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# Consolidated Report on Sector Level Review of LSG DM Plans

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Submitted by  
Kerala State Disaster  
Management Authority



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Road block being cleared at Pathanamthitta during Floods 2018  
Picture Courtesy – I & PRD

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## REVIEW OF LSG DM PLANS

# THIRUVANANTHAPURAM

## Section I | Overview of the LSG DM Plans in the District

### Introduction

The Local Self-Government Department, Kerala State Disaster Management Authority (KSDMA) and Kerala Institute of Local Administration (KILA) jointly engaged in the ‘resource-intensive, time bound, pan-Kerala grassroot-level consultations’ for developing the DM plans at local level. The overall objective of the mission which was rolled out in the first week of December 2019 to identify and understand the ground-level challenges faced by citizens who were the first responders in light of the recent natural calamities that struck the state.

Kerala, in its 14 districts, has 941 grama panchayats, 87 municipalities, and 6 corporations, it was directed by the state Government that disaster management plans to be formulated for all these local bodies in the State. Thus, first of its kind, in the Country (Perhaps in the whole world), an extensive disaster prevention/response programme at the local level was initiated. The number of LSGs specific to the Thiruvananthapuram district is given in Table 1.

Directions were given vide G.O(MS)No.156/2019/LSGD, dtd. 4/12/2019 for ensuring people’s participation and leader-driven intervention of local self-government institutions in disaster mitigation, preparation, and disaster management areas and for the planning and implementation of such plans at the local self-government level as part of annual plans. Besides this, detailed instructions with respect to the integration of disaster management plans with annual plans have also been issued vide GO (MS) No. 157/2019/LSGD, dtd. 5/12/2019 and GO (MS) No.9/2020/LSGD.

- The LSG DM Plans were sourced from the respective LSGs by the research assistants along with the annual plans of 2019-2020. The initial draft plans given submitted in the Sulekha software with

very less contents and blank tables. In Trivandrum district despite the Covid situation, the office of the DPO managed to receive 70% of the hard copies and almost 85% of soft copies by July-August,2020. On repeated request, rest of the LSGs submitted either the soft or hard copy by October-November, 2020. There were mismatches between their soft and hard copies in certain LSGs even after this initial scrutiny and they were asked to correct and submit the final plan. The scrutinizing/reviewing of the DM plans was donethrough the months of November 2020 to March 2021.

*Table 1*

<b>Name of the District: Thrivananthapuram</b>			
<b>Sl. No.</b>	<b>LSG Type</b>	<b>Total Number</b>	<b>Number of Plans Submitted by LSGs</b>
1	Grama Panchayats	73	73
2	Municipalities	4	4
3	Corporations	1	1
<b>Total</b>		<b>78</b>	<b>78</b>

Name of the Reviewer: Sriram.A

*Table 2*

Explanation	Colour code
Content not available	Red
Insufficient content	Orange
Content could be strengthened	Yellow
Content is proximal to the template	Green

SL.N o	Block name	LSG Type	LSG Name	Introducti on	Chapter Wise Content Availability							Annexur es
					1	2	3	4	5	6	7	
1	Parassala	Panchayat	Parassala									
2	Parassala	Panchayat	Karode									
3	Parassala	Panchayat	Kulathoor									
4	Parassala	Panchayat	Chenkai									
5	Parassala	Panchayat	Thirupuram									
6	Parassala	Panchayat	Poovar									
7	Perumkadavi la	Panchayat	Vellarada									
8	Perumkadavi la	Panchayat	Kunnathukal									
9	Perumkadavi la	Panchayat	Kollayil									
10	Perumkadavi la	Panchayat	Perumkadavila									
11	Perumkadavi la	Panchayat	Aryancode									
12	Perumkadavi la	Panchayat	Ottashekaramanga lam									
13	Perumkadavi la	Panchayat	Kallikad									
14	Perumkadavi la	Panchayat	Amboori									
15	Athiyanoor	Panchayat	Athiyanoor									
16	Athiyanoor	Panchayat	Kanjiramkulam									
17	Athiyanoor	Panchayat	Karumkulam									

18	Athiyanoor	Panchayat	Kottukal																	
19	Athiyanoor	Panchayat	Venganoor																	
20	Nemom	Panchayat	Maranalloor																	
21	Nemom	Panchayat	Balaramapuram																	
22	Nemom	Panchayat	Pallichal																	
23	Nemom	Panchayat	Malayinkeezhu																	
24	Nemom	Panchayat	Vilappil																	
25	Nemom	Panchayat	Vilavoorkal																	
26	Nemom	Panchayat	Kalliyoor																	
27	Pothencode	Panchayat	Pothencode																	
28	Pothencode	Panchayat	Mangalapuram																	
29	Pothencode	Panchayat	Andoorkonam																	
30	Pothencode	Panchayat	Kadinamkulam																	
31	Pothencode	Panchayat	Azhoor																	
32	Vellanad	Panchayat	Kattakada																	
33	Vellanad	Panchayat	Vellanad																	
34	Vellanad	Panchayat	Poovachal																	
35	Vellanad	Panchayat	Aryanad																	
36	Vellanad	Panchayat	Vithura																	
37	Vellanad	Panchayat	Kuttichal																	
38	Vellanad	Panchayat	Uzhamalakkal																	
39	Vellanad	Panchayat	Tholicode																	
40	Nedumangad	Panchayat	Karakulam																	
41	Nedumangad	Panchayat	Aruvikkara																	
42	Nedumangad	Panchayat	Vembayam																	







## **A. Content Analysis**

### **Introduction**

The DM Plans prepared are specific to each LSGs which has data scaled down to gramasabha/ward sabha. Apart from the basic demographic, hazard, vulnerability and infrastructure details, the strengths and weakness of particular LSGIs, disaster mitigation measures were also identified while preparing the plans. These measures are then to be converted to specific projects/interventions and fed into the annual plan of the local bodies for implementation.

Thiruvananthapuram has a total of 78 LSGs (73 Grama panchayats, 4 municipalities and 1 corporation) as mentioned in previous section. In an initial glance, it is to be observed that the DM plans formulated in each of the LSGs lack an understanding of the need to come up with such a plan. As per the GOs, the Gramasabhas and ward sabhas were to be aided by a team of local facilitators for sectoral discussions on the analysis report and for identifying local action points through participatory process. Most of the plan seem to be missing this. There are no evidences whether there were public consultations involved in the formulation of these plans. The DM plans formulated seems to be merely filling up the templates provided with consolidation of scattered data available at the LSG level.

Chapter 1, 2 and 3 demands a situational analysis based on the secondary data (Census, ground truthing) and map data provided by KSDMA and LSGD. Only 30-40% of the LSGs have understood the purpose of coming up with such a plan. The reports were supposed to focus on identifying the scope of interventions at the panchayat, block, and district levels. This is to reflect in chapters 4 and 6. These 2 chapters have failed to deliver the purpose that is to feed projects to the annual plans due to lack of understanding, trainings given to convert the identified strengths and weaknesses into projects. The maps given by most of the LSGs in chapters 1,2,5 are not to scale and not depicted in colour, hence not able to make sense of what the maps are trying to convey. The Grama panchayat DM plans are better in comparison to the municipalities in general. Thiruvananthapuram Corporation with its long history of disaster management related activities in the district has produced a comparatively good report in urban local bodies.

### **Chapter wise Analysis**

## 1. **Chapter 1 – Local Self Government Institution – General information.**

General information pertaining to the LSG is recorded in this chapter. Ward level data is also acquired from the respective departments and concerned institutions. Varkala Municipality, Pallickal, Chirayinkeezhu, Vakkom, Anjuthengu, Trivandrum corporation, Edava and Vettoor has completed majority of the data in this chapter whereas few panchayats such as Kottukal, Karavaram, Kollayil, Vilappil, Nellanad, Vithura, Aryanad, Pallichal and Amboori has filled in the data very poorly. Majority of the LSGs have completed data on General information, geography of the area, demographic data, ward wise distribution, livelihood vocations, veterinary hospital dispensary, community centers, religious centers, details of roads and bridges, names and details of natural water bodies, and names of implementing officers, whereas details on infrastructure details- inhabitable buildings, health institutions, listing of anganawadis, educational institutions livelihood records, economy details and history are just satisfactorily filled. A total of 26-32 maps were handed over to every LSGs to be included, but majority of them are not added. Even if they are added, most of them are of smaller scale, lesser resolution or not in color and hence don't make sense in the chapter. The map details need to be analyzed and compared with the available data on ground like hazard specific data to the on-ground infrastructure in place or resources available in the area. None of these is mentioned.

## 2. **Chapter 2 – Disaster risk and vulnerability assessment.**

Disasters likely to occur in the LSG and the assessment of such possible disasters are included in this chapter. This helps to identify the areas of possible disasters and would help to sketch preparatory actions. Manamboor, Trivandrum corporation, Varkala Municipality, Peringamala, Pallickal, Chirayinkeezhu, Vakkom, Anjuthengu and Edava Panchayats has fairly done good in completing this chapter with specific details given in the template, whereas Kottukal, Chenkal, Kunnathukal, Kadakkavoor has not done justice to the given template with many of the contents, tables left blank. Most of the LSGs have completed the tables and details on sections to be given special attention, areas of disaster-prone areas, tables on economic weaknesses and public buildings in disaster prone areas. Majority of the LSGs have given less importance to history of regional level disasters and other notified disasters in the last 5 years. Similarly, there is a poor listing of recurring periodicity of disaster in the area, regions where disasters are likely to occur, and geographically vulnerable areas to disaster based on the maps or wardwise. This chapter also lacks proper usage of the given maps (6-8 hazard specific maps) and analysis based on the hazard proneness of the areas in the LSGs. Nedumangad municipality and 2 other panchayats have used another template which has climate change related components in the plan.

### 3. **Chapter 3 – Disaster response**

This chapter deals with the disaster response plan. The main task forces to be formed and names and particulars of the persons to be there in each team is included in this chapter. Trivandrum corporation, Varkala municipality, Kunnathukkal, Peringamala, Pallickal, Chirayinkeezhu, Vakkom, Anjuthengu and Edava has given most of the data proximal to the given template in this chapter whereas LSGs of Vembayam, Chenkal, Neyyatinkara municipality, Kottukal has not detailed out the data as required in the given template. More than 60% of the LSGs have given complete data including the names and phone numbers of the ERT team members, list of volunteers though few of the LSGs have only specified the names of the people and no contact details. The chapter also looks into the evacuation plans for different hazards, and institutions, responsible persons to be contacted and their roles at the time of emergencies. These contents are not properly reflected in most of the LSG plans. In many of the LSGs, ward wise data is missing and the members in the ERTs see a duplication. The chapter lacks a clarity on the roles and responsibility of the ERT members. No much information on evacuation routes and shelter management strategies or such DRR related activities.

### 4. **Chapter 4 – Preparedness, Mitigation and Capacity building.**

Details of preparatory actions, disaster mitigation plans and social empowerment steps the LSG intends to take up is included in this chapter. This is one of the chapters that needs more details across most of the LSGs. The chapter discusses the mitigation measures, preparatory steps, warning steps, safety check, and capacity development by ERT and for other risk informed development activities. Major tables and contents are filled only by panchayats of Karavaram, Kadakkavoor, Vellanad, Manamboor and Chemmaruthy while majority of the panchayats have left the tables and contents blank. Most of the contents in this chapter are left blank except for the introduction part where in just the template contents are listed. The strategies mentioned in few of the panchayats are very generic and not specific to the local context comparing it with the hazards that are prevalent in the area according to chapter 2. Capacity enhancement measures, social empowerment measures are also lack contents. This chapter ideally needs to make use of the hazard maps and analyse on the landuse and measures to be taken are to be driven by the lack of capacities in the LSGs which seem to be lacking.

### 5. **Chapter 5 – Resource Mapping**

This chapter majorly deals with the resources and potentials of the LSGs. Majority of the LSGs has done a fairly good work on completing this chapter. Details on drinking water availability, market place/public distribution centres, mortuary/crematorium, and waste management facilities are available. Few details on waste management facility are simply mentioning of the presence and deployment of kudumbashreestaff, Clean Kerala Company to dispose waste. But no major innovative measures taken specific to any LSGs are mentioned. The chapter also has tables on strengths, weaknesses (SWOT), opportunities and threats in LSGs. This data is lacking in majority of the plans. Social resource maps are also not there in many of the plans. Even if the maps are there, it is just pasted without much analysis or depiction on what those maps represent.

#### **6. Chapter 6 – Disaster Risk Reduction Projects.**

Disaster management/mitigation project proposals which can be submitted at various levels are to be included in this chapter. This is another important chapter that needs to be given more attention. Sadly, majority of the LSGs has failed to include this in their plans. Except for few grama panchayats majority of the panchayats has just given generic project suggestions and pasted the template contents confining the chapter to just 1 page. Only 8 out of 78 LSGs have put an effort to bring out a fairly better listing of projects in proximal to the given template. The projects majorly include road construction and other infrastructure related mitigation measures than preparedness and response specific risk reduction interventions. The template mentions about listing of interventions/projects specific to hazards, proneness and mitigation necessities to be listed sector specific to be implemented in different levels. This is one chapter that needs massive revision and training if necessary, to develop projects based on the chapters 2, 4 and 5.

#### **7. Chapter 7 - Important phone numbers**

This chapter contain details regarding the information of the personals, elected representatives and important places that needs to be contacted specific to the search and rescue, response activities. Majority of the LSGs have listed these data in the tables. Ward specific data of these is missing in about 40% of the plans. Around 50% of the LSGs have not detailed veterinary services and other helpline numbers that needs to be contacted during emergencies.

#### **8. Chapter 8 - Annexures (Ward specific data)**

This chapter contains ward level information for contact during emergency times and the basic demographic details and other vulnerable section details specific to the wards. Only 40% of the LSG DM plans have given a dedicated annexure listing of wards wise. Other plans have just left blank columns as given in the template. Few of the LSGs who have given demographic and disaster loss data in the tables have not mentioned the source from which they have taken the data from. This chapter also needs a thorough revision.

### Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement& Major Recommendations

#### **a) Strengths / Best Practices**

Based on the scoring of the proximity to the given template, a face sheet as given in table 2 is taken as a benchmark to rate the DM plans. One of the major objectives of the plan was to identify the hazards, vulnerabilities, strengths, weaknesses and capacities in a particular LSG and suggest suitable measures to tackle them by formulating projects. Hence, the content availability in chapters 4 and 6 are given importance while suggesting the good plans.

Based on this, the DM plans made by Pulimath, Kalliyoor, Madavoor, Kunnathukal, Aryancode, Vakkom, Kilimanoor, Kadinamkulam panchayats, Neyyatinkara, Varkala municipality and Thiruvananthapuram corporation have better content availability and has a better understanding on the purpose of producing the DM plan. Considering the fact that the plans were produced in a quick manner and covid restrictions barring the possibilities of public participation, these LSGs have produced a good DM plan that has proximity to the template provided.

Thiruvananthapuram Corporation DM plan prepared is one of the good DM plans in the district. This could be because of a dedicated DM cell in the corporation who understand the need of such plans and their continuous and constant engagement with the State Disaster Management Authority and District Disaster Management Authority. Another good DM plan that is worth mentioning is that of Pulimath, Madavoor and Kilimanoor Panchayat which has brought out constructive interventions in chapter 6 based on the strengths and weaknesses identified in chapters 2,4 and 5.

In January 2021, before the preparation of 2020-21 annual plan, these comments were passed on to the Panchayat secretaries and the plan clerks who are responsible for the

preparation and correction of these plans in a meeting called by the DPO. They were also given a broad idea on how they could improve the plan so that they could formulate projects out of the analysis they would bring out of each chapter in the plan.

## **b) Gaps Identified / Areas of Improvement**

Thiruvananthapuram is a district which experiences all the major hazards in the state varying from hydro-meteorological, geo-hydrological and other hazards caused by anthropogenic activities. It also has a long coastline which is exposed to cyclones, coastal erosion and heavy winds. This along with the vulnerability of people living in these areas make it a highly disaster-prone district in the state. Given that,

- The basic data given in the chapters 1 and 2 lack content in many of the LSG DM plans. The methodology suggests a transect walk and public participation on ground by the experts and local representatives. But this seems to be missing in majority of the plans.
- The history of disasters in past 5-10 years are missing in most of the plans. The immediate memory just puts across just the 2018, 2019 floods in most of the plans.
- Hazard identification and assessment needs to be done based on the maps provided by the KSDMA. But around 70-80% of the plans has just pasted them without much analysis or any correlation of these maps with the on-ground availability of resources and risk on ground. The vulnerable section, their shelters, details on houses, damages etc also are lacking in few of the panchayats.
- In chapter 3, only the ERT member, volunteers' names and details are given. Majority of DM plans lack a clear idea on what are the roles and responsibilities of these members. Also, there is a lack of gender balance and representation from all the vulnerable sections in most of the ERTs across the LSGs. The ward wise data listing of the members is also lacking in various DM plans.
- In resource mapping most of the tables are left blank or without necessary information like contact details etc which are bare minimum a DM plan should contain.
- Project interventions/recommendations are vaguely presented. No distinct difference on the level where in these interventions need to be implemented.
- Ward wise details of demographic data, vulnerable sections, various features like housing type, water resources, hazards, etc are not mentioned in many of the annexures.

## **Major Recommendations**



- Being a pilot effort, this initial LSG DM plan is something that is worth appreciating. Having said that, in future revisions, involvement of people from expert background could help in making a better plan.
- An updated demographic details in each LSG based on the recently available data could enrich the vulnerability assessment in the region. The ward members, LSG members could maintain an updated number of vulnerable sections which will be of help during emergency situations.
- There is lack of trainings to the officials responsible in making the plans. Few of the areas like hazard, risk, vulnerability assessment it requires expert guidance and few ground level truthing before they are listed in the plan. This requires a series of trainings to these officials.
- Most of the maps are just randomly pasted without having understood the purpose of them. Different layers of maps could bring in a detailed information on the different hazards, areas prone to disasters and evacuation routes that could be formulated. This also requires a detailed training.
- Most of the plans have only listed the natural hazards in the area and has completely ignored the other possible man-made disasters. This also needs to be incorporated with the guidance of experts from areas like CBRN, road safety, health department etc.
- Only the damaged structures and possible future hazard prone areas are identified and mitigation, prevention measures are suggested. There are lesser suggestions on the existing structures that are in hazard prone areas. Something like a building foot print overlay on the hazard map could specifically identify the structures that lie in the hazard prone areas.
- Apart from just the quantitative details listed in the chapters that bring out the vulnerability, a chapter on the qualitative elements would help bring out the difficulties faced by different vulnerable sections in the LSGs. Different section specific FGDs could bring out these subjective elements in the DM plan.
- None of the plan has touched upon the local knowledge to tackle disasters, interventions based on the experiences faced during the recent disasters. Highlighting this could help in better understanding on what works and what not during an emergency situation.
- Data available as per the template could be collected from transferred institutions and through focus group discussions on to a portal for quick reference and for future reference.

**Section IV | Training Needs (you can suggest any kind of capacity building or training programmes which can support/improve the local level disaster management)**

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants</b> (Officials/People Rep.)	<b>Objectives</b>
Basics of disaster management	LSGD officials, local representatives and community	To understand how a Disaster management system works in different levels.
Incident response system	LSGD officials, Elected representatives	To ensure there is effective risk communication during a emergency and during a disaster. This also enables a smooth administrative and hierarchical functioning of the system.
Trainings on search and rescue, shelter management, Swimming training, early warning, first aid and basic life skills	ERT Members, Children and vulnerable sections, Community members	Being the first responder, the lives saved during the golden hour is of prime importance. This training could aid this.
Fire and rescue/ mock drills	Ground level officials responsible at LSG level or in Block level	This could reduce the number of deaths due to fire, help people prepared in case of such events.

Awareness trainings	Community members, Local resource groups, volunteers, Kudumbashree trainers.	This could bring out a general idea among the community on how to react to certain warnings, how to respond to various emergency situations. This also helps the officials in formulating risk informed planning among the community.
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### Section V | Conclusion

Rebuild Kerala Initiative (RKI) launched the campaign “NammalNamukkayi” with the to utilize the knowledge, experience and ideas of the entire people of the state in a participatory and practicable manner for rebuilding Kerala. Preparation of Disaster Management Plan by every Self Government Institutions is an important component of the above campaign formulated in *People's Planningmode*.As a first-time effort of this massive scale, it lacks certain elements that needs to be looked into and rectified by incorporating the suggestions from experts and giving trainings to get a more streamlined and efficient data from the ground. It is to be noted that the officials need to ensure people’s participation and leader lead intervention of local self-government institutions in disaster mitigation, preparation and disaster management areas, preparing DM plans and for the efficient implementation of such plans at local self-government level as part of annual plans.With more trainings and on ground detailing of the data required for the plan, a refined DM plan could be formulated at the local level. In future course, these plans will serve as a stepping stone to Kerala’s roadmap to disaster risk reduction.

## REVIEW OF LSG DM PLAN

# KOLLAM

### Section I- Overview of the LSG DM Plans in the District

LSG Disaster Management Plans envisaged inculcating people's participation with the leadership of respective local bodies so that Disaster mitigation activities can be planned in a practicable manner for rebuilding Kerala. The review of the plan was done keeping this vision. Chapter-wise analysis was done to identify the best practices, areas of improvement and to check the completion of crucial data so that the plan can be implemented effectively locally.

Table 1

Name of the District – Kollam			
Sl. No.	LSG Type	Total Number	Number of Plans Submitted by LSGs
1	Grama Panchayats	68	68
2	Municipalities	4	4
3	Corporations	1	1
Total		73	73
Name of the Reviewer: Gauri N Ghosh			

Table 2

Explanation	Colour code
Content not available	
Insufficient content	
Content could be strengthened	
Content is proximal to the template	

Sl. No.	Block	LSG Type	LSG Name	Chapter-wise content availability (Give Colour Codes)							
				1	2	3	4	5	6	7	8
1	OCHIRA	PANCHAYATH	THAZHAVA								
2	OCHIRA	PANCHAYATH	KULASEKHARAPURAM								

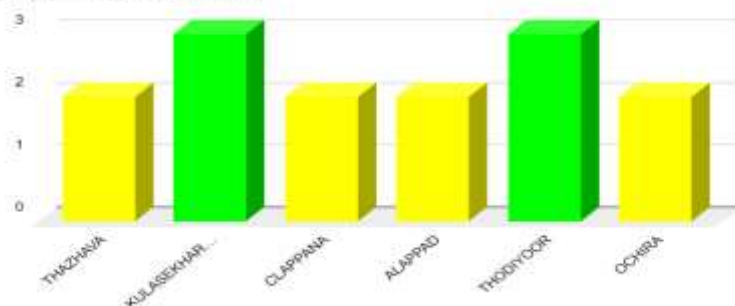






The chart given below is the block-wise analysis of DM plans of different LSGs in Kollam based on the accuracy of the general information provided and the completion of Data in Chapter 1. History and geography were not included by keeping the context of past disasters and current disaster risk. Maps of panchayats as mentioned in the introduction were not included by many LSGs. The completion of data regarding the infrastructure facilities, public buildings in disaster-prone areas, economic and livelihood record was looked upon while reviewing this chapter. The phone numbers of implementing officers were also not updated in many plans. While comparing all the chapters in the plan, data completion was higher in this chapter. The chapter was analysed in the light of all these criteria and is reflected in these charts.

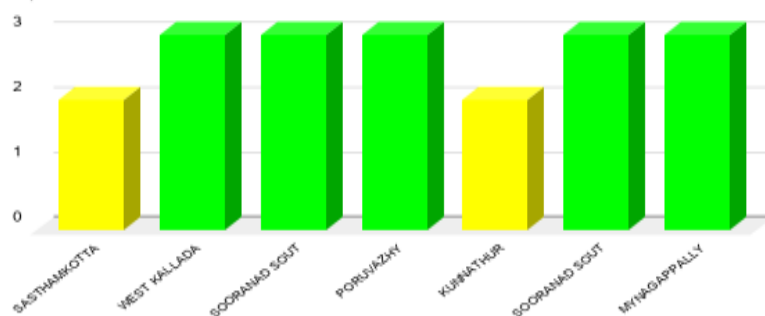
Ochira Block - Kollam  
Chapter 1 - Basic Details of LSG



Ochira Block has 6 Panchayats, out of which Kulasekharapuram and Thodiyoor have provided content proximal to the template.

Out of the 7 Panchayaths, Data provided by Sasthamkotta and Kunnathur can be strengthened more compared to other Panchayaths in the block in terms of completion of data, maps provided.

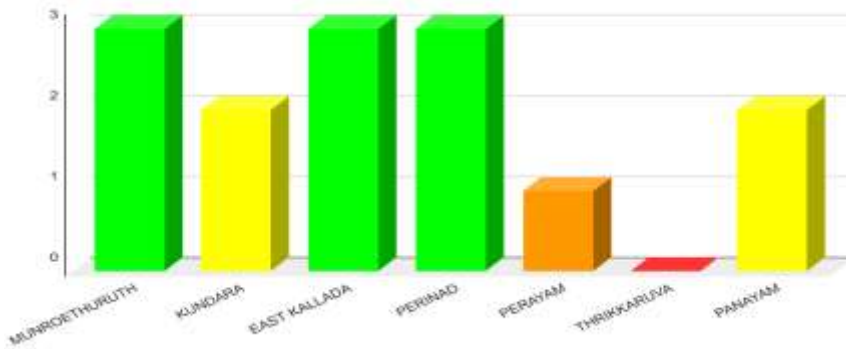
Sasthamkotta Block - Kollam  
Chapter 1 - Basic Details of LSG





### Chittumala Block - Kollam

Chapter 1 - Basic Details of LSG

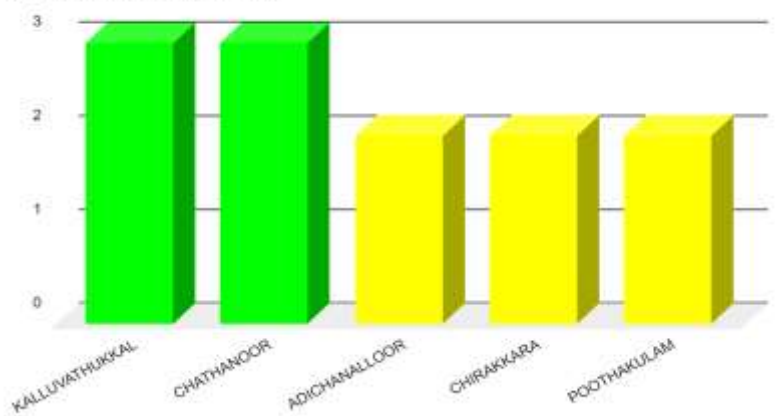


Data was insufficient in the plan of Perayam. Important contents from Table 1.3 to 1.5, implementing officers, natural water bodies and maps were missing in the plan of Thrikkaruva

All tables were completed in the plans of Kalluvathukkal and Chathannoor. Tables were omitted in the plans of Adichanalloor, Chirakkara, Poothakulam panchayaths

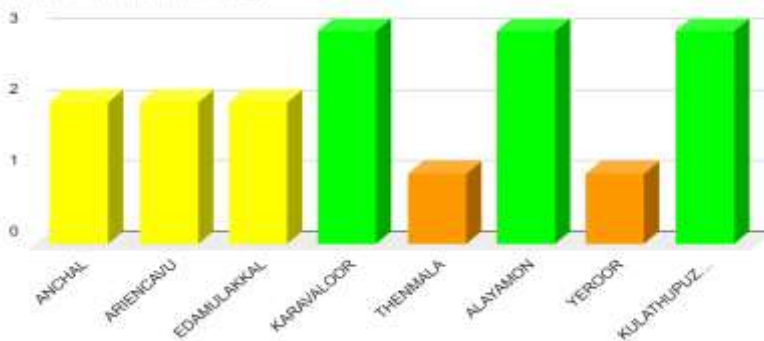
### Ithikkara Block - Kollam

Chapter 1 - Basic Details of LSG



### Anchal Block - Kollam

Chapter 1 - Basic Details of LSG



Thenmala and Yeroor had insufficient content. Most of the tables were left blank. Economic Status, natural water bodies, maps were not included in the plan of Thenmala while data regarding Roads, infrastructure facilities maps, inhabitable houses were not included in the plan of Yeroor.

**Chavara Block - Kollam**

Chapter 1 - Basic Details of LSG

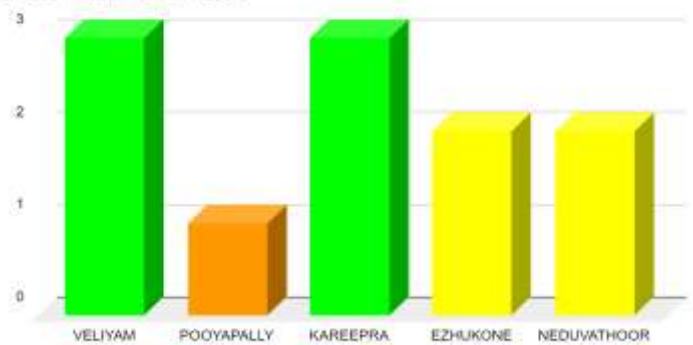


Chavara and Neendakara had provided data proximal to the template while data could be strengthened in Thekkumbhagom, Panmana, Thevalakkara Panchayaths.

Table 1.17- 1.20 were missing in the plan of Pooyappally.

**Kottarakara Block - Kollam**

Chapter 1 - Basic Details of LSG



**Vettikavala Block - Kollam**

Chapter 1 - Basic Details of LSG

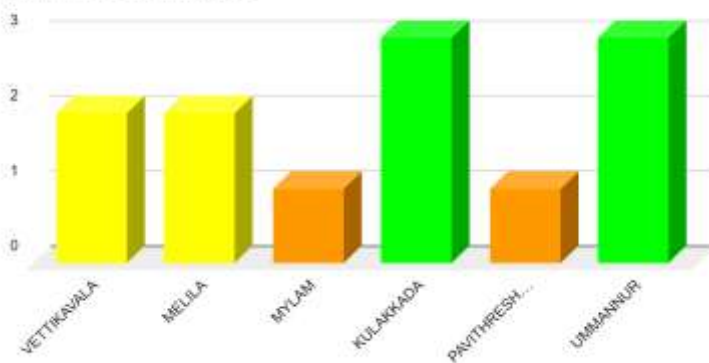
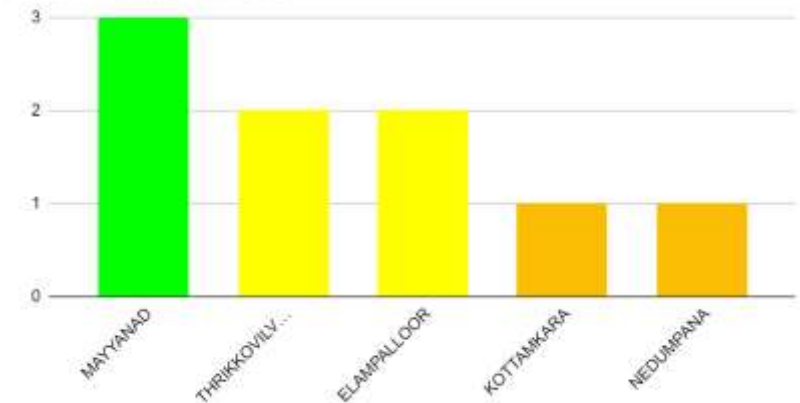


Table 1.3- 1.5 was missing in the plan of Mylam. The template was not followed properly by Pavitreshwaram. Data was insufficient in both the plans.

Mayyanad had content proximal to the template. Kottamkara and Nedumpana failed to provide maps and data can be more strengthened in their plan

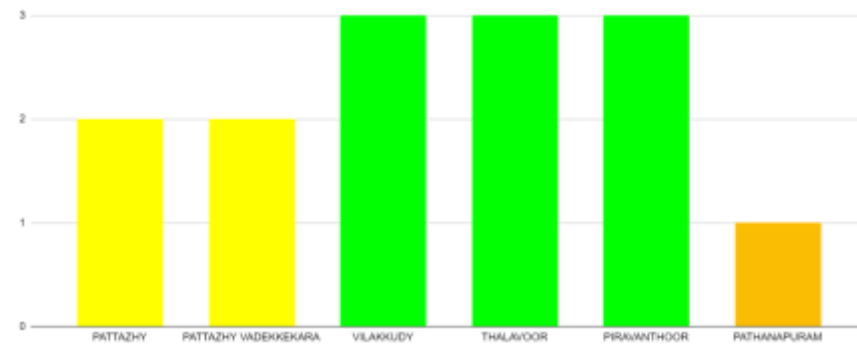
### Mukhathala Block - Kollam

Chapter 1 - Basic Details of LSG



### Pathanapuram Block - Kollam

Chapter 1 - Basic Details of LSG



Data was insufficient in the plan of Pathanapuram in terms of completion of data, maps provided. Data can be more elaborated in the plans of Pattazhy and Pattazhy Vadekkakara

### Chadayamangalam Block - Kollam

Chapter 1 - Basic details of LSG

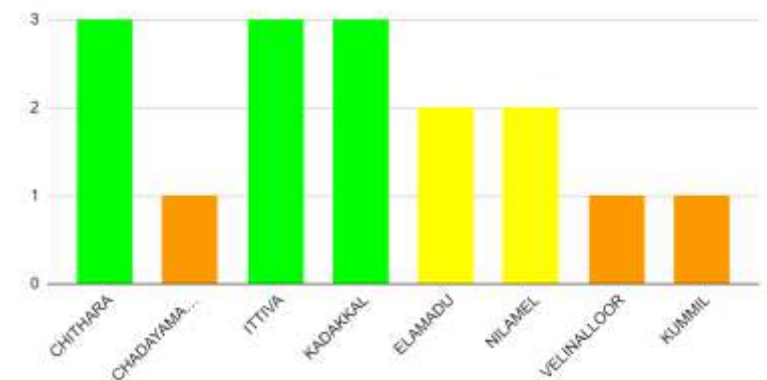
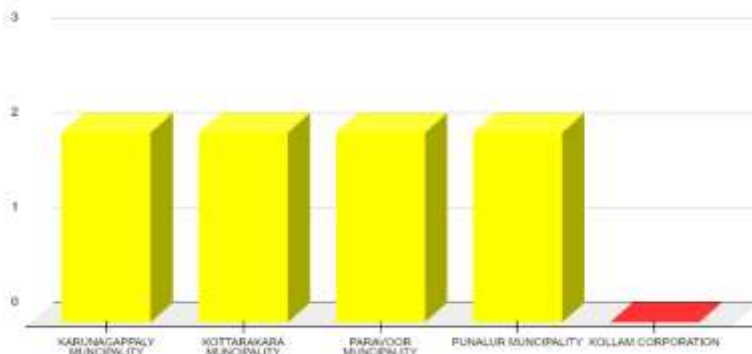


Table 1.3-1.21 is omitted in the plan of Chadayamangalam. Velinalloor failed to provide the demographic particulars, infrastructure facilities and data regarding Roads and inhabitable buildings were omitted in the plan of Kummil.



Data can be strengthened in terms of history and Geography, educational and religious institutions, natural water bodies in the plan of Municipalities. No data was available in the plan of the Corporation

## Chapter 2

Data regarding the recurring periodicity of disasters, disaster-prone areas, buildings in disaster-prone areas, groups to be given special attention, were crucial to this chapter. Floods, droughts were mentioned by most of the LSGs as their local hazards. Deaths caused by drowning, accidents, mob deaths were also mentioned by LSGs. Details of the local hazards mentioned by LSGs are provided in the table given below. Groups to be given special attention were provided by almost all LSGs. Buildings in disaster-prone areas were also not mentioned by many LSGs. Maps of disaster-prone areas were an integral part of this chapter. Many LSGs mentioned that the map is available on the KSDMA website but failed to attach the map in their plan. 38 LSGs that have provided the map given by KSDMA included Kulasekharapuram, Thodiyoor, Kundara, East Kallada, Perinad, Perayam, Adichanalloor, Chirakkara, Poothakulam, Alayamon, Yeroor, Kulathupuzha, Chithara, Chadayamangalam, Ittiva, Elamdu, Nilamel, Chavara, Thekkumbhagom, Panmana, Thevalakkara, Pooyappalli, Kareepra, Ezhukone, Thrikovilavattom, Elampalloor, Kottamkara, Nedumpana, Vilakkudy, Thalavoor, Piravanthoor, Pathanapuram, Vettikavala, Mylam, Kulakkada, Pavithreswaram, Ummanur, Paravur Municipality.

LOCAL HAZARDS MENTIONED		
Sl No	BLOCK	HAZARDS MENTIONED - Panchayath Data
1	OCHIRA	Flood- Thazhava, Kulasekharapuram Tsunami- Alappad, Clappana Coastal Erosion- Alappad Accidental Deaths- Kulasekharapuram

2	SASTHAMKOTTA	Flood- North, Poruvazhy Landslide-	Sasthamcotta, West Kallada, Sooranad South, Sooranad  Sasthamcotta
3	CHITTUMALA	Flood-	Munroethuruth
4	ITHIKKARA	Flood- Poothakulam, Kalluvathukkal, Adichanalloor	Chathannoor, Chirakkara,
5	ANCHAL	Flood- Landslide-	Edamulackal, Karavaloor, Yeroor, Anchal Karavaloor
6	CHADAYAMANGALAM	Flood- Deaths due to Accidents- Deaths due to Drowning-	Ittiva Chadayamangalam Velinalloor
7	CHAVARA	Flood- Drought-	Chavara, Panmana Thekkumbhagom
8	KOTTARAKARA	Flood- Earthquake- Deaths due to Drowning-	Veliyam, Neduvathoor Pooyapally Veliyam, Ezhukone
9	MUKHATHALA	Flood-	Mayyanad, Kottamkara, Nedumpana
10	PATHANAPURAM	Flood-	Pattazhy, Pattazhy Vadakkekara, Vilakkudy, Thalavoor
11	VETTIKAVALA	Flood- Deaths due to drowning-	Vettikavala, Melila, Mylam Ummannoor

Sl. No	MUNICIPALITY	HAZARDS MENTIONED
1	KARUNAGAPPALLY	Floods
2	KOTTARAKARA	Not Mentioned
3	PARAVOOR	Floods, Deaths due to Accidents
4	PUNALUR	Landslide, floods

Sl. No	CORPORATION	HAZARDS MENTIONED
1	KOLLAM	Not Mentioned

### **Chapter 3**

ERTs were formed by the majority of the LSGs but data was insufficient. in terms of updated phone numbers, the number of ERT members provided. Some of the LSGs including East Kallada, Perinad, Perayam, Thrikkaruva, Poothakulam, Thenmala, Kummil, Panmana failed to form ERT groups. Kulakkada, Munroethuruth, Ummanur, Mayyanad provided evacuation plans suitable for floods. 41 LSGs were seen omitting the data regarding evacuation plans. ward wise data was missing not only in this chapter but also in further chapters where ward wise data is crucial.

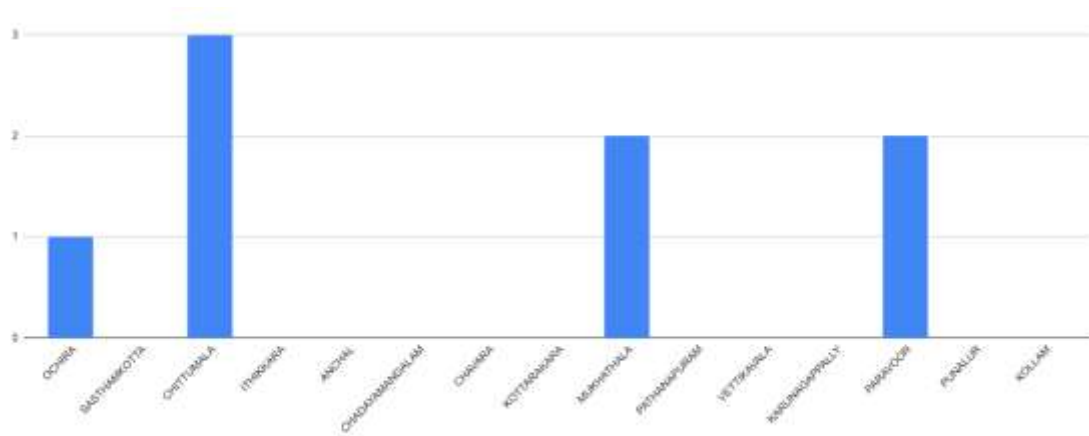
### **Chapter 4**

Local Hazards were mentioned by LSGs in the second chapter but failed to connect it with the fourth chapter which asked to mention the mitigation strategies, preparedness measures and social empowerment measures specific to the local hazards mentioned in the second chapter. The chart below shows the block-wise completion of data in Chapter 4. Munroethuruth and Panayam are the only LSGs that attempted chapter 4 from the Chittumala block. Munroethuruth had content proximal to the template. Only Table 4.3 was completed in the plan of Panayam. Other LSGs in the Chittumala block had no data in Chapter 4. Mayyanad from Mukhathala Block and Paravur Municipality had attempted to complete the chapter but data could be more strengthened in terms of mitigation and preparedness strategies specific to hazard situations. Some data was provided by Thazhava Panchayath, Ochira block but was insufficient and the template was also not followed.

### **Chapter 5**

Chapter 5 is crucial in the context of resource mobilisation and maximum utilisation of the existing capacities of different LSGs in a disaster risk situation. Templates were left blank in the plans of many LSGs. Accurate phone numbers were not given in the plans of many LSGs which will be a difficult situation while in need of resources. A technical error was found in the SWOT analysis of Many LSGs. SWOT analysis pertaining to the disaster risk situation was missing in many LSGs and a general SWOT analysis was provided instead

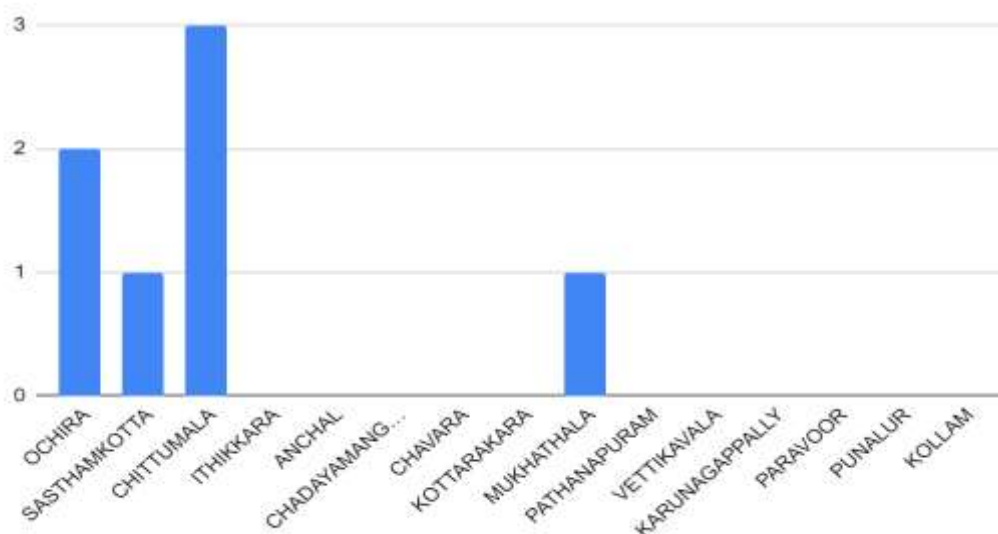
A social resource map was provided by Velinallur, Ummanur, Munroethururth and Paravur Municipality.



### Chapter 6

Only a few LSGs as mentioned in the analysis of the 4th chapter have provided the mitigation strategies, preparedness strategies in their plan. Due to this, a gap was found in the completion of data in the 6th chapter. Most of the LSGs omitted the 6th chapter and also did not follow the proper template. Project proposals were not given precisely and in connection with the pertaining hazards in the area

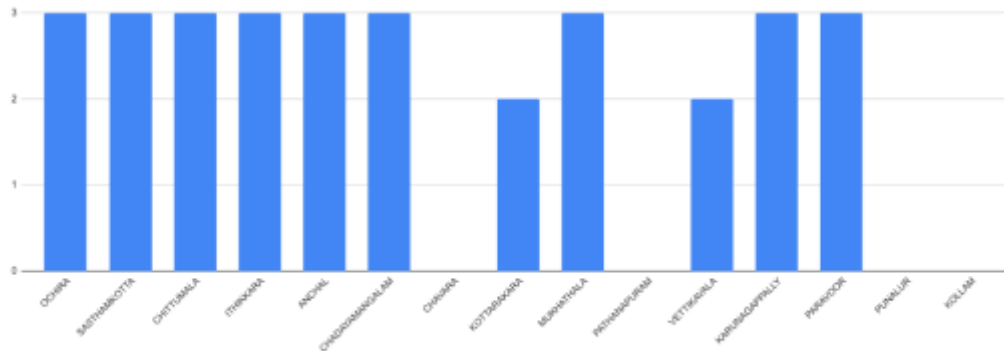
Projects to be included in the Disaster management authority and RKI was not provided by Thazhava, Kulasekharapuram and Thodiyoor panchayaths. Other LSGs in the Ochira block had no data available. Data were insufficient in the LSGs of Sasathamcotta Block. Only Munroethururth from Chittumala Block have completed the 6th chapter but projects can be more elaborated in the plan. Mayyanad from Mukhathala Block and Kulakkada have attempted the chapter but not provided projects in RKI. Some



LSGs have mentioned only project tiles with no clear objectives and fund allocation. Chapter 6 was omitted by most of the LSGs.

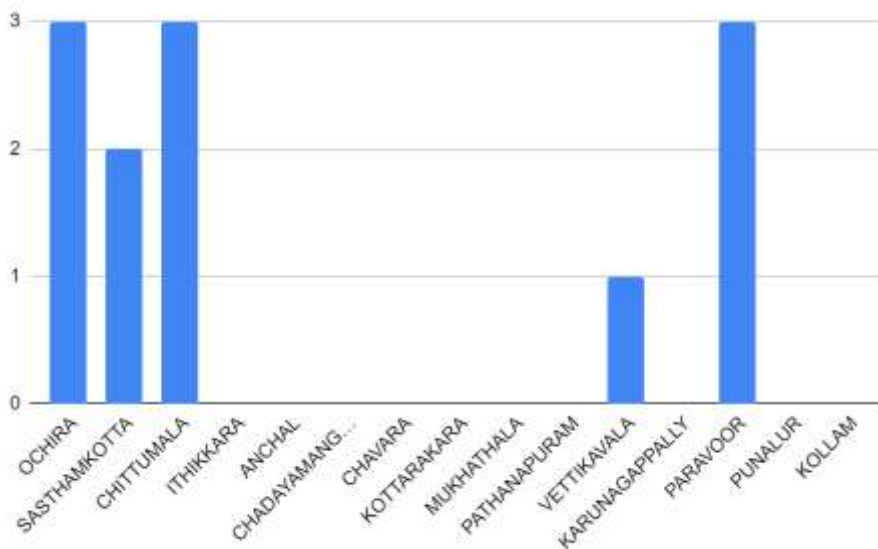
Chapter 7

Contact numbers were provided by most of the LSGs but only some gave ward specific details. Punalur Municipality, Kollam Corporation, Chavara, Thekkumbhagom had omitted the chapter.



Chapter 8

Annexures were attached by LSGs but not many have provided the source of details. Kollam Corporation, Karunagappally and Punalur Municipality have not attached the annexure part in their plan. Paravur Municipality, Ummanur Kulakkada, Karavalor, Thazhava and Munroethururth have provided annexure with complete ward wise data.



Strengths / Best Practices

The DM plan of Munroethururth can be elucidated as the best plan in the district for involving in a participatory process



for plan preparation. Proximity to the template and quality of data provided also makes the plan a better one. Availability of maps including maps of Panchayaths, disaster-prone areas, road maps and CRZ maps can be seen in the plan of Munroethururth.

### Section 3: Gaps Identified / Areas of Improvement

A bottom-down approach was needed in the initial stages of plan preparation. chapter 4 and chapter 6 were not sufficient in all of the plans. only a few plans connected to chapter 4 and 6. This indicated a technical issue in preparing data for this plan.

Adding pictures of the work done, gram sabhas and other programmes conducted on behalf of plan preparation can be added. The importance of maps can be seen least understood. Training can be conducted for making them analyse different maps regarding disaster management.

### Major Recommendations

- Engagement with local clubs registered non-governmental organisations and Kudumbhasree will be beneficial in the process of plan preparation and implementation.
- Community power authorities can be identified and involved in the process of developing plans.
- Ward level data can be collected utilising the authorities and key stakeholders from each ward and LSGs can consolidate the data accordingly.
- Plan to form a DRR committee in each ward and adequate training can be provided at regular intervals thus decreasing the casualties at the time of a disaster
- Monitoring and proper evaluation are needed in the formulation of LSG DM Plans in Districts. More stakeholders have to be included in the plan development process

### Section 4: Training Needs

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants(Officials/People Rep.)</b>	<b>Objectives</b>
Community-based DRR Training	Elected representatives from each disaster-prone areas Representatives from each ward under the DRR committees	To provide basic knowledge and practicum to implement DRR plans in disaster-prone areas

	LSG Plan Coordinators KSDMS District representative Representatives from Clubs and other non-governmental organisations, residents, etc	
PRA	Elected representatives from each disaster-prone areas Representatives from each ward under the DRR committees LSG Plan Coordinators KSDMS District representative Representatives from Clubs and other non-governmental organisations	To provide training for the representatives for participatory plan-making and to identify various resources in each specified areas
Flood Risk Mitigation and Management training	Elected representatives from each disaster-prone areas Representatives from each ward under the DRR committees LSG Plan Coordinators KSDMS District representative Representatives from Clubs and other non-governmental organisations	To identify and implement measures that reduce the risk affected by floods.

## Section 5: Conclusion

All the LSGs in Kollam District have submitted their respective DM Plans time-bound amidst Covid 19 Pandemic situation. The review of the DM plans submitted in 2019-2020 shed light on the results of the initiative to involve people's participation in Disaster Management plans. The necessity of such a plan was imbibed by Many LSGs in the Districts which showcased on their Plans. The review of this plan helped to identify the gaps in DM plan preparation at the LSG level and will hopefully pave a way forward to successfully implement the LSG level Disaster management plan in Districts across Kerala.

## REVIEW OF LSG DM PLANS

# PATTHANAMTHITTA

### Section I | Overview of the LSG DM Plans in the District

#### **Introduction**

Pathanamthitta District, the thirteenth revenue district of the State of Kerala, nestles its head on the slopes of the Western Ghats and stretches to the low-lying rice fields bordering Alappuzha District. It was formed with effect from the 1st November, 1982 vide G.O. (M.S) No.1026/82/RD dated 29.10.1982, with headquarters at Pathanamthitta. It is bounded on the North by Changanassery and Kanjirappally Taluks of Kottayam District and Peerumade Taluk of Idukki District, on the East by the State of Tamil Nadu, on the South by Kunnathur, Pathanapuram and Kottarakkara Taluks of Kollam District and on the West by Chengannur, Mavelikkara and Kuttanad Taluks of Alappuzha District

#### **DISTRICT MAP**



*Table 1*

<b>Name of the District: Pathanamthitta</b>			
<b>Sl. No.</b>	<b>LSG Type</b>	<b>Total Number</b>	<b>Number of Plans Submitted by LSGs</b>
1	Grama Panchayats	53	53
2	Municipalities	4	4
3	Corporations	0	0
Total		57	57
Name of the Reviewer: Sreenidhy Ramachandran - LSG DMPlan Coordinator			

**Table 2**

<b>Colour code</b>	<b>Explanation</b>
	Content not available
	Insufficient content
	Content could be strengthened
	Content is proximal to the template

Sl.No.	Block	LSG Type	LSG Name	Chapter-wise content availability								
				1	2	3	4	5	6	7	8	
1.	Mallappally	Panchayath	Anicadu	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Lightgreen	Yellow
2.	Mallappally	Panchayath	Kaviyoor	Lightgreen	Lightgreen	Yellow	Orange	Yellow	Yellow	Yellow	Lightgreen	Yellow
3.	Mallappally	Panchayath	Kottanad	Yellow	Yellow	Orange	Orange	Yellow	Yellow	Yellow	Lightgreen	Orange
4.	Mallappally	Panchayath	Kottangal	Orange	Red	Red	Red	Red	Red	Red	Red	Red
5.	Mallappally	Panchayath	Kallooppa	Lightgreen	Yellow	Yellow	Orange	Yellow	Yellow	Yellow	Yellow	Yellow
6.	Mallappally	Panchayath	Kunnamthanam	Lightgreen	Yellow	Yellow	Red	Yellow	Orange	Lightgreen	Lightgreen	Lightgreen
7.	Mallappally	Panchayath	Mallappally	Yellow	Yellow	Orange	Red	Orange	Red	Yellow	Yellow	Yellow
8.	Pulikeezhu	Panchayath	Kadapra	Yellow	Yellow	Orange	Orange	Yellow	Red	Yellow	Yellow	Yellow
9.	Pulikeezhu	Panchayath	Kuttoor	Lightgreen	Yellow	Yellow	Orange	Yellow	Lightgreen	Lightgreen	Lightgreen	Lightgreen
10.	Pulikeezhu	Panchayath	Niranam	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Lightgreen	Lightgreen	Yellow
11.	Pulikeezhu	Panchayath	Nedumpram	Yellow	Yellow	Yellow	Orange	Orange	Lightgreen	Lightgreen	Lightgreen	Yellow
12.	Pulikeezhu	Panchayath	Peringara	Yellow	Yellow	Yellow	Orange	Yellow	Yellow	Yellow	Yellow	Lightgreen





## **Introduction**

Kerala was heavily jolted in the devastating floods of August 2018. Rebuild Kerala Initiative is formulated by the Government with the aim to reconstruct the state in a much better manner than what it was before the floods. In response to the 2018 floods, the Government of Kerala initiated the Rebuild Kerala Development Programme (RKDP) under the Rebuild Kerala Initiative (RKI), which focuses on building a "Resilient Kerala" by supporting key sectoral departments of the government align their development and planning process to a collective objective of building a more resilient state. Rebuild Kerala Initiative (RKI) has launched a campaign by the name Nammal Namukkayi with the aim to utilize the knowledge, experience and ideas of the entire people of the state in a participatory and practicable manner for rebuilding Kerala. Preparation of Disaster Management Plan by every Self Government Institutions is an important component of the above campaign formulated in People's Planning mode.

‘Nammal Namukkayi’ is the campaign planned by the Government of Kerala aiming at preparing local disaster management plan in every panchayaths and urban local bodies of Kerala. ‘Nammal Namukkayi’ is envisaged a detailed plan process with the participation of public. The aim is to get feedback and opinion from the public and prepare local plans to mitigate disasters. It focuses on the preparation of DM Plans by ensuring people's participation and leaderly intervention of local self-governments, operations and activities pertaining to disaster mitigation, preparedness, resistance and disaster management.

Pathanamthitta district consists of a total of 57 LSGs including 53 Grama Panchayaths and 4 Municipalities. As per the records; it is found that prior to the preparation of Disaster Management Plan, 53 LSGs have conducted the transect walk and focus group discussions. Also, almost 50 percent of the LSGs have discussed the DM Plans in the gramasabha meetings. 50 percent LSGs have conducted seminar on DM Plan and discussed the same in the Annual Plan preparation seminar. All the DM Plans followed the template given by KILA; except chapter 2. Almost in all the DM Plans; chapter 2 had followed a different template; which include the Climate change and details. Only very few of the DM Plans included all the maps provided by KSDMA.

## **Chapter wise Analysis**

### **Chapter 1**

Chapter 1 of the DM Plan consisted of all the general information about the LSG. In the detailed review of the plans, the following are observed:

- Some of the LSGs have included the detailed geographical particulars like composition and nature of soil, water bodies, forest, coastal area etc.
- Many of the LSGs have not included the LSG map. Some maps are not legible.
- Source of data is not mentioned in some of the DM Plans.
- Information regarding education centres have included in detail in almost all the DM Plans.
- A few of the plans have not included the phone numbers of implementing officers.

## **Chapter 2**

In Chapter 2, almost all the DM Plans are prepared in a different template which included climate changes and its after effects.

- In more than 90 percent of the DM Plans, History of disasters focused on 2018 and 2019 flood only. No other details mentioned.
- Almost 80 percent of the plans have included the Maps of Disaster prone areas. Maps are not legible in some of the plans.
- 40 percent of the plans have not included the history of disasters.
- Almost all the LSGs have mentioned the vulnerable areas and groups.

## **Chapter 3**

This chapter consists of details of Disaster Response plan.

- Steering committee details are included in majority of the plans. Only 2 LSGs skipped this part.
- ERT details are included in almost all the plans. Some data are insufficient, phone numbers of ERT members not included in some of the plans.
- ERT had formed Panchayath wise in all the DM Plans except a few. The latter had included ward wise details.
- 4 LSGs have not included the list of volunteers.
- 40 percent of the DM Plans have not included the evacuation plan. Other plans have feeble data regarding the same. Response plans and routes are missing in almost all the plans. Also, training suggestions are not included. Some have included disaster prone areas.



## **Chapter 4**

Chapter 4 includes the Disaster Preparation – Mitigation - Social Empowerment Activities.

- Detailed content of this chapter is missing in most of the DM Plans. Disaster mitigation activities and the components are not included in most of the plans.
- Preparatory steps are not included in detail in most of the plans. 25 LSGs included the preparatory steps. Only one LSG mentioned about the warning systems.
- Renovation of water bodies and relief camps are found in some of the plans.
- Only 9 LSGs have included the land use map of disaster prone areas in this chapter.

## **Chapter 5**

This chapter includes the capacities and resources. Collection of information regarding available tools, equipment and devices which could be utilized for tackling disasters is the theme of this chapter.

- The information regarding available resources are included in almost all the plans. But in some of the plans, phone numbers are missing. A very few plans have included detailed list of the resources.
- The details of identified rehabilitation centers are included in almost all the plans.
- SWOT analysis are done by more than 75 percent of the LSGs. But some have not done in detail.
- 40 percent of the plans have not included the social resource map. In some of the plans in which the maps are included; the same is not legible

## **Chapter 6**

Chapter 6 includes the Disaster mitigation plans and project proposals; which could be taken up in different tiers.

- 80 percent of the DM plans have included project suggestions. But only a few of them mentioned it in sector wise. Others have just framed an outline. Projects mentioned in the DM plans are not as suggested in the template in most of the plans.
- Projects to be considered by disaster management authority have not included in most of the plans.
- 20 percent of the DM plans have not included this chapter.

## Chapter 7

This chapter includes phone numbers and particulars of persons responsible for providing guidance, assistance and help in disaster management operations.

- Almost all the LSGs included all the details in this chapter.
- A few plans have not included some of the phone numbers.

## Chapter 8

This chapter includes supplementary information to be collected at ward level.

- 7 percent of the plans have not included this chapter in the plans.
- In some of the plans, ward wise details of some components are given; where as others are excluded.
- Source of data are not mentioned in most of the plans.

## Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement& Major Recommendations

### **Strengths / Best Practices**

Disaster Management plans are highly beneficial for taking immediate actions using maximum available resources within minimal time limit. Out of the 57 DM plans reviewed, no plan compiled the data according to the template completely. Some of them have given the information in detail in a few chapters. In this context, the Disaster management plan of Naranamoozhy GP deserves appreciation. The GP have reconstituted the Disaster management working group and formed Local Resource Group in ward level. Also, they have conducted transect walk and focal group discussion in collecting the information. For preparing the disaster management plan, the Panchayath had discussed the same in gramasabha meetings. Also, they have discussed the DM plan in the preparation of annual plan. All the information is given in detail in chapter 1. The general information contains all the details. The ward information is given in detail. The history of the Panchayath – Social, economic and cultural history, is mentioned. In chapter 2, a detailed introduction of the disasters that occurred in the Panchayath is mentioned. Also, this chapter included the climate changes in detail and their consequences. In chapter 3, the list of volunteers is given ward wise. The maps provided by KSDMA are included in the plan. The project suggestions are also mentioned in detail in chapter 6.

## **Gaps Identified**

For preparing disaster management plan in a village level, preparatory steps are very essential for the effectiveness of a plan. In most of the plans reviewed, situational analysis and transect walk are not seemed to be done. This resulted in the incompleteness of many tables. For example; in chapter 3 in some of the plans, the ERT given are not having any details except name. Also, the maps given by KSDMA are not considered as an important tool in a few of the plans, as they are not legible and also it is absent in some of the plans. The evacuation plan- identified routes for evacuation, the road condition, need for renovation/repair, identified shelter camps, resources etc. should be identified and included in the plan. This part is not filled completely in any of the plans reviewed. Proper data collection seems not done. Also, the available resources are not mentioned fully in any of the plans. The project suggestions that mentioned in Chapter 6 needs more specification.

## **Suggestions/ Recommendations**

- Pathanamthitta is a district which is highly prone to lightning. Some of the LSGs have mentioned in the DM plan about the increase in lightning over past years. Proper awareness and lightning warning system could be provided in each LSG level. (For the past 5 months, more than 200 lightning alerts are received within 6 LSGs). The effect of lightning should be included in the plan.
- The district consists of various tribal colonies (namely in Laaha and Attathod area of Perunad GP). They are more vulnerable to the disasters. Considering the disaster probability in this area, it is suggestable that preparatory activities and proper evacuation plans must be planned and included in the plan focusing these groups.
- In the district, all the disaster related activities are managed by the Disaster Management / Revenue department. In the preparation of LSG Disaster Management plan, only the LSGDs and the District Planning department are involved. A linkage between these two departments is essential for the successful output.
- DM Plan should be prepared including the participation of community.
- Ward wise data is essential for addressing the problems in grass root level.
- Timely updation and supervision of the plans are necessary. Professional help can be availed for further improvement of the plan.

## Section IV | Training Needs

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants(Officials/People Rep.)</b>	<b>Objectives</b>
Disaster Management	Village Officers and Grama Panchayath Officials, Village representatives.	To ensure the effective disaster management in the grass-root level.  To create awareness among public on disaster management.
Fire and Rescue	ERT Members	To enrich the ability in rescue operations and to build a strong ERT team.
Mock Drills	Volunteers, Educational Institutions	To train the people on rescue operation and to enhance practical knowledge about the disaster.
ToT	LSG DM Coordinators	To provide training on DM to people's representatives of LSGs.

## Section V | Conclusion

Nammal Namukkayi campaign provides a platform for the participation of people in disaster management activities and to increase their capabilities in response to various disasters. Disaster management plans and the preventative measures they include are essential for stopping disasters from occurring. Although disasters may not always be avoidable, having a proper recovery plan helps to reduce the potential damage and quickly restore operations when one occurs. From the analysis of Disaster Management plans prepared by the LSGs of Pathanamthitta district, it is very clear that each local body had taken great effort to complete the DM Plan template. Of these, DM Plan of Naranamoozhy GP can be considered as a best plan. Some plans are proximal to the

template whereas some are not. Suggestions to improve the plans are included in the report. Overall, these DM plans are made with a vision of ensuring safety of the common people and the effort taken in preparing the same is appreciable.

# REVIEW OF LSG DM PLANS

## ALAPPUZHA

### Section I | Overview of the LSG DM Plans in the District

Government of Kerala decided to prepare local disaster prevention strategies vide GO (Ms) No.156/2019/LSGD dated 4-12-2019 and GO (Ms) No. 157/2019/LSGD dated 5-12-2019. Under the Rebuild Kerala Development Programme, a project titled **Nammal Namukkay** (we for us) was launched to enable the Local Self Governments to mainstream disaster risk reduction in the development plans vide GO (Rt) No. 499/2019/P&EA dated 26-11-2019 and GO (Ms) No. 34/2019/P & EA dated 12-12-2019. Vide GO (Rt) No. 36/2020/P&EA dated 21-1-2020, the Government allocated Rs. 1,72,28,840/- for KSDMA for additional human resource and for augmenting its facilities to implement the project.

Alappuzha is one of the smallest southern districts in terms of area in the state. The district lies mostly in the coastal plains. Alappuzha has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions & vast coastline. Floods and droughts have been recurrent phenomena. Most part of the district suffered during the floods of 2018 and 2019. So, the LSG DM plans are given top priority in the field of preventing havoc due to disasters. All LSG's in the district cooperate with the 'Nammal Namukkay Campaign' and they all make DM plans in their respective LSG's. Their immense effort will be surely effective for the district's future growth and development.

**Table 1**

<b>Name of the District- Alappuzha</b>			
<b>Sl. No.</b>	<b>LSG Type</b>	<b>Total Number</b>	<b>Number of Plans Submitted by LSGs</b>
1	Grama Panchayats	72	72
2	Municipalities	6	6

3	Corporations	Nil	Nil
Total		<b>78</b>	<b>78</b>
Name of the Reviewer - <b>Muhammed Shalikh. N</b> (LSG DM Plan Coordinator)			

**Table 2**

Explanation	Colour code
Content not available	Red
Insufficient content	Orange
Content could be strengthened	Yellow
Content is proximal to the template	Green

SL.No.	Block	LSG Type	LSG Name	Chapter-wise content availability								
				(Give Colour Codes)								
				1	2	3	4	5	6	7	8	
1	Thaykkattussery	Panchayat	Arookutty	Orange	Orange	Red	Red	Red	Red	Red	Green	Red
2	Thaykkattussery	Panchayat	Chennampallippuram	Orange	Red	Red	Red	Red	Red	Red	Green	Red
3	Thaykkattussery	Panchayat	Panavally	Orange	Red	Yellow	Red	Red	Red	Red	Orange	Red
4	Thaykkattussery	Panchayat	Perumbalam	Orange	Orange	Yellow	Red	Yellow	Orange	Yellow	Orange	Orange
5	Thaykkattussery	Panchayat	Thaykkattussery	Orange	Orange	Yellow	Red	Orange	Red	Red	Green	Red
6	Pattanakkad	Panchayat	Arooor	Orange	Yellow	Orange	Red	Red	Red	Red	Green	Orange
7	Pattanakkad	Panchayat	Ezhupunna	Red	Red	Red	Red	Red	Red	Red	Yellow	Green
8	Pattanakkad	Panchayat	Kuthiyathodu	Orange	Orange	Orange	Red	Orange	Red	Red	Green	Red





32	Champakkulam	Panchayat	Nedumudi									
33	Veliyanad	Panchayat	Kavalam									
34	Veliyanad	Panchayat	Pulincunnu									
35	Veliyanad	Panchayat	Neelamperoor									
36	Veliyanad	Panchayat	Muttar									
37	Veliyanad	Panchayat	Ramankary									
38	Veliyanad	Panchayat	Veliyanad									
39	Chengannur	Panchayat	Ala									
40	Chengannur	Panchayat	Cheriyamad									
41	Chengannur	Panchayat	Thiruvanvandoor									
42	Chengannur	Panchayat	Pandanad									
43	Chengannur	Panchayat	Puliyur									
44	Chengannur	Panchayat	Budhannur									
45	Chengannur	Panchayat	Mulakkuzha									
46	Chengannur	Panchayat	Venmony									
47	Haripad	Panchayat	Karthikapally									
48	Haripad	Panchayat	Karuvatta									
49	Haripad	Panchayat	Kumarapuram									
50	Haripad	Panchayat	Cheruthana									
51	Haripad	Panchayat	Thrikkunnappuzha									
52	Haripad	Panchayat	Pallippad									
53	Haripad	Panchayat	Veeyapuram									
54	Mavelikkara	Panchayat	Chennithala Thripperruthura									

55	Mavelikkara	Panchayat	Chettikulangra									
56	Mavelikkara	Panchayat	Thazhakkara									
57	Mavelikkara	Panchayat	Mavelikkara Thekkekkara									
58	Mavelikkara	Panchayat	Mannar									
59	Bharanicavu	Panchayat	Chunakkara									
60	Bharanicavu	Panchayat	Nooranad									
61	Bharanicavu	Panchayat	Palamel									
62	Bharanicavu	Panchayat	Bharanicavu									
63	Bharanicavu	Panchayat	Mavelikkara Thamarakkulam									
64	Bharanicavu	Panchayat	Vallikunnam									
65	Muthukulam	Panchayat	Arattupuzha									
66	Muthukulam	Panchayat	Kandallor									
67	Muthukulam	Panchayat	Krishnapuram									
68	Muthukulam	Panchayat	Chingoli									
69	Muthukulam	Panchayat	Cheppad									
70	Muthukulam	Panchayat	Devikulangara									
71	Muthukulam	Panchayat	Pathiyoor									
72	Muthukulam	Panchayat	Muthukulam									
73	Alappuzha	Municipality	Alappuzha									
74	Chengannur	Municipality	Chengannur									
75	Cherthala	Municipality	Cherthala									
76	Kayamkulam	Municipality	Kayamkulam									

77	Mavelikkara	Municipality	Mavelikkara									
78	Harippad	Municipality	Harippad									

## Section II |Content Analysis

On behalf of Nammal Namukkay campaign, all LSG's in the district prepared a disaster management plan and submitted the hard copy of the plan to the District Planning Board, Alappuzha. While the DM plan was put forth for a review, it was scrutinized to find out the level of community participation in the preparatory stage of the Plan. Analyzing the data available in the District Planning Board, Alapuzh, it was found that all LSG's have perfectly formed a ward based working group and local resource group for the purpose of DM plan preparation. 80% LSG's have completed the secondary data collection, 68% LSG's conducted transit walks, 75 % LSG's conducted focus group discussion, 87% of them conducted discussions to review the project idea developed and they also formed separate working groups for project preparation, 95% LSG's discussed DM plan formation in Grama Sabha, 55 % of LSG's DM Plan got approval from panchayath authority, 93% LSG's conducted DMP Development Seminarr, 74% LSG discussed the DM Plan in annual plan formation stage and almost 95% LSG's completed five stages of training.

Later, a sudden investigation was conducted throughout the LSG's DM Plan by the DM plan Coordinator and could trace the lack of situational analysis. Also these plans didn't give an idea about the current situation in their concerned locality and most of the LSG's failed to mention the regional level disasters and how far their local bodies were badly affected by the consequences of these disasters. Again, most of these plans hardly follow the template stipulated for the preparation of the plans. They could only make the first chapter satisfactorily correct. All these LSG's did not have any basic idea of what to be included in Chapter 4 and 6.. They just only cluttered up it with some information which barely has no logical connection with the chapter. A few LSG's could fill the annexure in appropriate order and all the rest of the LSG's have left the table blank. Due to this reason, the availability of ward level is barely sufficient in the plan. Also, they failed to include in the plan the map provided by KSDMA and those included were without having any clarity so that it was very difficult to understand.

## **Chapter wise Analysis**

### **Chapter 1**

- First chapter is found to be in accordance the given template
- Most of the LSG's didn't submit the map of their LSG
- History & Geography need improvement
- Descriptive data are missing in most of the plans
- Infrastructure facility, natural resources etc. need more accuracy

### **Chapter 2**

- Above 90 % of the LSG's data is not satisfactory
- Local level disasters are missing in most of the plans
- Periodicity of the disaster is not perfectly matched
- Map of disaster-prone area (KSDMA Provided) not included in the plans

### **Chapter 3**

- ERT details missing in most of the plans
- Phone number and other contact details are not appropriate to the template
- Most of the plans did not include any details about evacuation plan
- Descriptive data regarding the given headings are missing

### **Chapter 4**

- Most of the LSG's have no clear idea about chapter 4
- Above 90% of LSG's did not fill the chapter, rather they only filled up Table 4.1
- Some LSG completely neglected this chapter from the plan
- This chapter need improvement in all the plans as it covers the details about the mitigation and preparedness
- Social empowerment measures are weak in the DM Plans

### **Chapter 5**

- The chapter is based on capacity and resources
- The tables furnishing the details about market, mortuary, waste management facility etc. were left blank
- Helipad details are missing in almos all the plans

- Many of the plans didn't conduct SWOT analysis
- There is the lack of social resource map in the plans

## **Chapter 6**

- Most of the LSG's have no clear idea about this chapter
- LSG's just provided some suggestions only, no other details were given about the project
- Some LSG's neglect this chapter from the plan
- No sector specific projects are mentioned in the plans

## **Chapter 7**

- In this chapter, most of the lsg follow the suitable template
- Ward specific contact details are not available
- Phone numbers are missing in some of the plans

## **Chapter 8**

- Most of the LSG's neglect this chapter
- Ward level data missing in the plans
- Lack of sufficient information in the chapter
- 6-15 annexures are missing in most of the plans

## **Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement & Major Recommendations**

### **a) Strengths / Best Practices**

LSGD DM plans provide a new insight into the field of the district disaster management. Reviewer could satisfactorily complete the plan review within the stipulated time only with the staunch support from Planning Board & DDMA, Alappuzha. DM Plan could develop a strong data base on the disaster-prone areas at the LSG level. All local bodies have submitted the hard copy of DM plan even in this panic-stricken time of Covid pandemic due to the timely reminder and intervention from the side of the District Planning Board.

The DM Plan helps people in the grass root level to provide a basic idea about disaster management. The reviewer noticed that the DM plan of Chennithala, Champakulam and

Nedumudi are comparatively proximal to the template. Chapter 6 and 4 of the plans of the aforesaid LSG's are found to be weak but still there is scope for improvement.

DDMA conducted a two-day training programme to legislative and executive heads of all LSG's on disaster management. In this programme, sessions were handled by Deputy Panning Officer, Alappuzha and the DM plan coordinator and it was proved to be an instant success.

#### **b) Gaps Identified / Areas of Improvement**

- Lack of information on LSG level disaster (Madaveezhcha, Tanker Accident)
- Inaccurate and incomplete data
- Failure of furnishing information in the 4<sup>th</sup> and the 6<sup>th</sup> chapters
- Lack of adequate knowledge in the preparation of an ideal project proposal
- Failure of inclusion of DM project in the annual plan of LSG's
- Lack of interest in preparation of a DM Plan in municipalities as compared to the gramapanchayats
- Most of the plans were prepared only with the immense effort of executives in the LSG's and low level of participation from the legislative representatives.

#### **c) Major Recommendations**

- The plans are prepared by the executives of each local body. So give awareness to the legislative heads about their roles in the preparation of DM plans
- Proper training to working groups
- Plans should be prepared with complete participation of the people from their own region
- Ensure the participation of women, specially abled people and children in the working groups of DM Plan
- Professional help could be sought for further improvement of the plan, explanation of Map and the like.
- A strong linkage between DDMA and District planning will be useful for ensuring better output.
- Give provision to include the details of the areas of mass gatherings in the DM Plan
- Mention the local level disaster (Eg. MadaVeezhcha in Alappuzha)

## Section IV | Training Needs

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants (Officials/People Rep.)</b>	<b>Objectives</b>
Disaster Management Plan	Working Groups for DM Plan in LSG's	To make the effective DM Plan in LSG Level
Coastal hazards	Coastal LSG's in the district (18 LSG)	To give an awareness about the vulnerability of Coastal areas
Road and Tanker Accidents	LSG's in the side of National Highway	To reduce the vulnerability due to accidents
Project Proposal Preparation	Executives and Legislatives of LSG's	To prepare effective projects for the Disaster management area of LSG's
Fire and Resuce	ERT Members	To build a strong ERT Team in every Local bodies

## Section V | Conclusion

LSG Disaster Management Plan has been prepared on behalf of the *Nammal Namukkai Campaign* which was initiated after the 2018 flood as part of the Re-build Kerala Initiative. Each plan is prepared by ensuring the direct participation of the community at the grass root level. Such a plan should have equal participation of both the legislative and executive bodies. It will definitely be an insightful initiative in the filed of Disaster Management since it ensures the community participation at its best. If it is implemented effectively in more disaster-prone districts like Alappuzha, it will surely create great legacies in the disaster management scenario of the district. Thus the disaster management mission of the district should be coupled with effective training, community participation and an ideal LSGD Plan to make it a true venture and grand success.

## REVIEW OF LSG DM PLANS

# KOTTAYAM

### Section I | Overview of the LSG DM Plans in the District

Rebuild Kerala Initiative (RKI) has launched a campaign by the name “*NammalNamukkayi*” with the aim to utilize the knowledge, experience and ideas of the entire people of the state in a participatory and practicable manner for rebuilding Kerala. Preparation of Disaster Management Plan by every Self Government Institutions is an important component of the above campaign formulated in People's Planning mode.

**Table 1**

Name of The District: Kottayam			
Sl. No.	LSG Type	Total Number	Number of Plans Submitted by LSGs
1	Grama Panchayats	71	69
2	Municipalities	6	6
3	Corporations	Nil	Nil
Total		77	75
Name of the Reviewer - Ani Thomas Idiculla			

**Table 2**

Explanation	Colour code
Content not available	Red
Insufficient content	Orange
Content could be strengthened	Yellow
Content is proximal to the template	Green



SL.no	Block	LSG Type	Name	1	2	3	4	5	6	7	8
1	Erattupetta Block	GP	Thalanadu								
2		GP	Thalappalam								
3		GP	Thidanadu								
4		GP	Theekkoy								
5		GP	Poonjar								
6		GP	PoonjarThekkekkara								
7		GP	Melukavu								
8		GP	Monnilav								
9	Ettumanoor Block	GP	Athirampuzha								
10		GP	Arpookkara								
11		GP	Aymanam								
12		GP	Kumarakom								
13		GP	Thiruvvarppu								
14		GP	Neendoor								
15	Kaduthuruthy Block	GP	Kaduthuruthy								
16		GP	Kallara								
17		GP	Thalayolapparambu								
18		GP	Njeezhoor								
19		GP	Mulakkulam								
20		GP	Velloor								



44	Pampady Block	GP	Akalakkunnam	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
45		GP	Elikkulam	Orange	Orange	Orange	Red	Red	Orange	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red
46		GP	Kooroppada	Yellow	Orange	Red	Orange	Orange	Yellow	Orange	Red	Red	Red	Red	Red	Red	Red	Red	Red
47		GP	Pallickathodu	Orange	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
48		GP	Pampady	Yellow	Yellow	Orange	Yellow	Yellow	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red
49		GP	Meenadom	Yellow	Orange	Red	Orange	Red	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red
50		GP	Kidangoor	Red	Red	Red	Red	Red	Orange	Orange	Red	Red	Red	Red	Red	Red	Red	Red	Red
51		GP	Manarcadu	Orange	Orange	Orange	Orange	Red	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
52		Uzhavoor Block	GP	Uzhavoor	Yellow	Orange	Orange	Orange	Orange	Orange	Yellow	Red	Red	Red	Red	Red	Red	Red	Red
53			GP	Marangattupally	Orange	Orange	Orange	Orange	Red	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red	Red
54	GP		Kadaplamattom	Yellow	Red	Orange	Red	Red	Red	Orange	Orange	Red	Red	Red	Red	Red	Red	Red	
55	GP		Kanakkary	Yellow	Yellow	Orange	Orange	Orange	Orange	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red
56	GP		Kuravilangadu	Yellow	Orange	Green	Orange	Orange	Yellow	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red
57	GP		Manjoor	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
58	GP		Ramapuram	Green	Yellow	Orange	Orange	Orange	Orange	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red
59	GP		Veliyanoor	Green	Yellow	Orange	Orange	Yellow	Orange	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red
60	Vaikom Block		GP	Udayanapuram	Orange	Orange	Orange	Red	Red	Red	Yellow	Orange	Red	Red	Red	Red	Red	Red	Red
61		GP	Chempu	Yellow	Red	Red	Orange	Red	Red	Orange	Red	Red	Red	Red	Red	Red	Red	Red	
62		GP	T.V. Puram	Green	Green	Yellow	Yellow	Yellow	Yellow	Green	Green	Red	Red	Red	Red	Red	Red	Red	
63		GP	Thalayazham	Green	Yellow	Orange	Orange	Orange	Orange	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red
64		GP	Maravanthuruthu	Yellow	Orange	Orange	Red	Red	Orange	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red
65		GP	Vechoor	Green	Orange	Yellow	Red	Red	Yellow	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red
66	Vazhoor Block	GP	Kangazha	Orange	Yellow	Orange	Red	Orange	Orange	Yellow	Orange	Red	Red	Red	Red	Red	Red	Red	

67		GP	Chirakkadavu																
68		GP	Nedumkunnam																
69		GP	Vazhoor																
70		GP	Vellavoor																
71		GP	Karukachal																
72		Municipality	Kottayam																
73		Municipality	Changanacherry																
74		Municipality	Vaikom																
75		Municipality	Pala																
76		Municipality	Erattupetta																
77		Municipality	Ettumanoor																

## Section II |Content Analysis

### **Introduction**

Data provide from the deputy director of panchayaths (dated 6<sup>th</sup> February 2020) indicates that out of the 71 grama panchayaths 14 grama panchayaths did not discuss the disaster management plans in their respective grama sabhas. This is roughly 19% of the total grama panchayaths, while going through the plans there seems to be a lack people participation in the plan preparation as some of the plan's structure was too generic, it lacked location specific problem identification and solutions. Some plans do reflect the efforts they have put in to prepare the plans with help of public participation by including details of transect walks, resource group meetings and gramasabhas. These plans can be used as a model for other LSG's to follow.

Situational analysis was part of the DM plan process and most of the GP's did put their efforts to complete the situational analysis like SWOT etc. The analysis still requires more improvements and this is due to the lack of resource support to the GP's as they seem to lack the training to conduct the situational analysis in an effective way, this is clearly reflected in the plans as some GP's has used

general observations in the analysis and some did not even bother to include these data either. Only a handful of GP's did an effective situational analysis.

Almost 95% of the GP's and 100% Municipalities have created the plans adhering to the template. Small number of GP's did not follow the template for the preparation of the plans. However large number of plans had a common error in numbering sections according to the template which is to be rectified.

Majority of DM plans do not cite the source of data provided in the first chapter, second chapter and annexures. Majority of those who did data is taken from census data 2011. Lack of source of data is a big concern and another concern would be the use of old census data for the plan would affect the accuracy of the plan. Some plans left out easily acquirable data from the plan. It is to be noted that some GP's put in their effort to include data of people that require special attention in their plans, which can be replicated by other GP's.

Inclusion of maps (Created by SDMA) in the plan is crucial for increasing public awareness. Local self-government DM plans in the district only a handful of the plans used the maps produced by SDMA effectively. Most the plans have left out the maps and those who have included the maps have less quality by using hardcopy scans, these maps are not legible and to be of no use.

## **Chapter wise Analysis**

### **Chapter 1**

Out of the 77 local bodies only five local bodies (all gramapanchayaths) have drafted the first chapter somewhat proximal to the DM template, all municipalities first chapters need to be strengthened.

Data are crucial to a DM plans addition of required data with accuracy and source was only done by some of the local bodies. Data sources were vague there were DM plans with no data at all. Citing data source is crucial for examining the authenticity of the data, local bodies need to have these basic data updated if the available data is out of date like demographic information etc.

Maps prepared by KSDMA were used by most of the GP's and municipalities in the DM plans. Only one GP seemed to analysed the maps with their observations from transect walks and gramasabhas, suggestions regarding the maps were also included in the DM plan by one GP (Ramapuram GP). While going through the reports all other local bodies who included the maps there wasn't any productive suggestions or projects proposed were not based on the vulnerability assessment based on the maps.

## Chapter 2 – Hazards

Information pertaining to the state and status of infrastructure facilities is important for preventing disasters, mitigation of impact and for sheltering the victims. Hence category-wise collection and recording of information regarding possible disasters is absolutely essential. Collection and keeping of information related to possible disasters, geographical peculiarities, socio-economic status of different sections of people in relation to geographical fragility and infrastructure vulnerability is extremely important.

Only a handful local self-governments have collected the required information according to the template provided to them. When examining the plans there seem to be a confusion within the template as there were two type of layout drafted by LSG's. Identification of vulnerable areas were done by some LSG's by transects walks and local resource groups etc. It remarkable to note that a few of the LSG's took the time and resource to list out the vulnerable group details in the plan this can be replicated by other LSG's.

## Chapter 3

Emergency response teams constituted for each LSG's were given training by experts. Although this is the case some of the local self-governments were unsuccessful in forming an effective ERT's required for doing the assigned functions. Some LSG's have done excellent work in forming the ERT's and ward wise data is also included in the DM plan. Majority of the LSG's do lack the details regarding ERT's like their contact details team leader contact details which renders the plan not useful during a emergency.

There seems to be a confusion or lack of understanding how the evacuation routes or plans were to be created as most of the plan do lack the clarity or were left blank which seems to suggest they had problems in creating the escape plans according to template.

## Chapter 4

Of all the chapters in DM plan chapter four would be the worst part, as we go through plans it is evident that all-local self-governments were not given proper direction about the chapter or how it is to be prepared. Almost all LSG's had zero idea of the chapter and it is reflected in the plan documents.

## Chapter 5

Information regarding capacities and resources would be important for the preparations to be made to tackle inherent weakness of a particular region. Data on resources were fairly documented by most of the LSG's, still some LSG's clearly did not put in the effort to collect all available resource data. Information regarding NGO's and other organizations also need to be re- done as most of the

LSG's data on voluntary organizations are vague without any contact information. Most of the LSG's seems to have trouble doing the SWOT analysis or how the process is to be done effectively. Inclusion of maps provided by KSDMA was also not done properly as only few LSG did include the maps.

#### Chapter 6 – Projects included in the districts

Formulating projects on the basis of vulnerability, hazards and risks is crucial to mitigate and reduce impact of disasters. Out of 77 LSG's only handful of have put in the effort to propose some projects on the basis of their assessment and gaps identified. As being one of the most important chapters in DM plan it shows that all the LSG's do require more sensitization on how effectively projects could be proposed and implemented. LSG's that did propose projects were also somewhat general projects.

#### Chapter 7

This chapter contains information of important officers or persons who in the event of an emergency will be coordinating/ working to reduce the impact of disasters. Almost all LSG's did collect and recorded these details however there were still some gaps like phone numbers missing of certain sections, these missing information are need to be added to complete the DM plan document.

#### Chapter 8 – Annexures

Annexures of DM plans were also not up to standards as most of the LSG's left the annexure out of the DM plans while others had incomplete data and most of the DM plans had no source cited. Only a handful of LSG's incorporated the annexure as per the template and ward wise data were presented by few LSG's.

### [Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement& Major Recommendations](#)

#### **d) Strengths / Best Practices**

Some of the local self-governments did took the time and effort to create plans with the needed information and public participation, although these plans do require additions and corrections if this process of updating the plans are done on a yearly basis, we would see the plan improving the contents with innovative project suggestions by analyzing the data and special information. Strengths and best practices which were notable while reviewing the plans are listed below.

- Inclusion of list of people with special needs one of the best practice done by ThalayolaparambuGp, KuravilangaduGP,Udayanapuram GP.
- Inclusion of Covid 19 activities were done by Karukachal GP, Velloor GP, Meenadom GP, Pampadi GP.
- Chapter four was fairly done by Thalappalam GP, TV Puram GP
- Local self-governments that compiled chapter six of the DM plan somewhat fairly are TV Puram GP, Vechoor GP, Panachikadu GP, Kuroopada GP, Pampadi GP, Kuravilangadu GP, Thiruvarpu GP.

#### e) Gaps Identified / Areas of Improvement

Major gaps identified are

- Building safety audit is not specifically included.
- Lack of effective sensitization programmes for elected representatives and officials.
- Data collection problems only readily available data are used new data collection have to be done.
- Chapter four in almost all local self-government is incomplete.
- Chapter six – Project proposal are general in nature new and innovative projects based on the assessment of risk and vulnerability area required.
- Focus group discussions details need to be updated.
- Interdepartmental collaboration required for data and recommendations.
- Stakeholder participation not adequate.
- Data collection and data source are vague.

Areas to be improved

- Data sources need to be mentioned.
- Chapter four – mitigation measures need to be improved.
- Chapter six – project proposals need to be improved. New and innovative projects need to be proposed.
- Documentation of focus group discussions and Gramasabhas need to be included in the annexure.
- SWOT analysis process need to be improved.
- Training needs should be included.
- Maps sections are to be included without fail and use of high-quality image also has to be ensured.



- Incorporation of tourism related events data.

## **f) Major Recommendations**

The template for DM plan may require modifications as when the plans were reviewed it is seen that some the sections are left blank or it seems they have no knowledge of how the document is prepared. For example, chapter four in almost all LSG's are incomplete or left out, it suggests that the knowledge regarding what that chapter stands for is not attained by the persons who were preparing the dm plan.

Stakeholder consultations need to improve as the plan documents is simply a documentation of data only. Discussions on how to improve the mitigation strategies need to put forth by the stakeholders.

Data collection should be done first hand by the LSG's which could be validated more easily and can be repeated every year or every two to three years. Ward wise data is crucial for the benefit of each stakeholder, most of the plans lacks ward wise data.

Safety audit should be conducted and report of the same should be included in the DM plan. A simplified form can be created to ensure uniformity of the audit by State Disaster Management Authority after consultations with LSG's.

ERT formation seems to be difficult in some LSG's as there were incomplete or blank ERT sections in some plans. This problem needs to be solved by incorporating other NGO's or other local organizations into the DM plan preparation process so that those LSG's that face difficulty finding volunteers for ERT can be solved.

Interdepartmental coordination is crucial for the successful preparation and implementation of DM plans. Departments like Revenue, Planning, LSG's, DDP, Medical, Police, Fire force etc should have an open channel to discuss related issues or ideas to implement them with the support of aforesaid departments.

Allocation of special funds to implement disaster management related projects by the state government could motivate the local self-governments to actively design and implement innovative projects. The state government could start by inviting innovative projects from LSG's state wide

and select the best project that satisfies the criteria and provide a special fund to those LSG's this could inspire others to follow.

#### Section IV | Training Needs

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants(Officials/People Rep.)</b>	<b>Objectives</b>
<b>Disaster management orientation</b>	<b>All LSGD staff, Elected representatives, Volunteers, Other concerned officials</b>	<b>Have an idea about basics of disaster management</b>
<b>Disaster mitigation project proposal</b>	<b>LSGD Secretaries, Other concerned officials, Elected representatives</b>	<b>Enable concerned authorities to propose new and innovative projects based on risk and vulnerability assessment</b>
<b>First aid</b>	<b>All LSGD staff, Elected representatives, Volunteers, Other concerned officials</b>	<b>Prepare for unforeseen situations.</b>
<b>Safety audit of public spaces</b>	<b>LSG AE's and other selected officials</b>	<b>To ensure safety of public spaces.</b>
<b>Disaster management orientation for planning office staff</b>	<b>Planning office staff</b>	<b>To increase awareness of planning staff regarding Disaster management projects.</b>
<b>Emergency response training</b>	<b>ERT, LSG staff, Elected representatives</b>	<b>To have firsthand experience in emergency response.</b>

## Section V Conclusion

Out of the 77 Local self-governments 75 plans (soft copy) were received for review process, as stated in the report all plans require additions and corrections in one way or another. There are LSG's that has to re do the process as their plan documents points towards lack of planning and proper discussions. Municipalities in the district need to improve their documents and data. One municipality did not even prepare a document this needs to be avoided by forming a district coordination committee to check the status of plan preparation and project implementation continuously. However, some LSG's gave their best to prepare the document even during the covid 19 times and they do need a special appreciation. Disaster Management plan formulation and implementation is a continuous process and in time with corrections and improvements we could see a new shift in disaster management activities lead by local self-governments.

One thing to note is that 26 grama panchayaths and 3 municipalities of the district under the direction from the planning officer put forth at least one disaster management project for the plan year 2021-2022, and others have pledged to follow this action when their projects are reviewed by district project committee.

## REVIEW OF LSG DM PLANS

# IDUKKI

### Section I | Overview of the LSG DM Plans in the District

#### Introduction

In August 2018, the state of Kerala experienced its worst flooding since 1924. The devastating flood and associated landslides affected 5.4 million people and claimed over 400 lives. The post-disaster assessment commissioned by the Government of Kerala estimated the economic loss to be more than \$3.8 million.<sup>1</sup> 8 months prior to the flood, cyclone Ockhistruck the Kerala cost which resulted in the death of 60 and missing of 102<sup>2</sup>. The Government of Kerala realised in their ambitious and determined approach to change the face of the State, the unprecedented natural calamities were giant throwbacks, by causing substantial loss to the economy and claiming precious lives. The Government and the civil society together, stood by to survive this challenge by swift and prompt response which has been acclaimed at the international level. This challenge is engaged to meet squarely by the Government through the Rebuild Kerala Initiative (RKI) which has set for itself the task of “Build back better”. Kerala is now in the process of making it a people’s initiative through the campaign “Nammal Namukkayi” by involving the Local Self-Governments in the State.

‘Nammal Namukkayi’ is the campaign initiated by the state of Kerala aiming at preparing local disaster management plan in every Local self government bodies of Kerala. ‘Nammal Namukkayi’ is envisioned a detailed plan process with the Public participation. The aim is to get feedback and opinion from the public and prepare local plans to mitigate disasters.

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<sup>1</sup>[https://www.undp.org/content/dam/undp/library/Climate%20and%20Disaster%20Resilience/PDNA/PDNA\\_Kerala\\_India.pdf](https://www.undp.org/content/dam/undp/library/Climate%20and%20Disaster%20Resilience/PDNA/PDNA_Kerala_India.pdf)

<sup>2</sup><https://www.hindustantimes.com/india-news/ockhi-was-the-deadliest-storm-to-hit-india-s-coast-after-supercyclone-of-1999/story-xSPtGAOs3DoifhFfvWfZUM.html>





By ensuring people's participation and leaderly intervention of local self-governments, operations and activities pertaining to disaster mitigation, preparedness, resistance and disaster management can be made properly targeted, more effective and creative. By including and approving local level projects, formulated for disaster resistance, mitigation and management, in the annual plans of local self-governments prepared for the forthcoming year, better disaster resistance and resilience can be ensured. The Government asserted that all representatives of people participated in grama sabhas of their respective regions to give leaderly guidance in this regard.

Having 52 Grama Panchayats and 2 municipalities, mostly fall in geographically vulnerable aswell multiple disasterprone area, Need of a proper Disaster management Plan for Idukki District is inevitable. This report aims to evaluatehow the Disaster management plans prepared by the LSG bodies of Idukki meeting the necessities and demands of the population.

*Table 1*

<b>Name of the District- Idukki</b>			
<b>Sl. No.</b>	<b>LSG Type</b>	<b>Total Number</b>	<b>Number of Plans Submitted by LSGs</b>
1	Grama Panchayats	52	52
2	Municipalities	2	2
3	Corporations	0	0
Total		54	54
<b>Name of the Reviewer Ashhar Jabbar</b>			

*Table 2*

<i>Content is proximal to the template</i>	
<i>Content could be strengthened</i>	
<i>Insufficient content</i>	
<i>Content not available</i>	

Sl.No.	Block	LSG Type	LSG Name	Chapter-wise content availability							
				1	2	3	4	5	6	7	8
1	Adimaly	Panchayath	Adimaly	Green	Green	Yellow	Orange	Yellow	Red	Green	Red
2	Adimaly	Panchayath	Bisonvalley	Yellow	Orange	Yellow	Orange	Orange	Red	Red	Red
3	Adimaly	Panchayath	Vellathooval	Green	Green	Green	Orange	Green	Yellow	Green	Yellow
4	Adimaly	Panchayath	Konnathady	Green	Orange	Green	Orange	Yellow	Orange	Orange	Red
5	Adimaly	Panchayath	Pallivasal	Orange	Orange	Orange	Orange	Red	Red	Red	Red
6	Azhutha	Panchayath	Elappara	Yellow	Green	Yellow	Orange	Orange	Orange	Orange	Red
7	Azhutha	Panchayath	Kokkayar	Yellow	Yellow	Yellow	Orange	Orange	Orange	Green	Red
8	Azhutha	Panchayath	Kumily	Yellow	Orange	Yellow	Orange	Orange	Red	Yellow	Orange
9	Azhutha	Panchayath	Peerumed	Green	Green	Yellow	Orange	Orange	Orange	Yellow	Red
10	Azhutha	Panchayath	Peruvanthanam	Yellow	Green	Yellow	Red	Yellow	Orange	Yellow	Red
11	Azhutha	Panchayath	Vandiperiyar	Green	Orange	Yellow	Orange	Orange	Red	Green	Red
12	Devikulam	Panchayath	Chinnakkanal	Green	Yellow	Orange	Orange	Orange	Red	Green	Yellow
13	Devikulam	Panchayath	Edamalakkudy	Green	Orange	Orange	Orange	Yellow	Orange	Yellow	Orange
14	Devikulam	Panchayath	Kanthalloor	Yellow	Yellow	Yellow	Orange	Orange	Orange	Yellow	Red
15	Devikulam	Panchayath	Mankulam	Green	Yellow	Yellow	Orange	Yellow	Yellow	Green	Green
16	Devikulam	Panchayath	Marayoor	Green	Yellow	Yellow	Orange	Yellow	Red	Green	Green
17	Devikulam	Panchayath	Munnar	Green	Yellow	Yellow	Orange	Orange	Red	Green	Orange
18	Devikulam	Panchayath	Santhanpara	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Green	Red
19	Devikulam	Panchayath	Vattavada	Green	Green	Yellow	Orange	Yellow	Orange	Green	Red
20	Devikulam	Panchayath	Devikulam	Orange	Orange	Yellow	Orange	Orange	Red	Yellow	Red
21	Elamdesam	Panchayath	Alakode	Green	Green	Green	Orange	Green	Orange	Green	Yellow
22	Elamdesam	Panchayath	Karimannoor	Green	Green	Green	Orange	Green	Orange	Green	Yellow
23	Elamdesam	Panchayath	Kodikkulam	Green	Green	Green	Orange	Green	Orange	Green	Yellow
24	Elamdesam	Panchayath	Kudayathoor	Green	Yellow	Yellow	Orange	Yellow	Orange	Green	Yellow

25	Elamdesam	Panchayath	Udumbannoor									
26	Elamdesam	Panchayath	Vannappuram									
27	Elamdesam	Panchayath	Velliyamattom									
28	Idukki	Panchayath	Arakkulam									
29	Idukki	Panchayath	Kamakshy									
30	Idukki	Panchayath	Idukki-Kanjikkuzhy									
31	Idukki	Panchayath	Mariyapuram									
32	Idukki	Panchayath	Vathikkudy									
33	Idukki	Panchayath	Vazhathoppu									
34	Kattappana	Municipality	Kattappana									
35	Kattappana	Panchayath	Ayyappancoil									
36	Kattappana	Panchayath	Chakkupallam									
37	Kattappana	Panchayath	Erattayar									
38	Kattappana	Panchayath	Kanchiyar									
39	Kattappana	Panchayath	Upputhara									
40	Kattappana	Panchayath	Vandanmedu									
41	Nedumkandam	Panchayath	Karunapuram									
42	Nedumkandam	Panchayath	Nedumkandam									
43	Nedumkandam	Panchayath	Pampadumpara									
44	Nedumkandam	Panchayath	Rajakkadu									
45	Nedumkandam	Panchayath	Rajakumary									
46	Nedumkandam	Panchayath	Senapathy									
47	Nedumkandam	Panchayath	Udumbanchola									
48	Thodupuzha	Municipality	Thodupuzha									
49	Thodupuzha	Panchayath	Edavetty									
50	Thodupuzha	Panchayath	Karimkunnam									
51	Thodupuzha	Panchayath	Kumaramangalam									

52	Thodupuzha	Panchayath	Manakkad	Green	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Red
53	Thodupuzha	Panchayath	Muttom	Green	Yellow	Green	Orange	Green	Yellow	Green	Green	Red
54	Thodupuzha	Panchayath	Purappuzha	Green	Yellow	Orange	Orange	Orange	Orange	Orange	Orange	Orange

## Section II |Content Analysis

### A. Content Analysis

#### **Introduction**

Idukki District has 52 Grama Panchayats and 2 municipalities for Local Self administration. The available documents in the District Planning Office show majority of the LSGs have prepared the Disaster Management Plans with the participation of Public. Prior to the preparation of the Disaster Management plan, except Edamalakkudy Grama Panchayat, all local self bodies have reconstituted Disaster management working groups. 50 Grama panchayats and 1 Municipality completed transect walk, 51 Grama Panchayats and 1 Municipality have completed focus group discussions and Ward Sabha/Grama Sabha discussions. 68% LSGs have discussed the DM Plan in Annual plan formation seminar. The documents also show, almost every LSGs have completed situational analysis such as transect walk and secondary data collection even though it didn't reflect in Project formation.

Almost all LSGs stuck with the same template given, while Vathikkudy Grama Panchayat have substantial differences from template. 21 out of 54 LSGs have a different section in Chapter 2 called Climate change and its impacts. It is also noticeable that no LSGs have included source of data mentioned for tables in Chapter 1,2 and Annexure. Only 30% of them have added legible maps of Panchayats and Disaster prone areas.

### B. Chapter wise Analysis

#### **Chapter 1 - General Information**

Chapter 1 of the DM Plan includes the general information about the local body such as Geography, History, details of wards, demographic details, economy, Educational, health care and religious institutions, Roads, bridges, water bodies etc. 38 LSGs have included the Chapter 1 satisfactorily, the



other 16 LSGs should be improved the content. 20 of them need to be reworked the 'Geography' and 15 of them need to include 'History' of LSGs. Some of the plans do not include ward wise data of Educational and religious institutions. Many of them have not added phone numbers of Health care institutions in Chapter 1.

## **Chapter 2 - Disasters and possibilities of disasters**

There is a significant difference in template between LSGs here. 21 out of 54 of them have an additional section named 'Climate change and impacts' in the beginning of the chapter.

28% LSGs have done this chapter moderately well. Rest of them needs improvement in this chapter, since this part is very pertinent to plan the mitigation activities. It is also observed that, large majority of the LSGs have only included Kerala floods 2018 as the regional level disaster they have faced in recent past. Both the tables 2.1 and 2.2 can be seen similar with almost every plans.

## **Chapter 3 - Disaster response plan**

Identification and formation of 4 ERTs (Warning, Evacuation, Shelter management, First Aid/Basic Life support) is mandatory for all Local Self Governments. Only 3 of 52 Grama Panchayats have formed ward wise ERTs. No municipalities have added ward wise ERTs. However, 43 Grama Panchayats and Kattappana Municipality have formed Panchayat wise ERTs. 13 of them do not have minimum number of members in ERTs formed. Munnar Grama Panchayat has repeated members in almost all ERTs. 6 Grama Panchayats along with Thodupuzha Municipality have not formed ERTs.

Evacuation plans are very important section in this part. It is an integral part of the rescue operation. Unfortunately, only 20 LSGs have added this part satisfactorily. 20 LSGs did not even mention this part, and 14 LSGs have plans with less clarity and detail.

## **Chapter 4 - Preparation, Mitigation and Social Empowerment**

This chapter meant to throw some light on the preparation and mitigation with special focus on Social Empowerment. Unfortunately, no LSGs have covered this chapter comprehensively. Almost all LSGs left core part of this chapter empty. 31 of 54 LSGs have mentioned the infrastructural improvement activities in relief camps and shelters by assessing the possibility of various disasters. Only 28% LSGs

have attended the activities under Disaster Mitigation. This is one of the least touched chapter in DM Plans.

### **Chapter 5 - Potentials and resources**

Information about resources available in LSG limit is very essential to manage the crisis situation. Nevertheless, below 10 LSGs have recorded this information moderately well. Rest of the LSGs need to expand their data as many of them left so many important fields vacant in this chapter. Only 22% LSGs completed SWOT analysis. It is also noticed that only 10 LSGs have included social resources map in this chapter, which was prepared by KSDMA. Phone numbers of individuals and organizations are not completed with most of the LSGs. Make shift Helipads/Rehabilitation camps isn't identified by a large number of LSGs.

### **Chapter 6 - Climate conscious Disaster Mitigation Project proposals**

Based on the ground report, it is important to have projects to transform the Panchayat/Municipality to disaster resilient. In fact, the information gathered in all other chapters must lead to this chapter for framing the solutions. It was suggested to categorize the Projects/Instructions based on the implementing authority such as Grama Panchayat/Municipality, Block Panchayat, District Panchayat, Joint Plans, District Plans, Government Departments, Disaster Management Authority, Rebuild Kerala Initiative etc. Unfortunately, for vast majority of the LSGs, this chapter doesn't rise up to the expectation level.

18 LSGs didn't include a single project proposal or instruction in this chapter. 19 LSGs who listed out proposals/instructions, did not categorize as suggested. Indeed, no LSGs have suggested project proposals for all categories. It is also noticed that the available projects/instructions lack clarity. Rajakkad Grama Panchayat has done this chapter reasonably well. They have included project proposals except projects for district plan.

### **Chapter 7 - Important phone numbers**

Chapter 7 of the DM Plan is a telephone directory, which aims to club all important phone numbers in that particular LSG including phone numbers of ward members, important offices, health and veterinary institutions and other helpline numbers. 50% LSGs have maintained this data satisfactory. 22% LSGs

have to add a few more numbers to reach the target. 11 LSGs have attended this chapter inadequately. They need to rework this chapter by including all numbers. Bison Valley, Pallivasal and Nedumkandam Grama Panchayats have not added a single phone number in this chapter.

### **Annexures - Supplementary information to be collected at Ward level**

This part meant to add ward wise data of the selected columns included in previous chapters. But, 29 of 54 LSGs did not include this part. Rest of them have attended this part, however, they have not ward wise distribution of data for all tables. Those who attended this part haven't included the source of their data.

## **Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement & Major Recommendations**

### **g) Strengths / Best Practices**

Vellathooval, Arakkulam, Alakode, Karimannoor and Kodikulam Panchayats have prepared the DM plan proximal to the template. These are the LSGs who prepared the DM Plan reasonably well with the consciousness and significance though there are flaws and faults. Mankulam, Munnar, Vellathooval, Adimali, Vazhathoppe, Mariyapuram, Kanchiyar, Edavetty, Kumaramangalam, and Vannappuram are the LSGs who could grant the best use of maps in DM Plans. It is important to have an evacuation plan for every disaster prone area. Vellathooval, Mariyapuram and Kodikulam Grama Panchayats have prepared evacuation plans sound. Karimkunnam, Alakode, Karimannoor, Arakkulam, Udumbannoor and Velliyamattom Grama Panchayats and Kattappana Municipality have included evacuation plans moderately well. Emergency Response Teams are meant to be the effective way of Public participation in Disaster Management. It was asked to form ERTs as ward level. It should be appreciated that Marayoor, Rajakkad and Kodikkulam Grama Panchayats have followed this instruction to form ward level ERTs. It is also worth to be applauded that 21 LSGs have added Climate Change and its impacts in their DM Plan.

### **h) Gaps Identified / Areas of Improvement**

It can be observed many flaws and faults with the DM Plans of almost every LSGs, which might happen by the lack of vision or lack of training.

- It should also be discussed that the ground level preparation with the Public participation is not visible or reflected in the DM Plan draft. The ground level preparation with the support of public aimed to identify the affecting disasters, evacuation plans, rehabilitation plans, disaster

resilient projects and instructions etc. But it is not reflected with majority of the plans, where the chapters 2 and 4 are not seemed to be interconnected.

- The 6<sup>th</sup> Chapter stands the weakest of the chapters with most of the DM Plans. It is quite unfortunate that they couldn't formulate projects for meeting their Disaster resilient requirements.
- Majority of the LSGs couldn't present evacuation plans which is a major part of this plan.
- The Maps play a vital role to analyze any situation when it comes to disaster. Kerala State Disaster Management Authority prepared and delivered 31 maps to all LSGs for improving their DM Plans, however, majority of them did not make use of it.
- It would be appreciated that if all LSGs could include the information about the resources, details of ERTs, volunteers, individuals etc. with mobile phone numbers.
- The chapter 7 of DM Plan mainly designed to collect the contact numbers, nevertheless, a large share of LSGs left many phone numbers vacant.
- Sources of data included in tables not revealed.
- History of Local disasters is not discussed well. Most of the LSGs have mentioned Kerala Floods 2018 is the only disaster they have faced as local disasters when the entire area is prone to many other disasters.
- As a district having the greatest number of Dams, reservoirs and check dams, no LSGs have discussed the possibility of disasters evolving.
- The details of makeshift helipads/relief camps are hardly identified by the LSGs. Which could have easily discussed and identified if there was proper public participation.

### **Major Recommendations**

- The plans are amateur in many ways. It should be made under the guidance and support of the Experts/Professionals.
- Public Participation in DM Plans looks impoverished, which should be ensured for further process.
- Annual updation of DM Plans should be done with the submission of Annual Plans.
- Proper trainings to the members of ERTs should be conducted annually by the support of DDMA.
- Various maps given by KSDMA to be included in a legible manner. The importance of each map shall be educated in training sessions.
- The information about Industrial areas, factories, Petrol Bunks, Gas Stations, Power Houses and Fire cracker units in the LSG limit shall be added to the plan.
- An inspection from DDMA/LSG DM Plan Coordinator should be conducted to all LSGs for onsite feedback in regards to the DM Plan.

- The extension of Awareness classes, Mock drills and survival skill trainings to women, children and other vulnerable population in LSG limit should be included as an agenda in DM Plan.

#### Section IV | Training Needs

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants(Officials/People Rep.)</b>	<b>Objectives</b>
Disaster Management	LSGD officials	To plan and execute Disaster preparation, mitigation and rehabilitation in LSG level.
Rescue Operations and Survival Skills	ERT Members	To professionally build strong and proactive first respondents of any disaster.
Mock Drills	Students, Plantation workers, Merchants	To react proactive and understand the safety methods in any disaster situation.

#### Section V | Conclusion

‘NammalNamukkayi’ is one of the boldest steps taken by the Government of Kerala, on making the state, disaster resilient. It also disseminates a strong message to the public that disaster management is not alone government centered, also people centered. The disaster management plans prepared by the LSGs can be considered as baby steps in this regard. The shortcomings spotted in the plans are natural and it can be corrected with the support of experts, that would definitely bring about the result in the long process.

## REVIEW OF LSG DM PLANS

# ERNAKULAM

### Section I | Overview of the LSG DM Plans in the District

‘NammalNamukkayi’ campaign is launched by Rebuild Kerala Initiative (RKI) to rebuild Kerala a resilient state. The flood that happened in 2018 has seriously affected the social and economic balance of the state. This campaign mainly focussed on the active participation of common people in building a resilient society. The campaign has two major components i.e. i) Extensive campaign with active participation of the people to identify the required corrections and policy changes to ensure resilience ii) Preparation of Disaster Management Plan at every local self-government institutions. Kerala State Disaster Management Authority, Kerala Institute of Local Administration, and District Planning Offices have taken a serious effort to make this campaign a huge success.

Ernakulam district is located at 9.98°N 76.28°E, bounded by Thrissur in the north, Idukki in the East, Alapuzha, and Kottayam in the south, Lakshadweep Sea in the west is an amalgam of ancient heritage and global growth of industry and commerce. It consists of 96 LSGs. Ernakulam is prone to various disasters including coastal disasters. Preparation of DM plans at the grass-root level can be a great contribution to make this district a resilient society. Information about the DM plans submitted by the LSGs are given below

<b>Name of the District : Ernakulam</b>			
<b>Sl. No.</b>	<b>LSG Type</b>	<b>Total Number</b>	<b>Number of Plans Submitted by LSGs</b>
1	GramaPanchayats	82	82 (Soft copy)
2	Municipalities	13	13(Soft copy)
3	Corporations	1	1(Soft copy)
Total		96	96 Soft copies
Name of the Reviewer: Aiswarya S			

Table 2

Explanation	Colour code
Content not available	
Insufficient content	
Content could be strengthened	
Content is proximal to the template	

Sl.No.	Block	LSG Type	LSG Name	Chapter-wise content availability							
				1	2	3	4	5	6	7	8
1.	Alangad	Panchayat	Alangad								
2.	Alangad	Panchayat	Kadungaloor								
3.	Alangad	Panchayat	Karumaloor								
4.	Alangad	Panchayat	Varapuzha								
5.	Aluva	Panchayat	Kalady								
6.	Angamaly	Panchayat	Ayyampuzha								
7.	Angamaly	Panchayat	Kanjoor								
8.	Angamaly	Panchayat	Karukutty								
9.	Angamaly	Panchayat	Malayatoor								
10.	Angamaly	Panchayat	Manjapra								
11.	Angamaly	Panchayat	Mookkanoor								
12.	Angamaly	Panchayat	Thuravoor								
13.	Edappally	Panchayat	Cheranellur								

14.	Edappally	Panchayat	Elankunnapuzha	Yellow	Orange	Orange	Orange	Orange	Red	Red	Red
15.	Edappally	Panchayat	Kadamkudy	Orange	Orange	Orange	Orange	Orange	Orange	Green	Red
16.	Edappally	Panchayat	Mulavukad	Yellow	Orange	Yellow	Orange	Orange	Yellow	Yellow	Red
17.	Koovapady	Panchayat	Asammanoor	Yellow	Yellow	Yellow	Orange	Orange	Red	Yellow	Red
18.	Koovapady	Panchayat	Koovapady	Yellow	Orange	Yellow	Orange	Yellow	Red	Yellow	Red
19.	Koovapady	Panchayat	Mudakuzha	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Yellow	Yellow
20.	Koovapady	Panchayat	Okkal	Yellow	Yellow	Yellow	Orange	Yellow	Yellow	Yellow	Orange
21.	Koovapady	Panchayat	Rayamangalam	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Green	Green
22.	Koovapady	Panchayat	Vengoor	Yellow	Orange	Orange	Orange	Yellow	Red	Yellow	Orange
23.	Kothamangalam	Panchayat	Kavalangad	Yellow	Yellow	Orange	Orange	Orange	Yellow	Yellow	Yellow
24.	Kothamangalam	Panchayat	Keerampara	Yellow	Yellow	Orange	Orange	Orange	Orange	Yellow	Red
25.	Kothamangalam	Panchayat	Kottappady	Yellow	Yellow	Orange	Orange	Orange	Orange	Yellow	Red
26.	Kothamangalam	Panchayat	Kuttambuzha	Yellow	Orange	Orange	Orange	Orange	Yellow	Green	Orange
27.	Kothamangalam	Panchayat	Nellikuzhy	Yellow	Orange	Orange	Orange	Orange	Yellow	Yellow	Red
28.	Kothamangalam	Panchayat	Paingattoor	Yellow	Orange	Yellow	Orange	Yellow	Orange	Yellow	Red
29.	Kothamangalam	Panchayat	Pallarimangalam	Yellow	Yellow	Yellow	Yellow	Orange	Green	Yellow	Red
30.	Kothamangalam	Panchayat	Pindimana	Yellow	Orange	Yellow	Red	Orange	Yellow	Green	Red
31.	Kothamangalam	Panchayat	Pothanikad	Yellow	Yellow	Yellow	Orange	Orange	Red	Orange	Red
32.	Kothamangalam	Panchayat	Varappetty	Orange	Orange	Yellow	Orange	Orange	Red	Red	Red
33.	Mulamthuruthy	Panchayat	Amballoor	Orange	Orange	Yellow	Orange	Orange	Orange	Yellow	Red
34.	Mulamthuruthy	Panchayat	Chottanikara	Green	Yellow	Yellow	Orange	Orange	Orange	Yellow	Red
35.	Mulamthuruthy	Panchayat	Edakkatuvayal	Orange	Red	Red	Red	Red	Red	Red	Yellow
36.	Mulamthuruthy	Panchayat	Maneed	Orange	Orange	Orange	Red	Red	Red	Red	Orange



37.	Mulamthuruthy	Panchayat	Udayamperoor																
38.	Mulanthuruthy	Panchayat	Mulanthuruthy																
39.	Muvattupuzha	Panchayat	Arakkuzha																
40.	Muvattupuzha	Panchayat	Avoly																
41.	Muvattupuzha	Panchayat	Ayavana																
42.	Muvattupuzha	Panchayat	Kalloorkad																
43.	Muvattupuzha	Panchayat	Manjaloor																
44.	Muvattupuzha	Panchayat	Marady																
45.	Muvattupuzha	Panchayat	Payipra																
46.	Muvattupuzha	Panchayat	Vaalakom																
47.	North Paravur	Panchayat	Chittatukara																
48.	Palluruthy	Panchayat	Chellanam																
49.	Palluruthy	Panchayat	Kumbalam																
50.	Palluruthy	Panchayat	Kumbalangi																
51.	Pambakuda	Panchayat	Elanji																
52.	Pambakuda	Panchayat	Palakuzha																
53.	Pambakuda	Panchayat	Pambakuda																
54.	Pambakuda	Panchayat	Ramamangalam																
55.	Pambakuda	Panchayat	Thirumarady																
56.	Parakadav	Panchayat	Chengamanad																
57.	Parakadav	Panchayat	Kunnukara																
58.	Parakadav	Panchayat	Nedumbassery																
59.	Parakadav	Panchayat	Parakadav																

60.	Parakadav	Panchayat	Puthanvelikara									
61.	Parakadav	Panchayat	Sreemoolanagaram									
62.	Paravur	Panchayat	Chendamangalam									
63.	Paravur	Panchayat	Ezhikkara									
64.	Paravur	Panchayat	Kottuvally									
65.	Paravur	Panchayat	Vadakkekara									
66.	Vadavukod	Panchayat	Aikkaranadu									
67.	Vadavukod	Panchayat	Kunnathunad									
68.	Vadavukod	Panchayat	Mazhuvanoor									
69.	Vadavukod	Panchayat	Poothrikka									
70.	Vadavukod	Panchayat	Thiruvaniyoor									
71.	Vadavukod	Panchayat	VadavukodPuthankurish									
72.	Vazhazkulam	Panchayat	Choornikara									
73.	Vazhazkulam	Panchayat	Edathala									
74.	Vazhazkulam	Panchayat	Keezhmad									
75.	Vazhazkulam	Panchayat	Kizhakkambalam									
76.	Vazhazkulam	Panchayat	Vazhazkulam									
77.	Vazhazkulam	Panchayat	Vengola									
78.	Vypin	Panchayat	Edavanakkad									
79.	Vypin	Panchayat	Kuzhuppilly									
80.	Vypin	Panchayat	Nayarambalam									
81.	Vypin	Panchayat	Njarakkal									
82.	Vypin	Panchayat	Pallipuram									

83.		Municipality	Kalamassery	Yellow	Orange	Orange	Red	Orange	Red	Green	Red
84.		Municipality	Maradu	Yellow	Orange	Orange	Yellow	Orange	Orange	Yellow	Yellow
85.		Municipality	Perumbavur	Yellow	Yellow	Orange	Orange	Yellow	Red	Yellow	Yellow
86.		Municipality	Piravom	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Green	Red
87.		Municipality	Thrikkakara	Yellow	Yellow	Orange	Orange	Orange	Red	Red	Red
88.		Municipality	Eloor	Yellow	Orange	Yellow	Yellow	Yellow	Orange	Yellow	Red
89.		Municipality	N Paravur	Yellow	Yellow	Yellow	Yellow	Yellow	Orange	Yellow	Red
90.	Angamaly	Municipality	Angamaly	Orange	Orange	Orange	Orange	Orange	Orange	Red	Orange
91.	Kothamangalam	Municipality	Kothamangalam	Orange	Orange	Orange	Red	Red	Orange	Yellow	Red
92.	Mulanthuruthy	Municipality	Thrippunithura	Orange	Orange	Orange	Red	Orange	Red	Green	Orange
93.	Muvattupuzha	Municipality	Muvattupuzha	Yellow	Yellow	Yellow	Red	Yellow	Orange	Green	Red
94.	Pambakuda	Municipality	Koothattukulam	Orange	Red	Orange	Red	Orange	Red	Yellow	Red
95.	Vazhakulam	Municipality	Aluva	Orange	Red	Red	Red	Red	Red	Orange	Red
96.		Corporation	Kochi	Yellow	Yellow	Yellow	Orange	Orange	Red	Orange	Red

## Section II | Content Analysis

Ernakulam consists of 96 LSGs. It includes 82 GramaPanchayats, 13 Municipalities, and One Corporation. Almost all the LSGs have constituted Disaster Management working groups. Most of the LSGs have conducted transect walk before the preparation of DM plans. Only a few plans have added these processes in the introductory part of the DM plans. About 98% of the total plans have followed the suggested template. But the majority of the LSGs failed to draft a plan with all the content. Some of the plans have an additional topic on Climate change in the second chapter. The second and fourth chapters are least attended by the LSGs. The source of the data for the tables in Chapter 1 and 2 are not mentioned by the LSGs. Around 75% of the LSGs have not included the maps provided by KSDMA in their plans.

## Chapter wise Analysis

### Chapter 1 - General Information

Grama Panchayat: General information about the LSG is included in this chapter. Out of 82, 57 Gram Panchayats have filled the data satisfyingly. The remaining panchayats did not include the map. In most of the plans, descriptions are very less. There are incomplete tables in many plans. Some of the tables seem to be missing in few plans. 22 panchayats have insufficient content. Phone numbers of health care institutions are not added in a few plans. Ward wise data is not added in the tables of some plans. The majority of the plans didn't mention the source of the data. Some of the plans didn't even follow the exact template.

Municipalities:None of the municipalities has filled the chapter satisfactorily. 5 out of 13 plans have insufficient content. The remaining 8 LSGs need to work on necessary improvements. Only 4 LSG s have included the map.

Corporation:Ward-wise data for each table is added in the chapter. Some of the tables are left incomplete. No map is added. Descriptions are fewer.

### Chapter 2 - Disasters and possibilities of disasters

Grama Panchayat: This chapter includes information about disasters and disaster possibilities in the LSG. Only Kadungallor Panchayat has filled the chapter satisfyingly. 40 panchayats have done moderately well and require certain improvements. 37 plans contain insufficient data. 4 Panchayatsdo not have any information regarding this chapter in their plans. Only 18 panchayats have included maps in the plan. Some of the plans have an additional topic related to climate change. In most of the plans, Table, 2.2 is similar to Table 2.1.A few tables are left incomplete in the majority of the plans reviewed.

Municipalities:5 LSGs have included this chapter moderately well. 6 plans contain insufficient data. 2 LSGs have not included this chapter in their plan. 6 LSGs have included disaster-prone maps in the plan. Tables are left incomplete in most of the plans.

Corporation:Ward-wise data for each table is added in the chapter. Some of the tables are incomplete. Maps are not added.

In total, only a handful of LSGs has done this chapter satisfactorily. This chapter includes information regarding the history of disasters and disaster possibilities of the place which can be used for the preparedness and evacuation process. The LSGs need to rework this chapter.

### **Chapter 3**

**Grama Panchayat:** ERT is an inevitable part of the evacuation process. Well-trained and healthy persons can carry out evacuation and all other related processes without difficulty. Only one panchayat has worked on this chapter sufficiently. 44 panchayats have done moderately well. About 33 panchayats need to rework this chapter. 4 panchayats did not include this chapter in their plan.

**Municipalities:** 4 LSGs have included this chapter moderately well. 8 plans contain insufficient content. One LSG did not include this chapter in their plan. None of the plans are filled properly.

**Corporation:** Tables are left incomplete.

The majority of the plans did not mention the age and contact numbers of ERT members which are very relevant. The tables regarding evacuation plans are not filled properly. The majority of the plans have omitted this table. All the LSGs require putting more effort into this chapter.

### **Chapter 4**

This chapter is one of the relevant chapters of the suggested DM plan template. Unfortunately, the same chapter is the least discussed in most of the plans.

**Grama Panchayat:** 23 panchayats did not include this chapter in the plan. 51 plans contain insufficient data. These plans haven't discussed the mitigation and preparatory processes. 7 plans have done moderately well. Only one panchayat has worked on this chapter satisfactorily.

**Municipalities:** 6 LSGs have omitted this chapter and four contain insufficient data. Three of them have worked on this chapter moderately well. Unfortunately, none of the LSGs has done this chapter satisfactorily.

**Corporation:** This chapter is the least focused one by the LSG. The content is insufficient. Only tables are included.

### **Chapter 5**

The chapter includes information regarding the capacities and resources available with the LSGs. This information has an important role during emergencies.

**Grama Panchayat:** Two plans have satisfactorily worked on this chapter. 19 panchayats did moderately well and 47 plans have insufficient content. 14 LSGs haven't mentioned anything about this chapter. It is very disappointing that only 10 out of 82 LSGs have added a social resource map in their DM plan.

Municipalities: 5 plans have worked moderately well on this chapter. Six have insufficient content and two LSGs have skipped this chapter. None of the LSGs have completed this chapter satisfactorily.

Corporation: This chapter has insufficient content. Some of the tables are left incomplete and few tables seem to be missing. The social resource map has not been included in the plan. The phone numbers of individuals and organizations are missing in some of the tables. Disappointingly majority of the LSGs did not add the social resource map to their DM plan.

## **Chapter 6**

This chapter focuses on the project ideas which can lead the LSGs to a disaster-resilient habitat. By understating the strengths and weaknesses of the LSG, they are supposed to propose projects which can be a solution to existing weaknesses.

Grama Panchayat: 34 LSGs have left this chapter unattended. 25 plans have insufficient content. 2 LSGs worked on this chapter moderately well. Kadungallor panchayat has done this chapter well.

Municipalities: 6 LSGs have omitted this chapter and the remaining LSGs have included a very few projects which are not relevant.

Corporation: Content not available.

The majority of the LSGs who have attended the chapter did not categorize the projects as suggested.

## **Chapter 7**

This chapter includes the contact numbers of important officers, ward members, health institutions, helplines, etc.

Grama Panchayat: 18 LSGs have filled the data satisfyingly. 39 plans have a few incomplete tables. & plans have insufficient data. 18 LSGs did not include this chapter in their DM plan.

Municipalities: 4 LSGs have included all the details required in the chapter. 6 plans need to add a few more contact numbers to improve the quality of the chapter. One plan has insufficient content and two LSGs have skipped this chapter.

Corporation: Important contact numbers are not added to the chapter.

The majority of the LSGs should rework and update the contact numbers.

## Chapter 8

Annexure includes certain tables from the chapters. Ward-wise details are to be filled by the LSGs.

Grama Panchayat: 44 panchayats have omitted this chapter. 8 plans have insufficient content. They have only filled few tables. 18 LSGs have filled the data moderately well. Two panchayats have included all the tables in the annexure.

Municipalities: None of the LSGs has included all the details. 9 Panchayats have omitted this chapter. Two plans have insufficient data and the other two have filled the data moderately well.

Corporation: Content not available.

### Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement & Major Recommendations

#### **Strengths / Best Practices**

The DM plan prepared by Kadungalloor panchayat can be considered as the best plan from Ernakulam district. They have included all the necessary data and proposed good projects for the panchayat. The presentation of the plan deserves a special appreciation.

Besides this, another notable strength is that a few LSGs have included youth associations, library associations, and various club members in the volunteer's list. This can be a great contribution to the response team at the time of crisis.

#### **Gaps Identified / Areas of Improvement**

- Some of the plans failed to include basic details about the LSGs
- Panchayat map and all other maps provided by KSDMA were not included in 99% of the plans
- Histories of disasters and possibilities of disaster are not well discussed in the plans by most of the LSGs.
- The table demanding the data about people who need special attention is left incomplete in most of the plans
- ERT members are insufficient in few plans. Contact numbers and age of ERT members seem to be missing in the majority of the plans
- Serious efforts are not taken by the LSGs in preparing mitigation measures and evacuation plans
- Only a few LSGs have discussed capacity building in their plans
- The majority of the LSGs should rework on Chapter 2, Chapter 4, and Chapter 6

- Annexure should be added in 75% of the plans
- While reviewing, it was evident that the majority of the plans are influenced by the floods of recent years. Nearly all the plans have discussed this extensively as well.
- Coastal disasters are not given much importance in the plans prepared by LSGs located in the coastal region.
- None of the plans discussed Early Warning Systems
- Corporation and Municipalities should take much more effort to prepare a DM plan.

### Major Recommendations

- Necessary training should be given to the officials to prepare a professional DM plan
- Ensure active participation of the public in DM plan preparation
- DM plans should be updated yearly
- Since the map is an important tool, professional support has to be given to LSGs to interpret and understand the maps provided by KSDMA
- Ward wise data is mandatory in DM plans
- Public infrastructure, resource inventories, and rehabilitation centres should be examined by a professional team at a regular interval of time
- Details of factories, large scale industries, petrol pumps, gas stations, etc. should be considered in the plans
- Social awareness and capacity building training should be given to common people especially people residing in disaster-prone regions
- ERT members should be given professional training and awareness to perform rescue operations

### Section IV | Training Needs

Major Training Needs / Capacity Building Initiatives	Expected Participants (Officials/People Rep.)	Objectives
Disaster Management	LSGD officials	To perform effective disaster management activities at the LSG level



Rescue operations and first aid	ERT Members	To ensure safety during rescue operations and to build a strong ERT team.
Swimming Classes	Adults and children	To reduce the risk of drowning
Incident Response System	LSGD officials	To perform the duties in an organised manner and effective way during a disaster or an event
Mock drills	Students and ERT members	To ensure safety during an emergency situation

## Section V | Conclusion

NammalNamukkayi campaign has acted as a coordinating entity for Kerala's efforts to bring about a noticeable change in the lives and livelihoods of the citizens. By ensuring an inclusive and participatory process, LSGs have taken a great effort in making this campaign a huge success. Though the DM plans require a lot of corrections and improvements, all the LSG deserves an appreciation for their efforts considering this process as a first attempt. Suggestions mentioned in chapter 2 of this document can be considered by the LSGs and necessary improvements should be done in the plans.

## REVIEW OF LSG DM PLAN

# THRISSUR

### **Introduction**

Rebuild Kerala Initiative (RKI) has launched a campaign by the name Nammal Namukkayi with the aim to utilize the knowledge, experience and ideas of the entire people of the state in a participatory and practicable manner for rebuilding Kerala. Preparation of Disaster Management Plan by every Self Government Institutions is an important component of the above campaign formulated in People's Planning mode.

Instructions have already been issued for ensuring people's participation and intervention of local self-government institutions in disaster mitigation, preparation and disaster management areas and for the planning and implementation of such plans at local self-government level as

Part of annual plans. Two parts are there for the disaster management plan. The template comprising Situation Analysis Resource Mapping and Intervention Reports forms the first part. The projects proposed to be taken up in the annual plan on the basis of the above template come under the second part.

By including and approving local level projects, formulated for disaster resistance, mitigation and management, in the annual plans of local self-governments prepared for the forthcoming year, better disaster resistance and resilience can be ensured. The Government expects that all

Representatives of people will participate in gramasabhas of their respective regions to give guidance in this regard

## Section I | Over view of the LSG DM Plans in the District

Table 1

Name of the District <b>THRISSUR</b>			
Sl. No.	LSG Type	Total Number	Number of Plans Submitted by LSGs
1	GramaPanchayats	86	86
2	Municipalities	7	7
3	Corporations	1	1
<b>Total</b>		<b>94</b>	<b>94</b>
Name of the Reviewer- NoushabaNas P P, LSGDM Plan Coordinator, Thrissur			

Table 2

Explanation	Color code
Content not available	
Insufficient content	
Content could be strengthened	
Content is proximal to the template	

Sl.No	Block	LSG Type	Panchayat	Chapter wise content availability							
				1	2	3	4	5	6	7	8
1	Chowannur	Panchayath	Choondal								
2	Chowannur	Panchayath	Chowannur								
3	Chowannur	Panchayath	Kadangode								
4	Chowannur	Panchayath	Kadavallur								

5	Chowannur	Panchayath	Kandanissery	Red	Red	Red	Red	Red	Red	Red	Red	Red	Orange
6	Chowannur	Panchayath	Kattakampal	Yellow	Red	Orange	Red	Red	Red	Green	Red	Red	Red
7	Chowannur	Panchayath	Porkkulam	Yellow	Orange	Yellow	Red	Orange	Red	Yellow	Yellow	Red	Red
8	Chowannur	Panchayath	Velur	Yellow	Orange	Yellow	Red	Red	Orange	Yellow	Yellow	Red	Red
9	Puzhakkal	Panchayath	Aadat	Yellow	Orange	Yellow	Orange	Yellow	Orange	Orange	Orange	Yellow	Yellow
10	Puzhakkal	Panchayath	Avanur	Yellow	Yellow	Yellow	Orange	Yellow	Yellow	Orange	Orange	Yellow	Yellow
11	Puzhakkal	Panchayath	Kaiparamabu	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Yellow	Yellow	Yellow	Yellow
12	Puzhakkal	Panchayath	Kolazhy	Yellow	Orange	Yellow	Orange	Orange	Red	Yellow	Yellow	Red	Red
13	Puzhakkal	Panchayath	MG Kavu	Green	Green	Green	Orange	Yellow	Orange	Yellow	Yellow	Green	Green
14	Puzhakkal	Panchayath	Tholur	Yellow	Yellow	Yellow	Orange	Orange	Orange	Orange	Orange	Orange	Orange
15	Kodakara	Panchayath	Alagappanagar	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Yellow	Yellow	Yellow	Yellow
16	Kodakara	Panchayath	Kodakara	Green	Orange	Orange	Orange	Yellow	Orange	Yellow	Orange	Orange	Orange
17	Kodakara	Panchayath	Mattathur	Yellow	Orange	Yellow	Orange	Yellow	Orange	Green	Yellow	Yellow	Yellow
18	Kodakara	Panchayath	Nenamanikkara	Yellow	Orange	Yellow	Orange	Yellow	Orange	Yellow	Yellow	Yellow	Yellow
19	Kodakara	Panchayath	Pudukkad	Yellow	Orange	Yellow	Orange	Yellow	Orange	Yellow	Yellow	Yellow	Yellow
20	Kodakara	Panchayath	Thrikkur	Yellow	Orange	Yellow	Yellow	Yellow	Yellow	Orange	Orange	Yellow	Yellow
21	Kodakara	Panchayath	Varandarapilly	Yellow	Orange	Yellow	Red	Yellow	Orange	Yellow	Yellow	Green	Green
22	Mala	Panchayath	Aloor	Yellow	Yellow	Yellow	Orange	Orange	Orange	Green	Yellow	Yellow	Yellow
23	Mala	Panchayath	Annamanada	Yellow	Yellow	Yellow	Yellow	Yellow	Orange	Yellow	Yellow	Yellow	Yellow
24	Mala	Panchayath	Kuzhur	Yellow	Orange	Yellow	Red	Orange	Orange	Yellow	Yellow	Yellow	Yellow
25	Mala	Panchayath	Mala	Orange	Orange	Red	Red	Yellow	Orange	Yellow	Yellow	Yellow	Yellow
26	Mala	Panchayath	Poyya	Yellow	Orange	Orange	Orange	Orange	Yellow	Orange	Orange	Orange	Orange
27	Anthikkad	Panchayath	Anthikkad	Yellow	Orange	Red	Red	Red	Red	Red	Red	Yellow	Yellow
28	Anthikkad	Panchayath	Arimbur	Yellow	Orange	Orange	Orange	Orange	Orange	Yellow	Yellow	Red	Red
29	Anthikkad	Panchayath	Chazhur	Orange	Orange	Yellow	Red	Yellow	Red	Orange	Orange	Orange	Orange
30	Anthikkad	Panchayath	Manalur	Yellow	Orange	Yellow	Yellow	Yellow	Orange	Yellow	Yellow	Yellow	Yellow
31	Anthikkad	Panchayath	Thenniam	Yellow	Orange	Yellow	Orange	Yellow	Yellow	Yellow	Yellow	Red	Red
32	Chalakkudy	Panchayath	Athirapilly	Orange	Orange	Orange	Orange	Orange	Red	Yellow	Orange	Orange	Orange
33	Chalakkudy	Panchayath	Kadukutty	Yellow	Orange	Yellow	Red	Yellow	Orange	Yellow	Yellow	Orange	Orange
34	Chalakkudy	Panchayath	Kodassery	Yellow	Orange	Yellow	Red	Yellow	Orange	Orange	Yellow	Yellow	Yellow
35	Chalakkudy	Panchayath	Koratty	Yellow	Orange	Yellow	Red	Orange	Red	Yellow	Yellow	Yellow	Yellow
36	Chalakkudy	Panchayath	Melur	Yellow	Orange	Yellow	Red	Orange	Orange	Yellow	Yellow	Yellow	Yellow
37	Chalakkudy	Panchayath	Pariyaram	Yellow	Red	Yellow	Red	Orange	Red	Red	Red	Yellow	Yellow

38	Cherppu	Panchayath	Avinissery	Green	Orange	Yellow	Orange	Orange	Red	Orange	Orange
39	Cherppu	Panchayath	Cherpu	Yellow	Yellow	Yellow	Orange	Orange	Orange	Yellow	Red
40	Cherppu	Panchayath	Paralam	Orange	Orange	Yellow	Orange	Orange	Orange	Yellow	Yellow
41	Cherppu	Panchayath	Vallachira	Orange	Orange	Yellow	Orange	Orange	Orange	Yellow	Yellow
42	Pazhayannur	Panchayath	Chelakkara	Yellow	Red	Yellow	Orange	Red	Red	Yellow	Yellow
43	Pazhayannur	Panchayath	Kondazhy	Yellow	Orange	Yellow	Orange	Orange	Orange	Yellow	Yellow
44	Pazhayannur	Panchayath	Panjaj	Orange	Red	Orange	Red	Orange	Red	Yellow	Orange
45	Pazhayannur	Panchayath	Pazhayannur	Yellow	Yellow	Yellow	Red	Orange	Red	Yellow	Yellow
46	Pazhayannur	Panchayath	T'mala	Yellow	Orange	Yellow	Red	Red	Red	Red	Orange
47	Pazhayannur	Panchayath	Vallatholenagar	Yellow	Orange	Yellow	Orange	Orange	Orange	Yellow	Yellow
48	Wadakkanchery	Panchayath	Deshamangalam	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Yellow	Red
49	Wadakkanchery	Panchayath	Erumapetty	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Yellow	Red
50	Wadakkanchery	Panchayath	Mullurkkara	Orange	Orange	Yellow	Red	Orange	Orange	Yellow	Red
51	Wadakkanchery	Panchayath	Thekkumkara	Orange	Orange	Yellow	Red	Orange	Orange	Orange	Red
52	Wadakkanchery	Panchayath	Varavoor	Yellow	Orange	Yellow	Red	Orange	Red	Orange	Red
53	Mathilakam	Panchayath	Edathiruthy	Yellow	Orange	Yellow	Yellow	Orange	Orange	Yellow	Yellow
54	Mathilakam	Panchayath	Edavilangu	Yellow	Orange	Yellow	Yellow	Orange	Orange	Orange	Yellow
55	Mathilakam	Panchayath	Eriyad	Orange	Yellow	Orange	Red	Orange	Red	Yellow	Red
56	Mathilakam	Panchayath	Kaipamangalam	Yellow	Orange	Yellow	Red	Orange	Red	Orange	Orange
57	Mathilakam	Panchayath	Mathilakam	Yellow	Orange	Yellow	Yellow	Orange	Orange	Orange	Red
58	Mathilakam	Panchayath	Perinjanam	Yellow	Yellow	Yellow	Orange	Orange	Orange	Green	Orange
59	Mathilakam	Panchayath	S N Puram	Green	Yellow	Yellow	Yellow	Orange	Orange	Orange	Orange
60	Mullassery	Panchayath	Elavally	Yellow	Orange	Yellow	Yellow	Orange	Orange	Orange	Yellow
61	Mullassery	Panchayath	Mullassery	Yellow	Orange	Yellow	Red	Orange	Orange	Orange	Yellow
62	Mullassery	Panchayath	Pavaratty	Yellow	Yellow	Yellow	Orange	Orange	Orange	Green	Green
63	Mullassery	Panchayath	Venkitangu	Yellow	Orange	Yellow	Orange	Yellow	Orange	Yellow	Yellow
64	Thalikkulam	Panchayath	Engandiyur	Yellow	Orange	Yellow	Orange	Orange	Orange	Yellow	Orange
65	Thalikkulam	Panchayath	Nattika	Green	Orange	Yellow	Orange	Orange	Yellow	Orange	Red
66	Thalikkulam	Panchayath	Thalikkulam	Green	Yellow	Orange	Yellow	Orange	Orange	Yellow	Red
67	Thalikkulam	Panchayath	Valappad	Yellow	Green	Yellow	Yellow	Orange	Orange	Yellow	Orange
68	Thalikkulam	Panchayath	Vatanapilly	Yellow	Orange	Yellow	Orange	Orange	Orange	Orange	Red
69	Chavakkad	Panchayath	Kadappuram	Yellow	Orange	Orange	Yellow	Orange	Orange	Yellow	Yellow
70	Chavakkad	Panchayath	Orumanayur	Yellow	Orange	Orange	Red	Orange	Red	Orange	Red

71	Chavakkad	Panchayath	Punnayur									
72	Chavakkad	Panchayath	Punnyurkulam									
73	Chavakkad	Panchayath	Vadakkedkad									
74	Irinjalakkuda	Panchayath	Karalam									
75	Irinjalakkuda	Panchayath	Kattoor									
76	Irinjalakkuda	Panchayath	Muriyad									
77	Irinjalakkuda	Panchayath	Parappukkara									
78	Ollukkara	Panchayath	Madakkathara									
79	Ollukkara	Panchayath	Nadathara									
80	Ollukkara	Panchayath	Panancherry									
81	Ollukkara	Panchayath	Puthur									
82	Vellangallur	Panchayath	Padiyur									
83	Vellangallur	Panchayath	Poomangalam									
84	Vellangallur	Panchayath	Puthenchira									
85	Vellangallur	Panchayath	Vellangallur									
86	Vellangallur	Panchayath	Velukkara									
87	Chalakkudy	Municipality	Chalakkudy									
88	Chavakkad	Municipality	Chavakkad									
89	Guruvayur	Municipality	Guruvayur									
90	Irinjalakkuda	Municipality	Irinjalakkuda									
91	Kodungallur	Municipality	Kodungallur									
92	Kunnamkulam	Municipality	Kunnamkulam									
93	Wadakkanchery	Municipality	Wadakkanchery									
94	Thrissur	Corporation	Thrissur									

## Section II |Content Analysis

### **A. Content Analysis**

Thrissur district has 86 panchayth in total, the total 86 were submitted the Disaster management plan before June 2020. This has approved by District Planning office and District Disaster Management Authority as well.

In the initial phase 37 plans were approved by District Planning Council held on 30-4-2020 (letter no 80550/ 2020/DPO TSR).7 Municipalities and 1 corporation also submitted the same together, they also made a checklist for approving the disaster management plan, which include question like Whether plan submitted in sulekha / whether all chapters included?/ quality of chapters in percentage/ annexure attached / whether analyzed the possibility of occurrence of disasters / whether ERT formulated ?/ details of projects in number according to Precaution, Reduction, and Enhance social and economic powers to face disaster /Details of projects on sector wise etc.

50 LSG were got percentage higher than 50, Other 25 is in between 10% to 50%, 7 has not included all the chapters, other 12 LSG were not submitted the plan (in the month of April 2020)

According to the approving template for LSGDM Plan, the 5 best LSG's and its percentage shows in the below table.

<b>Serial Number</b>	<b>Name of the LSG</b>	<b>Quality of chapter in percentage</b>
1	Kattur GP	92.85%
2	Aloor GP	92.85 %
3	Kodakara GP	88
4	Valappad GP	88
5	KodungallurMunicipality	85.7

Each chapter assigned 1 mark for its quality, the mark gained for each chapter is added and percentage is calculated out of 7.

## Introduction

The plans were made of participatory approach completely. Secondary information gathering, transect walk, focus group discussion, collected information consolidation and analysis, suggestions received from other working groups, whether DMP discussed in gramasabha and ward sabha ? DMP has approved by administrative committee and discussed in developmental seminar are the points considered to check the plans are made in participatory approach

Serial no	Name of the participatory activity	How many GP/Municipality and corporation has not done	Name of the GP/Municipality which is not done
1	Secondary Information gathering	12 (11 GP and 1 municipality)	Punnayur, Mulamkunnathukaavu, Mathilakam, Edavilangu, Cherppu, Chowannur, Erumapetty, Kondaazhy, Panjal, Nadathara, Puthoor, Iringalakkuda Municipality.
2	Transect walk	29 ( 26 GP and 2 Municipality and 1 corporation )	Kadappuram, Orumanayur, Punnayur, Vadakkekad, Athirapally, Kadukutty, Kodassery, Kolazhy, Avannur, Kaiparambu, Mulamkunnathukaavu, Tholur, Mattathur, Mathilakam, Edavilangu, Chowannur, Kadavallur, Kattoor, Parappukkara, Kondaazhy, Paanjal, Engandiyur, Vadanapally, Thalikkulam, Nattika, Iringalakkuda and Chalakkudi Municipality and Thrissur Corporation
3	Focused group discussion	21 ( 19 GP and 1 Municipality and 1 corporation)	Pavaratty, Kadappuram, Orumanayur, Punnayur, Athirapally, Kadukutty, Kodassery, Mattathur, Mathilakam, Edavilangu, Chowannur, Cherppu, Erumapetty, Nadathara, Puthoor, Engandiyur, Vadanapally, Thalikkulam, Nattika, Iringalakkuda municipality and Thrissur corporation
4	Consolidation and analysis of collected information	26 ( 24 GP, 1 Municipality and 1 corporation)	Anthikkad, Thaanyam, Manalur, kadappuram, Orumanayur, Punnayur, Vadakkekad, Athirapally, Tholur, Mattathur, Edathiruthy, Kaipamangalam, Mathilakam, Edavilangu, Chowannur, Cherppu, Deshamangalam, Erumapetty, Mullurkkara, Chelakkara, Nadathara, Puthoor, Valappad, Iringalakkuda Municipality and Thrissur corporation
5	Project ideas	26 (25 GP and 1 Municipality )	Venkitangu, Anthikkad, Kadappuram, Orumanayur, Punnayur, Athirapally, Kodakara, Edathiruthy, Kaipamangalam, Mathilakam, Edavilangu, Chowannur, Kadavallur, Kattakamapal, Parappukkara, Paaram, Cherppu, Deshamangalam, Erumapetty, Varavoor, Thiruvillamala, Vallatholnagar, Nadathara, Puthoor, Thalikkulam, Thrissur corporation
6	Suggestion received from other working groups	33 (32 GP and 1 Corporation )	Anthikkad, Thaanyam, Kadappuram, orumanayur, Punnayurkkulam, Athirapally, Annamanada, Aloor, Mattathur, Nenamanikkara, Puthukkad, Thrikkur, Varanatharapally, Mathilakam, Edavilangu, Chowannur, Kattakamapal, Kadavallur, Porkkulam, Kadangodu, Parappukkara, Vallachira, Paaram, Cherppu, Deshamangalam, Erumapetty, Varavoor, Kondaazhy, Paanjal, Pazhayannur, vallatholnagar, Nadathara, Puthoor and Thrissur corporation
7	DMP discussed in Gramasabha and ward sabha?	24 ( 23 GP and 1 Corporation )	Venkitangu, Punnayurkkulam, athirapally, annamanada, aloor, Nenamanikkara, Puthukkad, Thrikkur, Varanatharapally, Mathilakam, Edavilangu, Chowannur, Porkkulam, Kadangodu, Vallachira, Cherppu, Erumapetty, Paanjal, Pazhayannur, Puthoor, Nadathara, Puthoor, Valappad and Thrissur corporation



8	Developmental seminars	51 GP	Pavaratty, Venkitangu, Anthikkad, Thaannyam, Kadappuram, Orumanayur, Punnayur, Punnayurkkulam, Vadakkekad, Athirapally, Annamanada, Kolazhy, Avannur, Kaiparambu, Mulamkunnathukaavu, Tholur, Mattathur, Nenmanikkara, Puthukkad, Thrikkur, Varanatharapally, Edathiruthy, Kaipamanagalm, Mathilakam, Edavilangu, Chowannur, Kadavallur, Porkkulam, Kadangodu, Kattoor, Muriyad, Parappukkara, Vallacchira, Paaralam, Cherppu, Deshamangalam, Erumapetty, Mullurkkara, Thekkumkara, Varavoor, Chelakkara, Kondaazhy, Paanjil, Pazhayannur, Thiruvillamala, madakakkathra, Nadathara, Paananchery, Puthoor, Padiyur, Velukkara,
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Public consultation and Gramasabhas and ward sabhas were held, there are 23 GP's and 1 corporation not done the public consultation till February, the average score of this LSGD's is 10.45 ( out of 24 marks , each chapter contain 3 marks ),and for those LSGs who have not done the public consultation, their average score is 09.45 which shows those panchayth had gramasabha and ward sabha are having better score, Most of the GP's in Kodakara Block didn't had public consultation till February 2020.

A lot participatory program have been done, for preparing the LSGDM plan, the process gone through a complete situational analysis, but this fact doesn't made plan better, plans are following the template, very few LSGD has misplaced the content, and some of them added climate change related impact assessment in detail, which is not part of the template. Very few panchayathhas mentioned the source of content, but only for tables, and all the LSGs are limited to 15 annexures.

KSDMA has provided around 16 Disaster prone maps, 1 satellite map and 9 social resource maps including land use, soil and topography maps. But unfortunately the LSGD's has added very few maps. And those who have added the map, either its legend is not seeing or which is in black and white color.

## Chapter wise Analyisi

### Chapter 1 –Local Self Government Institution - General Information

The content of the chapter further divided into 3 components

Serial No	Major component	Topics Covered	How many LSGs are completed
1	General Information	General information come as introduction, GP /Municipality and Corporation map	12

		,history, geography and ward wise distribution, demographic particulars etc.	
2	Statistical information	Economy, economic statistics, livelihood record, people working in different sectors, livelihood vocations etc.	6
3	Information on basic infrastructure facilities	Educational institutions, health institutions, ananganwadi, Roads, bridges, inhabitable houses, apartments and flats, colonies and manmade irrigation system etc.	All the LSGs have attended this, but very poor explanation. Descriptive part is missing

- Some the LSGs has given map of hand drawn, which might be done by participatory approach like through a transect walk.
- The LSGI general information includes, latitude and longitude of the area, very few has attended this on ward wise. Implementing officer's names are well done.
- Details on apartments and flats don't ask for the address or name, it just keeping the numbers only. Without having a name it's been difficult to identify.
- Private institutions and infrastructure not entertained much, like tuition centers, computer centers and fitness centers etc not added to anywhere.
- Some anganwadis put their inmates number as strength, which felt as necessary doing, but the low income colony detail doesn't include demographic details which also necessary when we plan evacuation and shelter arrangements.
- None of the local body has mentioned transgender information, and chapter doesn't include disabled /different abled person's data

- Health and veterinary details are given, but other facilities information regarding ambulance, ventilator, anti-snake venom, mortuary, mobile mortuary, laboratory, X-ray unit is not recorded.
- This is the only chapter which deals with agriculture sector, but there is not much sectorial preference.

## **Chapter 2 –Disasters and Possibilities for Disasters - Evaluation**

This chapter helps to make interventions and preparedness measures during and before getting to a disaster phase. This chapter only could complete with a focused group discussion, transect walk and pure situational analysis, The more information you record here, helps to improve other chapters as well, but unluckily many of the LSGs have mentioned the flood as their major concern as disaster, the locally happening incidents, and other geographical hazards didn't mention at all, For example, boat tragedy, drowning death, major motor accidents, contagious diseases, food poison, accidents occurred in connection with festivals, recurring road accidents etc. not mentioned, When we compare with district specific disasters (Mentioned in DDMP) which not at part of any LSG DM plan.

More than 15 LSGs attached climate change related components in the chapter, and some described the flood response in detail, and photographs were added. Out of 94, only Chowannur, Valappad and MulamkunnathuKaavu have sufficient data, 16 LSGs have to be improved, and 7 doesn't have no content and remaining 67 have least content. The disaster prone area maps include either flood or landslide area map.

## **Chapter 3 –Disaster Response Plan**

This is a response plan completely; it contains data on The 4 emergency response team, Volunteer team and steering committee details and different evacuation plans 5 LSGs have not attended the chapter, ChowannurGp and Mulamkunnathukaavugp has done properly. 30 have least content and remaining 57 need content improvement.

The ERT team has no much women representation. Only 10 % of LSGs have given the ERT details on ward wise. And there is no uniformity in listing out the volunteers, some has less than 10 numbers, some has ward wise volunteer list, The role and duties of ERT has not mentioned in the chapter, may be that made so much confusion in the chapter.

## **Chapter 4 – Preparation, Mitigation and Social Empowerment**

This chapter deals with preparation, mitigation and social empowerment activities, preparatory steps will help to identify the gap between the available facilities and the ideal facilities to be there in place. Then only, the facilities to be arranged can be enlisted and realized.

31 LSGs have not attended this chapter, 43 has least information and remaining 20 LSGs have data which need to be enhanced. And the disaster mitigation title has components like water conservation activities, action for rejuvenating water bodies, watershed and soil conservation etc., all these topics have been attended generally. There is rare information has been found from the field. And for the creation of social service activities too, all the information are just description on how Kudumbashree or NSS units will be helpful and what's their role on disaster phase.

Deshamangalam GP has put an extra ordinary step ( Even though the tables are not complete ) chapter has detailed on the major hazards in the GP, and what are the preparatory activities to be taken under disaster mitigation activity , note on Fire free forest Kerala , and how Deshamangalam GP put forwarded it.

There is no link between the preparatory and disaster mitigation activities with ERT and volunteer team which listed out the previous chapter.

## **Chapter 5 –Potentials and Resources**

This chapter deals with Collection of information regarding available tools, equipment and devices which could be utilized for tackling disasters is the theme of this chapter. Trained human resource, essential materials required for emergency response actions etc. 9 LSGs have not attended this chapter, 26 LSGs information need more data and remaining 59 has very poor information. Social resource map was added by very few LSGS

Trained civil defence volunteers, aptamithra volunteers were missing from the chapter, All the LSGs should have drinking water facilities, if it's not other alternatives should take by the authority, which is not at all mentioned in any of the plan, and details about waste management facilities also least attended.

The tables and descriptive info regarding SWOT, lacking in the majority of the plans, or those who attended looks similar with others.

## **Chapter 6 – Climate-conscious Disaster Mitigation Project Proposals**

Project proposals, which could be taken up at different tiers, prepared under different heads are listed out in this chapter, 24 LSGs have not attended this chapter, 9 has attended something better, and

remaining 61 LSGs have very poor content. Those who have listed out the projects, that could be either project titles or suggestions,

Thrikkur GP has listed out some good projects like canal data bank, disease mapping and micro flood management etc. This is one of the finest chapters, where all DM plan preparation activities get into an impact, or result been waiting, but LSGs has failed to ensure the quality,

The projects listed out from the annual plan come as road repairmen, canal rejuvenation and construction etc. Nothing specific disaster mitigation and preparation.

### **Chapter 7 – Important Phone Numbers**

This chapter deals with Phone numbers and particulars of persons responsible for providing guidance, assistance and help in Disaster management operations.

Kattakamapal, Mattathur, Aloor, Perinjanam, Pavaratty have given proper information, ward specific data is totally missed out from the chapters, the health and helpline numbers could be enhanced, the helpline numbers can add the locally known person , or a DMtrained persons from the locality as well,

### **Chapter 8 - Supplementary Information to be collected at Ward Level**

This chapter deals with the annexures, which has 15 annexures in totally, Mulamkunnathukaavu, Varantharapally, Pavaratty, Velukkaragp has done propley, all theannexures are completed with ward wise data. As the chapter requires ward wise information, the consolidated template will be good for attaching; some of the LSGs have used more than 100 pages to get it done. Source of the table content didn't mention at all.

## **Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement& Major Recommendations**

### **i) Strengths / Best Practices**

Majority of the ISGS have tried to put the introduction part quite well, a note from president following a note on NammalNamukkayi project etc. and good covering too, the covering include the photographs the previous flood response, and even on the chapters this is included, this picture conveys a lot information, how they coped up, withstand with the previous disaster

Avinissery has put other examples, while filling the data regarding health institution; they have listed out different streams of health intuitions, and their contact numbers and other facilities, so those who not to allopathic stream can prefer homeopathy or Ayurveda treatment in emergency.

Valappad GP have detailed explanation of disaster prone regions on hazard basis in the chapter 2<sup>nd</sup>, they have mapped the frequent accident prone areas and drowning death happening places.

Chowannur GP has ward wise details of 4 Emergency Response Team including warning team, exploration and rescue, shelter management and first/aid basic life support system. The entire list has equal women representation.

Part of project preparation, Muriyad GP has listed out specific problems of the ward, challenges recommendation, and how it could be done? The descriptive information shows a good situational analysis has done for making the disaster management projects, Different project title also suggested from annual plan.

MulamkunnathuKaavu GP annexure has included photo gallery previous disaster relief and response work.

#### **j) Gaps Identified / Areas of Improvement**

- Not much data entered to the chapters, and LSGs are more likely to fill the tables than putting the descriptive information. 80 % of the descriptive information is missing from the content.
- Felt those who added the data might not be person who are involved in focused group discussion or transect walk, Because the eriyadpanchayth from KodungallurMunicipality and KadappuramPanchayth from ChavakkadMunicipality are severe hazard prone area, the flood, coastal erosion , storm surge severely take place, that not come to account, The details on Tsunami shelter is missed out. Thrissur district also prone severe drought (Water scarcity ) and forest fire incidents, Around 75 landslips were occurred in the 2019 flood incident itself, which is not mentioned anywhere. Drowning death are very frequent, that is mentioned by very few LSGs, Corona case first reported in the Mathillakam GP(In country's first case) that didn't mention.
- There is no specific information regarding maps, KSDMA has provided with every LSGs. But none of them used in the plans, more than 8 maps not available in a single LSG DM plan. . And the map shown in the chapter and content as disaster prone areas are having differences , there is no analysis of map happening.
- Hardcopy of the DM plan and Soft copy which is uploaded in the Sulekha has lot of difference in the matter of content. Most of the soft copies are kept blank, but the map has good quality in the Sulekha files.
- The history of the disaster, LSGs have considered flood in 2018 and 2019 as major concerns, local disasters are not recorded.

- The linkages between each chapter are missing. Project title or suggestion put as project recommendation, there is no base for what could be a project, and why its need to be done.

**k) Major Recommendations**

- There should be a permanent committee in every LSG to prepare, monitor and to evaluate revision of LSGDMLSGDM plan in every year.
- The focused group discussion, situational analysis could be recorded and kept for annual revision, each death happening in the LSGS due to any specific hazard should be recorded,
- Indigenous knowledge / methods available locally should be included in the chapter resource and capacity
- The ERTmembers should get training in every six months according to seasonality of disasters, Those who have registered in SannadaSena could be added to ERT Team.
- Women participation/ participation of elderly and differently abled / transgender should have to be included in the committee, and their representation should maintain without fail.
- The annexure should include the details of people who have been resided over the camps during flood time, and SDRF allocation as well. The camp details should be included in the annexures
- Each LSG should have incident command system and standard operation procedure for acting in emergency
- Religious centres can include maximum number of intake information, public gathering and, festival details, and committee contact number and other facilities etc. Almost all Muslim religious centres have, structure to carry the dead body, and a committee for funerals.

**Section IV | Training Needs**

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants (Officials/People Rep.)</b>	<b>Objectives</b>
Training on early warning, search and rescue , shelter management and first aid and basic life support system	ERT members	To strengthen The capacity of ERT members, to know the role and duties during emergency.

Training on DM plan management	To the all the LSGD officials	To evaluate the plan, to make it sustain to way forward effectively
Mock drills on SOP and ICS	To all the LSG officials	To know how the carrying the DM plan on ground.
Massive training on swimming and BLS	To all the volunteer team	To ensure the effective saving mechanism.

### Conclusion:

Each LSG has 8 chapters, and the score varies 0 to 3 marks, so the total score for each LSGD comes 24. And here is the score of LSGs in Thrissur district.

Explanation	Color code	Number of LSGD
Content not available		11 LSGD
Insufficient content		61 LSGD
Content could be strengthened		22 LSGD
Content is proximal to the template		0 LSGD

According to this, average score of a LSGD come as 10.45 (total score 983 divided by 94 LSGD). There is no LSG having content that proximal to the template for Thrissur. Mulamkunnathukavu, Katoor, Aloor, Annamanada, Pavaratty, has the highest score among GP's, and among Municipality Chavakkad and Wadakkanchery has the highest score.

but as this is the pilot project done for entire state, I think this has par crossed, people are having at least experiencing a preparedness culture through making of LSGDM plan, their opinion has counted, through people's planning mode, While looking at the review, we have identified the gaps and listed out some serious suggestions. The plan is more of quantitative than a qualitative as we know, but this larger effort will not be misplaced; it should have great impact, all the developmental activities are now days connected to the core Disaster Risk Reduction. Continuous training and mock drills can impact a lot.



## REVIEW OF LSG DM PLANS

# PALAKKAD

### Section I | Overview of the LSG DM Plans in the District

#### **Introduction**

Palakkad is one of the fourteen districts of Kerala. It lies between 10° 20' 24" N to 11° 14' 17" N latitudes and 76° 01' 29" E to 76° 54' 29" E longitudes. Palakkad district is bordered by Malappuram district in the northwest, Thrissur district in the south, Coimbatore and Nilgiris districts of Tamil Nadu in the east and northeast sides respectively. Palakkad is considered as the gateway to Kerala for the eastern states due to the presence of the Palghat Gap in the Western Ghats, which plays a significant role in defining the socio-economic and climatic scenario of the district. The total area of the district is 4,480 km<sup>2</sup> which is 11.5% of the state's area, making Palakkad the largest district of Kerala. Out of the total area of 4,480 km<sup>2</sup>, about 1,360 km<sup>2</sup> of land is covered by forests. Most parts of the district fall in the midland region except the Nelliampathy-Parambikulam area in the Chittur taluk in the south and Attappadi-Malampuzha area in the north, which fall in the highland region.

*Table 1*

The table below shows the total number of LSGs who have submitted DM Plans in Palakkad district.

<b>Name of the District: Palakkad</b>			
<b>Sl. No.</b>	<b>LSG Type</b>	<b>Total Number</b>	<b>Number of Plans Submitted by LSGs</b>
1	Grama Panchayats	88	88
2	Municipalities	07	07
3	Corporations	0	0
Total		95	95
Name of the Reviewer: Asha V K Menon (LSG DM Plan Coordinator, Palakkad)			

Table 2

The table below shows the chapter wise content availability in DM Plans of each LSG through colour codes as follows:

Colour Code	Explanation
	Content not available
	Insufficient content
	Content could be strengthened
	Content is proximal to the template

Sl.No.	Block	LSG Type	LSG Name	Chapter-wise content availability								
				1	2	3	4	5	6	7	8	
1.	Alathur	Panchayat	Alathur	Yellow	Orange	Orange	Orange	Yellow	Orange	Orange	Orange	Red
2.	Alathur	Panchayat	Erimayur	Yellow	Green	Orange	Orange	Yellow	Orange	Yellow	Orange	Orange
3.	Alathur	Panchayat	Kannambra	Yellow	Yellow	Orange	Orange	Yellow	Orange	Yellow	Orange	Orange
4.	Alathur	Panchayat	Kavassery	Yellow	Orange	Yellow	Orange	Yellow	Orange	Yellow	Orange	Orange
5.	Alathur	Panchayat	Kizhakkencherry	Yellow	Yellow	Yellow	Orange	Yellow	Orange	Yellow	Yellow	Green
6.	Alathur	Panchayat	Puthucode	Yellow	Yellow	Orange	Orange	Orange	Orange	Orange	Red	Orange
7.	Alathur	Panchayat	Tarur	Yellow	Orange	Yellow	Orange	Orange	Orange	Yellow	Yellow	Red
8.	Alathur	Panchayat	Vadakkencherry	Yellow	Yellow	Yellow	Orange	Yellow	Green	Green	Yellow	Red
9.	Attappady	Panchayat	Agali	Yellow	Yellow	Orange	Red	Red	Red	Orange	Orange	Red
10.	Attappady	Panchayat	Puthur	Orange	Orange	Red	Red	Red	Red	Red	Red	Red
11.	Attappady	Panchayat	Sholayur	Yellow	Red	Red	Red	Red	Red	Red	Red	Red
12.	Chittur	Panchayat	Eruthempathy	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
13.	Chittur	Panchayat	Kozhinjampara	Yellow	Orange	Orange	Orange	Orange	Orange	Yellow	Yellow	Red
14.	Chittur	Panchayat	Nallepilly	Orange	Orange	Orange	Red	Orange	Red	Red	Red	Red
15.	Chittur	Panchayat	Perumatty	Orange	Orange	Yellow	Orange	Red	Red	Red	Red	Red

16.	Chittur	Panchayat	Vadakarapathy	Yellow	Orange	Yellow	Orange	Orange	Orange	Orange	Yellow	Orange
17.	Chittur	Panchayat	Elappully	Orange	Orange	Orange	Orange	Orange	Orange	Red	Orange	Orange
18.	Chittur	Panchayat	Polpully	Yellow	Yellow	Yellow	Orange	Orange	Orange	Orange	Yellow	Orange
19.	Kollengode	Panchayat	Koduvayur	Orange	Yellow	Orange	Orange	Orange	Orange	Orange	Green	Yellow
20.	Kollengode	Panchayat	Kollengode	Yellow	Green	Green	Orange	Yellow	Orange	Orange	Yellow	Orange
21.	Kollengode	Panchayat	Muthalamada	Orange	Orange	Orange	Orange	Orange	Orange	Red	Orange	Orange
22.	Kollengode	Panchayat	Puthunagaram	Orange	Orange	Orange	Orange	Orange	Orange	Red	Orange	Orange
23.	Kollengode	Panchayat	Vadavannur	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Yellow	Yellow
24.	Kollengode	Panchayat	Pattancherry	Yellow	Orange	Orange	Orange	Orange	Orange	Yellow	Yellow	Red
25.	Kollengode	Panchayat	Peruvemba	Yellow	Yellow	Yellow	Orange	Orange	Orange	Red	Red	Red
26.	Kuzhalmannam	Panchayat	Kottayi	Orange	Orange	Yellow	Orange	Orange	Orange	Red	Yellow	Orange
27.	Kuzhalmannam	Panchayat	Kuthanur	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Yellow	Red
28.	Kuzhalmannam	Panchayat	Kuzhalmannam	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Yellow	Orange
29.	Kuzhalmannam	Panchayat	Mathur	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Yellow	Orange
30.	Kuzhalmannam	Panchayat	Thenkurussi	Yellow	Orange	Yellow	Orange	Orange	Orange	Orange	Yellow	Orange
31.	Kuzhalmannam	Panchayat	Peringottukurussi	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Yellow	Orange
32.	Kuzhalmannam	Panchayat	Kannadi	Orange	Red	Red	Red	Red	Red	Red	Red	Red
33.	Thrithala	Panchayat	Anakkara	Orange	Orange	Orange	Orange	Orange	Orange	Red	Orange	Orange
34.	Thrithala	Panchayat	Chalissery	Red	Red	Red	Red	Red	Red	Red	Red	Red
35.	Thrithala	Panchayat	Kappur	Yellow	Yellow	Yellow	Orange	Orange	Orange	Orange	Yellow	Yellow
36.	Thrithala	Panchayat	Nagalassery	Yellow	Yellow	Yellow	Orange	Orange	Orange	Yellow	Green	Orange
37.	Thrithala	Panchayat	Pattithara	Yellow	Orange	Yellow	Orange	Orange	Orange	Yellow	Yellow	Orange
38.	Thrithala	Panchayat	Thirummittakode	Yellow	Yellow	Yellow	Orange	Orange	Orange	Orange	Yellow	Yellow
39.	Thrithala	Panchayat	Thrithala	Yellow	Orange	Orange	Orange	Orange	Orange	Yellow	Green	Orange
40.	Pattambi	Panchayat	Koppam	Yellow	Orange	Orange	Orange	Orange	Orange	Orange	Yellow	Red
41.	Pattambi	Panchayat	Kulukallur	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
42.	Pattambi	Panchayat	Muthuthala	Yellow	Orange	Yellow	Orange	Orange	Orange	Orange	Green	Yellow

43.	Pattambi	Panchayat	Ongallur									
44.	Pattambi	Panchayat	Paradur									
45.	Pattambi	Panchayat	Thiruvegapura									
46.	Pattambi	Panchayat	Vilayur									
47.	Malampuzha	Panchayat	Akathethara									
48.	Malampuzha	Panchayat	Malampuzha									
49.	Malampuzha	Panchayat	Maruthrode									
50.	Malampuzha	Panchayat	Pudusseri									
51.	Malampuzha	Panchayat	Puthuppariyaram									
52.	Malampuzha	Panchayat	Kodumbu									
53.	Mannarkkad	Panchayat	Alanellur									
54.	Mannarkkad	Panchayat	Kanchirapuzha									
55.	Mannarkkad	Panchayat	Karimba									
56.	Mannarkkad	Panchayat	Kottoppadam									
57.	Mannarkkad	Panchayat	Kumaramputhur									
58.	Mannarkkad	Panchayat	Thachampara									
59.	Mannarkkad	Panchayat	Thachanattukara									
60.	Mannarkkad	Panchayat	Thenkara									
61.	Nemmara	Panchayat	Ayiloor									
62.	Nemmara	Panchayat	Elavencherry									
63.	Nemmara	Panchayat	Melarcode									
64.	Nemmara	Panchayat	Nelliyampathy									
65.	Nemmara	Panchayat	Nemmara									
66.	Nemmara	Panchayat	Pallessena									
67.	Nemmara	Panchayat	Vandazhy									
68.	Ottappalam	Panchayat	Ambalapara									
69.	Ottappalam	Panchayat	Ananganadi									

70.	Ottappalam	Panchayat	Chalavara															
71.	Ottappalam	Panchayat	Lakkidi-Perur															
72.	Ottappalam	Panchayat	Vaniamkulam															
73.	Ottappalam	Panchayat	Nellaya															
74.	Ottappalam	Panchayat	Vallapuzha															
75.	Ottappalam	Panchayat	Thrikkadeeri															
76.	Palakkad	Panchayat	Keralassery															
77.	Palakkad	Panchayat	Kongad															
78.	Palakkad	Panchayat	Mankara															
79.	Palakkad	Panchayat	Mannur															
80.	Palakkad	Panchayat	Mundur															
81.	Palakkad	Panchayat	Parali															
82.	Palakkad	Panchayat	Pirayiri															
83.	Sreekrishnapuram	Panchayat	Kadampazhipuram															
84.	Sreekrishnapuram	Panchayat	Karimpuzha															
85.	Sreekrishnapuram	Panchayat	Pookkottukavu															
86.	Sreekrishnapuram	Panchayat	Sreekrishnapuram															
87.	Sreekrishnapuram	Panchayat	Vellinezhi															
88.	Sreekrishnapuram	Panchayat	Karakurussi															
89.	Cherpulasserry	Municipality	Cherpulassery															
90.	Chittur- Thathamangalam	Municipality	Chittur- Thathamangalam															
91.	Mannarkkad	Municipality	Mannarkkad															
92.	Ottappalam	Municipality	Ottappalam															
93.	Palakkad	Municipality	Palakkad															
94.	Pattambi	Municipality	Pattambi															
95.	Shornur	Municipality	Shornur															

## Section II |Content Analysis

### **Introduction**

Rebuild Kerala Initiative (RKI), formulated by the Government of Kerala aimed at the post-flood reconstruction as the Kerala state suffered heavily during 2018 & 2019 floods. The RKI's mandate is to develop, coordinate, facilitate and monitor the Rebuild Kerala Development Programme (RKDP) through a participatory and inclusive process. Hence RKI launched a massive participatory campaign named Nammal Namukkayi aimed at the utilization of the knowledge, experience and ideas of the entire people of the state. Nammal Namukkayi primarily aimed at the preparation of Disaster Management Plan by every Local Self Government institutions.

Palakkad district consists of 95 LSGs including 88 Grama Panchayaths and 7 Municipalities. According to the records, initially, 81% of LSGs reconstituted the disaster management working group. 99 % of the LSGs formed LRG. 94% of the LSGs conducted transect walks. 97% of the LSD connected secondary data. 96% of the LSGs conducted special development seminar. 99% of the LSGs discussed their disaster management plans in grama sabhas. Even though 98% of the LSGs have followed the template in preparing DM plans, most of them just entered data into the tables within the template. The majority of them, didn't mention the source of the data also. The DM plan didn't give a clear picture of the disaster scenario at the regional level. Only 35% of the LSGs added maps to the plan, in which 51% wasn't legible.

### **Chapter wise Analysis**

#### **Chapter 1**

This chapter deals with the basic details of the LSGs. 95% of the LSGs didn't add their location map in the plan. History and geography sections have to be improved. In the history part, most of them failed to add disaster history. Majority of the LSGs kept the details of the economy, infrastructure, water resources incomplete. The description of each table was also missing. But still 99% of the LSGs, nearly completed this chapter.

#### **Chapter 2**

This chapter depicts the hazard profile of each LSG. While, 90% of the LSGs included climate changes and their consequences in the plan, almost all of the LSGs failed to provide details regarding regional disasters. Most of them only focused on the 2018 and 2019 floods. This shows that the DM plans lacked situational analysis. 35% of the LSGs included disaster-prone area maps in the plan but only a few of them were legible. Regarding details of the vulnerable areas, public buildings, and economic weakness, nearly 35% of the LSGs didn't provide complete data.

### **Chapter 3**

This chapter is about the disaster response plan. The majority of the LSGs have included details about the steering committee and invitees. 74% of the LSGs didn't add sufficient details of ERT. Most of the ERTs were formed at the panchayat level instead of the ward level. In some plans, only four members were made to form an ERT, and contact details were also missing. 36% of LSGs provided the details of volunteers. Nearly 80% of LSGs failed to prepare a better evacuation plan. Meager plans included ward-wise details. No training suggestions were included.

### **Chapter 4**

This chapter focuses on disaster preparation, mitigation, and social empowerment activities. This chapter was meagerly approached by the LSGs. No LSG explained the preparatory activities in detail. A common trend was to fill the three tables given in the template leaving others neglected. A few LSGs did explain some of the mitigation and social empowerment activities, but most of them ignored.

### **Chapter 5**

This chapter includes information regarding the capacity as well as the available resources at the LSG level for tackling disasters. 68% of the LSGs added information on available resources. But some of them lacked the contact numbers of the respective person. 47% include details of non-government organizations, self-help groups, etc. While 65% of the LSGs identified rehabilitation centers, only 41% found suitable open space for the setting of relief camps and makeshift helipads. Though 39 LSGs don't have a waste management facility, the construction of material collection facility centers (MCF) is going on under the supervision of the Suchitwa mission. Only 38% of the LSGs conducted SWOT analysis. Also, 6 LSGs added social resource maps to their plan.

### **Chapter 6**

This chapter focuses on formulating project proposals for the disaster management plan. 52% of the LSGs added project ideas that have to be included in Grama Panchayat's development plan. Most of the LSGs didn't consider other categories like joint projects, projects to be included in block panchayat plan, district Panchayat plan, etc. for project proposals. Only 11% of LSGs included project proposals that have to be considered by the disaster management authority. Most of the LSGs included only project ideas, no details regarding the purpose, activities, and effects were specified. Even though most of the LSGs included project proposals to the DM plans, on the contrary, these proposals were seldom taken up to the grama panchayat development plan. 41 LSGs didn't even attend this chapter. This shows how ignorant the LSGs were regarding the importance of this chapter.

## **Chapter 7**

This chapter includes contact numbers of persons needed for disaster management operations. 78% of the LSGs included ward-wise details. 16 LSGs didn't include this chapter in their DM plan. In some plans, contact details of health and veterinary services are missing.

## **Chapter 8**

This part includes supplementary information collected at the ward level. 36 LSGs didn't include annexures to their plan. The LSGs who included annexure didn't provide ward-wise details. Most of them added consolidated information which was given in the preceding chapters. Only 3 LSGs completely added ward-wise information. Most of the plans didn't mention the source of the details.

## **Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement& Major Recommendations**

### **Strengths / Best Practices**

Among the DM plans prepared by LSGs in Palakkad district, plans of Alanellur, Mundur, Kizhakkencherry, Kollengode, Nagalassery, Parali, Vadakkencherry grama panchayaths, and Chittur-Thathamangalam municipality are comparatively proximal to the template. In the DM plan of Kizhakkencherry grama panchayat, ward-wise details of resources were given in the 5th chapter and also included some better DM projects. DM plan prepared by Nagalassery grama panchayat included disaster-prone area maps along with DM projects. It also consists detailed ERT list and recommendations of grama sabhas. The DM plan of Chittur-Thathamangalam municipality has compiled a detailed disaster response plan including ERTs, list of volunteers, ward wise evacuation plan, etc. The DM projects that have to be carried out at the municipality level are also included. Kollengode Grama panchayat's DM plan is the best one among the abovesaid seven plans. They successfully conducted a transect walk and formed LRG at the ward level. The plan was also discussed in gram sabhas. The plan included maps provided by KSDMA, disaster response plan, disaster mitigation measures in the 4th chapter, DM project proposals in the 6th chapter along with the recommendations for Rebuild Kerala Development Programme. It also included necessary data in other chapters.

After reviewing the DM plans, some common shortcomings were identified. Hence an orientation was organized by the District Planning Officer, Palakkad District, for the LSGs regarding the same. The DM Plan Coordinator also met the secretaries and plan clerks of 32 LSGs regarding the updation of the 2021-22 DM plan and pointed out the shortcomings in their plan.



## **Gaps Identified / Areas of Improvement**

Majority of the LSGs didn't give importance to chapters 4 and 6. While considering other chapters also, the priority was to fill all the tables available within the template. All the LSGs didn't include regional or local disasters, other than the 2018 and 2019 floods. For most of them, the list of ERT and volunteers are just a table of people and their contact. A proper evacuation plan wasn't prepared. Some of the LSGs left the 5th chapter blank. As the 7th chapter is intended to be a directory of emergency contact numbers, most of LSGs didn't include contact details. LSGs also ignored annexures and didn't include sufficient information. This shows that most of the LSGs aren't aware of the relevance of a DM plan and the use of maps.

## **Major Recommendations**

Major recommendations for the improvement of the quality of LSG DM plans and disaster mitigation activities are as follows:

- ❖ Even though the preparation of the DM plan has to be done under the leadership of the LSG steering committee with the support of the environment, climate change, biodiversity and disaster management working group, and local resource group(LRG), but in reality, it became the sole responsibility of the plan clerk to prepare the plan. And the public participation in the preparation process was disregarded. So, someone at the LSG level has to be held responsible for ensuring public participation and preparation of DM plan.
- ❖ Since the revenue villages and taluks are responsible for reporting the occurrence of disaster events at the regional level, engaging them in the preparation process will help in better analysis of the situation and formulating further mitigation activities.
- ❖ Most of the LSGs lack the basic knowledge of disaster management which leads to considering road tarring and re tarring as DM projects. Hence proper guidance regarding the preparation of DM projects has to be done.
- ❖ As separate funds haven't allocated to disaster management projects, most of the LSGs take up own funds for disaster management project which will be withdrawn during the further process due to lack of fund. Proper implementation of disaster activities at the panchayat level is only possible if a certain percentage of the total fund allocated to a particular LSG is utilized for disaster management activities. A mandatory allotment of fixed percentage to be included to prevent the ineffectiveness of DM projects due to laxity of funds.

- ❖ The DM plan should also include details of small and large-scale industrial units.
- ❖ The Nelliampathy and Attappady regions of Palakkad district are tribal populated areas as well as highly prone to landslides. Hence, while formulating disaster mitigation measures and projects these vulnerable sections must be given due consideration.

#### Section IV | Training Needs

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants(Officials/People Rep.)</b>	<b>Objectives</b>
Disaster Management	Village Officials, DM Working group & LRG	To ensure effective disaster management at the grassroot level To create awareness among the public
Formulation of DM Projects	DM Working group and Grama Panchayath officials	To formulate effective DM projects at the LSG level
Crisis and Emergency Management	ERTs	To strengthen the team for handling an emergency situation

#### Section V | Conclusion

Nammal Namukkai campaign creates a huge platform for public participation in disaster management activities as well as enriching their capabilities in response to various disaster scenarios. As Palakkad district has a multi-hazard facet, ensuring effective disaster preparedness and mitigation activities at the grass-root level is a great endeavor. Even though the quality of the DM plans is still questionable, all LSGs in the Palakkad district have taken a great effort in preparing them. If the abovesaid shortcomings are taken into consideration, the quality of the DM Plans can be ensured to a great extent. An effective Disaster Management Plan is surely a great tool in handling future disasters.

## REVIEW OF LSG DM PLANS

# MALAPPURAM





### Section I | Overview of the LSG DM Plans in the District

Bounded by the Nilgiris hills on the East and the Arabian Sea on the west, the district of Malappuram the land atop the hills is remarkable for its unique natural beauty. Perched among the undulating hills and the meandering rivers that flow to reach the coconut-fringed seacoast, the land conceals a unique and eventful history.

Malappuram District was formed on the 16th of June 1969 with the Nilgiris of Tamilnadu in the east, the Arabian Sea in the west, Kozhikode and Wayanad districts in the north, and Palakkad and Thrissur District in the south. The District has a geographical area of 3550 sq. km, which is 9.13% of the total area of the state and ranks 3rd in the state. Information about the DM plans submitted by the LSGs is given below.

Name of the District: MALAPPURAM			
Sl. No.	LSG Type	Total Number	Number of Plans Submitted by LSGs
1	Grama Panchayats	94	94
2	Municipalities	12	12
3	Corporations	0	0
Total		106	106
Name of the Reviewer: STEPHY RAJAN M			

**Table 1**

Scale	Explanation
	Content not available
	Insufficient content
	Content could be strengthened
	Content is proximal to the template









**Table 2**

Sl. No.	Block	LSG Type	LSG Name	Chapter-wise content availability (Give color Codes)								
				1	2	3	4	5	6	7	8	
1	NILAMBUR	Panchayat	VAZHIKKADAVU	Yellow	Yellow	Orange	Orange	Orange	Orange	Green	Green	Orange
2	NILAMBUR	Panchayat	POTHUKALLU	Yellow	Yellow	Orange	Orange	Orange	Orange	Red	Green	Orange
3	NILAMBUR	Panchayat	EDAKKARA	Orange	Orange	Orange	Orange	Orange	Orange	Red	Red	Orange
4	NILAMBUR	Panchayat	MOOTHEDAM	Yellow	Green	Yellow	Orange	Orange	Orange	Green	Yellow	Orange
5	NILAMBUR	Panchayat	CHUNGATHARA	Yellow	Orange	Orange	Orange	Orange	Orange	Green	Yellow	Red
6	NILAMBUR	Panchayat	CHALIYAR	Yellow	Yellow	Yellow	Yellow	Orange	Orange	Green	Green	Red
7	WANDOOR	Panchayat	WANDOOR	Yellow	Orange	Orange	Red	Red	Red	Red	Yellow	Yellow
8	WANDOOR	Panchayat	THIRUVALI	Yellow	Yellow	Orange	Orange	Orange	Orange	Green	Yellow	Red
9	WANDOOR	Panchayat	MAMPAD	Yellow	Yellow	Orange	Orange	Orange	Orange	Red	Green	Red
10	WANDOOR	Panchayat	PORUR	Yellow	Yellow	Yellow	Orange	Orange	Orange	Red	Orange	Green
11	WANDOOR	Panchayat	PANDIKKAD	Yellow	Yellow	Orange	Yellow	Orange	Orange	Red	Yellow	Green
12	WANDOOR	Panchayat	THRIKKALANGODE	Yellow	Yellow	Orange	Orange	Orange	Orange	Green	Yellow	Red
13	KALIKAVU	Panchayat	KALIKAVU	Yellow	Yellow	Orange	Orange	Orange	Orange	Green	Orange	Red
14	KALIKAVU	Panchayat	CHOKKAD	Yellow	Yellow	Yellow	Orange	Orange	Orange	Green	Green	Red
15	KALIKAVU	Panchayat	KARUVARAKUND	Yellow	Yellow	Orange	Orange	Orange	Orange	Red	Yellow	Yellow
16	KALIKAVU	Panchayat	THUVVUR	Orange	Orange	Orange	Red	Orange	Orange	Red	Orange	Red
17	KALIKAVU	Panchayat	AMARABALAM	Yellow	Green	Green	Orange	Yellow	Orange	Green	Green	Green
18	KALIKAVU	Panchayat	KARULAI	Green	Yellow	Green	Yellow	Yellow	Orange	Green	Green	Green
19	KALIKAVU	Panchayat	EDAPATTA	Yellow	Yellow	Green	Orange	Orange	Orange	Green	Green	Red
20	PERINTHALMANNA	Panchayat	ALIPARAMBA	Red	Red	Orange	Red	Orange	Orange	Green	Red	Red
21	PERINTHALMANNA	Panchayat	ELAMKULAM	Yellow	Yellow	Yellow	Orange	Orange	Orange	Yellow	Orange	Red

22	PERINTHALMANNA	Panchayat	MELATTUR	Yellow	Orange	Red	Red	Orange	Red	Orange	Red
23	PERINTHALMANNA	Panchayat	KEEZHATTUR	Orange	Orange	Orange	Red	Red	Red	Red	Red
24	PERINTHALMANNA	Panchayat	THAZHEKKODE	Orange	Orange	Orange	Red	Red	Red	Red	Red
25	PERINTHALMANNA	Panchayat	VETTATHUR	Yellow	Yellow	Yellow	Red	Yellow	Yellow	Yellow	Green
26	PERINTHALMANNA	Panchayat	PULAMANTHOLE	Orange	Yellow	Orange	Red	Orange	Red	Yellow	Orange
27	PERINTHALMANNA	Panchayat	ANGADIPPURAM	Yellow	Yellow	Green	Red	Red	Red	Red	Red
28	MANKADA	Panchayat	KURUVA	Yellow	Yellow	Green	Orange	Orange	Red	Green	Green
29	MANKADA	Panchayat	KOOTTILANGADI	Yellow	Yellow	Green	Red	Orange	Red	Yellow	Red
30	MANKADA	Panchayat	PUZHAKKATTIRI	Yellow	Orange	Green	Orange	Orange	Red	Green	Orange
31	MANKADA	Panchayat	MOORKANAD	Yellow	Yellow	Green	Yellow	Yellow	Green	Green	Yellow
32	MANKADA	Panchayat	MAKKARAPARAMBA	Yellow	Orange	Green	Orange	Orange	Orange	Orange	Orange
33	MANKADA	Panchayat	MANKADA	Yellow	Yellow	Orange	Red	Orange	Yellow	Yellow	Yellow
34	MALAPPURAM	Panchayat	ANAKKAYAM	Orange	Orange	Yellow	Red	Orange	Red	Yellow	Red
35	MALAPPURAM	Panchayat	MORAYUR	Yellow	Yellow	Yellow	Red	Orange	Green	Yellow	Orange
36	MALAPPURAM	Panchayat	PONMALA	Orange	Orange	Orange	Orange	Orange	Green	Yellow	Orange
37	MALAPPURAM	Panchayat	POOKOTTUR	Yellow	Orange	Orange	Red	Orange	Green	Yellow	Orange
38	MALAPPURAM	Panchayat	OTHUKKUNGAL	Green	Green	Yellow	Yellow	Yellow	Green	Green	Green
39	MALAPPURAM	Panchayat	KODUR	Yellow	Orange	Yellow	Orange	Orange	Red	Yellow	Orange
40	AREACODE	Panchayat	AREACODE	Yellow	Yellow	Green	Yellow	Orange	Green	Green	Red
41	AREACODE	Panchayat	URUNGATTIRI	Yellow	Yellow	Orange	Orange	Red	Red	Red	Red
42	AREACODE	Panchayat	KAVANUR	Orange	Orange	Orange	Orange	Orange	Red	Yellow	Orange
43	AREACODE	Panchayat	KEEZHUPARAMBU	Yellow	Yellow	Green	Yellow	Yellow	Green	Green	Red
44	AREACODE	Panchayat	KUZHIMANNA	Yellow	Yellow	Green	Yellow	Green	Green	Yellow	Green
45	AREACODE	Panchayat	CHEACODE	Yellow	Orange	Red	Red	Green	Orange	Red	Red
46	AREACODE	Panchayat	PULPATTA	Yellow	Yellow	Yellow	Yellow	Orange	Green	Green	Red
47	AREACODE	Panchayat	EDAVANNA	Green	Yellow	Yellow	Orange	Orange	Green	Yellow	Red

48	KONDOTTY	Panchayat	CHERUKAVU	Orange	Orange	Yellow	Orange	Orange	Orange	Yellow	Red
49	KONDOTTY	Panchayat	PALLIKKAL	Red	Red	Red	Red	Red	Red	Red	Red
50	KONDOTTY	Panchayat	VAZHAYUR	Orange	Yellow	Red	Red	Red	Red	Red	Red
51	KONDOTTY	Panchayat	VAZHAKKAD	Yellow	Orange	Yellow	Orange	Green	Yellow	Red	Red
52	KONDOTTY	Panchayat	PULIKKAL	Yellow	Yellow	Red	Red	Red	Yellow	Red	Red
53	KONDOTTY	Panchayat	MUTHUVALLUR	Yellow	Yellow	Orange	Orange	Red	Yellow	Yellow	Yellow
54	KONDOTTY	Panchayat	CHELEMBRA	Orange	Orange	Yellow	Orange	Green	Green	Green	Green
55	TIRURANGADI	Panchayat	NANNAMBRA	Yellow	Yellow	Orange	Orange	Green	Yellow	Red	Red
56	TIRURANGADI	Panchayat	MOONNIYUR	Yellow	Orange	Yellow	Red	Orange	Yellow	Green	Yellow
57	TIRURANGADI	Panchayat	THENHIPPALAM	Orange	Yellow	Orange	Red	Orange	Red	Green	Green
58	TIRURANGADI	Panchayat	VALLIKKUNNU	Yellow	Yellow	Orange	Orange	Green	Orange	Red	Red
59	TIRURANGADI	Panchayat	PERUVALLUR	Orange	Yellow	Orange	Orange	Red	Orange	Green	Green
60	TANUR	Panchayat	PONMUNDAM	Yellow	Yellow	Green	Orange	Yellow	Green	Green	Red
61	TANUR	Panchayat	CHERIYAMUNDAM	Yellow	Orange	Orange	Red	Orange	Green	Orange	Orange
62	TANUR	Panchayat	OZHUR	Yellow	Yellow	Orange	Orange	Green	Yellow	Red	Red
63	TANUR	Panchayat	NIRAMARUTHUR	Yellow	Green	Yellow	Orange	Orange	Green	Yellow	Red
64	TANUR	Panchayat	TANALUR	Green	Yellow	Orange	Red	Orange	Red	Yellow	Orange
65	TANUR	Panchayat	VALAVANNUR	Yellow	Green	Yellow	Yellow	Green	Green	Red	Red
66	TANUR	Panchayat	PERUMANNA KLARI	Yellow	Yellow	Orange	Orange	Green	Orange	Red	Red
67	TIRUR	Panchayat	PURATHUR	Orange	Orange	Orange	Red	Red	Red	Orange	Red
68	TIRUR	Panchayat	MANGALAM	Yellow	Yellow	Yellow	Red	Orange	Green	Yellow	Orange
69	TIRUR	Panchayat	TRIPRANGODE	Yellow	Green	Yellow	Yellow	Orange	Green	Yellow	Orange
70	TIRUR	Panchayat	VETOM	Yellow	Orange	Orange	Red	Green	Yellow	Orange	Orange
71	TIRUR	Panchayat	THALAKKAD	Orange	Orange	Orange	Red	Red	Red	Orange	Red
72	TIRUR	Panchayat	THIRUNAVAYA	Orange	Yellow	Yellow	Orange	Orange	Green	Yellow	Red
73	KUTTIPPURAM	Panchayat	ATHAVANAD	Orange	Orange	Orange	Red	Red	Green	Orange	Red

74	KUTTIPPURAM	Panchayat	EDAYUR	Green	Green	Yellow	Orange	Orange	Green	Yellow	Yellow
75	KUTTIPPURAM	Panchayat	IRIMBILIYAM	Orange	Yellow	Yellow	Orange	Green	Orange	Red	Red
76	KUTTIPPURAM	Panchayat	MARAKKARA	Yellow	Yellow	Yellow	Orange	Green	Green	Green	Green
77	KUTTIPPURAM	Panchayat	KUTTIPPURAM	Yellow	Green	Yellow	Yellow	Red	Green	Green	Green
78	KUTTIPPURAM	Panchayat	KALPAKANCHERI	Orange	Yellow	Orange	Red	Orange	Red	Yellow	Orange
79	VENGARA	Panchayat	ABDURAHIMAN NAGAR	Orange	Orange	Orange	Orange	Red	Red	Red	Red
80	VENGARA	Panchayat	PARAPPUR	Yellow	Yellow	Yellow	Red	Orange	Green	Green	Red
81	VENGARA	Panchayat	THENNALA	Orange	Yellow	Orange	Red	Red	Green	Orange	Red
82	VENGARA	Panchayat	VENGARA	Yellow	Red	Red	Red	Red	Green	Yellow	Red
83	VENGARA	Panchayat	KANNAMANGALAM	Orange	Orange	Yellow	Red	Orange	Red	Yellow	Red
84	VENGARA	Panchayat	OORAKAM	Orange	Yellow	Yellow	Red	Orange	Red	Yellow	Orange
85	VENGARA	Panchayat	EDARIKKODE	Yellow	Yellow	Yellow	Orange	Orange	Green	Green	Red
86	PONNANI	Panchayat	THAVANUR	Red	Red	Red	Red	Red	Red	Red	Red
87	PONNANI	Panchayat	VATTAMKULAM	Orange	Green	Green	Yellow	Orange	Green	Yellow	Green
88	PONNANI	Panchayat	EDAPPAL	Red	Red	Red	Orange	Red	Yellow	Red	Red
89	PONNANI	Panchayat	KALADI	Yellow	Green	Yellow	Orange	Orange	Red	Green	Green
90	PERUMPADAPPA	Panchayat	ALAMCODE	Orange	Red	Orange	Red	Red	Red	Orange	Red
91	PERUMPADAPPA	Panchayat	MARANCHERY	Yellow	Orange	Yellow	Yellow	Orange	Green	Green	Red
92	PERUMPADAPPA	Panchayat	NANNAMMUKKU	Yellow	Green	Yellow	Yellow	Orange	Green	Yellow	Orange
93	PERUMPADAPPA	Panchayat	PERUMPADAPPA	Yellow	Yellow	Yellow	Red	Yellow	Green	Green	Green
94	PERUMPADAPPA	Panchayat	VELIYANCODE	Orange	Orange	Orange	Orange	Orange	Red	Orange	Orange
95	KOTTAKKAL	municipality	KOTTAKKAL	Orange	Orange	Orange	Red	Red	Green	Orange	Red
96	MALAPPURAM	municipality	MALAPPURAM	Yellow	Orange	Orange	Orange	Orange	Red	Orange	Yellow
97	MANJERI	municipality	MANJERI	Yellow	Orange	Orange	Orange	Orange	Orange	Yellow	Yellow
98	NILAMBUR	municipality	NILAMBUR	Orange	Orange	Red	Red	Red	Red	Red	Red

99	PERINTHALMANNA	municipality	PERINTHALMANNA	
100	PONNANI	municipality	PONNANI	
101	TIRUR	municipality	TIRUR	
102	KONDOTTY	municipality	KONDOTTY	
103	PARAPPANANGADI	municipality	PARAPPANANGADI	
104	TANUR	municipality	TANUR	
105	THIRURANGADI	municipality	THIRURANGADI	
106	VALANCHERY	municipality	VALANCHERY	

## [Section II | Content Analysis](#)

### **Introduction**

The floods of 2018 and 2019 have caused considerable damage to Kerala. The Rebuild Kerala Initiative (RKI) under the Hon'ble Chief Minister of Kerala has been instrumental in speeding up the post-flood reconstruction programs and in achieving the Government's goal of Navakeralam. The RKI's mandate is to develop, coordinate, facilitate and monitor the Rebuild Kerala Development Programme (RKDP) through a participatory and inclusive process.

The RKDP encompasses cross-cutting and sector-based policy, regulatory and institutional actions as well as priority investment programs that are critical for resilient and sustainable recovery and rebuilding of the State. It aims to catalyze the rebuilding of Kerala in a way that addresses key drivers of floods and other natural disasters and climate change risks and strengthens preparedness against future disasters. Through the RKDP, the GoK aims to ensure a resilient recovery and development pathway for a Nava Kerala.

To identify the areas where corrections and changes are essential, a massive and participatory campaign is launched, involving not only the experts but the entire people of the state as well. Knowledge, experience, ideas, wisdom, and involvement of the people of the state can heighten the efficacy and practicability of the task at hand. This campaign named Nammal Namukkayi and modeled along the lines of people's planning has two major components, an Extensive campaign with the active participation of the people to identify the required corrections and policy changes to ensure resilience.

Preparation of Disaster Management Plan at every local self-government institution. By including and approving local level projects, formulated for disaster resistance, mitigation, and management, in the annual plans of local self-governments prepared for the forthcoming year, better disaster resistance



and resilience can be ensured. The Government expects that all representatives of people will participate in grama sabhas of their respective regions to give leaderly guidance in this regard.

Malappuram district consists of a total of 106 LSGs including 94 Grama Panchayats and 12 Municipalities. It is recorded that, before the preparation of DM plans, 99 percent of the LSGs reconstitute disaster management, working group. Also formed LRGs and ward-wise groups. 87percent of LSGs conducted transect walk. 97 percent of LSGs collected secondary data for knowing the situation. But plans have didn't gave an idea about the current situation and the greatest number of LSGs didn't mention the regional level disasters and the consequences of disasters' effect in their local body.

They conducted Gram Sabha for discussing DM-related project ideas and also conducted development seminars. The majority of the plans strictly followed prescribed templates, except Chapter 2. Certain LSGs included climate change in detail in Chapter 2. And the majority of them didn't attend Chapters 4 and 6 well. Nearly 85 percent of the plans were not added maps provided by KSDMA, and those who include the map in their plans are not legible.

### **Chapter-wise Analysis**

#### **Chapter 1**

General information of local self-government institutions is to be included in this chapter. Closely 90 percent of plans didn't add their ward level map and general information regarding the LSG is comparatively less. History and geography parts need to improve, especially disaster proneness and history. Sources of data in each table are not mentioned by the majority of the LSGs. Description above each table also missing. But for some tables it is unnecessary. Phone numbers of health care institutions are not added to some plans. Data completed in the entire chapter is about 70 percent.

#### **Chapter 2**

This chapter is regarding Disasters and Possibilities for Disasters. The majority of the LSG did not provide any information regarding local hazards, which proves that they have not done any situational analysis while making DM plans. More than 90 percent dm plans focused on floods that occurred during 2018 and 2019. History of other local disasters not available. Certain LSGs are prepared in a different template which included climate changes and their after-effects.

Nearly 30 percent of the LSGs provided maps of disaster proneness. A very few of them are added legible maps. The majority of them didn't consider a map as an important tool. 80 percent of the plans have not included the history of disasters. Almost all the LSGs have mentioned the vulnerable areas and groups. But some of them seem like just figures, not actual statistics. The majority of them added economically weak areas of their locality.

### **Chapter 3**

It includes a detailed disaster response plan. Most of them added details of steering committees and invitees. ERT details were also added well by a large number of LSGs. But some of them didn't add sufficient data, phone numbers of ERT members were not included in some of the plans. And ERT had formed Panchayath wise but the latter had included ward wise details.

More than 50 percent of them failed to present a better evacuation plan if there any chance of disasters. Some have included disaster-prone areas. The list of volunteers also not following a uniform pattern. Response plans, routes, and training suggestions are not included. In total, a disaster response plan not including a useful response system rather than just a table of people and their contact.

### **Chapter 4**

This chapter focuses on Disaster Preparation – Mitigation - Social Empowerment Activities. But this is the least attended chapter among other chapters. No LSG added data in preparatory steps in detail. Very few of them filled a table for the same.

Major points under this heading are left blank. 3 tables in this chapter are filled with some LSGs. despite an important chapter for Disaster preparation, mitigation, empowerment, the majority of them didn't know about the details. Only 18 LSGs added data on waterbody conservation. No land-use map of the disaster-prone area available in this chapter. A large number of LSGs failed to handle the point creation of social awareness and fostering of civil resistance.

### **Chapter 5**

This chapter includes data regarding the Capacities and resources of the LSG. The full chapter having tables of information regarding resources. These tables covering details like material resources, services, manpower, etc. Approximately 69 percent of the LSGs identified rehabilitation centers. Almost all LSGs added information regarding available resources but in some of the plans, phone numbers are missing.

A very few plans have included a detailed list of the resources. 65 percent of LSGs added data on Open space for setting up makeshift helipad/relief camp. 28 LSGs realized their strength, weakness, opportunities, and threats. In total, this chapter collects data around 60 percent. 26 of them attached their social resource map. The appreciable matter is that many of the LSGs have their waste management system called MCF.

## **Chapter 6**

The focus of this chapter is formulating Project proposals for a Disaster mitigation plan. 52 percent of LSGs added project ideas for disaster mitigation. But not all of them categorized these projects as Projects to be included in GP, Municipality/corporation, block panchayat plan, district panchayat plan, Joint projects, etc. The majority of the LSGs provided just a project idea, not the need, the effect of that project. Projects to be considered by disaster management authorities have not been included in most of the plans.

The contradictory matter is that not all dm projects proposals are added in the DM plan available in their respective annual plan. 43 LSGs haven't attended this chapter. This means to a majority of them are unaware of formulating a project proposal. It is suggested to provide proper training for LSGs for formulating project proposal

## **Chapter 7**

This chapter includes phone numbers and particulars of persons responsible for providing guidance, assistance, and help in disaster management operations. 16 percent of the LSGs did not attend this part. 26 percent of them added data on this well. This chapter is for making a phone directory, in case of any emergency. Regular updating of this chapter is important.

## **Chapter 8**

This chapter includes Annexures - Supplementary information to be collected at Ward level.

55 percent of them didn't attend this chapter. This chapter indicates ward-level data collection. In some of the plans, ward-wise details of some components are given; whereas others are excluded. The Source of data is not mentioned in most of the plans.

## **Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement & Major Recommendations**

### **Best practices/Strengths**

DM plan is a required document. Which helpful for LSGs to identify, realize, prepare for their disaster proneness. It includes all possible services, material resources, manpower, etc from its grassroots level. So, DM plans are highly beneficial for taking immediate actions using maximum resources within the minimum time limit.

Preparation of DM plans to take participatory process which may be helpful for proper organization and providing needed help to a maximum number of people in a field like situation. From the reviewed plans, Karulayi GP's Disaster Management plan selected as a better one is comparatively proximal to the template.

There are no DM plans compiled with 100 percent data. Some of them missed legible maps others without Annexure. In such a condition, Karulayi GP had followed all needed preparatory steps like the formation of disaster management working group, LRG s, ward level groups, transect walk, secondary data collection, etc. and they filled almost all tables with the mentioned source of data. Also included the history of disasters, detailed data on climate change, maps provided by KSDMA, etc.

Detailed disaster response plan also available which includes ERT members with phone number, evacuation plans. Karulayi GP attended Chapter 4 well, where the majority of the LSGs didn't deal with the same. They formed necessary data on resources and capacities. Likewise suggested different projects related to disaster mitigation activities. And a telephone directory was also formed by the GP. Ward wise data was also collected and filled as per table.

### **Gaps Identified / Areas of Improvement**

The review report shows that majority of the DM plans are not completed with data. One of the reasons may be, the DM plan is not done by a group of people. For collecting data, it is mandatory to form a disaster management working group, conduct a transect walk, secondary data collection, etc. Most of the plans are missed maps which is an important tool. Evacuation plan, list of ERTs, details of resources and capacities, history of disasters, needed project plans, mitigation plans, timely updating of telephone numbers or contacts, etc are much needed. Proper data collection not visible. And also, chapters 4 and 6 were the least attended. Some tables are not filled.

While considering the disaster proneness of the Malappuram district, we have markable disaster history. Some of them are listed below,

- Nilambur – landslip, forest fire
- Karuvarakundu – land slip
- Ponnani – coastal erosion
- Perumanna clari – soil piping
- Perinthalmanna – soil erosion

Draught, frequent accidents, drowning, etc also reported in different places. Here, it is not visible in DM plans. No clear data regarding locally occurred disasters. So, while making project proposals majority of the LSGs didn't consider disaster proneness for mitigation activities.

## **Major Recommendations**

- Suggestable that consider DM plan as a resource pool more than just a document, form a group (having 3,4 members) per LSGs for timely updating, maintaining, supervising, etc. of these plans.
- Implementation of Early Warning Systems
- Details of factories and large-scale industries should be considered in the plans
- Data updating for the specific time interval is suggestable. (yearly)
- Professional help could be utilized for further improvement of the plan.
- Consider maps as a major tool and provide awareness on the significance of maps.
- While formulating project proposals, consider the disaster proneness of the locality.
- Ward-wise data is mandatory for addressing problems at a grassroots level.
- Gas station and every petrol bunkers details need to be added in the plan
- A linkage between DDMA and District planning will be useful for better output.
- It is suggestible that proper evacuation plans should be included in the plan focusing on different vulnerable groups (e.g., tribal colonies)

## **Section IV | Training Needs**

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants (Officials/People Rep.)</b>	<b>Objectives</b>
Disaster Management	People representatives	To create awareness among people on DM.
Disaster Management	LSGD officials	To ensure effective disaster management at the grass-root level.

Mock drills	Volunteers	To enhance practical knowledge for dealing with a rescue situation.
TOT	LSG DM plan coordinators	To provide training on DM to people's representatives of LSGs.
Fire and rescue	ERT members	To build a strong and supportive team of ERT members.

## Section V | Conclusion

A disaster management plan can be considered as a preventive measure for dealing with the aftermath of a disaster. Nammal Namukkay campaign provides a platform for the participation of people in disaster management activities and to increase their capabilities in response to various disasters. Reviewing DM plans of LSGs of Malappuram, 94 Grama panchayats, and 12 Municipalities, it is clear that all of them spare their time for making such a valuable document. Some of the plans are proximal to the template. Among those Karulayi GP can be considered as the best plan. This report suggesting needed recommendations to improve these plans and required training for the needy. With all the above-mentioned changes, it's possible to update DM plans to an extent

## REVIEW OF LSG DM PLANS

### KOZHIKODE

#### Section I | Overview of the LSG DM Plans in the District

For rebuilding a resilient state with citizen centric approach under Rebuild Kerala Initiative (RKI) programme, the Government of Kerala launched a campaign named “NammalNamukkai”. The campaign aimed towards making a shift in the policy paradigm of the State through extensive stakeholder consultation and for preparing a Disaster Management Plan (DMP) at every local self-government institution.

Government has already issued various instruction for ensuring the people’s participation and leaderly intervention of local self and disaster management areas and for the planning and implementation of such plans at local self-government level as part of annual plans.

Under the coordination of Kerala Institute of Local Administration (KILA), State Disaster Management Authority, Local Self Government Department and State Planning Board has jointly conduct those projects and activities prepared as part of the LSGDM Plan. As a part of this Kozhikode district also joined the hands for making effective plans in the district itself. This plan was made by each LSGs and submitted to the concerned authority with in the time bound because these plans have to come along with the annual plan. So it’s a must appreciated thing that every LSGs in the district tried to submit the plan whether it’s good or bad.

*Table 1*

Name of the District			
Sl. No.	LSG Type	Total Number	Number of Plans Submitted by LSGs
1	Grama Panchayats	70	70

2	Municipalities	7	7
3	Corporations	1	1
Total		<b>78</b>	<b>78</b>
Name of the Reviewer - <b>Devanand M D</b> (LSG DM Plan Coordinator, Kozhikode)			

**Table 2**

The table below shows the chapter wise content availability in DM Plans of each LSG through colour codes as follows:

Colour Code	Explanation
	Content not available
	Insufficient content
	Content could be strengthened
	Content is proximal to the template

SL.No.	Block	LSG Type	LSG Name	Chapter-wise content availability								
				1	2	3	4	5	6	7	8	
1	Koduvally	Gramapanchayath	Katipara									
2	Koduvally	Gramapanchayath	Kizhakoath									
3	Koduvally	Gramapanchayath	Kodenchery									
4	Koduvally	Gramapanchayath	Koodaranji									
5	Koduvally	Gramapanchayath	Madavoor									
6	Koduvally	Gramapanchayath	Ommasjerri									
7	Koduvally	Gramapanchayath	Puthupadi									
8	Koduvally	Gramapanchayath	Thamarasherri									



9	Koduvally	Gramapanchayath	Thiruvambadi												
10	Kozhikode	Gramapanchayath	Kadalundi												
11	Kozhikode	Gramapanchayath	Ollavana												
12	Kozhikode	Corporation	Kozhikode												
13	Kunnamangalam	Gramapanchayath	Chathamangalam												
14	Kunnamangalam	Gramapanchayath	Karasserri												
15	Kunnamangalam	Gramapanchayath	Kodiyathur												
16	Kunnamangalam	Gramapanchayath	Kunnamangalam												
17	Kunnamangalam	Gramapanchayath	Kuruvattur												
18	Kunnamangalam	Gramapanchayath	Mavoor												
19	Kunnamangalam	Gramapanchayath	Peruvanna												
20	Kunnamangalam	Gramapanchayath	Peruvayal												
21	Kunnummal	Gramapanchayath	Kavilumpara												
22	Kunnummal	Gramapanchayath	Kayakkodi												
23	Kunnummal	Gramapanchayath	Kunnummal												
24	Kunnummal	Gramapanchayath	Kuttiady												
25	Kunnummal	Gramapanchayath	Maruthomkara												
26	Kunnummal	Gramapanchayath	Naripatta												
27	Kunnummal	Gramapanchayath	Velom												
28	Melady	Gramapanchayath	Keezhariyoor												
29	Melady	Gramapanchayath	Meppayur												
30	Melady	Gramapanchayath	Thikkodi												
31	Melady	Gramapanchayath	Thurayur												
32	Panthalayani	Gramapanchayath	Arikulam												
33	Panthalayani	Gramapanchayath	Atholi												
34	Panthalayani	Gramapanchayath	Chemanchery												

35	Panthalayani	Gramapanchayath	Chengottukavu																	
36	Panthalayani	Gramapanchayath	Moodadi																	
37	Perambra	Gramapanchayath	Chakittapara																	
38	Perambra	Gramapanchayath	Changaroath																	
39	Perambra	Gramapanchayath	Cheruvannur																	
40	Perambra	Gramapanchayath	Kayanna																	
41	Perambra	Gramapanchayath	Koothali																	
42	Perambra	Gramapanchayath	Nochad																	
43	Perambra	Gramapanchayath	Perambra																	
44	Thodannur	Gramapanchayath	Ayancheri																	
45	Thodannur	Gramapanchayath	Maniyur																	
46	Thodannur	Gramapanchayath	Thiruvallur																	
47	Thodannur	Gramapanchayath	Villiapally																	
48	Thuneri	Gramapanchayath	Chekkiad																	
49	Thuneri	Gramapanchayath	Edacherry																	
50	Thuneri	Gramapanchayath	Nadapuram																	
51	Thuneri	Gramapanchayath	Purameri																	
52	Thuneri	Gramapanchayath	Thuneri																	
53	Thuneri	Gramapanchayath	Vilayam																	
54	Thuneri	Gramapanchayath	Vanimel																	
55	Vatakara	Gramapanchayath	Azhiyur																	
56	Vatakara	Gramapanchayath	Chorode																	
57	Vatakara	Gramapanchayath	Eramala																	
58	Vatakara	Gramapanchayath	Onchiyam																	
59	Chelannur	Gramapanchayath	Chelannur																	
60	Chelannur	Gramapanchayath	Kakkodi																	

61	Chelannur	Gramapanchayath	Kakkoor																
62	Chelannur	Gramapanchayath	Nanminda																
63	Chelannur	Gramapanchayath	Narikunni																
64	Chelannur	Gramapanchayath	Thalakkalathoor																
65	Baluserry	Gramapanchayath	Baluserry																
66	Baluserry	Gramapanchayath	Koorachund																
67	Baluserry	Gramapanchayath	Kottoor																
68	Baluserry	Gramapanchayath	Nadavannur																
69	Baluserry	Gramapanchayath	Panagadu																
70	Baluserry	Gramapanchayath	Ulliyeri																
71	Baluserry	Gramapanchayath	Unnikulam																
72	Feroke	Municipality	Feroke																
73	Koduvally	Municipality	Koduvally																
74	Koyilandy	Municipality	Koyilandy																
75	Mukkum	Municipality	Mukkum																
76	Payyoli	Municipality	Payyoli																
77	Ramanattukara	Municipality	Ramanattukara																
78	Vatakara	Municipality	Vatakara																

## Section II |Content Analysis

After reviewing the plan from the district, it is felt that the plan was made under poor awareness and inadequate training because the plan submitted from all the LSGs, majority of the plan was simply copied from what was in the template given by the government along with order of this initiative. Most of the tables in the plan was incomplete and untouched. The descriptive part also simply skipped by majority of the Plans, among different chapters from the plan, chapter 4 and chapter 6 was mostly skipped by the LSGs about 14% of total plans were touched through these chapters. Also felt like the lack of situational analysis, resource mapping and transect walks. The absence of these technical procedures was affected in the quality of each LSG DM Plans. The plan should be done under the complete participation of the community because the

people themselves only knows about their own vulnerability risk, geographical and overall structure of the area.

Most of the LSG DM plan forget to focus on different catastrophic factors in their area without considering different mishaps, the majority of the plan was made under the point of view from flood only. Kozhikode is a district consists about a coastal line of 76km<sup>2</sup> but unfortunately the plans had submitted was never ever said something about the coastal problems and the adjacent disasters to it, at least the local bodies lies in the coastal area should be come up with the disaster management plan with these points. KSDMA has already provided a set of 30 different maps to every local bodies, but unfortunately more than 70% of the plan was made without adding those maps to it.

## **Chapter wise Analysis**

### **Chapter 1**

The disaster management template mainly consists of 7 chapters and when it comes to the first chapter, it's about general information pertaining to the local self-government institution. Data required for this can be collected from departments concerned and other institutions. Information that are unavailable from the above sources and additional information required may be collected through focus group discussions, involving persons and organizations concerned or through transect walks. It is found that majority of the DM plans has tried to complete the first chapter but there are so many areas to be improved. These are the following unaccountable or need to be improvised areas in this chapter

- Maps of the LSGs are missing in this chapter in majority of plans
- The location coordinates of the LSG was missing
- Majority of the plans added only the details of government health institution and educational institution private institutional details are omitted mostly
- Descriptive area before any table are missing in most of the plans
- The contact details like phone numbers and other hospital resource details are mostly skipped
- Source of the data are missing

## **Chapter 2**

Disasters likely to occur in the local body and the assessment of such possible disasters shall be included in the second chapter. This would help to identify the areas of possible disasters and to sketch preparatory actions. Only a few DM plan was given the right information to this chapter, this chapter can't be done without any situational analysis because the data for this chapter needs to find from the field itself. Disaster prone areas, geographical disaster prone areas are the most important part of this chapter and these should be done under the situational analysis of the area only. Also in some of the plans climate change related information are added more than the disaster potential analysis

- History of disaster and the regional history of disaster are mostly missing
- Only the recent flood was considered as the disaster happened in every LSG's history
- More and specific data are missing in the table sections to be given special attention
- Ward level information was seriously missing in common from all the plans

## **Chapter 3**

The third chapter is disaster response plan. The main task forces to be formed, names and particulars of the persons to be there in each team may be included in this chapter. This chapter mainly working as an array of different contacts and other evacuation helping details on every disaster. About 70% of the plan has tried to include the steering committee details and the contact details of each emergency response team, but most of the plans missed to include the evacuation plan information in this chapter. Also, the team leader details and the description about each table are missing in most of the plans. The institution and the responsible person to be contacted at the time of an emergency to be strengthened in each LSGDM plan. Team leader details for each voluntary emergency response teams were missing. This chapter is expected to meet the requirements for dealing with disasters, however, since the community is the first responder to any disaster, the community needs to be empowered for coping with disasters and as well as the need to mobilize their capabilities and capacities for effective Disaster Management.

## **Chapter 4**

Chapter 4 intends to cover the aim of the plan preparation, which includes details of preparatory actions, disaster mitigation plans and social empowerment steps to be taken by local self-government institution. While preparing the chapter, special care shall be given to overcome the shortcomings and gaps identified in the first two chapters. Only a few preparatory steps are added in this chapter by most of the LSGDM plans & this chapter needs the situational analysis for specific hazard mitigation which included structural and non-structural. Only three disaster management plans; Atholi, Koorachund and

PerumannaPanchayaths included the mitigation and social empowerment activities in their plan and about 32 disaster management plans simply skipped the chapter.

- Introduction to the chapter was missing in every plans
- Strategic environment assessment should be done for the proper mitigation from environment hazards but this is not yet reflected in the current chapter for given plans
- Physical safety like resistance of building from multi hazards, early warning, hospital check, land use planning needs to be strengthened
- Most of the plan only included a few preparatory steps only

### **Chapter 5**

Chapter five covers the information regarding the availability of resources required at the time of disasters but only 10 % covers above 75% information in this chapter. 12 DM Plans does not cover this chapter in their DM Plans. Majority of the plan provided the details about their resources but exact quantum of resources (in terms of manpower, equipment and essential items from key departments/stakeholders) that is not added much in majority of the plans

- Skilled human resource was not seen in most plans
- Social resource maps are least added thing in every plan
- It is identified from by reviewing the plan that only a few local self-governments practicing the waste management.
- Description about each table were missing 80% of plans

### **Chapter 6**

Disaster management/mitigation project proposals which can be submitted at various levels shall be included in chapter 6. The proposals shall be formulated with aim to solve and overcome the problems and shortcomings identified in chapters 1 to 5. About 60% of the plan failed to add the chapter or propose any disaster related project in the plan. Only 14 plans out of 78 plans included the chapter in it but most of the plans added some generic project ideas only.

- Sector specific projects are not included most of the plan added only some project ideas
- Projects should be considered by KSDMA and RKI projects simply skipped.

### **Chapter 7**

Chapter 7 include important phone numbers of officers, persons and institutions who/which are supposed to be providing emergency services at the time of disasters. Almost 60% of DM plans tried to include the complete details and about 30% averagely covered and 10% doesn't covered the chapter in the disaster management plan.

## Chapter 8

Annexure contains information on the ward level immediate disaster mitigation operations and response actions that should be taken at the time of disaster. But most of the plans; about 70% of the plan failed to add annexures in the disaster management plans and only 13 plans completely covered the annexures in it.

- Some of the plans just included the table of each annexures by without adding any details on it.
- Source of the given data are missing in every plan.

### Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement & Major Recommendations

#### **Strengths / Best Practices**

As we all know, when a minute microbe stops its function in the nature it will somehow affect the equilibrium of the entire ecosystem so here after reviewing the 78 LSGDM plans Koorachundgramapanchayath plan tried to put data in detail like they've considered the local flora which now in danger because of the climate change and they tried to mention it in the plan by mentioning their names this felt so interesting that because without any situational analysis these kind of practice can't be done, this is something like collecting data in the root level will always help to improve the quality of the plan . another thing that've been noticed in the Kozhikode corporations disaster management plan that is like they've tried to incorporate the skilled personal details in the emergency response teams, we know that in every place there are people having previous experience in managing some disasters so finding and joining them to the part of the plan will make the disaster management plan to a meaningful level. Here they've included the skilled people those who got trained specially from Goa for sea related disaster management this is a strength that they can manage it very efficiently. These are the best things noticed after reviewing the LSGDM plan. And rest of the plans best practices are made in common with each other. Also, the plans which have done situational analysis, transect walks, focus group discussions are best and must appreciated.

#### **Gaps Identified / Areas of Improvement**

Root level data is the major thing or the major information to be added in the local self-government disaster management plans it can be collected only by field visit or collecting it by direct surveys from the community or from the site itself, village level data are essential in the making of these plans. It is found that, majority of the plan did not conduct any of the situational analysis or transect walks these are reflected in the quality of the plan. Topographically the district has three distinct regions the sandy coastal belt, the rocky highlands formed by the hilly portions of the Western Ghats and the lateritic

midland. Of the total area of 2344 sq.kms, the sandy coastal belt is 362.85 sq.kms about 80 km of coastline were there in Kozhikode district but none of any plan mentioned about the coastal areas and the disaster related to it at least the local body those are adjacent to the coastal area should mention about the sea related or coastal related disaster and their management, but unfortunately it was omitted and it's a major gap in the LSDM plan of Kozhikode district. Also we all witnessed about the mass contribution of helping or rescuing of fisher people in the previous flood events actually these people are the major strength during water related disaster, most of the plans are just made with flood itself but none of the plan mentioned about the fisherman community. Human animal conflict is another arising issue now a day, Kozhikode is also comprising many areas in the forest side so the human animal conflict should be taken in to the account also these issues are omitted in the plans. In adequate training of the people those who made the plan was seen through the quality of plan people doesn't know about the given maps from KSDMA also they don't know how to use these maps in the plan. Through considering the disaster probability in a panchayath, preparation activities must be planned beforehand. For this it is very important to know about the boundary of the affected areas, routes for the rescue team to reach at disaster prone area and camps of flood victims in the locality with ward level information. In chapter 4, Table 4.1: Preparation- Flood disaster probabilities contain these attributes but most of the plan not considering these facts as important as their field level implication. While preparing the evacuation plan, it is important to know the number of population to be rehabilitant in the panchayath (ward level data), which helps to identify more camps in the disaster affected area that could accompany all the vulnerable population. So while preparing the Table 3.9 A: "Evacuation plan- Relief Camp details" in chapter 3 must provide the number of populations to be rehabilitated in the disaster affected area rather than providing total population.

### **Major Recommendations**

- The plan is made by non expertized person in each local body, so giving the proper training is the first major recommendation to the future programs
- Plans should be done under complete participation of the people from their own region
- Making a map of the scheduled tribe or the low-income group people region will make the evacuation during any event easier. Because it is clear that they are more vulnerable than the other people for any disastrousevents, theaccessibility to these community is somewhat less than the others.
- Plan should be including the major factories working in each local body
- Training for the people about the importance of keeping a survival kit at home should be done under this project
- Structural audit of every infrastructure shall be done before compiling the data
- Gas station and every petrol bunkers details needs to be added in the plan



## Section IV | Training Needs

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants(Officials/People Rep.)</b>	<b>Objectives</b>
Disaster Management	LSGDM officials	To ensure the effective disaster management in the grass-root level
Fire and Rescue	ERT Members	To enrich the ability in rescue operations and to build a strong ERT team.
Formulation of DM Projects	DM Working group and GramaPanchayath officials	To formulate effective DM projects at the LSG level

## Section V | Conclusion

NammalNamukkay campaign provides a breakthrough for the disaster resilient activities taken in Kerala. It provides a platform for the participation of people in disaster management activities and to increase their capabilities in response to various disasters. From the analysis, Disaster Management plans prepared by Local Self-Government institution in Kozhikode district based on draft prepared under NammalNamukkay Project, it is very clear that each local body had taken great effort to complete the DM Plan template. From the quantitative analysis of 78 disaster management plans from one co-operation, 7 municipalities & 70 Panchayaths, it was found that a small percentage of the local self-government institution covers only 50% part of the disaster management plan template. Less than 50% of the local self- government institutions cover below 50% part of the disaster management plan template. Out of 78 plans the best disaster management plan was prepared by Koorachundpanchayath followed by Kottur, Perumananna and Thikkodi panchayats. After all this plan is made by layman with a vision of ensuring safety and prosperity for the common people, so those who tried to add details in the given template without any complexity is consider as a successful plan.

## THE REVIEW REPORT OF LSG DM PLANS-

### WAYANAD

#### Section I | Overview of the LSG DM Plans in the District

There are 26 Local Self Government Institutions in Wayanad District comprises three municipalities and 23 Grama Panchayaths. Local bodies in Wayanad have done comparatively decent work on their disaster management plan, and few of it with exceptional focus on climate change and related effects. However, they did not follow the guidelines entirely in structuring their plan. While we discuss the Disaster Management Plans' chapters, the brief introduction provided in the plans is very minimal. Chapter-1 regarding general information, Chapter-2 on Disasters and possibilities of disasters, Chapter-3 focuses on Disaster response plan almost fulfils the requirement even though Chapter-4 on Preparation, Mitigation and Social Empowerment, Chapter-5 on Potentials and resources, Chapter-6 on Climate conscious Disaster Mitigation Project proposals lack data as per the template provided. The projects proposed in chapter-6 did not match the template is given, which has to finetune and included in the Annual Plans. Chapter-7 in Disaster Management Plans to provide contact numbers almost fulfils the requirement as per the template provided. Finally, regarding the annexure provided in plans, only six local self-governments provided the complete form, and most of the rest did not include any data in this division. Even though a proper guideline and template were provided for Disaster Management Plans' preparation, most of the local bodies adopted according to their convenience to fill up the data that lacks uniformity. However, their effort to prepare a Local Self Government level Disaster Management Plan resulted in creating awareness on Disaster mitigation and management.

Table 1

Wayanad District			
Sl. No.	LSG Type	Total Number	Number of Plans Submitted by LSGs
1	Grama Panchayats	23	23
2	Municipalities	3	3
3	Corporations	0	0
<b>Total</b>		<b>26</b>	<b>26</b>
Name of the Reviewer: Basil P. V.			

Table 2

Explanation	Colour code
Content not available	
Insufficient content	
Content could be strengthened	
Content is proximal to the template	

Sl. No.	Block	LSG Type	LSG Name	Chapter-wise content availability (Give Colour Codes)							
				1	2	3	4	5	6	7	8
1	Kalpetta	Municipality	Kalpetta								
2	Manathavady	Municipality	Manathavady								
3	SulthanBathery	Municipality	SulthanBathery								
4	Kalpetta	Grama Panchayath	Kottathara								
5	Kalpetta	Grama Panchayath	Muttill								
6	Kalpetta	Grama Panchayath	Vengappally								
7	Kalpetta	Grama Panchayath	Padinjathara								
8	Kalpetta	Grama Panchayath	Thariyod								

9	Kalpetta	Grama Panchayath	Meppadi										
10	Kalpetta	Grama Panchayath	Pozhuthana										
11	Kalpetta	Grama Panchayath	Vythiri										
12	Kalpetta	Grama Panchayath	Muppainad										
13	SulthanBathery	Grama Panchayath	Ambalavayal										
14	SulthanBathery	Grama Panchayath	Nenmeni										
15	SulthanBathery	Grama Panchayath	Meenangadi										
16	SulthanBathery	Grama Panchayath	Noolpuzha										
17	Panamaram	Grama Panchayath	Kaniyambatta										
18	Panamaram	Grama Panchayath	Pulpally										
19	Panamaram	Grama Panchayath	Poothadi										
20	Panamaram	Grama Panchayath	Mullankolly										
21	Panamaram	Grama Panchayath	Panamaram										
22	Manathavady	Grama Panchayath	Thirunelly										

23	Manathavady	Grama Panchayath	Thavinhal	Yellow	Yellow	Orange	Red	Orange	Yellow	Orange	Green
24	Manathavady	Grama Panchayath	Thondernadu	Yellow	Yellow	Yellow	Orange	Orange	Orange	Green	Orange
25	Manathavady	Grama Panchayath	Vellamunda	Green	Green	Yellow	Yellow	Green	Yellow	Green	Red
26	Manathavady	Grama Panchayath	Edavaka	Green	Yellow	Yellow	Orange	Green	Green	Green	Green

## Section II |Content Analysis

### **B. Content Analysis**

#### **Introduction**

All the Local-Self governments in the district have constituted disaster management working group, Local Resource Groups and ward level groups to prepare Disaster Management Plans. It ensures the peoples' participation to an extent. The situation analysis of internal and external conditions has to be done to recommend projects in Disaster Management. The local bodies have applied the template to prepare Disaster Management Plan, but they did not follow the template as it is. There is some addition of data collected as part of 'Local Action Plan for Climate Change', training provided by KILA in few plans. The sources of data are cited rarely in the data provided, which lack authenticity. Maps provided by KSDMA are included fully or partially in most of the plans except Kottathara, Thirunelly and Thondernadu Grama Panchayaths.

#### **Chapter-wise Analysis**

##### **Chapter 1-**

The chapter-1 fulfils the required data in all the Disaster management Plans compared to the rest of the chapters. Even though three of the grama panchayaths did not include any of the maps provided by KSDMA and five of the local bodies had it partially. General information regarding the local bodies is available in the plans even they deviated from the template. The details provided on natural water bodies and irrigation facilities are not available in most plan documents entirely. It can easily connect with the agricultural sector in the respective local body if it is available. Simultaneously, facilities available in community centres or suitable rescue centres did not provide a few plan documents.

## **Chapter 2-**

Specific local hazards roughly mentioned in the plan documents. Still, any of the plan documents did not mention the accident spots or previous disasters in the region rather than the recent flood. The data provided on vulnerable groups and the specific areas are in detail with the population found helpful for mitigation activities. The vulnerability in infrastructures provides in plan documents, but most of them did not mention it specifically. The marginalized groups are available in the previous chapter, but most local bodies did not address the sections to give special attention to this chapter's seriousness.

## **Chapter 3-**

Every local body has formed ERT (Emergency Response Team) as part of the Disaster Management Plan. Still, the contact details and ward wise information of ERT members did not include most plan documents. There does not have no suggestions for training in the plans. Response plan and route have provided in the plan document to the extent that has to fine-tune. Only a few have the response plan – Identification of personnel in 4 ERTs, team leader. The lion share of these local bodies' plan documents did not address appropriate evacuation plans for rescue operations.

## **Chapter 4-**

Disaster Mitigation strategies provided in Disaster Management Plans are not specific in the lion share of the Disaster Management Plans. Preparedness measures provided in the plans informally and the empowerment measures at a peripheral level. Warning Systems, Safety check in the hospitals and offices, Multilevel disaster-prone area maps, Land use map of disaster-prone areas, preparatory activities, capacity enhancement, etc. are lacking in most plan documents. The inappropriate presentation of this chapter indicates the inefficiency in the mitigation measures.

## **Chapter 5-**

The available resources mentioned appropriately in most of the plans, which has to regularly update. SWOT analysis does not conduct well; even a few of the local self-government included it for namesake. The existing capacities and convenient facilities are available in few plans, which could be considered as a model to update it in the rest of the plan documents. Waste Management is indispensable in the post-disaster scenario; however, most local bodies do not have an adequate Waste Management facility or plan. The local bodies can seek the help of Non-Government organizations other associations to incorporate the activities of "haritha karma sena" for effective waste management in post-disaster scenario.

## **Chapter 6-**

Most local self-governments approximately listed the project recommendations that are not Sector-specific, specific to the hazards, proneness, and mitigation necessities or taken up at different levels – Projects included in the districts. In most of the plan documents, these proposed projects do not connect with the previous chapters' discussions. The project proposals could be problem-focused furthermore, to resolve disaster-related difficulties.

## **Chapter 7-**

This chapter holds a telephone directory that could be helpful during the occurrence of disasters. Most of the plans have data regarding the essential contact details; however, ward wise information is not available as per the template. This data could be arranged properly and updated regularly to distribute among the public.

## **Chapter 8-**

Only ten local-self governments are included annexure in the Disaster Management Plan, and four of them have included it partially even though proper citation and mention of sources are not done.

## **Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement& Major Recommendations**

### **I) Strengths / Best Practices**

Meenangadi Grama panchayath has done comparatively good work on their disaster management plan with an exceptional focus on climate change and related effects. However, they did not follow the guidelines fully in structuring their plan. The work they have done deserves appreciation.

### **Chapter-I**

The general introduction has included almost all the general information regarding the socio-demographic and geographical details. They vividly explained the long history from the feudal period through the colonial period until establishing a democratic system. The ward wise distribution of occupation, people's economic status, education, health, infrastructure facilities, water sources, etc., are available in this chapter with an exceptional focus on tribal population and their settlements in a community wise format. This chapter ends with a list of implementing officers along with their contact details.

### **Chapter-II**

This plan outlines the climate changes in the last thirty years and their consequences in a tabular form. According to which significant changes happened in rain, temperature, humidity and wind. They observed that groundwater level did not change and drought did not affect the locality. However, human-animal conflict, flood, temperature variations, landslides, lightning, etc., increased within the last thirty years. The impacts of climate change on various biodiversity elements in each locality, issues and intensity are specifically mentioned in this chapter. After which, a detailed table provided on how such issues and their intensity influenced people's life and livelihood.

The detailed history of recent floods, the rescue and rehabilitation process that took place helped improve this chapter's quality. The activities which are elaborated in this chapter that the grama panchayath undertook after the floods were Clean Meenangadi, Geo-tagging, file Adalat, etc. The tables followed by this illustrates people who need special attention, disaster-prone areas, disaster-prone public buildings and ward wise list of people who have to be relocated. In the plan document, a detail of the marginalized groups, particularly tribal hamlets, is beneficial for the rescue operations. Towards the end of this chapter, there are maps on flood proneness, landslide proneness, Vs. Transportation, landslide proneness Vs. Land use and drought proneness.

### Chapter-III

In the disaster response plan, they have included the list of volunteers, which comprises 388 participants, and their ward wise distribution is the highlight of this chapter. They have included gender-wise data of shelter management team, basic life support team, early warning team, and rapid response team volunteers in the Grama Panchayath. Even though it lacks the ward wise distribution of these teams, they have also included the emergency response plans in this chapter

### Chapter-IV

Disaster mitigation programmes are briefly detailed with maps in this chapter. The map provided by KSDMA is included in this chapter for better understanding.

### Chapter- V

Available resources are presented in chapter V with contact details.

### Chapter- VI

The project recommendations are roughly listed, which need to be elaborated in this chapter.

### Chapter-VII



Contact details of various offices and helpline numbers are given in this chapter. Ward wise distribution of major occupations, religious institutions, roads, type of houses, drainages, water resources, age group and category, etc., are provided in this chapter.

**m) Gaps Identified / Areas of Improvement**

Disaster mitigation programmes and project recommendations could be more specific to address the concerns of discussions. Detailed Project Reports for the projects proposed and the funding sources must be explicitly mentioned for further action. The projects should have a focus on disaster management which may reduce the disaster proneness or beneficial in disaster management cycle.

**n) Major Recommendations**

Ward wise data of different groups like Emergency Response Team, Basic Life Support Team, Professionals, etc. could be provided with contact numbers. The situational analysis could be done with the help of PRA (Participatory Rural Appraisal) tools like FGDs (Focus Group Discussions) and transect walk. Professional help could be availed for further improvement of the plan and data to be a suffix as per template. The effects of disaster on the agrarian sector could be included as a separate chapter as most of the people in the region are farmers. The different agrarian groups like Padasekhara Samiti, Kurumulaku Samiti, etc. and their role in disaster management could be a part of this chapter. The available resources for Disaster Management could be updated in a specific interval.

**Section IV | Training Needs**

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants(Officials/People Rep.)</b>	<b>Objectives</b>
Fire and Rescue	ERT Members	To enrich the ability in rescue operations.  To build a strong ERT Team in every Local bodies.
Basic Life Support	Basic Life Support Team	To enhance the practical knowledge on Basic Life Support

Mock Drills	Educational Institutions and other Offices	To train the people on rescue operation.
Disaster Management	Village Officers, Grama Panchayath Secretaries and Chairpersons.	To ensure the effective disaster management in the grass-root level.
Waste Management	Haritha Karma Sena	To ensure an effective waste management during post-disaster scenario.

### Section V | Conclusion

NammalNamukkay campaign is a platform that can ensure participatory disaster management among the local self-governments all over Kerala. The templates provided to the local bodies to prepare LSG-DM (Local Self Government- Disaster Management) Plan helped to follow a uniform format to prepare Disaster Management Plans even they have deviated from the template. The disaster mitigation projects could be identified appropriately connected with disasters. Focus Group Discussions could be done to develop the most appropriate project proposal at different levels. Pieces of training could be provided at the grass-roots level on Disaster Management could be more effective to ensure people's active participation and share knowledge regarding Disaster Management. As a first step to address the Local Self Government Level Disaster Management, the local bodies' plan document is practical to create awareness among people and act appropriately during the disaster.

## KANNUR

### Section I | Introduction

As part of the Rebuild Kerala Initiative (RKI), the state government of Kerala launched ‘Nammal Namukkayi’ campaign in the state to use the knowledge, ideas and experience of the entire people of Kerala in a participatory and practicable manner for rebuilding Kerala. Preparation of Disaster Management Plan by every Self Government Institution is an important aspect of this campaign.

Kannur district is having 81 Local Self Government institutions. Out of which there are 71 Gram panchayats, 9 Municipalities and one Corporation. The LSG Disaster Management plan should be covering the important aspects mentioned below.

- LSG profile
- Hazard and vulnerability profile
- Capacity and resources
- Disaster response plan
- Preparedness mitigation and community resilience plan

The LSGs should form ERTs in all the wards with members not less than 8. 4 ERTs should also be formed at an LSG level which will be oriented to handle specific tasks such as first aid, rescue and evacuation, shelter management and basic life support. It is mandated that the LSG DM plan should be connected with the LSG annual plan, the projects proposed in it should appear in the annual plans as well. The institutions which are to be used as emergency shelters and rehabilitation camps should be identified and the condition of such facilities should be recorded.

The Local Resource Group (LRG) should conduct a transect walk for situational analysis and recording the primary data required for the plan. A draft report of the DM plan should be made with the primary data collected from the transect walk, this report should be presented and discussed in the Gram Sabha meetings. The draft report should then be submitted to the panchayat committee, this should include all the recommendations put forward by the Gram Sabha.

Table 1

Name of the District: Kannur			
Sl. No.	LSG Type	Total Number	Number of Plans Submitted by LSGs
1	Grama Panchayats	71	70
2	Municipalities	9	8
3	Corporations	1	1
Total		81	79
Name of the Reviewer Aswin Madhanashekar			

Table 2

Explanation	Colour
Content not available	Red
Insufficient content	Orange
Content could be strengthened	Yellow
Content is proximal to the template	Green

Sl.No.	Block	LSG Type	LSG Name	Chapter-wise content availability							
				1	2	3	4	5	6	7	8
1	Edakkad	Panchayat	Kadamboor	Yellow	Yellow	Yellow	Orange	Yellow	Yellow	Green	Yellow
2	Irikkur	Panchayat	Kuttiattur	Green	Orange	Yellow	Orange	Green	Yellow	Green	Red
3	Kalliasseri	Panchayat	Mattool	Yellow	Yellow	Yellow	Red	Yellow	Red	Yellow	Red

4	Panoor	Panchayat	Panniannur									
5	Payyannur	Panchayat	Peringome-Vayakkara									
6	Thaliparamba	Panchayat	Pariyaram									
7	Payyannur	Panchayat	Kunhimangalam									
8	Thalasserry	Panchayat	Vengad									
9	Payyannur	Panchayat	Ramanthali									
10	Taliparamba	Panchayat	Chapparappadavu									
11	Kuthuparamba	Panchayat	Mangattidom									
12	Taliparamba	Panchayat	Naduvil									
13	Thalasserry	Panchayat	Eranholi									
14	Payyannur	Panchayat	Kankol-Alappadamba									
15	Payyannur	Panchayat	Eramam-Kuttoor									
16	Payyannur	Panchayat	Cherupuzha									
17	Taliparamba	Panchayat	Pattuvam									
18	Peravoor	Panchayat	Kolayad									
19	Thalasserry	Panchayat	Anjarakkandi									
20	Iritty	Panchayat	Aralam									
21	Kuthuparamba	Panchayat	Pattiam									
22	Iritty	Panchayat	Keezhallur									
23	Thalasserry	Panchayat	New Mahi									
24	Thalassery	Panchayat	Kunnothparamba									
25	Payyannur	Panchayat	Karivlloor-Perlamb									
26	Kuthuparamba	Panchayat	Chittariparamba									

27	Edakkad	Panchayat	Chembilode															
28	Taliparamba	Panchayat	Kadannapally-Panapuzha															
29	Peravoor	Panchayat	Peravoor															
30	Peravoor	Panchayat	Kelakam															
31	Taliparamba	Panchayat	Chengalai															
32	Irikkur	Panchayat	Eruvessi															
33	Kannur	Panchayat	Azhikode															
34	Kannur	Panchayat	Pappinisseri															
35	Iritty	Panchayat	Ayyankunnu															
36	Irikkur	Panchayat	Mayyil															
37	Irikkur	Panchayat	Padiyoor															
38	Thalassery	Panchayat	Dharmadam															
39	Taliparamba	Panchayat	Kurumathoor															
40	Irikkur	Panchayat	Payyavoor															
41	Iritty	Panchayat	Koodali															
42	Irikkur	Panchayat	Ulikkal															
43	Kalliasseri	Panchayat	Kalliasseri															
44	Kalliasseri	Panchayat	Madayi															
45	Irikkur	Panchayat	Malapattam															
46	Taliparamba	Panchayat	Udayagiri															
47	Thalassery	Panchayat	Muzhappilangad															
48	Irikkur	Panchayat	Irikkur															
49	Kannur	Panchayat	Valapattanam															

50	Panoor	Panchayat	Kadirur										
51	Edakkad	Panchayat	Peralasseri										
52	Peravoor	Panchayat	Maloor										
53	Iritty	Panchayat	Payam										
54	Peravoor	Panchayat	Muzhakkunnu										
55	Edakkad	Panchayat	Kolacheri										
56	Kalliasseri	Panchayat	Cherukunnu										
57	Kalliasseri	Panchayat	Cheruthazham										
58	Panoor	Panchayat	chokli										
59	Kuthuparamba	Panchayat	Kottayam										
60	Kuthuparamba	Panchayat	Thrippangottoor										
61	Kannur	Panchayat	Chirakkal										
62	Kalliasseri	Panchayat	Ezhome										
63	Peravoor	Panchayat	Kanichar										
64	Kanichar	Panchayat	Kottiyoor										
65	Panoor	Panchayat	Mokeri										
66	Kalliasseri	Panchayat	Narath										
67	Kalliasseri	Panchayat	Kannapuram										
68	Iritty	Panchayat	Thillankeri										
69	Thalassery	Panchayat	Pinarayi										
70	Edakkad	Panchayat	Munderi										
71	Iritty	Municipality	Mattannur Municipality										
72	Thalassery	Municipality	Thalassery Municipality										

73	Iritty	Municipality	Iritty Municipality										
74	Kuthuparamba	Municipality	Kuthuparamba Municipality										
75	Panoor	Municipality	Panoor Municipality										
76	Payyannur	Municipality	Payyannur Municipality										
77	Irikkur	Municipality	Sreekantapuram Municipality										
78	Kannur	Corporation	Kannur Corporation										
79	Taliparamba	Municipality	Taliparamba Municipality										

## Section II | Content Analysis

More than 80% of the LSG DM plans have followed the prescribed template. Very few LSGs have gone out of the way and made the plan with their formats. Overall, it was observed that the majority of the LSGs were able to provide the DM plan in the prescribed format with negligible errors. Alas, there is a need to take up this number to 100% which in turn will improve the effectiveness of the plans.

Poor participation from the people’s side was evident while reviewing the plans, while some of the plans included all the available data from the ground, the majority of the plans have furnished the tables with minimum or necessary data only. The scenario is same for Transect walks and Focus Group Discussions as well, the majority of the LSGs had failed to invest their time in these activities.

Out of the 79 plans reviewed, the majority of the plans have mentioned the source of the data in chapter 1 and 2 but failed to do so in the annexures. While some LSGs have provided the source sporadically in the annexures, they were not consistent with it. Overall, there is a need to improve the clarity of the sources mentioned. There are many plans where sources are mentioned for name’s sake, this put the reliability of the data in question.

In the first chapter, there is less uniformity in the maps provided since LSG maps were produced in different formats. Around 45% of LSGs have provided a map in the first chapter while 55% of LSGs have failed to provide one. In the second chapter, almost 54% of the plans were having the required maps. In the 5<sup>th</sup> chapter, only 22% of the plans provided the social resource map.



## Chapter Wise Analysis

### Chapter 1

Chapter 1 aims to give a general understanding of the LSG. In the introduction section, most of the plans need to give more emphasis to the history of disasters in their LSG. There are plans which have simply recorded the history of that particular LSG without covering the history of disasters there. A lot of plans have also failed to provide the phone number for health institutions, veterinary hospitals and community centres. Having the phone number recorded in the DM plan would save a lot of time and effort during an emergency. Only 20% of the plans were having proximity to the template provided, the low number is due to the unavailability of maps and lack of data. This number could have been improved by simply providing the maps and completing the tables with the required details.

### Chapter 2

Almost 22% of the DM plans have prepared chapter 2 very well and the content provided is proximal to the template. This number would have been higher had the LSGs provided the map of disaster-prone areas. As mentioned earlier, 46% of the DM plans were not having the maps in this chapter. Apart from this, a huge portion of the plans had difficulty in providing the details of the 'History of disaster'. The proximity to the template was poor and a bunch of plans had also failed to provide any data in this regard. There seems to be confusion around the area of economic weakness. Around 31% of the plans have scored zero in this section.

### Chapter 3

While most of the plans have provided the list of names in the ERTs, only a few plans have mentioned the team leader names. Basic details like age and contact details were missing in several plans. Plans without these details will not be effective during an emergency. Around 20% of the plans had no evacuation plan, 26% of the plans failed to provide evacuation plan-B and 32% of plans only provided evacuation plan-A, but failed to provide plan B and C. Around 12% of the plans were having maximum proximity to the template. 78% of the plans would have been proximal to the template had it provided the complete data.

### Chapter 4

Chapter 4 is where 89% of the plans faced major challenges. Only 11% of the plans have provided satisfactory content. In the preparatory steps, more than 90% of the plans failed to provide any useful data. Subsection 4.1.1 to 4.1.11 seems to have created confusion amongst the LSGs, most of them have left the section blank because of that reason. If we look at the DM Plans, we could see that section 4.2 is approached slightly better than 4.1. LSGs have provided their inputs, but it lacks the quality that it

demands. Amongst all the chapters in the LSG DM plan, chapter 4 has the least proximity to the provided template.

### **Chapter 5**

In chapter 5, 70% of plans would have been proximal to the template by providing the completed data. Most of the LSGs have provided partial data in several crucial tables. Since this chapter deals with the capacities and resources of the LSGs, there are a lot of tables to fill in, and data to provide. It is therefore easy for the LSGs to overlook some of the required information and fall short in template proximity. There are multiple sections to the same data and all of them are equally important as well, failing to provide a part of the data would make it difficult for the people using the plan at the time of an emergency. Phone numbers are important data here, many of the DM plans failed to capture it in several places in the chapter. The SWOT analysis and the social resource map was another section where the LSGs faced difficulty in providing data.

### **Chapter 6**

Chapter 6 connects the LSD DM plan with the LSG annual plan. The projects mentioned in this chapter should find its way into the LSG annual plan. Only 7% of the LSG DM plans have prepared the chapter in the prescribed template. While providing a plan, it should contain all the relevant information and most importantly it should have a structure. More than 90% of the plans had failed to present the project proposals in a structured manner. Most of the proposals were provided with little or no attention to details such as cost, location and beneficiaries.

### **Chapter 7**

More than 40% of plans have provided all the required data for the chapter. Around 46% of the plans contain the required data but some details were missing in those plans making them less proximal to the template.

### **Chapter 8**

Very few plans have mentioned the source of the data in the annexure. Also, the majority of the plans have provided the data LSG wise, very few LSGs have provided ward wise data in this chapter. 37% of the DM plans did not provide annexures at all. Annexures helps in deriving a bigger picture of the LSG. Ward wise data would help tailor the relief, rescue and other activities too. It is important to provide ward wise data in annexures with a proper source.

### Section III

#### **a. Strengths / Best practices**

Mattannur Municipality has produced a holistic DM plan with maximum proximity to the template. It can easily be seen as the best plan in the Kannur district out of all the 79 LSG DM plan reviewed so far. Each chapter has been drafted with all the required data, making it easy to make use of the plan during an emergency. Maps are an integral element in the DM plan, most of the LSG DM plans have had some issue with maps. Mattannur Municipality has provided all the required maps in proper colours, making them usable. Black and white maps would be difficult to read because most of the maps are developed in colour. When the colour maps are converted to black and white, it fails to communicate what those colours represent. In chapter 4, the LSG has identified the mitigation activities such as water conservation, protection of the borders of the disaster-prone areas and improving the infrastructure facilities. This LSG has also prepared the 6<sup>th</sup> chapter in the appropriate format. The project proposals focused on capacity building and mitigation measures. Some of the major projects are–

- Improving the conditions of existing roads
- Installing street lights
- Installing pipelines for drinking water
- Improving the condition of existing wells
- Installing solar lights in the emergency shelters
- Construction of toilets in schools
- Ring compost in all the Schools
- Public water tap installation
- Sidewalls of water bodies
- Rainwater harvesting
- Removing silt from water bodies
- Construction of Sidewalls for canals

#### **b. Gaps Identified / Areas of Improvement**

The majority of the DM plans have identified ‘Flood’ as a major hazard. Kannur is having the largest coastal line but only a couple of plans have mentioned it in their plans. Even the local bodies situated close to the coastal areas have failed to mention the coastal erosion or any related hazards.

Chapter 4 seems to have created confusion for all the LSGs. Data for most of the subsections in chapter 4 was not present in a majority of the plans. Most of the LSGs have provided data for tables – 4.1, 4.2 and 4.3 only.

In chapters like 3,4 and 5, some tables require details like – route to reach the disaster-prone area (in table 4.1), the population in the disaster-prone wards (Table 3.9), people that can be occupied in the rehabilitation centre (table 5.3). These are often overlooked, but these details would be crucial during the time of an emergency. Some of the LSG DM plans have failed to provide data in the mentioned tables.

Annexure is not maintained with ward wise data. Only a few of the LSGs have provided ward wise data in chapter 8. Ward wise data is very important during the time of any emergency.

### c. Major Recommendations

The ongoing pandemic has reminded us of the importance of having good public health infrastructures. In the LSG DM plan, we are not looking at the health infrastructures facilities at the LSG level, in detail. There is an urgent need to have a detailed view of the health infrastructure facilities at the LSGs. It is the need of the hour to have a section dedicated to this.

There should be a table in chapter 6 for a better understanding of the details of the project proposals. Currently, most of the project proposal are vaguely written. It is difficult to understand the details of the project proposal if they are presented in the mentioned manner.

The template for chapter 4 needs to be improved. As mentioned earlier, the majority of the LSGs have not provided proper data for chapter 4. It feels like there is a need to change the template for chapter 4. This is required for better communicating with the LSGs on what data they should provide

### Section IV | Training Needs

Major training Needs / Capacity Building Initiatives	Expected Participants	Objectives
First aid and emergency rescue training	ERT members	To better equip ERTs with first aid and emergency rescue skills
Basics of Disaster Management	All the officials of the LSGs involved in the preparation of DM Plan	To improve the quality of the LSG DM Plan
Rapid Visual Screening techniques	officials of the LSGs in charge of identifying emergency	To help identify better emergency shelters and rehabilitation centres.

	shelters, rehabilitation centres etc.	
--	--	--

## Section VI | Conclusion

Preparation of Disaster Management plan by LSGs is an important component of *the Nammal Namukkayi* campaign launched by Rebuild Kerala Initiative (RKI). Through this initiative, it was envisaged to create a DM plan with people’s participation. While most of the LSG DM plans have successfully incorporated people’s participation, the majority of the plans lacked that element. All the LSGs who have successfully submitted the DM plan has indeed done a good job, but there is a great scope for improvement as well. By giving adequate training and minor tweaks to the plan template, we could ensure a more robust plan next time. Some LSG DM plans are exceptional while some have not even met the standards. It is very important to elevate the quality of the plans for all the LSGs. This could be achieved by working on the gaps identified and providing proper training. This first attempt to create a DM plan at ground level with people’s participation could indeed be considered as a great step for Disaster Management in Kerala.

## REVIEW OF LSG DM PLANS

# KASARGODE

### Section I | Overview of the LSG DM Plans in the District

#### Introduction

Lying at the northern tip of Kerala bounded by the Western ghats in the east and Arabian sea in the west; twelve rivers flowing across its terrain, Kasaragod is an enchanting beauty of Nature's creations.

There are different views on the derivation of the name "KASARAGOD". One view is that it is the combination of two Sanskrit words kaasaara (which means lake or pond) and kroda (which means a place where treasure is kept). Another view is that it is the place where Kaasaraka trees (Strychnosnux vomica or Kaanjiram or Kaaraskara) are in abundance. Both views are relevant as there are large number of rivers, lakes and ponds in the coastal belt of the district besides thick flora consisting of innumerable varieties of trees, shrubs etc. particularly plentitude of Kaasaraka trees.

The landscape is dominated by the characteristic coconut palms accompanying rolling hills and streams flowing into the sea. The landscape is dotted with tiled-roof buildings, topped with the famous Kasaragod tiles made with the local hard red clay and typically walled with laterite blocks. Older houses are commonly found with elaborate woodwork. There are 12 rivers in this district. The longest is Chandragiri (105 kms) originating from Pattimala in Coorg and embraces the sea at Thalangara, near Kasargod. The river assumes its name Chandragiri from the name of the place of its source Chandragupta Vasti; where the great Maurya emperor Chandragupta is believed to have spent his last days as a sage.

**Table 1**

<b>Name of the District: Kasaragod</b>			
<b>Sl. No.</b>	<b>LSG Type</b>	<b>Total Number</b>	<b>Number of Plans Submitted by LSGs</b>
1	Grama Panchayats	38	38
2	Municipalities	3	3
3	Corporations	0	0
Total		41	41
Name of the Reviewer :Ahammed Shafeeqe P, LSG DMPlan Coordinator			


**Table 2**

Scale & Colour code	Explanation
	Content not available
	Insufficient content
	Content could be strengthened
	Content is proximal to the template

Sl.No	Block	LSG Type	Panchayat	Chapter-wise content availability								
				1	2	3	4	5	6	7	8	
1	Kanhangad	GP	Ajanur									
2	Kasaragod	GP	Badiadka									
3	Parappa	GP	Balal									
4	Karadka	GP	Bedadka									
5	Karadka	GP	Belloor									
6	Kasaragod	GP	Chemnad									
7	Kasaragod	GP	Chengla									
8	Neeleswaram	GP	Cheruvathur									
9	Karadka	GP	Delampady									
10	parappa	GP	East Eleri									
11	Manjeswar	GP	Enmakaje									
12	karadka	GP	Karadka									
13	Parappa	GP	KodomBelur									
14	Nileswaram	GP	KayyurCheemeni									
15	Parappa	GP	KinanoorKarinthalam									

16	Karadka	GP	Kumbdaje	Yellow	Orange	Orange	Red	Red	Red	Orange	Red
17	Karadka	GP	Kuttikol	Orange	Red	Red	Red	Red	Red	Red	Orange
18	Kasaragod	GP	Madhur	Red	Red	Red	Red	Red	Red	Red	Red
19	Kanhangad	GP	Madikai	Yellow	Orange	Yellow	Red	Orange	Orange	Yellow	Orange
20	Manjeswaram	GP	Meenja	Yellow	Orange	Yellow	Orange	Yellow	Red	Yellow	Red
21	Nileshwar	GP	Padne	Orange	Orange	Green	Red	Yellow	Red	Red	Red
22	parappa	GP	Panathady	Yellow	Orange	Orange	Red	Yellow	Red	Green	Red
23	Nileswaram	GP	Pilicode	Yellow	Orange	Yellow	Yellow	Yellow	Red	Green	Red
24	Manjeshwar	GP	Puthige	Yellow	Red	Orange	Red	Orange	Red	Green	Red
25	Kanhangad	GP	Udma	Yellow	Yellow	Yellow	Red	Orange	Red	Green	Red
26	Manjeshwar	GP	Vorkady	Yellow	Red	Yellow	Red	Red	Red	Orange	Red
27	Parappa	GP	West Eleri	Yellow	Orange	Yellow	Red	Yellow	Red	Green	Yellow
28		Municipality	Kasaragod	Green	Yellow	Green	Orange	Yellow	Red	Green	Red
29		Municipality	Nileswar	Yellow	Yellow	Green	Red	Green	Red	Green	Red
30	Kanhangad	GP	PULLUR PERIYA	Yellow	Red	Red	Red	Red	Red	Green	Red
31	NILESWARAM	GP	TRIKKARIPPUR	Green	Orange	Yellow	Red	Orange	Red	Green	Yellow
32	MANJESWARA M	GP	MANJESWARAM	Green	Orange	Yellow	Red	Orange	Red	Green	Yellow
33	NILESWARAM	gp	Valiyaparamba	Yellow	Red	Green	Red	Red	Red	Green	Red
34	Kanhangad	GP	PALLIKKARA	Green	Red	Green	Red	Yellow	Red	Green	Red
35		Municipality	Kanhangad	Yellow	Red	Orange	Red	Red	Red	Red	Orange
36	Kasaragod	GP	MogralPuthur	Yellow	Red	Yellow	Red	Red	Red	Yellow	Red
37	Kasaragod	GP	KUMBALA	Orange	Red	Yellow	Red	Red	Red	Yellow	Red
38	KARADKA	GP	MULIYAR	Yellow	Orange	Green	Red	Orange	Red	Green	Red
39	VELLARIKKUND	GP	KALLAR	Green	Red	Green	Red	Red	Red	Orange	Red



40	MANJESWAR	GP	MANGALPADY	
41	MANJESWAR	GP	PAIVALIKE	Kannada

## Section II- Content Analysis

### Introduction

Kerala was heavily jolted in the devastating floods of August 2018. Rebuild Kerala Initiative is formulated by the Government with the aim to reconstruct the state in a much better manner than what it was before the floods. In response to the 2018 floods, the Government of Kerala initiated the Rebuild Kerala Development Programme (RKDP) under the Rebuild Kerala Initiative (RKI), which focuses on building a "Resilient Kerala" by supporting key sectoral departments of the government align their development and planning process to a collective objective of building a more resilient state. Rebuild Kerala Initiative (RKI) has launched a campaign by the name NammalNamukkayai with the aim to utilize the knowledge, experience and ideas of the entire people of the state in a participatory and practicable manner for rebuilding Kerala. Preparation of Disaster Management Plan by every Self Government Institutions is an important component of the above campaign formulated in People's Planning mode.

‘NammalNamukkayai’ is the campaign planned by the Government of Kerala aiming at preparing local disaster management plan in every panchayaths and urban local bodies of Kerala. ‘NammalNammukkayai’ is envisaged a detailed plan process with the participation of public. The aim is to get feedback and opinion from the public and prepare local plans to mitigate disasters. It focused on the preparation of DM Plans by ensuring people's participation and leaderly intervention of local self-governments, operations and activities pertaining to disaster mitigation, preparedness, resistance and disaster management.

### Content Analysis

Kasaragod district consists of a total of 41 LSGs including 38 Grama Panchayaths and 3 Municipalities. As per the records; it is found that prior to the preparation of Disaster Management Plan, Few LSGs have conducted the transect walk and focus group discussions. Also, almost all of the LSGs have discussed the DM Plans in the gramasabha meetings. Most of the LSGs have conducted seminar on DM Plan and discussed the same in the Annual Plan preparation seminar. All the DM Plans followed the template given by KILA; except chapter 2. Almost in all the DM Plans; chapter 2 had followed a different

template; which include the Climate change and details. Only very few of the DM Plans included all the maps provided by KSDMA. After reviewing the plan from the district, it is felt that the plan was made under poor awareness and inadequate training because the plan submitted from all the LSGs, majority of the plan was simply copied from what was in the template given by the government along with order of this initiative. Most of the tables in the plan was incomplete and untouched. The descriptive part also simply skipped by majority of the Plans, among different chapter from the plan chapter 4 and chapter 6 was mostly skipped by the LSGs .

Kasaragod is a district consists about a coastal line of 70km but unfortunately the plans had submitted was never ever said something about the coastal problems and the adjacent disasters to it, at least the local bodies lie in the coastal area should be come up with the disaster management plan with these points. The most recurring disaster in the district is coastal erosion. There are around 16 fisheries village spread over 13 panchayaths in the district which faces severe coastal erosion. In the view of recent okh disaster live saving equipment distributed to coastal panchayaths, but none of them mentioned regarding them in their plans. In DM plan there is no mention about instruments like 2500 life jacket, marine radio and lifebuoy that has been distributed. Plan also do not mention about the sea rescue guard who were specially trained

## **Chapter wise Analysis**

### **Chapter 1**

Chapter 1 of the DM Plan consisted of all the general information about the LSG. In the detailed review of the plans, the following are observed. Some of the LSGs have included the detailed geographical particulars like composition and nature of soil, water bodies, forest, coastal area etc. Many of the LSGs have not included the LSG map. Source of data is not mentioned in some of the DM Plans. Information regarding education centres have included in detail in almost all the DM Plans. A few of the plans have not included the phone numbers of implementing officers.

### **Chapter 2**

This chapter includes Disasters and Possibilities for Disasters. Almost all LSGs not provided details regarding local hazards, which means the group who involve in making of DM plan don't consider situational analysis. In more than 90 percent of the DM Plans, History of disasters focused on 2018 and 2019 flood only. No other details mentioned. Certain LSGs are prepared in a different template which included climate changes and its after effects. Ward level information was seriously missing in common from all the plans

Very few of the LSGs provided maps of disaster proneness. A very few of them are added legitimate maps. Majority of them didn't consider map as an important tool. Most of the plans have not included the history of disasters. Almost all the LSGs have mentioned the vulnerable areas and groups. But some of them seems like just figures, not actual statistics. Majority of them added economically weak areas of their locality.

### **Chapter 3**

This chapter consists of details of Disaster Response plan. Most of them added details of steering committees and invitees. ERT details also added well by a large number of LSGs. But some of them didn't add sufficient data, phone numbers of ERT members not included in some of the plans. And ERT had formed Panchayath wise but the latter had included ward wise details. Most of the them failed to present a better evacuation plan if there any chance of disasters. Some have included disaster prone areas. The list of volunteers also not following a uniform pattern. Response plans, routes and training suggestions are not included. In total, disaster response plan not including a useful response system rather than just a table of people and their contact.

### **Chapter 4**

This chapter includes the Disaster Preparation – Mitigation - Social Empowerment Activities.

Introduction to the chapter was missing in every plans. Detailed content of this chapter is missing in most of the DM Plans. Disaster mitigation activities and the components are not included in most of the plans. Preparatory steps are not included in detail in most of the plans. Only a few preparatory steps are added in this chapter by most of the LSGDM plan & this chapter needs the situational analysis for specific hazard mitigation which included structural and non-structural.

### **Chapter 5**

This chapter includes the capacities and resources. Collection of information regarding available tools, equipment and devices which could be utilized for tackling disasters is the theme of this chapter.

The information regarding available resources are included in almost all the plans. But in some of the plans, phone numbers are missing. A very few plans have included detailed list of the resources. The details of identified rehabilitation centers are included in almost all the plans. Social resource Map was not seen in most plans.

### **Chapter 6**

Chapter 6 includes the Disaster mitigation plans and project proposals; which could be taken up in different tiers.

Sector specific projects are not included most of the plan added only some project ideas. only a few of them mentioned it in sector wise. Others have just framed an outline. Projects mentioned in the DM plans are not as suggested in the template in most of the plans.

Projects to be considered by disaster management authority have not included in most of the plans.

## **Chapter 7**

This chapter includes phone numbers and particulars of persons responsible for providing guidance, assistance and help in disaster management operations.

Almost all the LSGs included all the details in this chapter. A few plans have not included some of the phone numbers.

## **Chapter 8**

This chapter includes supplementary information's to be collected at ward level. Some of the plans just included the table of each annexures by without adding any details on it. Source of data are not mentioned in most of the plans.

## **Section III | Best practices/Strengths, Gaps Identified / Areas of Improvement & Major Recommendations**

### **Strengths / Best Practices**

In the DM Plans reviewed, some of them have given the information in detail. The Disaster management plan of KinanoorKarinthalamabdKayyurCheemeni GP are comparatively better. The GP have reconstituted the Disaster management working group and formed Local Resource Group in ward level. Also, they have conducted transect walk and focal group discussion in collecting the information. For preparing the disaster management plan, the Panchayath had discussed the same in Gramasabha meetings. Also, they have discussed the DM plan in the preparation of annual plan. All the information are given in detail in chapter 1. The general information contains all the details. The ward information is given in detail. The history of the Panchayath – Social, economic and cultural history, is mentioned. In chapter 2, a detailed introduction of the disasters that occurred in the Panchayath is mentioned. Also, this chapter included the climate changes in detail and their consequences. In chapter 3, the list of volunteers is given ward wise. The maps provided by KSDMA are included in the plan. The project suggestions are also mentioned in detail in chapter 6.

### **Gaps Identified**

For preparing disaster management plan in a village level grass root level data and preparatory steps are very essential for the effectiveness of a plan. In most of the plans reviewed, situational analysis and transect walk are not seemed to be done. This resulted in the incompleteness of many tables. For example;

in chapter 3 in some of the plans, the ERT given are not having any details except name. Also, the maps given by KSDMA are not considered as an important tool in a few of the plans, as they are not legible and also it is absent in some of the plans the evacuation plan- identified routes for evacuation, the road condition, need for renovation/repair, identified shelter camps, resources etc. should be identified and included in the plan. This part is not filled completely in any of the plans reviewed. Proper data collection seems not done. Also, the available resources are not mentioned fully in any of the plans. The project suggestions that mentioned in Chapter 6 needs more specification. Also felt that Lack of coordination among departments during DM Plan Preparation.

The most recurring disaster in the district is coastal erosion. There are around 16 fisheries village spread over 13 panchayaths in the district which faces severe coastal erosion. In the view of recent okhidi disaster live saving equipment distributed to coastal panchayaths, but none of them mentioned regarding them in their plans. In DM plan there is no mention about instruments like 2500 life jacket, marine radio and lifebuoy that has been distributed. Plan also do not mention about the sea rescue guard who were specially trained

### **Recommendations**

It would be more beneficial in preparing plan, after consulting departments like Revenue, Fisheries, Health, Fire, Animal Husbandry, Dairy, Police and Agriculture

The plan is made by non expertized person in each local body, so giving the proper training is the major recommendation to the future programs. Need to identify the role of the people who are trained for the preparation of DM plan. and their level of involvement for the same.

Plans should be done under complete participation of the people from their own region in the district, all the disaster related activities are managed by the Disaster Management / Revenue department. In the preparation of Disaster Management plan, only the LSGDs and the District Planning department are involved. A linkage between these two departments is essential for the successful output.

### **Section IV | Training Needs**

<b>Major Training Needs / Capacity Building Initiatives</b>	<b>Expected Participants (Officials/People Rep.)</b>	<b>Objectives</b>
Disaster Management	LSGD officials	To ensure the effective disaster management in the grass-root level.

Fire and Rescue	ERT Members	To enrich the ability in rescue operations and to build a strong ERT team.
Disaster Management	People representatives	To create awareness among people on DM.

### Section V | Conclusion

NammalNamukkay campaign provides a breakthrough for the disaster resilient activities taken in Kerala. It provides a platform for the participation of people in disaster management activities and to increase their capabilities in response to various disasters.

Disaster management plans and the preventative measures they include are essential for stopping disasters from occurring. Although disasters may not always be avoidable, having a proper recovery plan helps to reduce the potential damage and quickly restore operations when one occurs. Disaster management efforts aim to reduce or avoid the potential losses from hazards, assure prompt and appropriate assistance to the victims of a disaster, and achieve a rapid and effective recovery.

The main beneficiaries of DM plan are the people. It is highly desired to include them in the project planning and awareness about the objectives of the plan should also reach them.

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# Consolidated Report on Sector Level Review of LSG DM Plans

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Submitted by  
Kerala State Disaster  
Management Authority

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June 2021

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# EXECUTIVE SUMMARY

## 1. Background

With a participatory approach towards “Building Back Better”, Hon’ble Chief Minister of Kerala launched ‘*Nammal Namukkayi*’ Campaign under the Rebuild Kerala Initiative (RKI). The campaign aims to reach out to a wide range of stakeholders to be able to participate and voice their opinions in the resilient rebuilding process. The most important output of the campaign was the Disaster Management Plans prepared at the Local Self Government Institution level. 1034 LSGIs including 941 Grama Panchayats, 87 Municipalities and 6 Municipal Corporations have prepared their DM plans based on the template and training provided by the Kerala State Disaster Management Authority (KSDMA) and the Kerala Institute of Local Administration (KILA). This was a pioneering feat in India.

The RKI, as part of its efforts to strengthen different departments, has provided HR support to KSDMA. This includes a team comprising of an Agriculture Specialist, an Architect, a Hydrologist, a Rural Development Specialist and an Urban Planner at the state level and 14 LSG DM Plan Coordinators at the district level who were entrusted with the primary responsibility of reviewing the LSG DM Plans. This review was done so as to facilitate revisions and finalization of the plans in consultation with the LSGIS through KILA. While the LSG DM Plan Coordinators in the districts were expected to do a general review of all the plans in their respective district, the sector specialists at KSDMA were expected to examine the plans through the lens of their respective sectors such as:

- a. Agriculture
- b. Building Safety
- c. Hydrology
- d. Rural Development
- e. Urban Planning

## 2. Sectoral Review

Roughly 10% of the total number of LSG DM Plans i.e. 105 out of 1034 was to be reviewed sector-wise. The selection of plans was based on the recommendations of the LSG DM Plan Coordinators and it included a mix of different geo-climatic regions such as highland, midland and lowland (including coastal areas). The overall number of LSG DM Plans prepared and the number of plans reviewed, based on the type of LSG is given in the table below.

<b>OVERALL SUMMARY</b>			
<b>Sl. No.</b>	<b>Type of LSG</b>	<b>No. of Plans</b>	
		<b>Total</b>	<b>Reviewed</b>
1	Municipal Corporation	6	6
2	Municipality	87	16
3	Grama Panchayat	941	83
<b>Total</b>		<b>1034</b>	<b>105</b>

DM Plans of all Municipal Corporations (6 in number) were reviewed. As for Municipalities, at least one Municipality DM Plan per district for districts with less than 10 Municipalities and two Municipality DM Plans per district for districts with more than 10 Municipalities were reviewed adding to a total of 16 Municipality DM plans. Remaining number of plans reviewed i.e. 83 in number were Grama Panchayat DM plans. The district wise distribution of total number of plans prepared and the number of plans reviewed is given in the following table.

<b>DISTRICT WISE DISTRIBUTION</b>							
<b>Sl. No.</b>	<b>District</b>	<b>No. of Plans</b>					
		<b>Municipal Corporation</b>		<b>Municipality</b>		<b>Grama Panchayat</b>	
		<b>Total</b>	<b>Reviewed</b>	<b>Total</b>	<b>Reviewed</b>	<b>Total</b>	<b>Reviewed</b>
1	Thiruvananthapuram	1	1	4	1	73	6
2	Kollam	1	1	4	1	68	5
3	Pathanamthitta	0	0	4	1	53	5
4	Alappuzha	0	0	6	1	72	7
5	Kottayam	0	0	6	1	71	7
6	Idukki	0	0	2	1	52	4
7	Ernakulam	1	1	13	2	82	7
8	Thrissur	1	1	7	1	86	7
9	Palakkad	0	0	7	1	88	9
10	Malappuram	0	0	12	2	94	9
11	Kozhikode	1	1	7	1	70	6
12	Wayanad	0	0	3	1	23	2
13	Kannur	1	1	9	1	71	6

14	Kasaragod	0	0	3	1	38	3
<b>Total</b>		<b>6</b>	<b>6</b>	<b>87</b>	<b>16</b>	<b>941</b>	<b>83</b>

All sector specialists reviewed all Municipal Corporation and Municipality DM Plans whereas Grama Panchayat DM Plans (83) were divided among the 5 specialists.

This report is a compilation of the sectoral review done under the five sectors of agriculture, building safety, hydrology, rural development and urban planning. Each sectoral review consists of the following sub-sections:

1. Introduction
2. Gaps Identified and Recommendations
3. Training needs
4. Best Practices

The recommendations put forth in each sector of this report aims at improving the quality of the LSG DM plans as well as at strengthening the disaster risk management efforts of the LSG. Capacity building programmes to bridge the gaps identified have also been proposed in each sector. In addition, the section on Best Practices showcases initiatives that were successfully implemented in different places and the lessons to be learnt from them for adoption in the Kerala context.

The report also contains two annexures. The list of LSG DM Plans reviewed is added in Annexure 1. In order to facilitate capacity building programmes and extend technical support to LSGs if necessary, a sector wise institutional mapping was also carried out which has been given in Annexure 2.

## 1. Introduction

Sl. No.	Type of LSG	No. of Plans Reviewed
1	Municipal Corporation	6
2	Municipality	16
3	Grama Panchayat	17
<b>Total</b>		<b>39</b>
<b>Name of the reviewer:</b> Dr. Aswathy S. Nair, Agriculture Specialist (RKI)		

## 2. Gaps Identified and Recommendations

Sl. No.	Gaps	Recommendations
		<i>(Make sector-specific recommendations to improve disaster risk reduction and/or climate change adaptation at LSG level. Probable strategies or projects unique/applicable to a particular LSG may also be included.)</i>
1	Agriculture is not only a victim of disasters; risk-sensitive agriculture is part of the solution to improving disaster resilience. Farmers are direct custodians of the environment, the way they manage natural resources can prevent natural hazards from becoming crisis. So, ecosystem services at a particular provided by farmer should be acknowledged.	The good management practices done by the farmer towards disaster mitigation at the particular LSG should be identified and highlighted in DM plans.

2	It is critically important to integrate disaster risk reduction into agricultural sector and socio-economic development strategies.	It will be more convenient if all DM plans incorporate disaster risk reduction policies particularly focusing on agriculture sector.
3	Every DM should provide maps. The maps can be of landscape maps, soil type maps, major cropping pattern map, agriculture in hazard prone areas. Some DM plans are unable to provide the proper maps.	Disaster versus agriculture maps can be prepared.
4	Some plans identified hazards that pose risk to the agriculture sector and where timely interventions are needed. But the plans are not able to provide basic information on agriculture and how they get affected due to disasters.	All DM plans need to provide fundamental information on agriculture.
5	Chapter 4. The mitigation measures detailed are from general perceptiveness.	Over the last few years, Kerala has observed a significant trend of increased exposure to disasters, in particular to floods, droughts, lightening, pest and disease. So, the mitigation measures to agriculture sector should be very site specific and suiting the particular LSG.
6	Disaster management plans did not mention detail about impact monitoring system in agriculture.	Need to strengthen capacities for disaster impact monitoring in agriculture and need to mention about the same in DM plans.
7	DM plans did not cover about early warning systems or forecast model related to agriculture.	Detailed information on early warning system adopted in particular LSG and forecast model (if any) need to mention.
<b>Other General Suggestions, If Any</b> <i>(Include suggestions to improve the template as well as the overall quality of plans from the perspective of your sector)</i>		

1	The template can provide a table to furnish details on agriculture sector. That can be about area under cultivation, major cropping pattern, yield. It is better to provide a section to detail how agriculture got impacted due to disaster. As agriculture is one of the most sensitive sectors to climate change and other disasters, table showing detailed information of current data on agricultural crops and effect of disaster (agricultural drought, flood, coastal erosion) on crops - sector wise (type of crop, area of production, current production, history of vulnerability etc) especially in hazard prone area can be included.
2	Need to close the gap between information rich and information poor. All DM plans need to be more elaborate and clearer with respect to data regarding to agriculture.
3	Some DM plans did not follow the template (eg: Nilambur Municipality, Malappuram). All DM plans need to stick on the given format.
4	

### 3. Training Needs

Sl. No.	Theme	Target Participants	Objectives
1	Eco-friendly methods to rejuvenate agriculture in the disaster aftermath.  "Trichoderma multiplication units and compost preparation units".	Farmers	<ul style="list-style-type: none"> <li>To familiarize the farmers about Trichoderma and compost.</li> <li>Demonstrate the production technology of both.</li> <li>Make aware the farmers how this product could be helpful for the farmers in the disaster aftermath.</li> </ul>
2	"Community awareness programmes"	Extension workers	Need to update the extension workers about

			the updated technologies and practices to mitigate and to reduce the risk in disaster
3	Community Warning System	Public	Using any kind of warning system, the whole community need to be updated about weather forecast and the proper mitigation needs.

## Best Practices

### Wetlands - Protecting Life And Property From Floods

Floods are the most common and widespread of all-natural disasters. Federal Emergency Management Agency encourages the use of wetlands for stormwater detention and prevents from becoming a disaster.

#### Case study:

At Massachusetts in US, scientists had utilized wetlands in preventing flood damage. It was calculated that loss of all wetlands at Massachusetts would have caused an average annual flood damage cost of \$17 million during heavy downpour. The scientists concluded after studies that conserving and expanding wetlands was a natural, less expensive solution to control flood than the construction of dikes, dams and other practices and they proceeded to acquire 8,103 acres of wetlands in the particular area as a flood protection measure. (Source: U.S. Army Corps of Engineers – Charles River Natural Valley Storage Area)

Wetland Hydrology and Flood Control: Wetlands are transition zones between uplands and deeper water, unique ecosystems characterized by their hydrology, soils and vegetation. They function like natural tubs, storing flood waters that overflow riverbanks. In this way, wetlands can help protect property from flood damage.

The effectiveness of wetlands for flood abatement depending on the size of the area, type and condition of vegetation, slope, location of the wetland in the flood path and the saturation of wetland soils before flooding. A one-acre wetland can typically store about three-acre feet of water. Trees and other wetland vegetation help slow the speed of flood waters. This action, combined with water storage, can actually lower flood heights and reduce the water's destructive potential. (Source: EPA).

So, restoration and extension of wetlands could act as one of the best management plans in drought management.



## 1. Introduction

Sl. No.	Type of LSG	No. of Plans Reviewed
1	Municipal Corporation	6
2	Municipality	16
3	Grama Panchayat	17
<b>Total</b>		<b>39</b>
<b>Name of the reviewer:</b> Indu V, Architect (RKI)		

## 2. Gaps Identified and Recommendations

Sl. No.	Gaps	Recommendations
		<p><i>(Make sector-specific recommendations to improve disaster risk reduction and/or climate change adaptation at LSG level. Recommendations may be further categorized into Urban and Rural/ Highland, Midland and Lowland etc. as deemed appropriate to your sector. Probable strategies or projects unique/applicable to a particular LSG may also be included.)</i></p>
1	Tables most relevant to building safety such as 1.12, 1.16, 1.17, 1.18, 2.7, 3.5, 3.9, 4.3 and 5.3 are either incomplete or empty or the data given is inconsistent in some of the plans (e.g.: Disaster Management Plans of Thrissur Corporation, Alappuzha Municipality, Chavakkad	<ul style="list-style-type: none"> <li>This information is crucial for disaster risk management and hence these tables cannot be left empty or incomplete. For example, the risk faced by low income vulnerable settlements/ colonies is different from the risk faced by high rise apartments and hence both data are essential. LSGs must ensure that all these tables are filled after collecting</li> </ul>

	Municipality, Vatakara Municipality, Punnapra North, Kaaralam, Kannambra, Polpully, Koodali etc.)	<p>data from reliable sources and/ or verified through site inspections.</p> <ul style="list-style-type: none"> <li>• Buildings functioning as relief camps must be identified and checked for all basic necessities to ensure the safety and comfort of the evacuated people. Maintenance and repair works of these buildings should be done annually as part of monsoon preparedness.</li> <li>• Shelter Management Team must be formed and their details (such as name, age and phone numbers) included in the plan. This team is essential to ensure necessary facilities in relief camps during preparedness phase and for the effective management of camps during emergency phase.</li> </ul>
2	Table 1.16 contains the number of houses with thatched roof. However, no measures have been included in the plan to protect such buildings from disasters.	The houses with thatched roof require special attention during disasters. Upgradation of these homes (partly or fully) could be explored under existing government housing schemes. People living in these houses must be prioritised during preparedness and response phases.
3	In most of the plans, Chapters 4 and 6 lack preparedness measures, mitigation strategies and projects to improve building safety during disasters.	Inadequacies pointed out in tables 4.3 and 5.3 must be addressed in Chapters 4 and 6. These tables should inform the preparedness and mitigation measures to be taken (Chapter 4) and this information could also lead to projects (Chapter 6).
4	Absence of clear evacuation and response plans for Low income group/ colonies/ settlements and other vulnerable groups.	<ul style="list-style-type: none"> <li>• Table 1.18 ലോ ഇൻകം ഗ്രൂപ്പ്/ കോളനികൾ/ വാസസ്ഥലങ്ങൾ (Low income group/ colonies/ settlements) and Table 2.6 ഭൂമിശാസ്ത്രപരമായി ദുരന്ത സാധ്യതകളുള്ള പ്രദേശങ്ങൾ (Places susceptible to geological hazards) should be</li> </ul>

		<p>read side by side if names of the colonies are mentioned in 2.6. to identify the most vulnerable settlements.</p> <ul style="list-style-type: none"> <li>• Creating ward level geospatial maps of low income groups/ colonies/ settlements and other vulnerable households (see section 4.5.B of <i>Orange Book of Disaster Management 2- Monsoon Preparedness and Disaster Guidelines</i> available at <a href="https://sdma.kerala.gov.in/wp-content/uploads/2019/12/Orange-Book-of-Disaster-Management-2-2020.pdf">https://sdma.kerala.gov.in/wp-content/uploads/2019/12/Orange-Book-of-Disaster-Management-2-2020.pdf</a> for prioritised list of vulnerable households) to draft evacuation plans. This would streamline the response and facilitate prompt and informed decision making during disasters. This exercise could be taken up by DDMA by forming a temporary GIS cell with the help of technical educational institutions, NGOs, sannadhasena members with technical expertise and other volunteers.</li> </ul>
5	<p>Even though some of the plans have identified risks posed by specific regional hazards and pointed out issues caused due to their geo-climatic characteristics, the plans do not attempt to address such problems.</p>	<ul style="list-style-type: none"> <li>• <b>Coastal LSGIs</b> (e.g. Ponnani Municipality): The coastline which is prone to coastal erosion, storm surge, cyclone, tsunami etc. coupled with its vulnerable population requires special attention with regard to safe housing. The informal/ low income housing settlements along the coast needs to be mentioned in table 1.18 or as a separate section in the plan. People staying there are usually socio-economically vulnerable as well. Sensitive relocation plans may be suggested with due consideration to the livelihood of the residents.</li> </ul>

		<ul style="list-style-type: none"> <li>• <b>Low lying LSGIs and/ or LSGIs with rivers and backwaters prone to flooding:</b> <ul style="list-style-type: none"> <li>○ Houses in low lying flood prone areas must be given priority while evacuation and response.</li> <li>○ House owners must be oriented on structural and non-structural flood mitigation measures.</li> <li>○ Flood retrofitting of a public building could be undertaken as a pilot project and included in Chapter 6.</li> <li>○ LSGIs in the Kuttanad region should initiate technical studies with the help of DDMA to arrive at site-specific, sustainable and hazard resilient housing solutions. DM plan of Munroe Thuruth may be referred in this regard.</li> </ul> </li> <li>• <b>Hilly LSGIs:</b> <ul style="list-style-type: none"> <li>○ A Geologist/ geotechnical engineer along with the LSG engineer should inspect the sloping sites before construction begins.</li> <li>○ Cut and fill must be minimized and done scientifically. Retaining walls must be designed by a structural engineer.</li> <li>○ Community groups or residents associations could be formed to ensure that natural drainage channels along the slope are not blocked.</li> <li>○ Light weight and wind resistant building materials could be promoted to reduce the dead load the building exerts on the slope.</li> <li>○ Cooperatives like <i>kalavara</i> could be formed to purchase and store building</li> </ul> </li> </ul>
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		<p>materials in bulk so that transportation costs are reduced for individual consumers.</p> <ul style="list-style-type: none"> <li>○ Communication facilities must be ensured in hard-to-reach areas.</li> </ul>
6	<p>LSGIs with tribal population (e.g. Sulthan Bathery Municipality) have not proposed prioritised plans or projects catering to the tribal settlements.</p>	<ul style="list-style-type: none"> <li>● If thatched houses mentioned in table 1.16 belong to the members of any tribal community, their preferences must be considered and interventions to strengthen these houses must be sensitive to their requirements without compromising the safety of the inhabitants.</li> <li>● People living in these houses must be prioritised during preparedness and response phases. Mapping of all tribal colonies and preparation of evacuation plans could be another project to prioritize vulnerable sections.</li> <li>● Representatives from tribal communities must be included in ERTs as well.</li> </ul>
<b>LSGI-specific inputs</b>		
7	<p>Thrissur Corporation: Projects under Chapter 6 of Thrissur Corporation DM Plan has been given in the annexure and not in the main body of the plan.</p> <p>The projects about building safety are limited to renovation of an existing building used as relief camp and constructing a disaster center.</p>	<ul style="list-style-type: none"> <li>● Projects given in annexure are to be added to Chapter 6.</li> <li>● Page no. 89, Division no. 39, Project no. 1 and Page no. 92, Division no. 43, Project no. 1: A structural engineer should be consulted if the said rubble wall is a retaining wall.</li> <li>● Page no. 107, Division no. Vilvattom Zonal (Div. 4, 5, 6, 7, 8, 9, 11), Project no. 6: Instead of just renovating or carrying out repair works, this project could be turned into a pilot in Rapid Visual Screening (RVS) and retrofitting. Since it is an engineering college,</li> </ul>

		<p>this could be a hands-on learning experience for the faculty and students of civil engineering and architecture departments.</p> <ul style="list-style-type: none"> <li>• Page no. 109, Division no. Vilvattom Zonal (Div. 4, 5, 6, 7, 8, 9, 11), Project no. 21: This is a good project. This disaster center needs to be designed as a multi-purpose shelter so that it is functional during normal times also. This would also help in generating revenue. The shelter management team should be involved in the process.</li> </ul>
8	<p>Kozhikode Corporation: Plan points out densely populated areas and cramped settlements as a challenge in the SWOT analysis. However, it does not propose any solution to tackle this issue.</p>	<p>These challenges need to be addressed in chapter 4 and 6. Measures to mitigate the exacerbating effects of hazards in densely populated areas need to be proposed. These can be a combination of structural measures (eg: Use of fire resistant materials for construction and avoiding materials such as thatch, tarpaulin sheets etc.) and non-structural measures (eg: conducting regular mock drills etc.). Measures to ensure strict compliance of fire safety codes must be adopted. Fire safety systems must be installed.</p>
9	<p>Punalur Municipality:</p> <p>Located along the banks of the Kallada river, the LSGI should arrive at measures for flood mitigation and document the same in the DM plan.</p> <p>Secondly, even though the LSGI often records the highest temperatures in the state, the plan does not propose any solution to reduce the urban heat island effect.</p>	<ul style="list-style-type: none"> <li>• It has been mentioned in page no. 35 under "ദുരന്ത സാധ്യതാ പ്രദേശങ്ങൾ" that hundreds of families reside along the banks of Kallada river and its tributaries and that their houses face the risk of flooding. If it is an annual occurrence and if measures like cleaning the water bodies do not help, these houses need to be flood retrofitted. Appropriate relocation plans may be drafted for Kutcha houses.</li> </ul>

		<ul style="list-style-type: none"> <li>• Since Punalur often records the highest temperatures in Kerala, <ul style="list-style-type: none"> <li>○ Unburnt mud construction techniques (compressed stabilised earth blocks, rammed earth, adobe blocks etc.) and building materials like clay bricks, terracotta blocks, natural stones (eg: laterite), timber etc. are preferred over cement based construction blocks as the former reduces heat gain.</li> <li>○ Glazing in buildings needs to be reduced as it traps heat inside and increases the cooling load.</li> <li>○ Provide adequate sunshades and roof overhangs to reduce heat gain.</li> <li>○ Reflective wall paints of light shades can also help in heat reduction.</li> <li>○ Concrete paved surfaces which aggravate the urban heat island effect should be kept to the minimum. Permeable pavements may be used wherever necessary as it has the added advantage of allowing water percolation.</li> <li>○ Promote planting of trees around buildings.</li> <li>○ Include projects to promote rainwater harvesting in all buildings: <ul style="list-style-type: none"> <li>- Mechanisms to ensure compliance of KMBR</li> <li>- Create awareness among different stakeholders</li> </ul> </li> </ul> </li> </ul>
10	Perumbavoor Municipality: Even though a migrant labourer hub, this Municipality's plan makes no	The details about the housing settlements of migrant workers may be included in table 1.18 or as a separate section in the plan. It is essential to

	mention of this sizable population and their settlements.	address this community from the perspective of disaster risk management and come up with inclusive strategies for preparedness and mitigation.
11	<p>Nilambur Municipality: As an LSGI which is prone to multiple hazards and is also socio-economically vulnerable due to its tribal population, the plan has not examined these in detail. Appropriate preparedness and mitigation measures have not been proposed.</p>	<ul style="list-style-type: none"> <li>• Nilambur is prone to floods as well as slope failures. Rains in Wayanad hills can affect this LSGI. Information such as the history of disasters and regional hazards is very important. Forest fire and human-animal conflicts have also been reported here. Wards prone to these hazards and relief camps in these wards need to be identified and documented in the plan.</li> <li>• Nilambur also has tribal population living in colonies and inside forests. Their settlements need to be mapped. DRM strategies must prioritise such vulnerable groups.</li> </ul>
12	<p>Munroe Thuruth Grama Panchayat: Even though one of the best plans, the LSGI could explore more in terms of building safety.</p>	<ul style="list-style-type: none"> <li>• Chapter 4 has given special emphasis on the need for hazard resilient and environment friendly house construction and also provides details of context specific design models. This is a commendable achievement unmatched by any other LSGIs.</li> <li>• Due to variations in the water level and the soil type, buildings have been developing cracks and settling. Raised foundations and lightweight building materials could be a solution to this. Coconut piles could be a sustainable way of compacting soil.</li> <li>• Ways to utilize the abandoned houses may be thought of. Technical studies could be conducted in this regard. Reuse of building</li> </ul>



		materials, adaptive reuse of buildings and retrofitting could be explored.
<b>Other General Suggestions, If Any</b> ( <i>Include suggestions to improve the <b>template</b> as well as the overall <b>quality of plans</b> from the perspective of your sector</i> )		
1	<p>The template is silent on aspects like universal access (non-slippery ramp with handrails, tactile tiles, differently abled friendly toilets etc.), fire safety and lightning safety of buildings that are identified to be used as relief camps. Columns may be added to ensure these aspects in the tables 1.12, 4.3 and 5.3 which document the various facilities in such buildings. A column on the presence of communication facilities also may be added to these tables.</p> <p>It is seen that in some of the plans (e.g. Punnapra North Grama Panchayat, Polpully Grama Panchayat etc.) the columns of toilets/ bathroom and kitchen have been merged and a single answer is given for both. Availability of these two facilities should be documented separately in the table.</p>	
2	<p>Since the plans were prepared during pre-COVID-19 times, the pandemic has not been factored-in in the plans.</p> <ul style="list-style-type: none"> <li>As specified in the <i>Annexure 3 of the Orange Book of Disaster Management 2-Monsoon Preparedness and Disaster Guidelines</i> (available at <a href="https://sdma.kerala.gov.in/wp-content/uploads/2019/12/Orange-Book-of-Disaster-Management-2-2020.pdf">https://sdma.kerala.gov.in/wp-content/uploads/2019/12/Orange-Book-of-Disaster-Management-2-2020.pdf</a>) the LSG should identify 4 types of buildings for relief camps to ensure the containment of COVID-19 during disasters. The list of the same needs to be included in the LSG DM Plan and also submitted separately to the DEOC.</li> <li>Rapid Safety Audits must be conducted in the COVID-19-specific facilities of hospitals (G.O., guidance note and checklist available at <a href="https://sdma.kerala.gov.in/wp-content/uploads/2021/05/Rapid-Safety-Audit-GO-May-21.pdf">https://sdma.kerala.gov.in/wp-content/uploads/2021/05/Rapid-Safety-Audit-GO-May-21.pdf</a>) to primarily mitigate the risk of fire hazards due to oxygen leakage, electrical malfunctioning and other reasons.</li> </ul>	
3	<p>Unlike schools, hospitals do not undergo annual audits as a critical life line building. Safety audits must be conducted in every hospital on a regular basis (preferably annually like in schools) to ensure that hospitals are fit for operation during normal times as well as during disasters. DM plan should carry a list of hospitals that are certified fit for</p>	

	operation. Rapid Visual Screening (RVS) of hospitals would best serve the purpose of ensuring structural safety of the hospital buildings during disasters.
4	Plans seem to lack technical inputs from the perspective of building safety. LSG Engineers need to be included in the process of plan preparation as it would help in technical assessment of building conditions and in turn facilitate better project formulation.
5	Generally, there seems to be a disconnect between the situational analysis (Chapters 1,2,3), resource inventory, specifically the SWOT analysis (Chapter 5), and the preparedness, mitigation measures (Chapter 4) and projects (Chapter 6). Chapter 4 and 6 should draw inferences from the previous chapters while suggesting preparedness and mitigation strategies as well as projects. The projects pertaining to augmenting the facilities at the buildings identified as relief camps and to strengthen those buildings structurally have been included only in a handful of plans.
6	Some of the plans such as that of Kollam Corporation, Angamali Municipality, Nilambur Municipality etc. do not follow the template. Some plans such as that of Angamali Municipality, Ponnani Municipality, Azhiyur Panchayat etc. have used different formats for tables. In some plans like that of Kochi Corporation, ward-wise data has been given in the main body of the plan and not in the annexure. The main body of the plan should contain only the summary of the data i.e. the total numbers at LSG level.  Providing data and documenting information in a uniform template would be beneficial for DDMA's to consolidate information at the district level.

### 3. Training Needs

Sl. No.	Theme	Target Participants	Objectives
1	Rapid Visual Screening (RVS) for Disaster Risk Reduction in Buildings. (Classroom sessions combined with on-site pilot)	<ul style="list-style-type: none"> <li>• LSG Engineers</li> <li>• Other stakeholders: <ul style="list-style-type: none"> <li>○ Concerned government department (For e.g. Department of General Education in case of a school building)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• To enable LSG Engineers to do basic vulnerability assessment of public buildings through Rapid Visual Screening methods and thereby ensure resilient critical lifeline buildings.</li> </ul>

	exercise in a government building)	<ul style="list-style-type: none"> <li>○ Professional bodies such as the Institution of Engineers, Indian Institute of Architects etc. and professionals such as civil engineers and architects of the LSG</li> <li>○ Technical Education Institutions (Departments of Civil Engineering, Architecture)</li> </ul>	<ul style="list-style-type: none"> <li>● To help the participants make informed decisions about building maintenance/ renovation/ retrofitting.</li> </ul>
2	Rapid audit of buildings that are identified to be used as relief camps	Shelter Management Team of the ERT	<ul style="list-style-type: none"> <li>● To create awareness among the members of shelter management team about the minimum standards of facilities to be provided in relief camps.</li> <li>● To enable them to ensure basic safety in the building and its premises by doing a basic vulnerability assessment.</li> </ul>
3	Hospital Safety and Hospital RVS	LSG Engineers and Hospital RRT members	<ul style="list-style-type: none"> <li>● To enable LSG engineers to do yearly safety audits of hospitals so as to identify gaps and take necessary actions for disaster risk reduction.</li> <li>● To create awareness among the hospital RRT members on the red flags of structural threats to the building.</li> </ul>

4	Retrofitting for hazard resilience	LSG Civil Engineers  (Professionals such as civil engineers and architects of the LSG may also be included)	<ul style="list-style-type: none"> <li>• To sensitize LSG Civil engineers on the need for retrofitting for disaster risk reduction in buildings.</li> <li>• To create awareness among LSG Civil engineers on the retrofitting measures to be adopted to strengthen public as well as private buildings (such as residences).and equip them in suggesting retrofitting measures to the public.</li> </ul>
5	Mock drills in all apartments:  a. Fire mock drill  b. Earthquake mock drill	Residents' Associations including building owners, tenants, security personnel and housekeeping staff.	<ul style="list-style-type: none"> <li>• To create awareness among residents on the importance of fire and earthquake safety in multi-storey buildings.</li> <li>• To prepare them for effective response and evacuation in the eventuality of fire or earthquake in their apartment.</li> <li>• To make necessary modifications or additions to improve the fire and earthquake safety of the building and its residents.</li> </ul>

6	Setting up emergency temporary shelters and latrines.	Shelter Management Team of the ERT, Residents' Associations/ Neighbourhood groups	<ul style="list-style-type: none"> <li>• To familiarize the participants with the erection and maintenance of emergency temporary shelters and latrines.</li> <li>• To inculcate self-reliance and reduce the dependency on external help during disasters.</li> </ul>
7	Multi-hazard resilient and sustainable construction practices	<ul style="list-style-type: none"> <li>• Masons including women masons teams under Kudumbashree, site supervisors, engineers, architects and contractors of the LSG</li> <li>• Other stakeholders: <ul style="list-style-type: none"> <li>○ LSG Engineering</li> <li>○ Shelter Management Team of the ERT</li> <li>○ Professional bodies such as the Institution of Engineers, Indian Institute of Architects etc.</li> <li>○ Technical Education Institutions (Departments of Civil Engineering, Architecture)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• To train participants in multi-hazard resilient construction practices that are cost-effective and environment friendly.</li> <li>• To inculcate an orientation towards sustainable living.</li> <li>• To create a registry of trained professionals in the LSG.</li> </ul>

## Best Practices

### 1. Pradhan Mantri Aawas Yojana- Urban (PMAY-U) Housing For All Mission- Scheme Guidelines, January 2021

The PMAY-U scheme guidelines 2021 (available at <https://pmay-urban.gov.in/uploads/guidelines/60180813309f2-Updated%20guidelines%20of%20PMAY-U.pdf>) explicitly specify the need for inclusion of disaster resilient construction in housing. The format/ checklist for all the 4 different verticals under the mission (i.e. In-situ Slum Redevelopment, Affordable Housing Through Credit Linked Subsidy, Affordable Housing in Partnership and Subsidy for Beneficiary-Led Individual House Construction or Enhancement) includes the question “Whether disaster (earthquake, flood, cyclone, landslide etc.) resistant features have been adopted in concept, design and implementation of the project? Details thereof.”

State level housing schemes under the LIFE Mission should also include such a clause in their guidelines to ensure that all new houses constructed under the scheme are disaster resilient. LSG engineers must ensure compliance of the same.

## 2. Rapid Visual Screening (RVS) of Critical Lifeline Buildings

- **Thiruvananthapuram Municipal Corporation:** As part of the *Hazard and Vulnerability Assessment Report of Thiruvananthapuram City, Kerala 2016* (available at <https://sdma.kerala.gov.in/wp-content/uploads/2018/11/HVATvm2016.pdf>) a rapid visual screening of 378 public buildings including schools, higher educational institutions, hospitals, government institutions and other public buildings was conducted. A simple, pragmatic and replicable RVS method was employed with a set of 10 criteria (safety equipment, accessibility for water tenders around the building, evacuation routes, early warning systems, occupancy, accessibility of emergency services to the building, damageability of buildings, electrical insulation, storage of fuel, accessibility to medical facilities) to categorize buildings into highly vulnerable, moderately vulnerable and least vulnerable. Based on the absolute number of public buildings evaluated using RVS per ward, the wards were categorized into high, moderate and low vulnerability.
- **Tripura:** *Rapid Visual Screening (RVS) of Schools in Tripura* (available at <https://tdma.tripura.gov.in/sites/default/files/Report-RVS%20in%20380%20schools%20in%20Tripura.pdf>) and the *Report on Rapid Visual Screening of Twenty Schools in Tripura* (available at <https://tdma.tripura.gov.in/sites/default/files/rvs.pdf>) are two good reports on RVS of school buildings. The former report contains the recommendations to improve the hazard resilience of buildings in 378 schools of the state while the latter also carries the format for conducting RVS exercise. The methodology for RVS varies according to the type of construction of the building.

The methodologies used in the above two cases could be adapted and used in LSGIs by the LSG engineers while carrying out the safety audits of schools annually.

## 3. Mapping of Slums in Pune City

Using geospatial techniques such as Remote Sensing and Geographic Information System (GIS) technique, the slums of Pune Municipal Corporation were identified and mapped by N. Mundhe of International Institute for Population Sciences (IIPS), Mumbai and

Department of Geography, Sir Parashurambhau College, Pune. The different kinds of maps generated are available at <https://www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XLII-5-W3/57/2019/isprs-archives-XLII-5-W3-57-2019.pdf>.

Such mapping techniques if employed in LSGIs with slums, low income colonies, tribal settlements etc. would help in converting the existing non-spatial data into spatial data. This would be extremely useful for decision making during disasters and for adopting preparedness and mitigation measures.



## 1. Introduction

Sl. No.	Type of LSG	No. of Plans Reviewed
1	Municipal Corporation	6
2	Municipality	16
3	Grama Panchayat	17
<b>Total</b>		<b>39</b>
<b>Name of the reviewer:</b> Lekshmi Vijayachandran, Hydrologist (RKI)		

## 2. Gaps Identified and Recommendations

Sl. No.	Gaps	Recommendations
		<p><i>(Make sector-specific recommendations to improve disaster risk reduction and/or climate change adaptation at LSG level. Recommendations may be further categorized into Urban and Rural/ Highland, Midland and Lowland etc. as deemed appropriate to your sector. Probable strategies or projects unique/applicable to a particular LSG may also be included.)</i></p>
1	It is seen that most of the recommendations given under chapter 4 are limited. Water recharging measures can be included in those regions which are more prone to drought.	Basically, a Hydrological and water resources sector plan shall include the basic details of the water bodies (both natural and artificial), their storage capacity, rainfall/precipitation values, land use cover, groundwater sources (tube wells/open dug wells), reservoirs and their

		storage capacity, artificial flood mitigation measures. The template provided here can include some of these parameters for analysing and understanding a hydrological situation.
2	The Template shall consist of classifying the water sources(artificial/natural) such as potable, domestic, industrial, irrigation, that is usage and allocation of water in the region shall be included.	The first chapter of the DM plan shall include all the basic data of the region (Panchayat/Municipality/Corporation), such as irrigation, hydro-electricity projects, wells, canals, drainage in data, in detail. The template given here considers the number of water bodies, area and the current condition of the same. Additionally, we can consider the location, age, water levels and its frequency of usage and number of households depending on the same.
3	Every DM plan should contain a flood prone map, drought prone map and landslide vulnerability map .It was seen that some of the maps were missing in the individual DM plan.	Elaborate maps can be prepared such as watershed map, flood proneness map, landslide proneness map, drought prone map with proper legend and specifications shall be given the DM plan.
4	The chapter 4 basically includes recommendations pertaining to a disaster management plan. The hydrological recommendations can be more region specific. The recommendations given were more generalised.	More specific rejuvenation techniques/renovation measures can be included in the chapter 4, particularly with regard to a sector, rather than being generalised.
5	It was seen that some of the maps included in the plan were added at the last portion of the DM plan. It would be better,	River rejuvenation measures, if any, shall be included in the DM plan. Any renovation/recharging measures for the

	if the maps are added in the first or second chapter.	watershed/basins can be included under separate heading.
6	Early alert system based on a Hydrological model output shall be developed and the same can be included under recommendations (Chapter 4).	Proper medication facilities, emergency shelters for human and animals, rescue training programmes in some of the DM plan are found to be not appropriate. This shall be corrected.
7	Most of the hydrological recommendations in the DM plan consisted almost similar strategy, irrespective of the terrain/weather parameters. This also shall be rechecked and can be more specific.	As per the characteristics of the topography and terrain of a region, the recommendations shall be more area specific in terms of its hydrological parameters.
8	Some of the DM plans were found out to be lagging in data with respect to maps (vulnerability, watershed, geographical) as well as the information regarding the emergency and rescue team, irrigation/drainage systems and infrastructure.	Certain recommendations relating to surface and subsurface sources of water, their storage capacities, their water levels and hydrological details such as depth below ground level, age, discharge capacity can be included in the plan under the heading Water Resources.
<b>Other General Suggestions, If Any</b> <i>(Include suggestions to improve the template as well as the overall quality of plans from the perspective of your sector)</i>		
1	The DM plan can be more elaborate and clear with respect to the data regarding the watershed of a locality, its adjoining rivers/streams. Separate details for each and every water body shall be included.	
2	The maps can be more enlarged with more precise legend and its related specifications.	
3	Any particular river rejuvenation techniques/schemes with respect to a particular region shall also be included.	

4	The data regarding the rescue team, emergency shelters for humans and animals, emergency warning system/help line system and training aids should be given due importance in all the DM plans.
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### 3. Training Needs

Sl. No.	Theme	Target Participants	Objectives
1	Emergency Plan	Every Household	Each and every household should be given a proper emergency plan to overcome a disaster. This shall in turn highlight the importance /severity of a catastrophe rather than mere negligence.
2	Community Warning System	Community/ Public as a whole	Radio and television stations shall provide information on evacuation routes, temporary shelters, and other emergency procedures. Depending on the situations, protective actions can be adopted.
3	Disaster and Emergency Training Course(Online Platform)	Youth	This method can also be one effective method in preparation of a disaster. Particularly this course can be targeted for the budding section of the society since they have more affinity towards the digital zone. Nevertheless. this can be extended to middle age section of the society as well.

4	Emergency Response and Preparedness Plan	Women and Children	Proper planning measures and response techniques and training shall be provided to both women and children. Efficient courses shall be provided to them regarding the outcomes of a disaster such as worsening of chronic disease, waterborne disease, Vector-borne disease, epidemics and mental health concern.
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## Best Practices

### 1. Bhungroo – Ground Water Injection Well

Place of Implementation: Gujarat

Implementation Agency: Govt. of Gujarat

Bhungroo is an efficient water management system, adopted in Gujarat (Implemented by Govt. of Gujarat), involves injection and storage of excess rainfall water underground. This particularly helps to meet water shortage during dry spells. The non-saline rainwater when mixed with the underground saline water brings down the salinity of the groundwater, making it fit for domestic use. The farmers were trained in installation of Bhungroo units. Installation of piezometer was also done for water level monitoring on a day-to-day basis. This technique can be replicated in other parts of country for groundwater recharge as well as continuous water supply.

### 2. Mazhapolima Initiative

Place of implementation: Thiruvilwamala Gram Panchayat

Implementing agency: Thrissur District Administration, Kerala

The Thrissur District Administration along with various NGOs working in Kerala established an artificial groundwater recharge program called Mazhapolima, a system in which, the rooftop rain water is led through pipes with sand filter at the end, to open dug well to replenish the subsurface aquifer during monsoon. This technique subsidises to poorer households especially in areas of overexploited groundwater sources and areas of high salinity. When such multiple wells are recharged in an area, the groundwater table goes back up and continuous provision of water can be made available. This model can be replicated and adopted in anywhere in Kerala.

### 3. Birkha Bawri, Jodhpur

Place of implementation: Jodhpur, Rajasthan

Implementing agency: Umaid Heritage Real Estate

To overcome the problem of acute water shortage in Umaid Heritage Site (a private township in Jodhpur), a Rain Water Harvesting (RWH) system was developed inside the housing complex. The As the name suggests, Birkha Bawri is a structure which draws water from

traditional step wells in the region and also catches rainwater from the catchment area. Apart from storage and conservation of rainwater, the project also highlights sustainable storm water management in the housing complex, as it collects runoff and minimizes water logging in the area. The rainwater is collected from open areas through natural slopes as well as from the roof top of the house.

#### **4. Bulk Metering System, Bangalore**

Place of implementation: Bangalore

Implementing agency: Bangalore Water Supply & Sewerage Board

This case involved initiatives by the Bangalore Water Supply and Sewerage Board to install bulk meters at important locations and to develop an ICT application (Information and Communication Technology) to capture information from these meters to improve the water supply infrastructure. Flow meters were installed at critical locations including inlet and outlet of all Ground Level Reservoirs and Elevated Service Reservoirs and on feeder mains which feed water directly to the distribution network. All the meters were used to aid data collection. A specific quantity of flow was assigned to a meter based on the requirement of service area and water availability and an alarm was triggered if the flow would go above or below the set limit to monitor and alter the flow. This technology can be adopted in Kerala, in order to improve the water supply system, particularly during any hazard times.

#### **5. Hiware Bazar, Maharashtra**

Place of implementation: Maharashtra

Implementing agency: Yashawant Krishi Gram and Watershed Development Organization

Under this watershed development program, specific steps were taken like implementation of artificial recharge structure, contouring on hill top, structures to store water and proper distribution channels, and shift in the conventional cropping method was also adopted by the farmers. Besides, deforestation and grazing were also banned. The funds were generated with the help of several agencies to make it a successful intervention. As a result, there was a significant rise in the groundwater level and increase in surface water availability. This is a favourable system which can be modelled in Kerala to reduce the exploitation of groundwater resources.

## 1. Introduction

Sl. No.	Type of LSG	No. of Plans Reviewed
1	Municipal Corporation	6
2	Municipality	16
3	Grama Panchayat	16
<b>Total</b>		<b>38</b>
<b>Name of the reviewer:</b> Tinoj John, Rural Development Specialist (RKI)		

## 2. Gaps Identified and Recommendations

Sl. No.	Gaps	Recommendations
		<p><i>(Make sector-specific recommendations to improve disaster risk reduction and/or climate change adaptation at LSG level. Recommendations may be further categorized into Urban and Rural/ Highland, Midland and Lowland etc. as deemed appropriate to your sector. Probable strategies or projects unique/applicable to a particular LSG may also be included.)</i></p>
<b>People/Community Participation and Human Resource</b>		
1	Methodology suggests a transect walk and public participation on the ground by the experts and local representatives. But this seems to be missing in the majority of the plans.	<p>A bottom-up approach was needed in the initial stages of plan preparation.</p> <p>The participation of all people should be ensured at all stages of disaster</p>



		management plan preparation. The methods including transect walk and focus group discussion which is already mentioned in methodology should be used
2	Ward level details are not available in most of the plans. Many plans do not have the information to be collected and the tables to be prepared on a ward basis	Ward wise information should be collected and recorded accurately. Recording the source of information will increase its reliability. It should be done compulsorily.
3	The history of disasters in past 5-10 years are missing in most of the plans	Experience and knowledge of elder persons of the local area in disaster management should be utilized while preparing DM plan at LSG level. Details on listed disasters, local disasters, recurring periodicity of disaster, etc should be collected through transect walk, focus group discussion with the help of elder people from the locality.
4	Plans lack a clear idea on what are the roles and responsibilities of ERT members. The ward wise data listing of the members is also lacking in various DM plans. Many of them do not have the minimum number of members in ERTs formed	Make sure each emergency response team includes more people who are experienced in the concerned field and provide necessary training for them. Also collect the contact numbers of the person those who are involved in the Emergency response teams
5	The list of ERT members and contact numbers provided are not sufficient to manage a disaster. Emergency contact numbers, their responsibilities, details of volunteers are missing in most plans	

Health Care, Education and Capacity Building/ Social Awareness		
6	Section 1.6 is for information on health care institutions and the available facilities. However, except the names of hospitals and some information, details about the infrastructure and available facilities is not included in the plans	Details of health care institutions, schools should be collected. Based on these details the projects can be formulated to fill the gaps and carry out the necessary urgent construction
7	The plans do not explain how social awareness can be done through organizations and departments which can intervene at local level	<p>Identify educational institutions at ward level and identify the nearest institutions in disaster prone areas and take necessary precautionary measures</p> <p>Identify the facilities of healthcare institutions, and prepare plans to provide facilities required to fill the gaps</p> <p>Trainings should be provided on listed and non listed disasters to the people those who are become a part of disaster management plan preparation</p> <p>Necessary training should be imparted to analyze and understand the maps prepared and provided by KSDMA to the people those who are involved in project preparation</p> <p>Find out and suggest within the limits of local body how to conduct social</p>

		awareness and through which organizations and departments can conduct
<b>Infrastructure and Housing</b>		
8	Information on roads, bridges and houses, existing areas of colonies, irrigation facilitates and natural water bodies should be collected at ward level. Based on such information, immediate attention can be drawn to the needed for urgent reconstruction, repair, as well as prepare disaster mitigation plans. But such information is not available.	Disaster mitigation plans should be prepared and identify Urgent reconstruction should be needed on the basis of data provided in section 1.9, such as roads, bridges, details of habitats, colonies, irrigation facilities and natural water bodies etc.
9	Information on disaster prone areas, geographical vulnerabilities, public buildings and households located in disaster prone areas are not mentioned in the plan properly	List out public buildings and houses in disaster prone areas, and prepare suitable evacuation and rehabilitation plans and projects.
<b>Economic Status, Employment and Livelihood</b>		
10	Section 1.4 deals with the economic details of the people. The information provided on the basis of ration cards will help to identifying the areas / wards where the economically weaker sections are located and also it will help to prepare the necessary disaster mitigation plans based on it. But such information has not been accurately collected or analysed	Collect proper data and prepare effective evacuation plans for people, livestock, public institutions  Formulate suitable rehabilitation and relocation, insurance schemes for livestock in a manner that does not lead to the loss of livelihood

11	Information on flood appropriate evacuation plans for people, cattle and other livestock etc. is presented to a very limited extent	To reduce the damage to the crop and avoid financial loss, LSG department should be arranged a consultation of farmers along with senior farmers in the area and officials from agricultural department.  Consider the income generation programmes and projects while preparing climate oriented disaster mitigation plans. Include MGNREGs workers in these programmes
12	Livelihood activities are also intervened with geographical characteristics. So that, this may also affected by the disasters. But it does not seem to have been considered in the plans like agriculture, fisheries, livestock etc.	
<b>Vulnerable and Special Attention Needed Population</b>		
13	Transgender details could not be found in any plans	Ward level data should be collected on persons those who need special attention, should be prepared plan for them on a priority basis
14	Only little information is available in the categories that need special consideration at the ward level.	Include the LSGs where the information of transgenders is available and make them part of the plan formulation  Involvement should be ensured from vulnerable community, such as transgenders, women, children, aged, scheduled caste and tribes, economically weaker, etc and consider their needs and
15	There is a lack of gender balance and representation from all the vulnerable	

	sections in most of the ERTs across the LSGs	wants in disaster mitigation plan formulation  Gender balance and representation of vulnerable sections in ERTs should be ensured  Prepare necessary evacuation and rehabilitation plans by identifying the areas where the economically weaker sections are and their vulnerability to disaster
<b>Resource Identification and Management</b>		
16	The resources, equipments, vehicles, other capacities in the panchayat have not been fully identified. It did not indicate the availability of the required resources according to the geographical feature of the local body and did not suggested the necessary remedial measures to fill the gaps	Examine the availability of resources for disaster management, according to the geographical features of the local body and suggest necessary remedial measures. Propose project to purchase resources needed
<b>Other General Suggestions, If Any</b> <i>(Include suggestions to improve the template as well as the overall quality of plans from the perspective of your sector)</i>		
1	Fill in the template accurately and prepare a plan based on the topography, and disaster potential of the local body	
2	Identify the strengths and weakness of the panchayat and analyse the threats and opportunities with the help of public, NGOs, elected representatives, farmers, representatives from vulnerable population etc	

3	Indicate how the project proposals provided will help in disaster mitigation, how, for how long, for what department, at what cost and what are the positive changes it will bring to the society
4	Man-made disasters also need to be incorporated in DM Plan with the guidance of experts from areas like CBRN, road safety, health department etc. Give provision to include the details of the areas of mass gatherings in the DM Plan
5	In hilly areas, to create awareness among the people about the cause of landslides, how to deal with landslides, what farming methods to adopt etc. Take necessary steps to control illegal mining and quarrying in hilly areas with the help of local people. Train people and ERT members in landslide prone areas on what are the signs which can be identified before a landslide. Make people aware of what needs to be done immediately after seeing signs of landslides
6	Take necessary steps to promote cultivation practices including paddy cultivation to prevent drought by ensuring water conservation. Prepare and implement rainwater harvesting schemes and make people aware of the need for rainwater harvesting.
7	Strict monitoring of industries established at banks of river, streams and other water bodies. Prepare and implement industrial disaster mitigation activities.
8	Discuss and implement at the local body level the measures required to combat coastal erosion and to reduce losses

### 3. Training Needs

Sl. No.	Theme	Target Participants	Objectives
1	Disaster management orientation	All LSGD staff, Elected representatives, Volunteers, Other concerned officials, Working Groups for DM Plan in LSG's	Have an idea about basics of disaster management

2	Disaster Management Plan preparation and disaster mitigation project proposal	LSGD Secretaries, Other concerned officials, Elected representatives, Working Groups for DM Plan in LSG's	Enable concerned authorities to prepare an effective DM plan and propose new and innovative projects based on risk and vulnerability assessment
3	First aid & Basic Life Support	Elected representatives, Volunteers, drivers, employees from various government and non government institutions	Prepare for unforeseen situation & To enhance the practical knowledge on Basic Life Support
4	Waste Management	Haritha Karma Sena	To ensure an effective waste management during post-disaster scenario.
5	Incident response system	LSGD officials, Elected representatives	To ensure there is effective risk communication during a emergency and during a disaster. This also enables a smooth administrative and hierarchical functioning of the system.
6	Mock Drills	Volunteers, Educational Institutions	To train the people on rescue operation and to enhance practical

## Best Practices

### **964 checkdams constructed in Parappa Block Kasaragod, under the Employment Guarantee Scheme**

964 temporary check dams constructed in Parappa block panchayat under Mahatma Gandhi National Employment Guarantee Scheme (MGNREGS). Check dams are being constructed in the panchayats as a special campaign. The target is to construct 2000 temporary check dams in the next year. The implementation of MGNREGS in the Gramapanchayats of Parappa Block is progressing with special focus on water conservation and drought mitigation activities.

(Source: <https://prd.kerala.gov.in/ml/node/110535> dated 28.01.2021)

The above given is the news which is taken from PRD website of Kerala Government. Such creative interventions help to reduce the drought in the area and also it may lead to the increase in ground water level by storing rainwater in these check dams. It will help to increase people's employment opportunities and ensure income. This will also lead to improvement in the standard of living of people those who are involved in MGNREGS including women. The intervention led by the Parappa block is a model for other panchayats.

			knowledge about the disaster.
7	Coastal hazards	Coastal LSG's	To give an awareness about the vulnerability of coastal areas
8	Emergency response training	ERT Members	To have firsthand experience in emergency response.





## 1. Introduction

Sl. No.	Type of LSG	No. of Plans Reviewed
1	Municipal Corporation	6
2	Municipality	16
3	Grama Panchayat	16
<b>Total</b>		<b>38</b>
<b>Name of the reviewer:</b> Reshma T. Vilasan, Urban Planner (RKI)		

## 2. Gaps Identified and Recommendations

Sl. No.	Gaps	Recommendations
		<i>(Make sector-specific recommendations to improve disaster risk reduction and/or climate change adaptation at LSG level. Probable strategies or projects unique/applicable to a particular LSG may also be included.)</i>
1	Lack of data	Ground-level preparation with Community participation
2	Gaps in project formulation	Consider the disaster proneness of the locality, while formulating project proposals.  Also, should consider the vulnerable group in disaster mitigation measures and project formulation

3	Data on the structural stability of the buildings are missing in this plan	<p>The proper methodology should be done to check the structural stability of the existing building(like RVS)</p> <p>Proper training should be given to the ERT(Shelter Management) to ensure necessary facilities in relief camps</p>
4	Hazard Analysis – Tools and Techniques	<p>It refers to prioritizing disasters based on its frequency and analysis of the estimated losses.</p> <p>Tools for hazard analysis:</p> <ul style="list-style-type: none"> <li>• Hazard Mapping</li> <li>• Historical Profile or Timeline</li> <li>• Seasonal Calendar</li> </ul>
5	Vulnerability Analysis: Tools and Techniques	<p>The process of vulnerability analysis aims to highlight the weakness in the existing scenario of the LSG in terms of human beings as well as infrastructure.</p> <p>Tools for vulnerability analysis:</p> <ul style="list-style-type: none"> <li>• Transect Walk</li> <li>• Problem Tree</li> <li>• Livelihood Analysis</li> <li>• Vulnerability Assessment</li> </ul>
6	Capacity/Resource Analysis: Tools and Techniques	<p>Resource analysis focuses on identifying locally available assets and resources that can be utilized for building the capacities of the community during and after disasters.</p> <p>Tools for Resource Analysis:</p> <ul style="list-style-type: none"> <li>• Venn Diagrams</li> <li>• Resource Mapping</li> <li>• Resource Matrix</li> </ul>

7	Standard Operating Procedures of Disaster Management Teams in Pre-Disaster Phase	The Disaster Management Team have certain Standard Operating procedures in the pre disaster phase.
8	Identifying Safe Evacuation Routes	The safe evacuation routes can be identified and also be mapped.
9	Development Schemes and Disaster Mitigation	Should include the different schemes and programmes run by government on rural development under Financial Mechanism section.
<b>Other General Suggestions, If Any</b> <i>(Include suggestions to improve the template as well as the overall quality of plans from the perspective of your sector)</i>		
1	Hazard Risk and Vulnerability Analysis (HRVA) helps in strategic planning by way of analysis the risks, vulnerability, and coping capacity to take guided initiatives	
2	Involvement of experts from the different department should involve in the better revision of the DM plan	
3	The plan must be tested and validated for its effectiveness.	
4	Preparatory steps like Situation Analysis and Transect Walk are not done in DM Plan which is very essential.	
5	The evacuation plan should be identified and included in the plan	
6	The plan must be reviewed at the state level by various departments to suggest any improvements and ensure inter-departmental coordination	
7	Annual updating of DM Plans should be done with the submission of Annual Plans	
8	Proper training of the ERT members should be done	
9	The remedial action process helps in identifying and highlighting the problems in the disaster management plan so that corrective actions can be taken	

10	Can include a Family Disaster Preparedness Plan Template - The community is better prepared to deal with any disaster when every household in the community has a preparedness plan in place.
11	Can include a section on “Dos’ and Don’ts of hazards”. This can be included in Annexure also.

### 3. Training Needs

Sl. No.	Theme	Target Participants	Objectives
1	Training on Urban Risk Mitigation	Professionals involved in urban development and planning	To impart adequate knowledge and skill to the trainees to deal with urban risks in their respective spheres of work and formulate strategies/ action plan suitable for the mitigation of such risks.
2	Training on Mainstreaming DRR into Urban / Rural Planning	Professionals involved in Urban Planning and Town Planning department	
3	Training to Emergency Response Team Members of Local Self Governments	ERT Members	<ul style="list-style-type: none"> <li>• Disaster risk reduction practices</li> <li>• How to coordinate with other agencies engaged in rescue</li> <li>• Specialized response for rescue and relief</li> <li>• Improving preparedness and response (before, during, and after the disaster)</li> </ul>

4	Training on PRA and PRA tools	Elected representatives from each disaster-prone area	<ul style="list-style-type: none"> <li>• Learn the process of PRA and develop peoples' skills</li> <li>• Imbibe the skills for need assessment and problem identification</li> <li>• Develop skills for project development</li> </ul>
5	Training on Disaster Resilient Housing Construction	Professionals from related LSGs	To minimize the risk associated with individual houses built-in natural hazard-prone localities as far as possible.

## Best Practices

### **1. Reducing Disaster Risk Through Land Use Planning In Canterbury, New Zealand**

A sequence of earthquakes and thousands of aftershocks experienced in Canterbury during 2010–2011 generated widespread impacts for the city of Christchurch and the wider Canterbury region of New Zealand. Key lessons from the Canterbury region earthquake sequence are currently guiding land use planning processes in New Zealand and include a combination of approaches to address risk—risk avoidance, risk reduction, risk transfer, and risk acceptance.

Lessons Learned:

- Develop urban planners to be effective leaders.
- Strengthen relationships with other Stakeholders
- Better understand land conditions
- “Sell” the concept of resilience to private sector developers and decision makers

### **2. Use Of Flood Modeling For Urban Development In Da Nang, Vietnam**

Faced with the repeated impact of floods and typhoons and with rapid urban development in areas of flood risk, the city of Da Nang in 2010 led the development of a linked hydrologic–hydraulic model for the city. The model allowed the city government to examine the interaction between proposed developments and flooding. Since its completion, the flood risk model has been used as a key decision-making tool. It is the first time in Viet Nam that a flood risk model incorporating climate change considerations has been used for urban planning decision-making.

### **3. The Role Of Building Codes And Planning Systems In Reducing Earthquake Risk In Chile**

Chile is highly prone to earthquakes. Since the 1970s, the government has taken various actions to improve hazard specifications in the building codes, strengthen the implementation of building regulations, and enhance the planning system. These gradual improvements have strengthened performance of buildings and assets and results of these actions were manifested in the significantly lower number of casualties in the recent earthquakes.

Source: <https://www.adb.org/sites/default/files/publication/185415/disaster-risk-urban-land.pdf>

ANNEXURE 1  
List of LSG DM Plans Reviewed

Sl. No.	Name of LSG	District
<b>Municipal Corporation</b>		
1	Thiruvananthapuram	Thiruvananthapuram
2	Kollam	Kollam
3	Kochi	Ernakulam
4	Thrissur	Thrissur
5	Kozhikode	Kozhikode
6	Kannur	Kannur
<b>Municipality</b>		
7	Neyyattinkara	Thiruvananthapuram
8	Punalur	Kollam
9	Adoor	Pathanamthitta
10	Alappuzha	Alappuzha
11	Ettumanoor	Kottayam
12	Kattappana	Idukki
13	Angamaly	Ernakulam
14	Perumbavoor	Ernakulam
15	Chavakkad	Thrissur
16	Chittur- Thathamangalam	Palakkad



17	Nilambur	Malappuram
18	Ponnani	Malappuram
19	Vatakara	Kozhikode
20	Sulthan Bathery	Wayanad
21	Mattannur	Kannur
22	Nileswaram	Kasaragod
<b>Grama Panchayat</b>		
23	Aruvikkara	Thiruvananthapuram
24	Aryancode	Thiruvananthapuram
25	Kadakkavoor	Thiruvananthapuram
26	Kalliyoer	Thiruvananthapuram
27	Kunnathukal	Thiruvananthapuram
28	Pulimath	Thiruvananthapuram
29	Alappad	Kollam
30	Chadayamangalam	Kollam
31	Mayyanad	Kollam
32	Munroe Thuruth	Kollam
33	Sasthamcotta	Kollam
34	Eraviperoor	Pathanamthitta
35	Kaviyoer	Pathanamthitta
36	Kodumon	Pathanamthitta
37	Koippuram	Pathanamthitta

38	Naranamoozhi	Pathanamthitta
39	Champakkulam	Alappuzha
40	Chennithala Thripperunthura	Alappuzha
41	Kanjikkuzhy	Alappuzha
42	Krishnapuram	Alappuzha
43	Punnapra North	Alappuzha
44	Thiruvanvandoor	Alappuzha
45	Thrikkunnappuzha	Alappuzha
46	Pampady	Kottayam
47	Poonjar Thekkekkara	Kottayam
48	Ramapuram	Kottayam
49	Thalappalam	Kottayam
50	Thrikkodithanam	Kottayam
51	Uzhavoor	Kottayam
52	Veliyanoor	Kottayam
53	Alakkode	Idukki
54	Arakkulam	Idukki
55	Karimannur	Idukki
56	Vellathooval	Idukki
57	Chellanam	Ernakulam
58	Chottanikkara	Ernakulam
59	Kadungalloor	Ernakulam

60	Kottuvally	Ernakulam
61	Kuttampuzha	Ernakulam
62	Nedumbassery	Ernakulam
63	Varappuzha	Ernakulam
64	Aloor	Thrissur
65	Annamanada	Thrissur
66	Karalam	Thrissur
67	Kattur	Thrissur
68	Kodakara	Thrissur
69	M G Kavu	Thrissur
70	Mattathur	Thrissur
71	Agaly	Palakkad
72	Alanallur	Palakkad
73	Erimayur	Palakkad
74	Kannambra	Palakkad
75	Kollengode	Palakkad
76	Kottayi	Palakkad
77	Mundur	Palakkad
78	Pattithara	Palakkad
79	Polpully	Palakkad
80	Amarambalam	Malappuram
81	Kalady	Malappuram

82	Karulayi	Malappuram
83	Kuzhimanna	Malappuram
84	Marakkara	Malappuram
85	Moorkkanad	Malappuram
86	Moothedam	Malappuram
87	Muthuvallur	Malappuram
88	Othukkungal	Malappuram
89	Azhiyur	Kozhikode
90	Kavilumpara	Kozhikode
91	Koorachund	Kozhikode
92	Kottoor	Kozhikode
93	Perumanna	Kozhikode
94	Thikkodi	Kozhikode
95	Meenangadi	Wayanad
96	Thariode	Wayanad
97	Ayyankunnu	Kannur
98	Dharmadam	Kannur
99	Koodali	Kannur
100	Mayyil	Kannur
101	Padiyoor	Kannur
102	Pinarayi	Kannur
103	Kinanoor Karinthalam	Kasaragod

104	Kodom Belur	Kasaragod
105	Kumbadaje	Kasaragod

ANNEXURE 2  
Sector-wise Institutional Mapping

AGRICULTURE					
Sl. No.	Institution	District	Expertise	Services	Contact Details
1	Farm Information Bureau	Ernakulam Kozhikode	Extension	It works as a link between research stations and farming community by disseminating right scientific knowledge to the right person at the right time and providing feedback to research stations	FIB Regional Office Kakkannad, Ernakulam  Phone: 0484-2429017
2	WTO cells	Thiruvananthapuram	Extension	Periodically monitor the crop situation of the State and examines the domestic support and export subsidies provided to agricultural sector in the context of WTO .  Agreement on Agriculture and suggest measures for enhancing the competitiveness of commodities in the liberalized trade regime.  Monitor the functioning of EEC aided Wholesale Markets and establishment of Agri-malls	WTO Cell, North Block Government Secretariat Thiruvananthapuram  Phone: 0471-2327039

				Monitor the functioning of EEC aided Wholesale Markets and establishment of Agri-malls	
3	State Agricultural Management and Extension Training Institute, Kerala (SAMETI, Kerala)	Thiruvananthapuram	Extension and management	<p>Functions as the nodal State level Training Institute in the area of Agricultural Management</p> <p>Provide capacity building support in Extension Management related areas to the extension functionaries from public, private and non-governmental sector</p> <p>Provide consultancy in the areas like project planning, appraisal, implementation, monitoring &amp; evaluation, etc</p> <p>Organize need based training programmes.</p>	<p>State Agricultural Management &amp; Extension Training Institute (SAMETI), VenpalavattomAnayara, Thiruvananthapuram Kerala</p> <p>Phone: 0471-2446840</p>
4	State Horticulture Mission(SHM)	Thiruvananthapuram	Research and extension	<p>Holistic development of selected crops by providing research and training.</p> <p>The crops identified for development under the Mission are Mango, Banana, Pineapple, Pepper, Ginger, Turmeric, Nutmeg, Cashew, Cocoa and flower crops.</p>	<p>State Horticulture Mission, Kerala Sunny Dale, Mead's Lane, Palayam, Thiruvananthapuram Kerala-695 034</p> <p>Phone: 0471-2330856</p>

				Apiculture, vegetable seed production and Mushroom cultivation are also included in the programme	
5	Vegetable and Fruit Promotion Council Keralam (VFPCCK)	Thiruvananthapuram	Research and extension	<p>Overall development of commercial fruit and vegetable farmers of the state.</p> <p>Changes in the livelihood of the farmers by improving their capacities by providing adequate support in the areas of Production technology, credit and marketing.</p> <p>The main objectives of the Mission are to achieve holistic growth of the Pineapple Sector through improvement of production, post-harvest management, processing, marketing and export.</p> <p>The important programmes are under the mission include pineapple productivity enhancement through demonstrations (second year plot), Procurement of Pineapple &amp; Value addition, export to Middle East Countries, Experiment trail on varieties through Kerala Agricultural University, improvement of packing and transporting facilities, assistance to</p>	<p>KSHPDC</p> <p>Udayagiri, Poojappura, Thiruvananthapuram Kerala- 695 012</p> <p>Phone: 0471-2359477</p>



				Pineapple Fiber Extraction unit, organize Pineapple Cultivation, participation in National, International, State and District Fairs.	
6	Krishi vigyan Kendra (KVKs)	Kollam	Research and Extension	<p>On-farm testing to assess the location specificity of agricultural technologies under various farming.</p> <p>Frontline demonstrations to establish production potential of technologies on the farmers' fields.</p> <p>Capacity development of farmers and extension personnel to update their knowledge and skills on modern agricultural technologies.</p> <p>To work as Knowledge and Resource Centre of agricultural technologies for supporting initiatives of public, private and voluntary sector in improving the agricultural economy of the district.</p> <p>To work as Knowledge and Resource Centre of agricultural technologies for supporting initiatives of public, private</p>	<p>Krishi Vigyan Kendra Kerala Agricultural University Sadananthapuram P.O Kottarakkara Kollam Kerala 691550</p> <p>Phone: +91-474-2663599</p>
7		Kottayam			Krishi Vigyan Kendra Kerala Agricultural University

				and voluntary sector in improving the agricultural economy of the district.	Kumarakom P.O Kottayam Kerala 686563  Phone: +91-481-2523421
8		Thrissur			Krishi Vigyan Kendra Kerala Agricultural University KAU P.O Thrissur Kerala 680656  Phone: 9400483754
9		Palakkad			Krishi Vigyan Kendra Kerala Agricultural University Mele Pattambi (P.O.) Palakkad Kerala 679306  Phone: +91-466-2212279, +91-466-2212279
10		Malappuram			Krishi Vigyan Kendra Kerala Agricultural University Tavanur P.O Malappuram Kerala 679573  Phone: +91-494-2686329

11		Wayanad			<p>Krishi Vigyan Kendra Kerala Agricultural University Ambalavayal P.O Wayanad Kerala 673593</p> <p>Phone: +91-4936-26041</p>
12		Kannur			<p>Krishi Vigyan Kendra Kerala Agricultural University Panniyur Kanhirangad P.O Kannur Kerala 670142</p> <p>Phone: +91-460-2226087</p>
13	Central Tuber Crop Research Institute	Thiruvananthapuram	Research and extension	Research and extension activities related to tuber crops	<p>ICAR-CTCRI, Sreekariyam.P.O Thiruvananthapuram. PIN-695017</p> <p>Phone: (+91)(471) 2598551 FAX: (+91)(471) 2590063</p> <p>Email: <a href="mailto:ctcritvm@yahoo.com">ctcritvm@yahoo.com</a></p>

14	Central Plantation Crop Research Institute	Kasaragod	Research and extension	Research and extension activities related to plantation crops	ICAR-Central Plantation Crops Research Institute, Kudlu.P.O, Kasaragod,Kerala, 671124, India
15	Regional agricultural Research Station, Pilicode	Kasargode	Research and extension	Agromet service, Centre for e learning, demonstration units, Quality production centre, Compost units,agro clinic	Regional Agricultural Research Station, Pilicode Kerala Agricultural University Pilicode Post Pilicode Kasaragod Kerala 671310
16	Regional agricultural Research Station, Ambalavaya	Wayanad	Research and extension	Agromet service, Centre for e learning, demonstration units, Quality production centre, Compost units,agro clinic	Regional Agricultural Research Station Kerala Agricultural University Ambalavayal Wayanad Kerala 67359
17	Regional agricultural Research Station, Pattambi	Palakkad	Research and extension	Agromet service, Centre for e learning, demonstration units, Quality production centre, Compost units,agro clinic	Regional Agricultural Research Station (RARS), Pattambi, Palakkad district, Kerala, 679306

BUILDING CONSTRUCTION					
Sl. No.	Institution	District	Expertise	Services	Contact Details
1	Indian Institute of Infrastructure and Construction (IIIC)	Kollam	Skill Centre	<p>Courses for workers and managers in the infrastructure and construction sectors to promote higher education, skill development, entrepreneurship and to improve employability with collaborators from across the globe.</p> <p>(<a href="https://iiic.ac.in/course_new/">https://iiic.ac.in/course_new/</a>)</p> <ul style="list-style-type: none"> <li>• Technician level</li> <li>• Supervisory level</li> <li>• Managerial level</li> <li>• QIP</li> </ul>	<p>Near Chavara Bridge, AMC, Puthanthura Post, Neendakara - 691582, Kollam. Kerala</p> <p>Phone: 8078980000</p> <p>Email: <a href="mailto:placement@iiic.ac.in">placement@iiic.ac.in</a></p> <p>Website: <a href="https://iiic.ac.in/">https://iiic.ac.in/</a></p>
2	Kerala State Nirmithi Kendra (KESNIK)	Thiruvananthapuram	Cost Effective and Environment Friendly (CEEF) Construction Technologies	<ul style="list-style-type: none"> <li>• Construction/ Consultancy: Implementation of projects and total project management</li> <li>• Capacity building: Training programmes for skill development for artisans giving special emphasis to unemployed youth.</li> <li>• Kalavara: Building Material Fair Price Shops where cement and steel are</li> </ul>	<p>KESNIK Campus, PTP Nagar, Thiruvananthapuram</p> <p>Phone: 0471-2360559, 2360084</p> <p>Email: <a href="mailto:kesnik.tech@gmail.com">kesnik.tech@gmail.com</a></p>

				<p>being sold to BPL beneficiaries at a maximum cost reduction of 15 % less than the procurement rate. (15 shops)</p> <ul style="list-style-type: none"> <li>• The Laurie Baker International School of Habitat Studies (LaBISHaS): Established by the Government of Kerala in KESNIK as an Academic initiative, under the Chairmanship of the Hon'ble Minister for Housing. The objective of the Institute include Research based academic courses, short term training programmes, Finishing Schools, exchange of Habitat culture and Post Graduate level courses in Habitat technology.</li> <li>• Material testing and Quality Control Labs</li> <li>• Production of building materials such as Hollow Concrete Blocks, Solid Concrete Blocks , Pre-cast Door / Window frames, Stabilized Mud Blocks, Interlocking Mud Blocks, Rubble Filler Blocks, Flower pots, Ventilators, 6 "pipe holes, Fencing Post, Pit Cover, Ferro cement water tanks etc.</li> <li>• Architectural Design Lab: CAT + LaBISHaS Design Lab (CLDL) is an</li> </ul>	<p>Website:  <a href="https://nirmithi.kerala.gov.in/">https://nirmithi.kerala.gov.in/</a></p>
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				extension service jointly run by College of Architecture, Trivandrum and Laurie Baker International School of Habitat Studies to develop designs that are affordable, sustainable and disaster resilient for projects ranging from housing to urban design.	
3	Regional Offices of KESNIK				
	a) Regional Nirmthi Kendra, Barton Hill	Thiruvananthapuram	Cost Effective and Environment Friendly (CEEF) Construction Technologies	<ul style="list-style-type: none"> <li>• Construction/ Consultancy</li> <li>• Capacity building</li> <li>• Kalavara</li> <li>• Material testing and quality control</li> <li>• Production of building materials</li> </ul>	NHEC, Bartonhill, Kunnukuzhi P.O, Trivandrum  Phone: + 91-471-2447638  Mobile: +91- 8111882857
	b) Regional Nirmthi Kendra, Vattiyoorkavu	Thiruvananthapuram			Central Polytechnic Campus, Vattiyoorkavu, Trivandrum  Phone: + 91- 471-2362229  Mobile: +91- 8111882858

c) Regional Nirmithi Kendra, Kottarakkara	Kollam			<p>NSS Karayogam Building , Gandhimukku, Near Taluk Office, Kottarakkara 6991531</p> <p>Phone: + 91- 474-2450399</p> <p>Mobile: +91- 8111882859</p>
d) Regional Nirmithi Kendra, Adoor	Pathanamthitta			<p>Technical High School Site, Manakala P.O, Adoor</p> <p>Phone: + 91- 4734-231673</p> <p>Mobile: +91- 8111882860</p>
e) Regional Nirmithi Kendra, Kozhencherry	Pathanamthitta			<p>College Road, Near Children’s Hospital, Kozhanchery 689641</p> <p>Phone: + 91- 469-2631972</p> <p>Mobile: +91- 8111882862</p>
f) Regional Nirmithi Kendra, Mavelikkara	Alappuzha			<p>Chettikulangara PO, Near Housing Board Colony Site Mavelikkara</p>



					Phone: + 91- 479-2349503 Mobile: +91- 8111882861
	g) Regional Nirmithi Kendra, Athirampuzha	Kottayam			M.G University Campus, Priyadarshini Hills P.O, Athirampuzha, Kottayam  Phone: + 91- 481-2731502 Mobile: +91- 8111882863
	h) Regional Nirmithi Kendra, Pala	Kottayam			Vallichira P.O, Pala  Phone: + 91- 482-2211412 Mobile: +91- 8111882864
	i) Regional Nirmithi Kendra, Muttom	Idukki			Muttom PO, Idukki  Phone: + 91- 486-2255996 Mobile: +91- 8111882865
	j) Regional Nirmithi Kendra, Kalamassery	Ernakulam			Govt Polytechnic Campus, Production Centre Kalamassery

					<p>Phone: + 91- 484-2555944</p> <p>Mobile: +91- 8111882866</p>
	k) Regional Nirmithi Kendra, Thrissur	Thrissur			<p>Sivasakthi Building, 3rd Floor, Round North, Thrissur 680001</p> <p>Phone: + 91- 487 2322654</p> <p>Mobile: +91- 8111882867</p>
	l) Regional Nirmithi Kendra, Palakkad	Palakkad			<p>Opposite Staff Quarters Govt Polytechnic Campus, Kudumbu PO, Palakkad</p> <p>Phone: + 91- 491-2571492</p> <p>Mobile: +91- 8111882868</p>
	m) Regional Nirmithi Kendra, Kozhikode	Kozhikode			<p>Thiruthiyadu, Near Azhakodi Temple, Kozhikode</p> <p>Phone: + 91- 495-2725394</p> <p>Mobile: +91- 8111882869</p>

	n) Regional Nirmithi Kendra, Wayanad	Wayanad			Arattuthara PO, Wayanad  Phone: + 91- 493-5244900  Mobile: +91- 8111882870
4	Grameena Patana Kendram: A rural study centre by Karakulam Grama Panchayat	Thiruvananthapuram	A community University by the people, for the people, of the people.	Provide the necessary technical input and consultancy support for the implementation and monitoring of People's Planning initiatives work as a rural resource centre for human resource development in information and rural technology and provide support developing and disseminating appropriate rural technology.	Karakulam Palam- Kachani Rd, Karakulam, Thiruvananthapuram Pin- 695043  Phone: <u>+919447961677,</u> <u>+919496103109</u>

## HYDROLOGY

Sl. No.	Institution	District	Expertise	Services	Contact Details
1	KSCSTE- Centre for Water Resources Development and Management (CWRDM) (Headquarters)	Kozhikode	Research & Development	<ul style="list-style-type: none"> <li>• Research (Research Projects, Consultancy Projects and Transfer of Technology/Action Research Projects)</li> <li>• Training (WRMTP Training, Sponsored Training Courses and Students Guidance Training)</li> <li>• Publications</li> </ul>	<p>Centre for Water Resources Development and Management, Kunnamangalam, Kozhikode-673 571</p> <p>Phone: (91) 495 2351800, 2351801, 2351803, 2351804</p> <p>Email: <a href="mailto:ed@cwrmd.org">ed@cwrmd.org</a></p>
2	Centre for Water Resources Development and Management (CWRDM) Sub Centres	Kottayam	Research & Development	Research projects, Consultancy Projects, Training on various applications to WRM, Guidance for students for their thesis work (water research)	<p>CWRDM Subcentre Mannancheril House Adjacent to Hotel Pearl Regency, Kodimatha Kottayam Main P O - 686 001 Kerala</p>

					Phone : 0481 2563197 Fax : 0481 2563197  Email : <a href="mailto:kottayam@cwrdm.org">kottayam@cwrdm.org</a>
3		Ernakulam		Implementation of research projects, Training on Water Resources and Computer applications to WRM, WRMTP Training on introduction to QGIS and QSWAT, Guidance for PG students for their thesis work	CWRDM Subcentre Manimalakunnu Oliyappuram PO Koothattukulam Ernakulam - 686 679 Kerala  Phone : 0485 2963517  Email : <a href="mailto:manimalakunnu@cwrdm.org">manimalakunnu@cwrdm.org</a>
4		Thiruvananthapuram		Research and Development Projects, Action Research, Training and Extension, Guidance to students for thesis work	CWRDM Subcentre Neyyattinkara P O Thiruvananthapuram - 695121 Kearala  Phone : 0471 2222319 Fax : 0471 2222319

					Email : <a href="mailto:neyyattinkara@cwrddm.org">neyyattinkara@cwrddm.org</a>
5	Mazhapolima	Thrissur	A Community based and decentralised Well Recharge Programme	<ul style="list-style-type: none"> <li>• Recharge groundwater by feeding rainwater into open wells, ponds, and borewells</li> <li>• Improve drinking water availability and service level</li> <li>• Create an alternative sanitation model for coastal other densely-populated areas of the district</li> <li>• Reduce the impact of drought and consequent public spending on tanker water for water-stressed regions</li> <li>• Strengthen the decentralization program and the Panchayathi Raj Institutions.</li> <li>• Generate knowledge and create a database about the local water resources</li> </ul>	Civil Lines Rd, Ayyanthole, Thrissur, Kerala 680003  Phone: 0487 236 3616
6	JALANIDHI (Kerala Rural Water Supply And Sanitation Agency)	Thiruvananthapuram	Water supply and Sanitation project (World Bank Asisted)	Jalanidhi Phase 1-13694 small water supply schemes and 16 large water supply schemes commissioned. Jalanidhi Phase 2-Project was implemented in 115 Grama panchayaths. 2169 water supply schemes were	3rd Floor, SS Kovil Road, PTC Towers, M G Road, Thampanoor, Thiruvananthapuram, Kerala 695001

				<p>commissioned and transferred to beneficiary group for operation and maintenance after imparting necessary capacity building.</p>	<p>Phone:0471-2337002, 2337003, 2337005</p> <p>Email: <a href="mailto:mediakrwsa@gmail.com">mediakrwsa@gmail.com</a></p>
7	RAINCENTRE (Kerala Rural Water Supply And Sanitation Agency)	Thiruvananthapuram	Rain Water Harvesting	<ul style="list-style-type: none"> <li>To improve the drinking water facility of the individual households and schools that are facing acute shortage of water</li> <li>Sustainability of the water bodies to ensure ground water recharging with rain water harvesting to overcome the water scarcity problems</li> <li>Open well recharge programme through Rain Water Harvesting Construction of RWH tanks of 10000 litre capacity to schools under “Jala Souharda Vidyalayam Pathathy”.</li> <li>Flood Moderation Programme in Thiruvananthapuram City Community Managed Rain Water Harvesting storage tanks for SC/ST/other backward colonies</li> </ul>	<p>3rd Floor, SS Kovil Road, PTC Towers, M G Road, Thampanoor, Thiruvananthapuram, Kerala 695001</p> <p>Phone:0471-2337002, 2337003, 2337005</p> <p>Email: <a href="mailto:mediakrwsa@gmail.com">mediakrwsa@gmail.com</a></p>
8	Institute for Watershed Development and	Kollam	Training and Consultancy services	Training to farmers, officers and various functionaries involved in watershed development and	Institute for Watershed Development & Management,

	Management, (IWDM-K)			management. Courses offered: Diploma in Watershed Management (DWM), Certificate Course in Water Harvesting & Management	Kerala (IWDM-K), Chadayamangalam, Kollam.  Phone : 0474 2475051,  E-mail : <a href="mailto:iwdmkerala@gmail.com">iwdmkerala@gmail.com</a>
9	Central Ground Water Board (CGWB) (Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation)	Thiruvananthapuram	Sustainable Development and Management of Ground Water Resources of the Country	Implementation of national policies for the Sustainable development and management of Ground Water Resources (exploration, assessment, conservation, augmentation, protection from pollution )	Central Ground Water Board (CGWB), Vivekanand Nagar, Kesavadasapuram, Thiruvananthapuram, Kerala 695004  Phone: 0471 244 2175
10	Jala Vijnana Bhavan	Thiruvananthapuram	Maintenance of quality and efficient management of water resources , Provision of assured irrigation to facilitate sustainable agriculture	Providing Irrigation facilities, Flood control including prevention of breach, erosion, water conservation, Inter State water sharing, Providing infrastructure for Inland water ways to facilitate water transport, National Hydrology Project , Renovation of ponds and tanks	Jala Vijnana Bhavan, Mutada Rd, Samithy Nagar, Ambalamukku, Thiruvananthapuram, Kerala 695005



			development and food security		
11	Central Water Commission (Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation)	Ernakulam	Solving water body related issues, Coordinate Governmental schemes for conservation, control and utilisation of water resources	Flood forecasting, River Basin Planning, Water resource Estimation, Reservoir Monitoring, Water Quality, Hydro-Meteorological Observations	Central Water Commission Cheriyakadavanthra, Kasturba Nagar, Thevara, Ernakulam, Kerala 682013
12	Water and Power Consultancy Services (India) Limited	Ernakulam	Consultancy Services (Water resources, Power and Infrastructure)	Civil construction Irrigation (including micro/drip irrigation, canals) Power Generation (thermal, hydro) Power transmission and distribution, including rural electrification Industrial projects (sugar, cement, food processing, textile, automotive ) Renewable energy (including solar, wind, bio-gas) Roads and highways Water and sanitation (including desalination, water treatment and	WAPCOS, 4th Floor, ISAACS Towers, Jawahar Nagar Ave, near Bread World, New Kudumbi Colony, Jawahar Nagar, Kadavanthra, Kochi, Kerala 682020  Phone: Office: +91-484-2353424  Email: <a href="mailto:kochi@wapcos.co.in">kochi@wapcos.co.in</a> , <a href="mailto:wapcoscochin@gmail.com">wapcoscochin@gmail.com</a>

				purification, storage and distribution)	
13	FLUID CONTROL RESEARCH INSTITUTE	Palakkad	Training Institute	<ul style="list-style-type: none"> <li>• Training on Oil, Water and Gas Flow Measurement &amp; Control Techniques &amp; Standards</li> <li>• Training on Instrumentation and Control &amp; Data Acquisition System in Fluid Flow in Process and Petroleum Engineering</li> <li>• Training on Digital Library Practices &amp; Information Technology Application for Knowledge Management</li> <li>• Training program on Quality System Certification (ISO 9001) &amp; Six sigma practices for Organizations / Laboratories (Testing &amp; Calibration)</li> </ul>	<p>FLUID CONTROL RESEARCH INSTITUTE Kanjikode West, Palakkad – 678623 Kerala</p> <p>Phone:91-491-2566120/2566206</p> <p>E-mail : <a href="mailto:customercare@fcriindia.com">customercare@fcriindia.com</a></p>
14	Groundwater Development Centre	Thiruvananthapuram	Maintenance and Training centre	Ground water Survey by modern technologies and traditional methods, Groundwater Training, Groundwater and Borewell Drilling Training service	<p>Ground Water Development Centre, Krishna Nagar Rd, Harvipuram Colony, Peroorkada, Thiruvananthapuram, Kerala 695005</p> <p>Phone: 94467 95350</p>

RURAL DEVELOPMENT					
Sl. No.	Institution	District	Expertise	Services	Contact Details
1	State Institute of Rural Development, Kottarakkara	Kollam	The Institute has been imparting training for the benefit of government officials, elected representatives, members of Non-Government Organisations and rural youths.	Developing managerial skills, organisational abilities, leadership qualities and decision making skills among different categories of Government officials, elected representatives of Panchayats and members of non-governmental organisations who are engaged in developmental activities in the State.	ETC P.O, Kottarakara, Kollam District, Pin code: 691531, Kerala, India,  Phone: 91-0474- 2454618, 2454169, 2454768  Email: <a href="mailto:sirdkerala@gmail.com">sirdkerala@gmail.com</a>  Website: <a href="http://www.sird.kerala.gov.in">www.sird.kerala.gov.in</a>
2	KILA	Thrissur	Training, Research, Consultancy	Capacity Building programmes of LSGs, elected representatives, government officials and public, conducting various research works at community level.	Mulakunnathukavu PO Thrissur - 680 581  Phone: +91-487- 2207000,2201312, +91-487- 2201062,

					Email: <a href="mailto:info@kila.ac.in">info@kila.ac.in</a>  Website: <a href="http://www.kila.ac.in">http://www.kila.ac.in</a>
3	KILA Regional Office	Thiruvananthapuram	Sub- Centres		Kumarapuram PO , Thiruvananthapuram District, Pin code: 695011, Kerala, India  Phone: +91-487- 2207002, +91-487-2201062,  Email: <a href="mailto:info@kila.ac.in">info@kila.ac.in</a>
4	KILA Centre for Human Resource Development (CHRD)	Kollam			ETC P.O, Kottarakara, Kollam District, Pin code: 691531, Kerala, India  Phone: +91-474- 2454618, 2454169, 2454768, +91-474-454169,  Email: <a href="mailto:kilachrd@kila.ac.in">kilachrd@kila.ac.in</a>
5	KILA Centre for Socio-Economic Development (CSED)	Kollam			ETC P.O, Kottarakara, Kollam District,

				<p>Pin code: 691531, Kerala, India</p> <p>Phone: +91-474- 2454618, 2454169, 2454768, +91-474- 454169,</p> <p>Email: <a href="mailto:kilakottarakkara@kila.ac.in">kilakottarakkara@kila.ac.in</a></p>
6	KILA Centre for Good Governance (CGG)	Thrissur		<p>Santhosh Nagar , Mannuthy, Thrissur District, Pin code: 680651, Kerala, India</p> <p>Phone: +91-487- 2370209, +91- 487-2201062,</p> <p>Email: <a href="mailto:kilamannuthy@kila.ac.in">kilamannuthy@kila.ac.in</a></p>
7	KILA Centre for Tribal Development and Natural Resource Management (CTDNRM)	Palakkad		<p>Agali PO , Palakkad District, Pin code: 678581, Kerala, India</p> <p>Phone: +91-487- 2207006, +91- 487-2201062,</p> <p>Email: <a href="mailto:agali@kila.ac.in">agali@kila.ac.in</a></p>

8	KILA Centre for Organic Farming and Waste Management (COFWM)	Kannur			<p>Thaliparamba, Karimbam PO, Kannur District, Pin code: 670142, Kerala, India</p> <p>Phone: +91-460- 2203216, +91-487-2201062</p> <p>Email: <a href="mailto:kilataliparamba@kila.ac.in">kilataliparamba@kila.ac.in</a></p>
9	KIRTADS	Kozhikode	<p>carry out research that helps to promote development among the Scheduled Communities in Kerala.</p>	<p>The institute works towards the development of the Scheduled Castes and Tribes by engaging in research and undertaking studies to identify problems faced by these marginalized sections of the society and by suggesting recommendations for their uplift. The three separate wings – Training wing, Research wing and Development Studies wing – work towards conserving tribal history, assist students in research, conduct studies and come out with suggestions and recommendations to address the problems of these weaker sections.</p>	<p>DIRECTORATE OF KIRTADS Chevayur, Kozhikode- 673017,</p> <p>Phone: 0495 – 2357329 / 2356805 Fax: 0495 2357329</p> <p>Email: <a href="mailto:kirtads@gmail.com">kirtads@gmail.com</a>, <a href="mailto:dirkirtads@gmail.com">dirkirtads@gmail.com</a>, <a href="mailto:kirtads@kerala.gov.in">kirtads@kerala.gov.in</a></p>

**URBAN PLANNING**

Sl. No.	Institution	District	Expertise	Services	Contact Details
1	Department of Town and Country Planning	Thiruvananthapuram		<ul style="list-style-type: none"> <li>• Preparation of various Plans at the State, District, and Local level (Master Plans and Detailed Town Planning Schemes)</li> <li>• Statutory Approvals for constructions &amp; land developments as per KMBR-1999, KPBR-2011 &amp; Town Planning Schemes Drafting Legislation &amp; Government Policies on settlement planning and development.</li> <li>• The nodal agency of the Centrally Sponsored NUIS</li> <li>• Technical secretariat of the Art &amp; Heritage Commission.</li> <li>• To advise the LSGIs and Government on matters related to the planning and development of settlements. Spatial Planning Wing of the DPC.</li> </ul>	<p>Office of the Chief Town Planner (Planning):</p> <p>Swaraj Bhavan, 2nd floor Nanthancode, Kowdiar. P.O. Thiruvananthapuram – 695003.</p> <p>Phone: 0471 -2726677, 0471 - 2723429</p> <p>Email: <a href="mailto:ctpplanningkeralam@gmail.com">ctpplanningkeralam@gmail.com</a></p>

2	Development Authority, Thiruvananthapuram (TRIDA)	Thiruvananthapuram	Planning and Development Authority	<p>Powers and Functions of Development Authority as per section 56 of the Kerala Town and Country Planning Act, 2016, shall include the following:</p> <ul style="list-style-type: none"> <li>• Preparation and implementation of land readjustment or land pooling or land banking schemes for implementation of projects in the development authority area, in tune with the provisions of this act;</li> <li>• Promoting planned development as envisaged in the plans for the development authority area, through tools like transfer of Development Rights, accommodation reservation, etc;</li> <li>• Set-up special function agencies, if required and guide, direct, and assist them on matters about their respective functions;</li> <li>• Co-ordination of implementation of plans under this act in the Development Authority area Perform such other functions as are supplemental, incidental, or consequential to items (1) and (3) above or as may be directed by the Government, the District Planning</li> </ul>	<p>Thiruvananthapuram Development Authority (TRIDA) "Jaya Mansion" Vazhuthacaud Sasthamangalam. P. O., Thiruvananthapuram-695 010.</p> <p>Phone: 0471-2722-748, 0471-2722-238, 0471-2722-171</p> <p>Website: <a href="http://www.trida.kerala.gov.in">www.trida.kerala.gov.in</a></p>
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				Committee, or the Metropolitan Planning Committee, as the case may be, from time to time.	
3	Greater Cochin Development Authority (GCDA)	Ernakulam	Planning and Development Authority		Greater Cochin Development Authority P. B. No. 2012 Kochi- 682 020  Phone: 0484- 2206230  Email: <a href="mailto:gcdonline@gmail.com">gcdonline@gmail.com</a>  Website: <a href="http://www.gcda.kerala.gov.in">www.gcda.kerala.gov.in</a>
4	Goshree Islands Development Authority	Ernakulam	Planning and Development Authority		Goshree Chathiyath Road Mulavukad Ernakulam Kerala-682 018  Phone: 0484- 2423001
5	Kerala Land Development Corporation Ltd.	Thiruvananthapuram	Kerala Government Undertaking under the administrative control of the	The main objectives of KLDC are to develop a quality structure and related infrastructure facility for the agriculture community in the state at a reasonable cost. In 2017 the Corporation got accreditation from State Government to	Administrative office: TC 11/570, Museum Bains Compound Kowdiar P O,

			Agriculture Department	undertake, execute general civil construction works of any departments or agencies in the State.	Thiruvananthapuram Kerala-695003  Phone: +91-471-2315001  Email: <a href="mailto:kldctvm@gmail.com">kldctvm@gmail.com</a>
		Alappuzha			Project Engineer's Office- Kayamkulam: Sree Padmam Puthen Veedu Building No. KMC 732 C Opp. Girls H.S.S Kayamkulam - 690502  Phone: 0479 2448427, 2445359, Fax: 04792445359  Email: <a href="mailto:kldckylm@gmail.com">kldckylm@gmail.com</a>
		Alappuzha			Construction Engineer's Office- Alappuzha: 28/747, Sabari Gardens Chandanakavu Alappuzha- 688011

					<p>Phone: 0477 22526980, 2239544, Fax: 0477 2252698</p> <p>Email: <a href="mailto:kldcalpy@yahoo.co.in">kldcalpy@yahoo.co.in</a></p>
		Kottayam			<p>Deputy Project Engineer's Office- Vaikom: 32 A/8, Mullaparambil Building Vaikom - 686641</p> <p>Phone: 04829224594, Fax: 04829224594</p> <p>Email: <a href="mailto:kldcvkm@gmail.com">kldcvkm@gmail.com</a></p>
		Ernakulam			<p>Project Engineer's Office- North Paravoor: Chiraganttu (H), Building No. 268/XII Mannam. P.O North Paravoor- 683520</p> <p>Phone: 0484 2440946</p> <p>Email: <a href="mailto:kldcnparavoor@gmail.com">kldcnparavoor@gmail.com</a></p>

		Thrissur			Registered Office & Construction Engineer's Office – Thrissur: 28/725, Chembukavu Near Rama Nilayam Thrissur - 680020  Phone: 0487 2331092,2325762, Fax: 0487 2331066  Email: <a href="mailto:kldctcr@gmail.com">kldctcr@gmail.com</a>
		Kozhikode			Project Engineer's Office- Vadakara: 19/243, Neelamunnumel House, Vadakara P.O Kozhikode  Phone: 0496252301, Fax: 04962523701  Email: <a href="mailto:kldckldc@gmail.com">kldckldc@gmail.com</a>
6	Kerala State Industrial Development Corporation (KSIDC)	Thiruvananthapuram	Premier agency of the Government of Kerala mandated to		Kerala State Industrial Development Corporation Ltd. T.C. XI/266, Keston Road, Kowdiar,

			for industrial and investment promotion in Kerala		Thiruvananthapuram-695 003  Phone: +91-471-2318922 (EPABX) Fax: 0471-2315893  Email: <a href="mailto:enquiry@ksidcmail.org">enquiry@ksidcmail.org</a>
7	Kerala State Coastal Area Development Corporation (KSCADC)	Thiruvananthapuram	State Government-owned company that integrates the development activities in the coastal areas of Kerala.	<ul style="list-style-type: none"> <li>• To plan, formulate, and implement various sustainable development projects and programs of the coastal areas of Kerala.</li> <li>• To promote research and development for evolving appropriate technologies for achieving the main objectives of the Company.</li> <li>• To enter into all types of internal or external, foreign collaborations, license agreements, technical assistance, financial or commercial arrangements for the fulfillment of any of the objectives herein contained.</li> <li>• To co-ordinate and facilitate the activities of various Government departments, Non-Governmental Organizations, and other voluntary institutions towards contributing their efforts and aids including fund mobilization for the integrated development projects/programs of</li> </ul>	I Floor, Chalachitra Kalabhavan Building Vazhuthacaud, Thiruvananthapuram - 695 014.  Phone: +91 471 2321520 Fax:+91 471 2323363  Email: <a href="mailto:kscadc@gmail.com">kscadc@gmail.com</a> <a href="mailto:info@keralacoast.org">info@keralacoast.org</a>

				<p>the coastal areas and to pool the outputs from various institutes, organizations, and agencies operating for the development of various dimensions of the coastal area.</p> <ul style="list-style-type: none"> <li>• To plan and develop sustainable fish-resource management programs in the sea and coastal areas.</li> <li>• To undertake any other coastal project or consultancy work assigned by the Government, other states, statutory bodies, and agencies from time to time.</li> </ul>	
8	Vision Varkala Infrastructure Development (VIVID)	Thiruvananthapuram		<ul style="list-style-type: none"> <li>• To Plan, Promote, Develop, Operate, Own, Maintain, all infrastructure facilities; Prepare project and feasibility reports; Implement projects and development of schemes; Monitor economic and social welfare activities, Render technical, financial, and marketing supports and Undertake developmental projects and services of Government, Public, Private &amp; Joint Sectors.</li> <li>• To provide all infrastructure facilities for establishing or for facilitating the establishment of, manufacturing, processing, or packaging industries; electronic, hi-tech, or knowledge-based industries; agro-based, food processing industries; tourism,</li> </ul>	<p>House no: 12/132(1), "Pooja", Behind Marthoma Church, Near Varkala Railway Station, Cherukunnam P.O. Varkala – 695141</p> <p>Phone: 0470-2611170 Mob: 8547871170</p> <p>Email: <a href="mailto:vididcorporation13@gmail.com">vididcorporation13@gmail.com</a></p>

				<p>leisure, recreation, adventure, health management industries/ services, logistics infrastructure and warehouses, and;</p> <ul style="list-style-type: none"> <li>To render consultancy and advisory services in connection with infrastructure projects of any nature.</li> </ul>	
9	The CPPR Centre for Urban Studies (CUS)	Ernakulam	Independent public policy organisation	<p>The centre aims to understand the contestation of space by different socio-economic groups and addresses the multiple realities that exist within a city. It also aims to meet the challenges of urban development by recommending better practices and innovative policy changes. This is done through the use of primary and secondary quantitative data, to support qualitative policy suggestions.</p>	<p>'Anitha', 1st floor, SA Road, Elamkulam, 682020, Kerala, India</p> <p>Phone: +91 484 4043895</p> <p>Email: <a href="mailto:cppr@cppr.in">cppr@cppr.in</a></p>
10	The CPPR Centre for Comparative Studies (CCS)	Ernakulam	Independent public policy organisation	<p>The centre aims to conduct in-depth comparative analysis in the fields of Demographics, Education, Health, Poverty, Urbanisation, Governance, Politics, Budgeting, Social and Economic Indicators.</p> <p>It also aims to identify current gaps in policies using comparative analysis. Comparative studies involve the analysis and synthesis of the similarities, differences, and patterns across two or more cases that share a common focus.</p>	<p>'Anitha', 1st floor, SA Road, Elamkulam, 682020, Kerala, India</p> <p>Phone: +91 484 4043895</p> <p>Email: <a href="mailto:cppr@cppr.in">cppr@cppr.in</a></p>

				It helps in exposing the success or failure of a policy initiative. CCS also seeks to advocate state of the art practice and recommend innovative policy changes to help improve the country's development process.	
11	Centre for Socio-economic and Environmental Studies (CSES)	Ernakulam	Independent, non-profit, non-governmental organisation	<p>Research Themes:</p> <ul style="list-style-type: none"> <li>Poverty &amp; Social Exclusion</li> <li>Health &amp; Demography</li> <li>Governance &amp; Public Service Delivery</li> <li>Education</li> <li>Labour &amp; Migration</li> <li>Public Finance</li> <li>Decentralisation</li> </ul>	<p>Khadi Federation Building, NH By-Pass, Padivattom, Kochi- 682 024, Kerala, India.</p> <p>Phone: 2805108 Fax: 91-484-2808108</p> <p>Email: <a href="mailto:csesindia@gmail.com">csesindia@gmail.com</a></p>
12	Institute of Land and Disaster Management	Thiruvananthapuram	State Training Institute for the Department of Revenue and Disaster Management. The Institute also caters to the training needs of the general public and NGOs in	<ul style="list-style-type: none"> <li>• To impart professional training, including induction training, in-service training, and refresher training to personnel of the Land Revenue and Survey Department of Kerala State;</li> <li>• To impart to and develop managerial and technical skills of the above personnel,</li> <li>• To undertake research and study projects relating to the aforesaid departments to improve their functioning and productivity;</li> </ul>	<p>PTP Nagar, Thiruvananthapuram, Kerala, India. Pin – 695038</p> <p>Phone: +91 471 2365559 Fax: +91 471 2365559</p> <p>Email: <a href="mailto:ildm.rev@kerala.gov.in">ildm.rev@kerala.gov.in</a> <a href="mailto:ildm.revenue@gmail.com">ildm.revenue@gmail.com</a></p>



			addition to the officials, in the field of disaster management, since the enactment of the Disaster Management Act in 2005.	<ul style="list-style-type: none"> <li>To function as a nodal agency for introducing new techniques of operation, innovations, and modern technology</li> </ul>	
13	Centre for Development Studies	Thiruvananthapuram	Autonomous social science research institute	The main activities of the Centre are research, teaching, and training. Right from its inception, CDS emphasised the training of young researchers and launched the MPhil and Ph.D. programmes, recognised by Jawaharlal Nehru University, New Delhi. It also ran a Ph.D. programme affiliated with the University of Kerala.	Prasanth Nagar, Medical College P.O, Ulloor, Thiruvananthapuram-695011, Kerala, India  Phone:+91-471- 2774200, 2448881-2 Fax: +91-471-2447137, 2448942

## Contributors to the Report

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Picture from Aluva, Ernakulam during Floods 2018  
Picture Courtesy - I & PRD