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A STUDY OF DISASTER CAUSED BY 2018 KERALA FLOOD TO KUTTANAD FARMERS

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ABSTRACT

Almost 90% of people in Kerala were directly or indirectly affected by the Kerala flood that took between also caused severe damages for the people in Ernakulam and Idukki districts. Almost a million people were evacuated and most numbers of people were affected in Pathanamthitta, Alappuzha, Idukki districts. Severe cases of landslides occurred in Idukki and Wayanad districts. This paper discusses the problem faced by Kuttanad 15th of August and 18th of August 2018. Over 500 people died, and many missing cases were registered. Almost 14 districts in Kerala was directly affected. In the history of Kerala, all the dams were open which farmers and also provides suggestions about how challenges faced by the Kuttanad farmers can be addressed.

KEYWORDS: Kerala flood, Kuttanad

1. INTRODUCTION

Kuttanad, the 'Rice Bowl of Kerala', lies at the very heart of the backwaters in Alappuzha district. Its wealth of paddy crops is what got it this unique nickname. Based in the inner regions of the district, it is a huge area of reclaimed land, separated by dikes from water which is higher than it appears. The view of the countryside is what enchants all who pass through this area while travelling via houseboats. It has been speculated that it is perhaps the only place in the world where farming is done up to 2 meters below sea level. The area is serviced by 4 major rivers: Pampa, Meenachil, Achankovil, and Manimala. (Keralatourism, 2018)

The major occupation of people in Kuttanad is farming. Rice is the most important agricultural product grown there. And most of the families are doing have pisciculture in a good way. There is an abundant area for the fishing activities in Kuttanad. Kuttanad is a region which is under the sea- level. Due to the abundance of water supply throughout the year the land is suitable for agricultural activities. This is the reason by which most of the people farmers engaged in farming activities. This paper mainly discusses about Kerala flood that took on August 2018 and how does it affected the farmers especially in Kuttanad region.

2. POPULATION IN KUTTANAD

As per the census population 2018 data published by Jain HK (2018), which shows the population in the 14 villages of Kuttanad taluk. The

Kuttanad taluk of Alappuzha district has a population of 1,93,007 in which 93,013 are males while 99,994 are females. (census2011websites, 2018)

Sl.no	Villages	Administrative division	Population 2011 census	Estimated 2018 population
1	Champakulam	Kuttanad	15,848	25356
2	Edathua	Kuttanad	21,699	34718
3	Kainakkary North	Kuttanad	8,292	13267
4	Kainakkary South	Kuttanad	15,405	24648
5	Kavalam	Kuttanad	13,089	20942
6	Kunnumma	Kuttanad	14,252	22803
7	Muttar	Kuttanad	9,200	14720
8	Nedumudi	Kuttanad	14,601	23361
9	Neelamperoor	Kuttanad	5,841	9345
10	Pulinkunnu	Kuttanad	15,210	24336
11	Ramankary	Kuttanad	10,755	17208
12	Thakazhy	Kuttanad	15,758	25212
13	Thalavady	Kuttanad	20,556	32889
14	Veliyanad	Kuttanad	12,501	20001

3. LITERATURE REVIEW

3.1 FLOOD IN KERALA

Heavy rainfall between 8 and 14 August has caused flooding and landslides in Kerala state, in southwest India. Every year the region is affected by the monsoon (from June until September), and regularly causes damage to agriculture, impacting livelihoods in particular. (The Guardian, 2018) Kerala state is currently facing the worst flooding and landslides on record since 1924. 39 people have reportedly died and over 60,000 people have been evacuated to 500 relief camps across the state. As of 14 August, eight

out of 14 districts in Kerala are on high alert (Idukki, Thrissur, Palakkad, Malappuram, Kozhikode, Wayanad, Kannur, and Kasaragod). (India Meteorological Department, 2018) Idukki and Wayanad in particular been affected by landslides, due to the presence of many hills. (Act Alliance, 2018) Heavy rainfall is expected to continue in Kerala on 15 August (12-20 cm in 24 hours), but will then decrease from 16 to 18 August. (India Meteorological Department, 2018)



Fig 3.1: Kerala flood in pictures

3.2 KUTTANAD IN DETAIL

Kuttanad can be described as wetlands which are defined as 'lands transitional between terrestrial and aquatic systems where the water table is at or near

the surface or the land is covered by shallow water' (Cowardin et al. 1979).

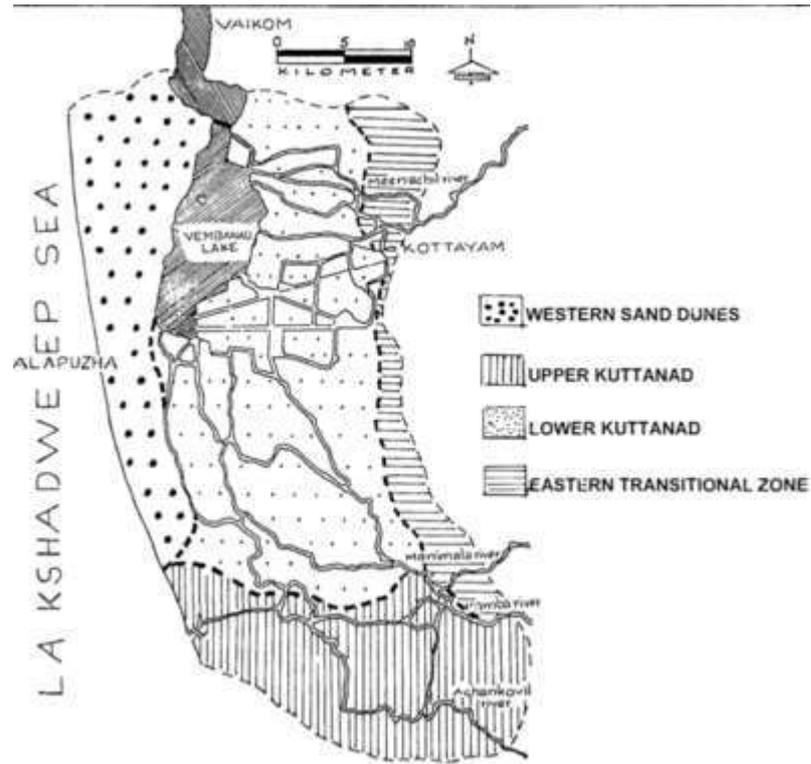


Fig 3.1: Overview of Kuttanad (Shodhganga, 2018)

The above figure shows an overview of Kuttanad. Mainly Kuttanad is divided into 2 regions, Upper Kuttanad and Lower Kuttanad. Kuttanad is a place which is available with an abundance of water supply. It is surrounded by Lakshadweep Sea in the

left side. It also has the water supply from Meenachil river, Vembanad lake, Pamba river, Manimala river, Achankovil river etc. So, it is possible for the people in Kuttanad to be engaged in different farming activities also the soil is very fertile too.

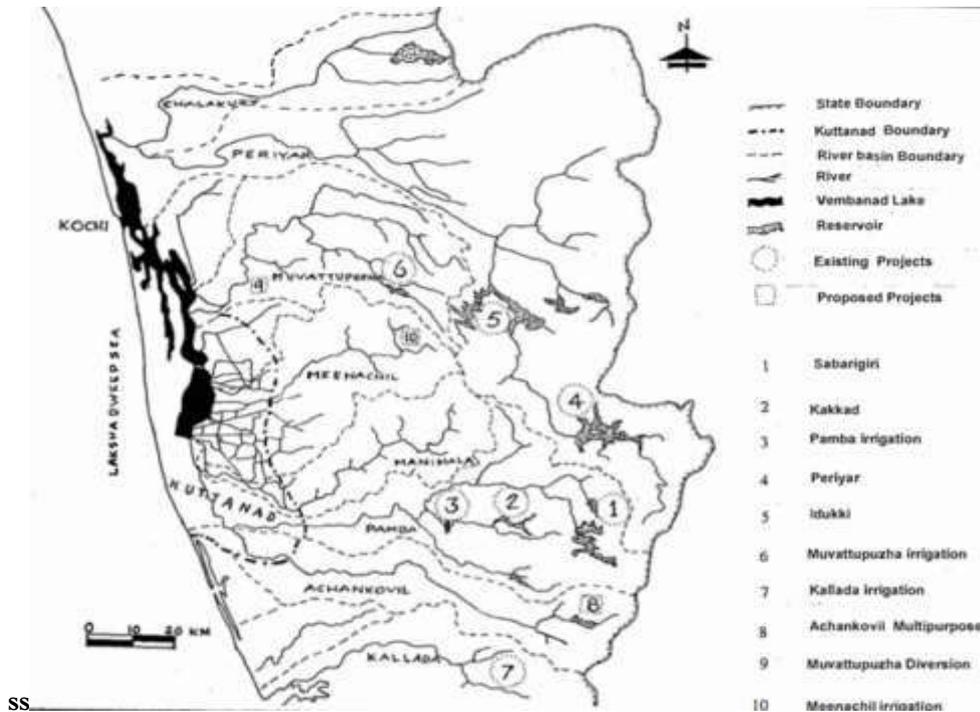


fig 3.2: The Vembanad lake, rivers debouching into it and location of hydrological projects (Shodhganga, 2018)

The above figure explains the the location of Vembanad lake and the location of hydrological projects that are near to it, which have an impact on

3.4 FLOODS IN KUTTANAD

As discussed due to the large number of water sources in Kuttanad and also the heavy rain which last between 15th August to 18th August 2018, the flood became very worse in Kuttanad. More than 200 relief camps were opened in the Alappuzha district for the 1.25 lakh population. Many people left their home and moved to relief camps. Most of them lost their cattle's, pet animals and many of them died by

the environment of Kuttanad. The Government already have invested many projects in Kuttanad and many of them are undergone now also.

the time they reached home. A large number of the portion in Kuttanad was under water for more than 45 days. The problem became severe after many dead animals were floating through water. The crops were destroyed, paddy fields were filled with water.



Fig 3.3: People being rescued through boats in Kuttanad

4. RESEARCH METHODOLOGY

The results and data presented in this paper were part of a study on farmers affected by flood in the Kuttanad region in Kerala. As mentioned in the introduction chapter, the main objectives of the research was to explore the financial requirement of farmers to restart their farming activities after they were affected by the flood. To achieve these, quantitative research method and literature based

4.1 Sample group

The 500 families were selected based on different criteria.

They are,

- I. Details of the traditional pre-flood resources for food
- II. Monthly livelihood activities
- III. Nature of disruption caused after the flood occurred
- IV. Primary constraints for restarting farming activities for: (a) Paddy farmers, (b) Poultry farmers, (c) Fishery and aquaculture

research was carried out. Quantitative research focused on data collection from different farmers in Kuttanad. The data was collected by creating telephonic survey and the survey was prepared out to about 500 farmers in different parts of Kuttanad, the 500 families were selected on the basis of their number of farmers who were most affected in Ummikkary and Chavarabhav

The survey questions were prepared before the farmers were selected. The survey consisted of questions that are discussed in the tables 1 to 5. Reminder telephonic calls were made to the farmers who were not able to finish survey. The questions were prepared to understand areas in which each famers need attention from the government agencies and on how to improve the support from different organizations.

Source	Proportion(Pre-flooding)				The disruption caused by flooding	Cropping strategy (if disruption occurs)adopted after flooding
	Rice	Pulses	Vegetables and fruits	Meat and fish		
1.Own crops/Garden production						
2.Cash purchase						
3.Work for land						
4.Borrowing food/Buying on credit						
5.Gifts from neighbours						
6.Government subsidies						
7.Barter/trade of goods						

Table 1: Traditional pre-flood resources

Table 1 shows the method for collecting the pre-flood resources from the affected people. Using this table, we could completely analyze the exact problem that the farmers are been facing. There is a proportion field, which shows the number of farmers having garden production, and how many of them

purchase by cash, it also shows whether they work for land or not, are they getting any government subsidies etc. We were also able to collect necessary information about the disruptions caused by flooding and what is the cropping strategy they adopted after being affected by the flood.

Sl.no	Gregorian month	Malayalam month	Livelihood activities	Nature of disruption
1	January	Dhanu to Makaram		
2	February	Makaram to Kumbham		
3	March	Kumbham to Meenam		
4	April	Meenam to Medam		
5	May	Medam to Edavam		
6	June	Edavam to Midhunam		
7	July	Midhunam to Karkidakam		
8	August	Karkidakam to Chingam		
9	September	Chingam to Kanni		
10	October	Kanni to Thulam		
11	November	Thulam to Vrischikam		
12	December	Vrischikam to Dhanu		

Table 2: Livelihood Map

Table 2 illustrates livelihood activities that are been accomplished by a farmer in a calendar year. For convenience, we have included both Malayalam calendar as well as the Gregorian calendar. Once the data is collected from the farmers, we can correctly

identify in which portion they need to get help. For example, if flood effects in the month of November we could easily conclude the problem the maintenance can be done easily.

Sl. no	Problems	How important is to solve/to restart	Which constraints will they need support to overcome and causes
1	Damage to land		
2	Lack of fertilizer		
3	Lack of pesticides		
4	Lack of agricultural tools		
5	Lack of irrigation		
6	Lack of workforce		
7	Lack of agricultural credit		

Table 3: Primary constraints to restart

Table 3 deeply analyse the damage caused in each sector and also focuses on how to restart it. This

method is very important because it particularly points out the exact reason the farmers are facing.

Sl. no	Problems	How important is to solve/to restart	Which constraints will they need support to overcome and causes
1	Lack of fodder/too expensive		
2	Lack of water		
3	Lack of Veterinary services		
4	Lack of animal shelter		
5	Lack of workforce		
6	Lack of market for selling animals		
7	Lack of agricultural credit/pressure of pending loans		

Table 4: Main constraints and costs (Poultry and dairy)

Table 4 focuses on Livestock management. It mainly focuses on the issues undergone by livestock farmers. Each problem is explained in detail it also

shows how important is to restart them. Also, it focuses on how to overcome these issues.

Sl. no	Problems	How important is to solve/to restart	Which constraints will they need support to overcome and causes
1	Lack of fodder/too expensive		
2	Lack of water		
3	Replenishment of fish seedlings too expensive		
4	Lack of boats		
5	Lack of nets		
6	Lack of agricultural credit/pressure of pending loans		

Table 5: Main constraints and costs (Fishery and aquaculture)

Table 5 focuses on Fisheries and aquaculture. It mainly focuses on the issues undergone by the fisherman. Each problem is explained in detail it also

shows how important is to restart them. Also, it focuses on how to overcome these issues.

5. RESULTS AND ANALYSIS

The survey was conducted among around 500 families in the Kuttanad region. The data shown below is from the data collected from this survey.

5.1 Research Results

Table 5.1 shows the details of how many of the people are acquiring different food materials such as rice, pulses, vegetables, meat, fish etc.

Sl.no	Source	Rice	Pulse	Vegetables	Meat and fish
1	Own crops/Garden production	334	120	80	157
2	Cash purchase	156	280	300	20
3	Work for land	320	60	52	12
4	Borrowing food/Buying on credit	140	60	30	80
5	Gifts from neighbours	85	82	2	110
6	Government subsidies	354	185	107	126
7	Barter/trade of goods	40	60	86	55

Table 5.1: Traditional pre-flood resources

From the research conducted, we have concluded that the majority of the people in Kuttanad are either having garden production, purchases products by cash, or they work on the land. It clearly shows, that

very few farmers borrow food materials and are offered food materials as a gift from neighbours or relatives. Many people are also provided with different government subsidies

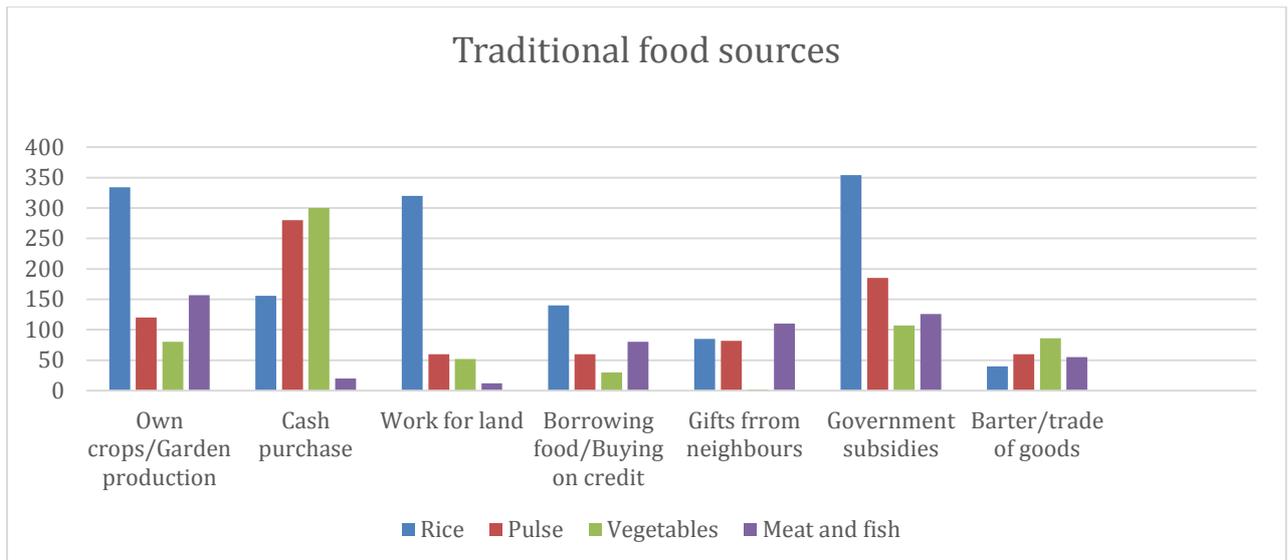


Fig 5.1: Traditional pre-food resources

Table 5.2 focuses on the problems that are faced by paddy farmers. They were most affected because of them were small and marginal farmers who work for land. Most of them lost their agricultural tools and

many of them were destroyed. So, for them, it's urgent to have supplied with adequate tools because it may affect towards next year's production.

Sl.no	Problems	No of people affected
1	Damage to land	260
2	Lack of fertilizer	6
3	Lack of pesticides	130
4	Lack of agricultural tools	140
5	Lack of irrigation	0
6	Lack of workforce	140
7	Lack of agricultural credit	380

Table 5.2: Primary constraints to restart

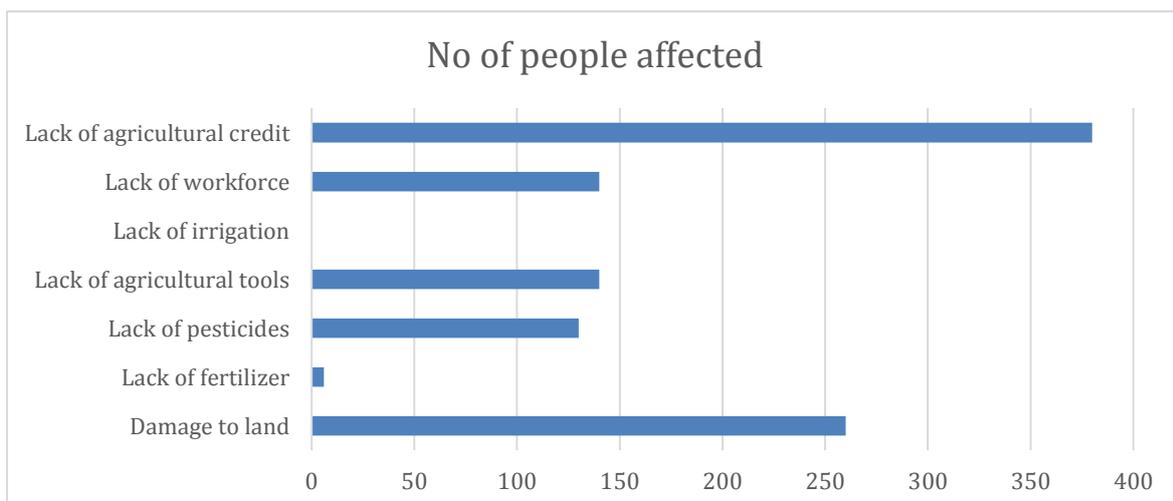
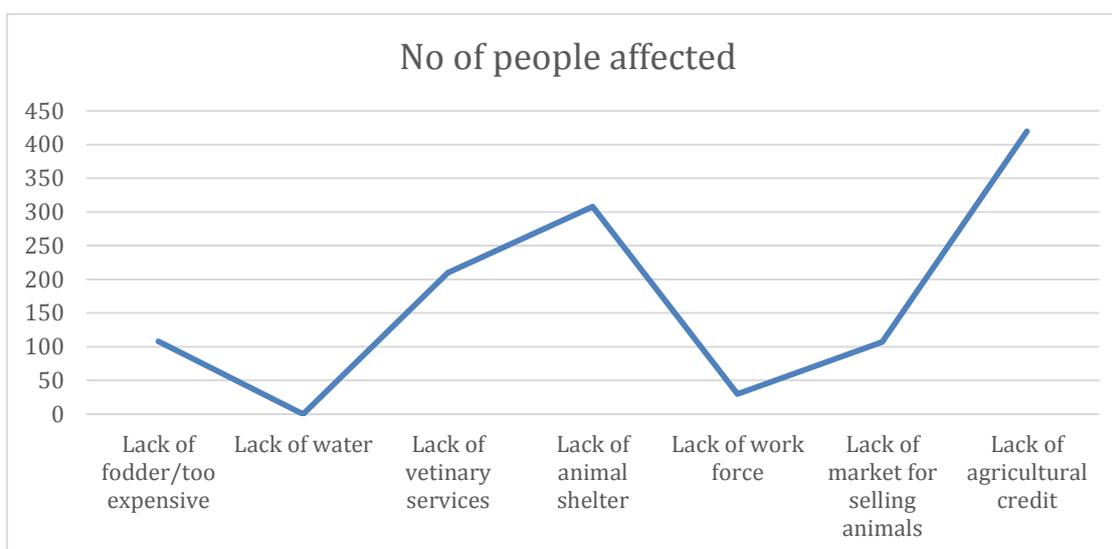


Table 5.3 focus on the problems that are being faced by Livestock farmers. It is also seen that the farmers are facing a huge financial problem because most of the farmers borrowed money from moneylenders or have taken agricultural loans. After the flood, most of them have lost all their farming belongings and a

large portion of the money was lost. Many of them lost their cattle's and shelters. So, the focus for the livestock farmers must be on how to supply them with cattle's and providing shelters for them. Also, there should be a method for providing them with adequate financial help.

Sl.no	Problems	No of people affected
1	Lack of fodder/too expensive	108
2	Lack of water	0
3	Lack of veterinary services	210
4	Lack of animal shelter	308
5	Lack of work force	30
6	Lack of market for selling animals	107
7	Lack of agricultural credit	420

Table 5.3: Main constraints and costs (Livestock)



The table 5.4 below shows the problems that are being addressed by farmers in fisheries and aquaculture after the flood occurred. From the above table it is seen that a large number of farmers are facing financial problems. The next serious issue

faced is the lack of fish cages and also the farmers need to replenish the fish seedlings. The advantage of arranging such a table is to properly analyse and allocate funding scheme from the government to the affected farmers in an easier way.

Sl.no	Problems	No of people affected
1	Lack of fodder/too expensive	170
2	Lack of water	0
3	Replenishment of fish seedlings too	101
4	Lack of boats	35
5	Lack of nets	104
6	Lack of agricultural credit	280

Table 5.4: Main constraints and costs (Fishery and aquaculture)

No of people affected



- Lack of fodder/too expensive
- Lack of water
- Replenishment of fish seedlings too
- Lack of boats
- Lack of nets
- Lack of agricultural credit

6. CONCLUSIONS

The risk of natural calamities like Earthquakes, Flood, and Tsunami have been enormously increasing over the last few years. Even they are not controllable by the humans we can reduce the after-effects caused by them through proper execution of disaster recovery plan. For this, we should exactly analyse what were the issues faced by the farmers. This paper mainly discusses the problem that was faced by Kuttanad farmers. Financial aid is one of the essential thing needed by farmers. Rehabilitation

facilities should be provided as soon as possible. Medical help is very urgent, because in the case of floods there are chances for water-borne diseases to spread so vaccination is very important. Farmers should get the exact support they needed because if poultry farmer receive support that is intended for paddy farmers then it would not be benefit-able. So government as well as several NGO's has significant role in restoring the lives of affected people to normal condition.

7. RECOMMENTATIONS

- Interest free banks loans should be provided to farmers
- NGO's should come forward in helping farmers for repairing of cages
- Immediate financial assistance through bank accounts
- Proper Veterinary help should be provided the survived cattle's
- Awareness should be given to farmers about financial help from other agencies

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