some tools and equipment washed away by water, those immersed in mud for several days became rusted and useless. Also buildings almost immersed in water around a week and caused reduction in its strength. So they had to do maintenance of the entire building including new electrification.

Table 3 Effect of flood on the residence and man-days of artisans

Sl. No.	Particulars	Artisans No.	%
Flooding of residence area			
1	Flood affected the residence area	27	49
2	Flood not affected the residence area	28	51
Number of man-days lost			
1	48 days	28	51
2	60 days	2	4
3	90 days	25	45
	Total	55	100

As can be inferred from Table 3, the Kerala flood-2018 directly affected the residence area of 49 per cent of the artisans. Majority (51%) artisans lost labour for 48 days while 45 per cent lost labour for 3 months. Post flood, the workshops faced the task of removal of mud that deposited in several feet height. Artisans engaged in the cleaning process also. Their raw materials, tools and equipment lied along with mud and other waste materials. The herculean task was to identify and clean the rusted tools, equipment, raw materials, semi-finished and finished products from mud. The total number of man days lost by the sample was 3714, with an average of 68 man-days per artisan. Since the average wage paid per artisan was around Rs. 700 per day, an artisan suffered an average loss of income of around Rs. 47600/- during this flood time.

The flood occurred preceding their peak season for Aranmula metal mirror. It also affected the workshops. At the time of start of the flood, some workshops were functioning during the night time and the workers got stuck at the workplace during the flood time. They were soon shifted to nearby houses and safer places.

The flood dimmed the hopes of the artisans who fashion the famous Aranmula metal mirror. It affected the residence area as well as workplace of the artisans. Their personal assets and properties were lost in addition to their job loss or income loss.

Post flood borrowings by artisans

During flood time the artisan families moved to poverty because their only source of income was lost for many days. So they were constrained to borrow money for day to day expenditures.

Table 4 Source of credit during post flood period for Artisans

Sl. No.	Source of Credit	Number of artisans	Percentage in total
1	Private money lenders	48	87
2	Others (relatives, friends etc)	3	6
3	Financial Institutions	0	0
4	Nil	4	7
	Total	55	100

Source: Compiled from primary data

Table 4 reveals an important fact that no artisan depended on a formal institution for getting loan. Exactly 87 per cent depended on private money lenders for availing credit. Since there were lot of formalities and documentation procedures to get credit from formal financial institutions, they preferred local money lenders, considering the easiness and flexibility in the transaction process. The money lenders who were settled in Kerala but native of Tamil Nadu visited every week in the residence area of artisans for giving loan. The artisan workers preferred easiness in getting the loan and flexibility rather to the rate of interest. In fact, the artisans were aware of the enormous amount charged by the private money lenders, but nobody was willing to take a loan from commercial or co-operative banks. Hence, financial institutions and commercial banks should take increased interest in helping the artisans and establishing a good linkage. Documents needed for bank loan was yet another problem faced by the artisans. This is an alarming situation, which should be addressed by creating awareness and by simplifying the procedures for availing loans from formal financing institutions.

However, the artisans, whose residence area was directly affected, received a financial assistance Rs.10000 from the concerned gramapanchayat (village council), though the

amount was meagre and not sufficient to meet even the cleaning necessitated by the flood.

Impact of flood on income of artisans

Flood had a heavy impact on the income of the artisans. Many workshops had closed for several months. For many artisans this was the only source of income for the entire family. Here impact of the flood on the income of artisans is statistically analysed using one way ANOVA and independent sample t tests. To test whether any significant difference was there in the income during June to first half of August (pre-flood period), second half of August (flood period) and September to November (post flood period) *One-Way Analysis of Variance (ANOVA)* test was employed. The null hypothesis (H_0) assumed was that there was no significant difference between incomes of these three periods. The resultant F-value (461.552) was significant at 5 per cent level with p value 0.000 and hence the H_1 can be accepted that there was significant difference in the incomes of pre flood, flood and post flood periods. To test among which periods the significant difference exists, post-hoc Tukey test was used. While making multiple comparisons, significant difference was observed between pre flood and flood period (p value =0.000), flood period and post flood period (p value = 0.000) and pre flood and post flood period (p value= 0.000). The mean income was high during pre-flood period, and the flood period registered the lower mean income. Thus it can be confirmed that the flood ha negatively affected the income of artisans.

Table 5 ANOVA Statistic for Income

Period	Mean Income	Std. deviation
Pre flood	45930.75	8994.051
Flood	.00	.000
Post flood	18483.96	10153.816

N=53 df= 156 F= 461.552 F pr.=0.000

As mentioned earlier, the ANOVA test results revealed that there was a significant difference in the income during three periods. i.e.pre flood, flood and post flood period. To check whether this difference was due to the flood, Independent Sample t Test was used. For that the income of the artisans for the corresponding months of 2017 were considered. i.e., June to first half of August (pre flood period), second half of August (flood period) and September to November (post flood period), and were compared with the year 2018 using independent sample t test.

Table 6 Comparison of Income during 2017 and 2018

Period	Levene's Test for Equality of Variances (for equal variance assumed)		t-test for Equality of Means (for equal variance assumed)		Mean difference
	F value	F pr.	t value	t pr.	
Pre flood	.143	.707	-1.658	.100	-2968.4906
Flood	92.416	.000	33.496	.000	8646.2264
Post flood	4.332	.040	12.364	.000	23558.4906

From Table 6, it can be seen that the t value for the pre flood period of 2017 and 2018 is insignificant which implies there was no significant difference between incomes during this period. For the flood period, the p value is .000 which implies that there was significant difference between incomes during 2017 and 2018 in this period. Mean income for flood period of 2017 was 8506.25 and 2018 was zero. For the post flood period also the p value is .000 which means that there was

significant difference between incomes during that period. The mean income was high during post flood period of 2017 (Rs.42531). Thus, the results support the results of ANOVA, that flood has a serious impact on the income of artisans. All the artisans are the major income earners in their families. So this situation would affect the entire life standard of the whole families. If they cannot earn properly from this work, they may shift to other jobs for their livelihood, which in turn would adversely affect the manufacturing sector of this marvellous piece of art. In addition, destruction of finished goods and damage to the production units have resulted in reduced supply of goods and services from the heritage sector. This will expectedly increase the prices of such goods and services, contributing to higher rates of inflation, especially in the local markets, precipitating a further decline in average standards of living. This will take a longer time to reverse, since prices may not decrease until the restoration work is completed and production gets back to normal, pre-disaster levels (UNDP, 2018)

CONCLUSION

Kerala Flood-2018 has almost completely destroyed the Aranmula mirror industry, and seriously affected the artisans of this traditional craft industry. The entire families who took up craft and artisanal work rendered without income or livelihood for months. Even the makers of this unique product moved into poverty during flood time. The flood has completely disrupted the life of the artisans. Many artisans are not approaching any formal financial institution for availing credit and are exploited by private money lenders, even during calamities. First and foremost, the artisans need adequate financial support so as not to be tempted to leave their traditional crafts and move to unskilled work. Financial institutions and commercial banks should take increasing interest in helping the artisans and a good linkage has to be established by the co-operative, commercial and rural banks with these artisans. This group of artisans should be rehabilitated properly as we cannot allow the tradition of Aranmula metal mirror and the cultural heritage to fade into history. The drop in income of artisans and the need for loans to rebuild their houses and workplaces or to restart production puts this part of the population at risk of increased poverty, and this in turn increases the gap of inequality in society.

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