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Message

The great deluge of 2018 brought unparalleled destruction and devastation in Kerala. In the impact of monsoon villages and cities, canals and rivers became as furious as the ocean. The 44 rivers of Kerala reclaimed their forgotten courses and gushed forth violently through the shores. The hydro-electric projects of Kerala swelled and overflowed. People residing in coastal and hilly areas experienced the tremors of the flood directly or indirectly.

The humans naturally became the victims of the unforeseen flood and our State resembled a field after the battle. At this critical juncture the Keralites with their self respect and fighting spirit rose up to the occasion. They became their own saviours.

The people of Kerala acknowledged in one voice the service-mindedness and commitment of the Kerala Police. The victims of flood in Kerala had no models of rescue and relief operation. The rescue operation of the police was titled Operation Jalaraksha. The Hon. Chief Minister of Kerala who led the venture from the front pinned faith on the police and exhorted them to take up the challenge of the relief operation. Police faithfully took it up and did not disappoint the Chief Minister.

Such actions that are historically relevant must be preserved and subjected to study. The Research Wing of Kerala Police took up that duty. It is hoped that this comprehensive study report prepared after exhaustive examination will definitely be a model for students and the public and for the police themselves in future. The survival model of this great land will be a touchstone for posterity. I am proud of having led the police in this critical period. I use this opportunity to express my gratitude to all those who stood with the police: the government departments, agencies, individuals, and the valiant fishermen.

Loknath Behra

Editor-in-Chief

From the Editor's Desk

The Independence Day celebrations of 2018 were soaked in rain. The threat of disaster loomed large in the atmosphere. From the very next day the shock of the flood and the landslips sent shivers across the State. The younger generation of Kerala has not shared the terrible memories of the 'Deluge of '99' (1924). We fail to remember the fact that great calamities can recur even after a hundred years. It was reported that the residents in some areas refused to comply with the directions of the police to vacate their houses. The police had the shocking realisation that the State was sinking into a calamity. Equipped with the courage and strength that they acquired from the experience of the past ten years of the Janmaithri Suraksha Project, they participated in the rescue operation and later the relief work.

Though the officers of the Police Academy and the Police Training College were involved in the rescue and relief operation, the Research Wing of the Kerala Police captured the moments of the great deluge. We cannot turn away from the responsibility of recording history truthfully because history repeats itself. The Research Wing of the Kerala Police took up this humble responsibility. District-wise research teams were formed and studies were conducted.

The majority of the police force worked in the face of disaster in one way or other. A major chunk of public was with them. All the activities of the entire operation could not be captured in this study. But this humble attempt will indeed be an asset to the police and the public at large. Thanks to all those who became a part of this fraternity, members of the police team,

the photography/videography team, the officers and the public.
Let the flood lessons be the lessons for our future.

Dr. B Sandhya IPS

Managing Editor

KERALA FLOOD 2018

Abstract

Kerala State in year 2018 witnessed the unprecedented fury of nature in the form of floods. As such disaster of this magnitude had only taken place a century ago, our state was virtually unprepared for meeting this exigency. However, Kerala Government acted swiftly and all the departments under the Government as well as the public joined hands to tide over the crisis with minimum casualty. Janamaithri Police of Kerala played a very active role in mitigating the suffering of the public. The disaster also prompted us to undertake a study incorporating the experiences and activities of our police personnel throughout the State so that we could chalk out a Standard Operating Procedures to deal efficiently with such a disaster in future. This study is an attempt in this line and we have captured in essence how our force toiled day and night to deal with the situation. Through this study it is established how necessary it is to bring forth Disaster Management Protocols and how the Janamaithri Police and the concept of Janamaithri in Kerala has been successful in deeply penetrating the lives of our people and provide them with the much needed help and support when they need it most.

Introduction

The Great Deluge of 2018. It was a great deluge that submerged the entire state of Kerala in an ocean of sorrow: the rivulets, streams and rivers of the state came together to form that ocean.

The flood made us realize the truth about the existence of nature. When we erect buildings, we have to care for Nature, the soil and the surroundings. Or else, whatever we build up will be washed away within no time. It was an occasion when the nature insisted on taking back whatever we have conquered unlawfully.

There were several people who helped Keralites overcome the crisis: the fishermen of Kerala, the real sons of this soil who launched their boats into the sea of distress, other Government servants and the general public. The role of the police was that of guide and protector coordinating the activities.

The flood has no comparison. After the rule of the legendary king Maveli, this was an occasion like the first Onam when all Keralites stood as one. We rose to the occasion to brave the calamity. This was an instance when the people set aside religious, social and political differences and upheld human values. The generation might not have witnessed a similar sight of people of different perspectives and political loyalties joining hands as one.

It was the norm that when natural calamities rocked other parts of the world, we thought that we were safe. Keralites had the feeling that such calamities were peculiar to those parts of the world. We were hence thoroughly unaware of the precautionary measures to be adopted on such occasions. We hadn't thought about the ways to reduce the loss of human lives and the colossal destruction of resources. Each natural calamity explains to us how helpless we are. Each flood gives us the message of the level of alertness that we have to maintain in future. The flood of 2018 has given us also

the invaluable lesson of sustainable living: the necessity to live in harmony with our surroundings.

The flood that occurred in 1924 which is known as ‘the flood of 99’ is the only precedent occurrence known in Kerala. There might not be many today with vivid memories of the flood of 99. The rescue operations of police under the title ‘Jalaraksha’ and the cleaning-up activities titled ‘Jalraksha-2’ will ever be remembered as indelible marks of the true spirit and mission of the police force. The police did excellent coordination work. On Onam and Bakrid holidays, the police were busy with the cleaning-up programme, active in getting houses ready for habitation again. In addition to this, they were in the forefront distributing kits of essential supplies.

The Research Wing of the Kerala Police decided to make an extensive study of the floods of 2018 with a view to finding a solution to the dearth of historical documents on such calamities. The research wing of Kerala Police works under the direction of Dr B Sandhaya IPS, ADGP & Director of the Police Academy (Training), and State Nodal Officer of the Janmaithri Suraksha Project. The study comprehensively covers the performance of the police in various dimensions such as the activities of the police in the critical situation, the challenges faced by the police in the face of danger, the potential of the police in dealing with such disasters in future and the scope of the disaster management systems of the Police. As part of the study, the Research Wing collected data directly from the flood hit areas, relief camps, police stations, Soil Research Centres, Irrigation Department, Kerala Forest Research Centre, Collectorates, District Emergency Operation Centres, Fire force and media centres. The report is a powerful reminder as well. The report reveals supreme examples of sacrifice, unity and secularism. The primary objective of the study is to create a comprehensive document that analyses how the people dealt with the situation collectively, how posterity should deal with such situations, the situations confronted by police officers in the face of this disaster, and of course, their limitations. As the focus of the study is on the activities of the police, other areas are not comprehensively dealt with.

The Deluge of '99

The deluge that occurred in Kerala in the months of July and August in 1924 was the most dreadful one of the last century. As it occurred in the Malayalam Era 1099, it is known as the deluge of 99. Though it was not so massive as the flood of 2018, it was its equal in intensity. After the flood, the state of Kerala, God's own country became zone of tragedy. From press reports and available documents of those days, we get only an approximate picture of the calamity.

The low lying areas of the state were totally submerged by the torrential rain that lashed across the State for about three weeks from the first of *Karkidakam*. The flood affected Central Travancore and South Malabar. Transportation by road and rail came to a halt. Postal service was cut off. People fled from flood affected areas to seek refuge in elevated places. History records that even the Karinthiri Hills were washed away. After the assault of the water, the consequent battery of poverty and misery hit the people as never before.

The majority of districts of the then Travancore—Kochi state, Thrissur, Ernakulam, Idukki and Kottayam were terribly affected by the floods. Kundal valley railway, and the narrow gauge railway in Munnar were swept away in the landslip. Far more intense was the gravity of the flood situation in Central Travancore. Water rose to the height of twenty feet. Torrential rain and the raging seas together wreaked havoc on land. South Malabar was completely submerged in floods by the 16th of Karkidakam. The majority of places in Kozhikkode town were submerged. Nearly two thousand houses were destroyed. Dead bodies bobbed along the Kanoli canal. The deluge of 99 brought

about drastic changes in the landscape and course of rivers. Devaki Nilayangod recollects the loss of the 'Agni' kept apart for rites in the *illams* [priestly Namboodiri households] on the banks of the Bharathapuzha.

The threat of e-waste was not even imagined during the flood of 99. But after the 2018 flood, chemicals from the accumulated mountain of electronic waste seeped into the water sources and the lead and mercury content in water can cause far reaching environmental and health hazards.

The tea estates of Munnar situated at a height of 5000 to 6500 feet were not spared by floods. A dam had been naturally formed by uprooted trees and soil deposited by landslides at the spot in Mattuppetti where two hills met. (At present there exists a manmade dam.) The landslide following the incessant rain destroyed the bund. The resultant fury of floods laid waste the town of Munnar. It destroyed the railway station and the entire railway line.

In place of 2087.67 mm rain expected between 1 June and 15 August, in just three weeks the rainfall was 3368 mm. Dams were very rare in those days. The flood of 99 came 29 years after the Mullaperiyar dam was constructed. Now there is a considerable increase in the number of dams. The total number of small and big dams stands at around 58.

(<http://india-wris.nrsc.gov.in>)

A dam had been formed at Changamanad on the exact spot where the main dam is now situated. On the sixth day after the rain started, the dam burst. In the fury of floods, a broad stretch of six thousand acres was converted into a large lake. When the flow and

fury of water subsided, 200 acres of land had been swept away in Pallivasal. This changed the geographical shape of Pallivasal.

The areas affected by floods in 2018—Thrissur, Ernakulam, Kottayam and Munnar roads—were the same ones affected in 1924. Though official records are not available, it is believed that the death toll then was about one thousand. Tens of thousands of cattle were also lost.

1.1 **Flood Relief Activities**

Government of Travancore started emergency flood relief activities and constituted a flood relief committee. In the month of August itself, hundreds of flood victims and their families reached the relief camps. Their number in Ambalpuzha was 4000, Alappuzha 3000, Kottayam 5000, and Paravur 8000. The Forest Department had given orders to supply bamboo and other materials to the poor for construction of houses. The government constituted a house construction fund and took steps to regulate the prices of food materials. There were floods in 1939 and 1961, though not of the intensity of the floods of 1924.

1.2 **Asia**

Rains usually occur in South Asia in the months of June to September. Studies indicate that around 2000 people die every year on account of floods in the last two decades. Floods are usual in such South Asian countries as Bangladesh, India, Nepal and Pakistan between July and September.

1.3 **India**

Floods occur in India in the North eastern regions. Due to the influence of rivers originating from the Himalayas, floods are common in Punjab, Haryana, Himachal Pradesh, Delhi,

Rajasthan, Uttar Pradesh and West Bengal. Earthquakes and landslides obstruct the flow of water. The floods affect the North-west parts of India such as UP, Punjab and Himachal Pradesh mainly due to the water currents of the Naramada, Chambal and Tapti rivers in Central India and the peninsular base. When the period of monsoon extends itself, the banks of Godavari, Krishna and Kaveri usually get flooded.

There are several causes for the flooding in India. The northern part of India is located in the central region of the monsoon map. As a result of this, we get heavy rain. Plains on the Northern side, the long stretches in the eastern zones, the rivers and streams in the northern plains, and the low lying areas of the Ganga-Brahmaputra are also causes of flood. Inadequate sewage systems and the failure of the flood control systems are also responsible. The melting of layers of snow due to global warming too causes floods.

According to the statistics of the Central Water Commission (presented to in the Rajya Sabha), in the 64 years from between 1953 and 2017, 107487 people died in India in heavy rains and floods. The loss to agriculture, the damage to houses and the losses to public would have been around 3,65,860 crores of rupees.

An average of 75 lakh hectares of land is affected by floods every year. The largest loss of human lives occurred in Andhra Pradesh in 1977. More than ten thousand people died (Disaster Management India, Report). Government has to spend 1,805 crores of rupees to meet the expenses of losses, reconstruction of houses and other public needs. The central Disaster Management Authority has set up 226 Flood Exchange Systems across 20

States, 2 Union territories and 19 river bank zones to face the floods.

1.4 Kerala

Kerala is a state with diverse peculiarities: a very complex lake system, coastal area stretching over nearly 550 km, wet tropical forests of the Western Ghats, a rather undulating topography and temperate monsoon climate. The uplands 75 metres high above the sea level, midlands from 7.5 to 75 metres and the coastal area 7.5m below the sea level are special features of the topography of Kerala. Roughly 60% of the annual rainfall is received from the Southwest monsoon. The main source of numerous streams, lakes and ponds is the Sahyadri. Of the 44 rivers originating from the Western Ghats, 41 flow southwards and reach the Arabian sea. The other three rivers flow through the state to reach the Bay of Bengal. Wells are the major sources of underground water. There are around 80 dams and standing river banks. Disasters will naturally assume unimaginable dimensions in a state like Kerala. Effective disaster management can only become possible with the proper awareness of the specialities of the topography of Kerala and the features of its water resources. Only those who clearly know the locality can take a lead role in the rescue operations.

People in contemporary society know about calamities only by hearsay. The floods that hit Kerala in August 2018 was the most disastrous and the worst of all disasters in recent times. The catastrophe has no comparison. It brought in its wake great devastation.

The monsoon came rather early, by the end of May 2018 and the depression that formed in the second week of August gave

Kerala many days of endless misery. According to the Indian Meteorological Department and the Water Commission, instead of the 287 mm rain we can expect to get between August 1 and 19, we got 758.16 mm rain. This was in fact 164% more than the normal rainfall.

We did not have the expertise to manage such a colossal disaster. The people of Kerala could overcome the crisis only with unity and cooperation. The floods brought devastation to houses, agricultural land, and to the sectors of construction and transportation. The people of Kerala set aside their individual prejudices and differences of caste and creed, and joined hands to overcome the situation. The state witnessed a mammoth rescue operation from August 8 to 20: an activity that it had never before witnessed. Kerala Police (Operation Jalaraksha), Indian Army, Indian Navy, Indian Air Force, other Departments, fishermen, the common man and non-governmental organisations all became integral parts of the rescue operation. Lakhs of people were evacuated to camps: this included people whose houses were submerged and those rescued from the impending danger of rising flood water. People in the inundated areas were saved in fishing boats and by airlifting. This considerably reduced the number of fatalities. The role played by the youth was commendable. Their presence was conspicuous both in the rescue operations and in the relief work.

The rescue operations were a proof that the administrative machinery of Kerala could tide over such a disaster. The timely interference of the Chief Minister was instrumental. As the monsoon showed signs of intensifying, 24/7 monitoring cells were opened. The senior officers of central forces and authorities including the Army were ready for service

throughout. As a result of this successful coordination was ensured.

Evaluation meetings were held both in the morning and evening under the leadership of the Chief Minister. The committee appraised the situation and the progress of the rescue operations as it evolved each day. Necessary directions were given accordingly to the district level bodies.

The Collectors had their general responsibilities and also the special responsibilities of the relief activities. The Chief Minister also took the decision to entrust the IAS officers with special responsibilities. District Police officers were given the complete responsibility of the rescue operation in the districts. Other IPS officers were given special responsibilities and deputed to districts. Special care was taken to ensure the participation of the local self governing bodies. It was remarkable that the Chief Minister took a leading role in monitoring the activities. The office of the CM worked round the clock at this stage.

The dedicated service of the police force in unison with the public in the flood hit areas was indeed praiseworthy. The police took a leading role in dealing in a timely and effective manner with the situation in compliance with the directions of the government and the district administrative machinery. They worked with commitment and zeal in the relief camps and rehabilitation centres. The state has not witnessed such a massive rescue operation ever before. Servicemen from the Army, Navy, Fire Force and Air Force, voluntary organisations and fishermen joined together to save hundreds of people from casualties. Police had no previous experience of a situation like

this. Nor had they taken any prior preparation for this unexpected disaster. But with their indomitable will power, alertness and physical prowess, they braved the adverse circumstances. Even at the initial stage of the flood situation, they brought back hundreds of people to life and hope. The police had a clear idea of the locations and places and they continued the rescue operations day and night giving up food and sleep. The flood-fighting is the supreme instance of the organisational skill and tolerance, the will power and commitment of the police.

The highest spell of rainfall of the deluge of 99 in the months of July and August 1924 was received on 16, 17 and 18 July. Devikulam received 484 mm and 751 mm rain on 16 and 17 July respectively.

District	Expected	Received	Excess (%)
Alappuzha	1380.6	1784	29
Kannur	2333.2	2573.3	10
Ernakulam	1680.4	2477.8	47
Idukki	1851.7		
Kasaragod			
Kollam			
Kottayam			
Kozhikod			
Malappuram			
Palakkad			
Pathanamthitta			
Thiruvananthapuram			
Thrissur			
Wayanad			

Kerala State

(Courtesy Central Water Commission)

The rainfall in Kerala from June 2018 to 19 August was 2346.6 mm. It was 42% higher than the expected 1649.5 mm. Instead of the 287.6 mm rainfall expected between 1 August and 19 August the rainfall received was 758.6 mm—164 percent higher.

The following districts in Kerala were especially impacted by the flood of 2018:

1. Idukki –the district that had to face the worst of landslips and landslides
2. Pathanamthitta
3. Alapuzha
4. Ernakulam
5. Thrissur - The largest number of casualties were reported from Kuranchery of Thrissur district. According to the report of the United Nations, the loss to Kerala in the deluge of 2018 is around 31,000 crores of rupees. The details of the loss suffered by various sectors as assessed by the Post Disaster Needs Assessment (PDNA) of the UN are given below:

Number	Sector	Loss (in Rs crores)
1	Construction Sector	5,443
2	Health	600
3	Education	214

4	Culture	80
5	Agriculture, Animal Husbandry, Fishing	4498
6	Drinking water, sanitation	1331
7	Transportation	10,046
8	Electricity	1483

(Courtesy-Central Water Commission Report)

*Gandhiji wrote about the relief work of the flood of 99 in **Navjeevan** and **Young India**.*

*Collect fund for the victims of flood by giving up food once a day or by avoiding milk as food. In **Navjeevan** he referred to a girl who brought 3 paise to contribute for flood relief. He exhorted the women to sell their jewellery to contribute to the food and safety of the flood victims. Till then he had collected Rs 6994, 13 annas and 3 paise.*

Chief Minister Shri Pinarayi Vijayan receiving the salute at the combined parade arranged in connection with the felicitation of the various Forces that had rendered commendable service and acted as models, by the Kerala Government.

Hon. Chief Minister felicitating the Kerala Police for the commendable and exemplary service in helping to tide over the flood disaster, presenting them with Testimonials of Honour.

2. Research Methodology

The data used for the study of the activities of the Kerala Police Department in dealing with the flood situation that the State encountered in August 2018.

The following data were relied upon for the study of the activities.

-The information collected during the visits of Dr. B Sandhya IPS ADGP (Training) and Director, Kerala Police Academy, and the Research Wing of Police.

- Data collected from the Station House Officers who coordinated the rescue operations.

-Information collected from other Police Officers who were directly involved in the rescue operation.

-Information collected from officers of other forces, Fire and Rescue, Forest, Army and Navy.

-Information received from other voluntary organisations (NSS NCC, SPC, Youth Clubs, Charitable societies, etc).

-Both primary and secondary data have been used for the study.

Methodology

- (1) Audio interview
- (2) Video interview
- (3) Face to face Interview
- (4) Papers and documents

Problems

The present environmental issues are the tragic consequences of our own atrocious deeds of battering down hills

and hillocks, filling the low lying areas with soil for construction, mining the rocks for quarries, deforestation and illegal sand mining from rivers. Such illegal activities can be bridled with the help of scientific studies and creating awareness among the people. The challenges faced by the water sources, the structural change undergone by the paddy fields and wetlands, and the threats to the ecological balance of the sea and the seashore, all combine to exert pressure on nature.

Objective

Research focused on the precautions and practical steps to be taken in case of a similar future disaster is the need of the hour. Such studies and research will be an asset to future generations.

Relevance

The calamity that the State had to face in August 2018 was the most dreadful one since the deluge of 1924 (ME 1099). The calamity occurred mainly because we did not learn any lesson from the devastation of the flood in the last century. No precautions were taken either. As floods are not daily occurrences, no scientific study or precautionary measure has so far been initiated. Herein lies the relevance of this study.

Scope

The present study conducted by the Police Department is only at the micro level and can only be a preface to the continuous studies that need to be done in the field of disaster management. The issues that are generated by the study will help enlarge its scope. The important areas are the meticulous classification of the danger zones and their details, statistics of the heavy losses incurred, statistics of the areas vulnerable to

disaster, the geographical changes that have occurred in places subjected to study and a comparative assessment of the social scenario before and after the flood.

3. The Police and the Rescue Operation

It was the most disastrous flood that the state had witnessed in almost a century. The unexpected spell of torrential rain, the geographical features of our state and the packed nature of the residential areas all intensified the gravity of the situation.

According to the pre-monsoon forecast of the Indian Meteorological Department, Kerala was expected to get far less rain than usual. The rainfall till the middle of July was in line with the prediction. But the rainfall from the middle of July to 10 August was 20 % above normal. As a result of this the lakes and reservoirs were filled and they soon began to overflow.

The state received 170 percent rain, in excess of the average rain expected during the period from 10 to 19 August. The IMD had not issued a clear prediction or warning. Kerala witnessed the worst disaster because of all these circumstances. The first step in facing the flood situation was to arrange rescue operations. The duty of rescue was entrusted with the police. The police managed it successfully by coordinating the activities of different groups and acquiring the support of various departments.

The police deployed more than 10,000 personnel every day for the rescue and relief operations from 8 to 25 August. On 23 August alone 33,104 police officers were on duty. Along with the local police there were Armed Police, Coastal Police, RRF,

Thunderbolt, Commandos, Women Commandos and the Special Branch, who all offered dedicated service to the common cause. Saving the people from this disaster was the goal. When all the forces worked together to attain this goal it became an unforgettable experience. In 'Operation Jalraksha' all the arms and systems of the police worked flawlessly and the rescue operation marched ahead. In addition to the police force, police vehicles, boats and lorries became integral parts of the rescue and relief operations. Police rewrote history through this rescue operation, transcending limitations and gathering energy from their own humanitarian activities and commitment.

As the flood waters gushed forth, the supply of electricity was snapped at different places. KSEB and the Fire Force extended all assistance to remove the obstacles. Mobile towers had been battered by floods. Communications network was paralysed. Special mention has to be made of the efforts of the police to re-establish communications with the wireless. Synchronised with the rescue and relief activities, control rooms were also opened to monitor all the activities. Ambulance service was established to assist the rescue operations. Special care was taken to speed up police inquests and post-mortems and to hand over the corpses to the relatives without delay, to enable them to perform the last rites.

The police were vigilant to save the people trapped under the debris of landslides and also to evacuate people in flood-prone areas to safer zones. They were in the forefront to give warnings regarding the opening of dams. The performance of the police was more or less on par with that of the defence service personnel. They worked in unison with other departments under the directions of the government. The fact that the police knew

the terrain and the location of the residents made their task easier. As a result of the operation, the police could rescue 3,17,573 people.

When fishing boats were deployed for the rescue operation, it was a moment of great significance. The committed service of the fishermen will always be remembered as a glorious chapter in the history of the rescue operation. The role of the police was pivotal in organizing more than 500 boats in the districts of Kollam, Thrissur, Kannur and Malappuram. With the assistance of the coastal Police Stations more than 600 boats were pressed into service. Facilities were provided to the fishermen for rest and accommodation in several Police stations. More than 2000 fishermen actively participated in the rescue operation. That more than 200,000 people were rescued in the venture shows the significance of the intervention.

The service of experienced trauma care volunteers was made available in the station limits of all the districts. The telecommunication wing of the police made arrangements for issuing alert notices in hazard-prone station limits. The official telephone number of the Inspector of Telecommunications had been shared for enquiries through the media. The helicopters involved in the relief operation were given wireless communication facility.

Janamaithri Suraksha Committees has been functioning ever since the formation of Janmaithri Police. As a result of the activities of this organisation, there existed an intimacy and cooperation between the police and the public. During the floods, Janamaithri meetings had a key role in conveying accurate information about the situation. The Janamaithri and

Jana Suraksha committees were very helpful in the rescue operation.

The services of the Student Police Cadets as volunteers in camps is a healthy sign and a promise of the younger generation's willingness to serve. The service of this group of youngsters was very helpful in bringing the flood victims back to their homes.

The police watched the situation very closely from local and central control rooms. Whenever there was some slowdown in the activities, there was instant action on the part of the police. The police took the initiative to provide proper facilities and security for the Central Forces and also for their equipment. They were in the forefront in ensuring the safety of those stranded in houses, especially the old people. The police acted promptly to restore roads and regulate traffic.

The police made the people aware of the true state of affairs relating to the flood through social media. Moreover, they saw to it that no element of needless fear was generated by the dissemination of false information.

The police extended selfless service both in rescue and relief. Materials and goods worth Rs 8.4 crores were made available for relief work by transporting these as required in 236 trucks. The police force helped a lot in pooling and the materials and goods pouring in from different parts of the country at the Thiruvananthapuram Airport and in co-ordinating the distribution of these. They also ensured that these materials including food items reached the areas affected by the disaster. They were also alert in maintaining safety and security in the relief camps. The police force took up the cleaning activities of

the houses, when the inmates of the camps returned home. Their round-the-clock alertness also prevented petty thefts in the camps.

The actions of the police, in fact, reflected the sage proverb '*Mridu bhava drita kritye*' (Soft in temperament and strong in action). The police officials, regardless of rank, took part in the venture as volunteers or rescuers and thus fulfilled their mission being saviours and protectors of the public. It was the Chief Minister of the state who gave leadership and necessary directions to the police. He held frequent meetings every day and gave necessary directions for implementation. The touch of the Chief Minister was palpable in the directions. The enthusiasm and commitment of the police earned for them an enviable position in the hearts of the Keralites.

The selfless services of the police in the station limits were without parallel. The detailed picture is yet to come out. Some of these activities have been covered by the media. But it is of paramount importance to record the activities of the police especially as one among the people. The intervention of the police should become part of history: this would be a text of their future course of action in similar situations. It is on this basis that the lessons of flood in each district are explained in the following chapters.

4. Lessons of the Deluge in Different Districts

4.1 Pathanamthitta District.

Pathanamthitta district was constituted on 1st November 1982. The total area of the district is 2642 sq km. The district includes 6 municipalities, 4 taluks, 8 block panchayats, 53 grama panchayats 5

Assembly constituencies and 1 Lok Sabha constituency. The three rivers of the district are Achankovil, Manimala and Pamba.

Dr B Sandhya IPS, Director, Police Academy, and a team of Police Officers visited Aranmula and Koyipuram and held discussions with the police officers and gained an accurate picture of the colossal devastation by the flood. It should be recorded that Sri T Narayanan IPS, PB Nooh IAS, District Collector gave commendable leadership to the efforts.

Pathanamthitta was the district the worst affected by the flood. The flood left behind a trail of devastation in the district. The geographical peculiarities of the district with the rivers, Pamba, Achankovil, Kallada, Manimala and Varattar, and hill ranges and a number of ecologically sensitive areas aggravated the floods. The police leapt into action and displayed unusual determination and courage right from the beginning of the torrential rains and landslides. As a result of this the extent of the devastation was considerably reduced. Each and every one of the police personnel worked with social commitment and leadership skills. They handled with patience the countless desperate calls pouring into the police stations and showed the courage to attempt to bring back to life and safety everyone in distress.

Pathanamthitta District under the Great Deluge

The district administration in Pathanamthitta had to open 12 relief camps nearly 2 months before the torrential rain wreaked havoc in the low lying areas of Thiruvalla, Kozhencherry and Konni taluks of Pathanamthitta district. The number of camps was raised from 12 to 106 in July as there was no reduction in the intensity of the downpour. A total of 9050 people from 3,640 families were rehabilitated. By that time 13 persons had lost their lives. The heavy rain brought destruction to agriculture in 1417 hectares of

land and roads stretching over 846 kilometres. Due to incessant rain all the rivers, small and large, began to overflow. Dams reached their optimum storage capacity.

The situation worsened in the month of August. Transport and communication systems were disrupted. Foreseeing the gravity of the situation, the district authorities issued alert notices to all departments. Anticipating the arrival of thousands of people to the shores of swelling rivers to perform the rites of Karkidavavu bali, strict safety measures were taken and warnings issued.

The second wing of NDRF and the 39 members of ITBP who reached at night could not bring the situation under control. In the night of 15 August, numerous laments were heard from the marooned in various places. They had lost everything except their lives. Messages poured in from different corners seeking the service of the fishermen, Kerala's own army. The fishermen who rushed from Kollam and Thiruvananthapuram had to travel across many kilometres in lorries with their boats to reach the different locations reeling under the flood. Though they could reach only at midnight, the moment they reached, they joined the relief operations with the police without losing a minute. Though they managed to coordinate the activities very speedily, 5 persons died on 15 August in landslips and landslides in different locations of the district.

Though two navy helicopters flew to the affected areas on 16 August, they could not operate effectively or speedily due to the obstructions of roofing sheets and trees. The operations in the already flooded areas of Ranny could be completed in two days without many casualties. But the low-lying areas of Aranmula and Kozhencherry and the places in Thiruvalla Taluk came under water because of the overflow from the Pamba river. Rescue operations on 17 August was carried out in areas like Aranmula, Kidangannur

and Kozhencherry. Around 30 fishing boats were pressed into relentless service. But there were houses inaccessible because of the whirling undercurrents in the Pamba. People explored the nooks and corners where large fishing boats could not reach, with the help of makeshift rafts. Places such as the famous Aranmula Parthasarathy temple premises and the Police station were completely submerged under water.

Water rose unusually high in the rivers of the district such as Achankovil, Manimala and Kallada submerging places like Konni, Adoor and Mallappally. Pandalam town, which had never before experienced a similar flood, was totally flooded by the night of 16 August. Achankovil river had changed its course and diverted its course to Pandalam making the situation very grave. The situation could be brought under control only by the afternoon of 17 August with the concerted efforts of the Police, Fire force, NDRF and RAF teams. Meanwhile, the situation in Thiruvalla and the neighbouring areas was deplorable. The hurdles to the rescue operation at Thiruvalla area were comparatively larger: the incessant heavy rain and the landslides in the catchment areas. The residents of multi-storeyed buildings who were reluctant to leave their abodes, had taken refuge on the top of the buildings. It was a task to make available food and water to these people. The boats that had been brought for the rescue operation were the only means of transportation. Red alert was declared in the district. Educational institutions including professional colleges were closed down. The gates of Kakki, Anathodu, Kochupamba, and Muzhiyar dams, which were part of the Sabargiri hydroelectric project were opened. The water level of the Pamba rose still higher and the low lying areas of Ranny, Thiruvalla and Kozhencherry taluks were flooded.

By midnight of 14 August, reports of heavy rain and landslides were received from all the surrounding area of the Pamba river.

Water rose to a height of seven feet in houses. People ran out in fear to elevated places and terraces. Around 30,000 people were evacuated to safer places. The river overflowed and gushed forth along the thickly populated areas. Within no time electric posts and multi-storey buildings disappeared under water. The Achankovil and Pamba and their tributaries wreaked havoc, battering banks and damaging houses and roads. Initially the police did not wait for the NDRF to come. Though they were ill-equipped, they proceeded with the rescue operation with the support of the public.

Ranny was the first place to be affected by flood. The entire town of Ranny was flooded in the morning on 15 August. The river flowing with fury and violence over the bridge across Pamba river continued to remain swollen for 3 days. The only devices useful for rescue operations were two boats given by two individuals and a makeshift raft. Later the, Forest department made available 24 canoes and the services of 25 oarsmen from Adavi. These were immediately put to use in the Aranmula area with the help of police. The rescue operation was very difficult because of the strong undercurrents and the incessant rain though the rowers were well-trained experts. The 29 member NDRF team reached Ranny in the afternoon of 15 August. They too could not perform successfully because of their unfamiliarity with the place and the presence of strong undercurrents. The air-filled dinghy boat of NDRF struck work on the very first day. By the evening of the same day, a team of 70 soldiers from the Pangode Military Camp and a navy team of 10 navy personnel with 2 boats arrived from Kochi.

By 18 August the number of relief camps rose to 518. In addition to this, the rescue operation had to be continued in some places in Thiruvalla taluk such as Aranmula and Upper Kuttanad. When the situation improved a bit by 19 and 20 August, police and the public made arrangements to supply food and drinking water to

the stranded populace. Three thousand six hundred and eighty three food packets were distributed by means of helicopter drop. The rescue operation ended officially on 21 August. Police and the local self governing bodies concentrated on distributing the materials collected from across the state and in trying to inject confidence among the flood-hit. The fishermen actively participated in the rescue operation disregarding their own safety. Twenty one of their fishing boats had minor damages. The number of deaths and casualties could be reduced because the fishermen, army and the general public worked in unison with the police.

Ezhikad colony in Pathanamthitta district, where a number of SC/ST families reside, was worst affected by the flood. The cleanup programme arranged by the police in the colony should be mentioned.

Ranny Police Station

The information that the water level in Pamba river was rising exceedingly high and the people should be warned against the impending danger of floods reached Ranny Police Station at night on 14 August. Under the leadership of SHO CI Newman, loudspeaker announcements were made and all the ward members were instantly apprised of the situation. But there came repeated phone calls in the early hours of the morning (at 1 am) of 15 August informing about the worsening floods. The same instant, those available in the station, S I Anil Kumar, CPOs Abdul Salim, Vijayaraj and SI Ibrahimkutty ventured forth into a rescue operation with the equipment then available. The police were actually walking out in neck-deep water in the dead of night. A raft made by police and public was the only equipment for rescue. The office and the equipment of Fire Force, Ranny, was completely under water. Their ambulance was also trapped on the road in an attempt to recover the dead body of a lady. Low lying areas of Ranni station

were submerged in the morning itself. The seven kilometre stretch from Ranny Police station to Chellakkad was submerged and traffic came to a standstill. GSCPO Anup Raghavan and Jayakrishnan walked through neck-deep water and saved 3 women employees stranded in the Panchayat office. SI Siddique and CPO Jayakrishnan made use of a crude country raft to save a mother and her two bedridden sons, which could have become a hazardous misadventure. The mother, who was reluctant to leave her children who were unable to walk, was ready to embrace death.

Many officers could not report for duty at Ranny from 15 to 17 August as the Blockpady, Mandirampady and Vaikom areas were flooded. The transport resumed on the 18th. The CPO of Ranny Police Station, Girijendran went along with fishermen in a fishing boat to rescue 6 KSEB workers and 5 families. On the way back he lost control of the boat in a strong current. Ignoring his safety, the officer jumped into the water and in a very perilous operation he rescued 11 people.

Police could proceed with the rescue operation more speedily on 15th evening. One boat of the Coast Guard, four from the NDRF, two from the Fire Force, one belonging to fishermen from Kollam and 6 canoes from Adavi reached that very evening. Around 3,500 people marooned in several places were rescued by the Ranny police. Seventeen people were airlifted with the help of the Navy.

Two unnatural deaths were reported at Ranny Police station in connection with the flood.

Employees of the Departments, KSEB, Forest and other departments vacated the Pamba surroundings fearing for their lives. The Police station was in a precarious state with the river flowing furiously on one side and the threat of landslides on the other side. Though the authorities gave permission to vacate the place if the

situation warranted, none of the policemen left the station. Police received information that the volunteers of the Ayyappa Seva Sangham were stranded on the other side of the Pamba. With wireless assistance three policemen on duty at the Sabarimala Sannidhanam were deployed to rescue the Ayyappa Seva Sangham. Police then rescued 16 persons trapped in three buildings on the shore of the Pamba.

Pamba SHO, K S Vijayan, CPO Harikrishnan and the policemen of the AR camp led this daring venture. Responding to a message from the Collectorate control room that three ailing persons were bedridden at the Sannidhanam on the 24th, the Inspector of Pamba station along with a Fire Force team from Seethathodu crossed the river in a dinghy boat at great risk to their lives and saved them. It took two more weeks for the water to recede completely.

Around 50 families in Attathodu Colony in the Pamba station limits were moved to the Nilackal and Attathodu tribal schools. The tribals who wanted to collect forest resources refused to vacate. The police provided them food. The food was prepared by the police themselves. They wore only towel, loin-cloths etc. in the rescue operation.

Pathanamthitta Police Station

Police station received a message from Arattupuzha Kalarikkod that seven persons including an old woman and an infant were stranded. CI Sunil kumar and his team sped to the spot with an oarsman, Joseph, in his boat. It was a struggle that followed. The intertwined electric wires were pushed aside and catching hold of the wire, they proceeded forward half a kilometre. The boat soon struck against a wall and came to a stop. The water-soaked wall was demolished by strong kicks, and finally an old woman of 85, a

youth of 18 years weighing 110 kg, 3 mothers, 2 children, and an infant of 6 months were all saved.

Aranmula Police Station

Aranmula was completely submerged in the flood. So too its Police station. The district administration had given strict orders on 9 August that the snake boats made ready for the Uthrattadi boat race should not be launched on the swelling Pamba. Loudspeaker announcements about the flood were given at night on 14 August. The station began receiving phone calls from different places requesting immediate help. Sub Inspectors Anil, Jibu John and CPOs Bindulal, Arunraj, and Reju began rescue operation at night on 15 August. They evacuated the old men and children living behind the station area. Melukara, a low lying area, was flooded very soon. People in flats were saved using rafts of plantain trunks. Police personnel stranded on the terrace of a building were saved with the help of a fishing boat. Twenty seven girls stranded in the hostel of Kozhipalam Engineering college and ten persons trapped in the PWD Rest house at Sathrakadavu were saved breaking down the roof.

Koyipram Police Station

Koyipram is another police station in Pathanamthitta district that was submerged in the flood. Rescue operations were done with makeshift rafts fashioned out of plantain trunks and bamboo poles, rubber tyres, tubes, etc., with the help of the local people. Police waded through the water, or swam through it to several places and issued warnings from 15 to 16 August, before the arrival of the army and fishing boats. As a result of this several people could be saved. The people who preferred to remain on the first floor of their houses could only be brought out with the help of the army and fishing boats. The station was also in water. Several files, records

and registers were destroyed. Power failure and the sudden and unexpected onslaught of water hindered the moving of many such articles to the first floor.

Malayalapuruzha Police Station

Malayalapuruzha is surrounded on the three sides by rivers. Transport had come to a standstill on the routes to Pathanamthitta, Konni and Vadasserikara. Though there was a landslip in Mannarakulanji, the casualties were minimized because of the timely regulation of traffic. Moreover, the Government employees and the public worked as one to shift goods and articles from shops to safer places. Around 50 families residing in Kadapuruzha, near Kallar were evacuated to the SNDP school at Pothippadu. The police chained up the school buses parked on the road at Vadasserikkara near Kallar to prevent them being swept away.

Perunad Police Station

The low lying areas surrounding the station came under water when the shutters of dams were opened on 14 August. The police gave warnings by loudspeaker announcements. As the water level rose, people were evacuated and relief camps were set up. The devotees who had reached Sabarimala for the monthly pooja were rescued and shifted to the Sabari Ashramam in Matathumuzhi. The migrant workers stranded in Athikayam and the manager of the Athikayam branch of the South Indian Bank were rescued in a makeshift raft.

Chittar Police Station

Large scale landslips and landslides occurred in the Chittar police station limits. CPOs Alsam and Sachin were patrolling on bikes on Jalraksha duty when a landslip occurred right in front of them on the Vadasserikara Chittar route. In the unexpected accident 4 bikes were trapped. The police began rescue operations without

any thought of their personal safety and they saved Jayan, Arun and Nithin, natives of Chittar. But Asokan died in another landslip. Four persons died in the Vayyattupuzha Kulangara valley and in Mundanpara, Seeththode on 15 August following the landslide. Janmaithri Police gave financial assistance of Rs 10,000 to Anjali, the SPC cadet who lost her house in the flood.

Enath Police station

The Kallada river around Enath flows below the MC Road. As the Thenmala dam was opened, the water level rose up to the culvert at Enath junction. Meanwhile, the low-lying areas of Mannadi were flooded. Trucks coming from Thiruvananthapuram district carrying boats and essential goods had to pass through Enath to reach the flood-hit areas without delay. Fuel for boats, diesel and kerosene had to be made available to run the boats in service. Police personnel of the Enath station worked day and night to make this happen. G Gopakumar, Sub Inspector of the Police Station commandeered the ration shops and arranged for kerosene, lighting and generator facilities and other essential materials to be supplied to the flood-hit areas.

Pandalam Police Station

The canal bund at Ambalakadavu broke and as a result of this the river Achankovil diverted its course. By about 9.30 at night on 15 August the river gushed out to the residential areas of Pandalam. By 10 o'clock, policemen under the leadership of Inspector Vijayakumar began the rescue operation. In the very first hour, hundreds of people were evacuated to the camps. The operation was very difficult because of the non-availability of boats in the area and the absence of power supply. The police turned saviours along with the Fire Force and fishermen. The local people did not dare to get into the neck-deep water. Police constables

Udayakumar and Dileepkumar, who could swim, proceeded 50 metres through the water with a long stick and the torchlight of a mobile phone and saved Ammini Pappi, an old woman who lived in the middle of a field. They had bound her safe to a plastic chair with a dhoti and the plan was to carry her on their head. The police listened to her request to save her close companion, her dog, who refused to leave her in the teeth of danger. Dileepkumar, the CPO, lifted the dog and placed it in a bucket and holding it above his head, swam across to safety.

Information that Kosy, a 74 year old man sustaining his life through dialysis once in two days, was staying alone in his house behind Nanak auditorium at Thonnallur for the past 4 days reached the police station. A life was in danger. It was not possible to row a boat through the narrow passage. Kosy was saved by a police constable and a local resident in a very perilous operation by which they managed to reach the spot in a tiny air-filled boat and keeping the boat tied to a tree while they brought him out.

Thiruvalla Police station

Places such as Kavumbhagom, Peringara, Kadapra, Niranam and Neerettupuram in Thiruvalla village were completely under water. The police succeeded in saving 5,560 people, hospitalising 117, and providing food and essential materials to more than 20,000 people in the beat areas of the Thiruvalla station, with the help of other departments and organisations and the public.

People who took refuge on the top of buildings and who were reluctant to leave their abode hindered the relief operation. Those who refused to go to the camp and preferred to remain on the terraces had to be provided with food and drinking water with great difficulty. The boats made available for the rescue operation were the only means of getting in touch with them.

Konni Police Station

When the floods wreaked havoc in the hilly areas, the Police station at Konni was the only place the people could bank their faith on. In the evening of 15 August, the Muringamangalam, Attachakkal and Aruvappulam areas of Konni were flooded. Soon the police and the members of the Janamaithri became active and shifted the people to safe places. Knowing that the electric supply would soon be cut off, the police organised generators and fuel from all available sources to avoid any failure of communications. The first task of the police was to convince the people of the danger. Water was rising high at the point where the two rivers, Kallar and Achankovil meet. Police made announcements over loudspeaker to make people aware of the gravity of the situation. Rubber plantations came under water in one or two hours. Though the first floors of the houses were submerged, the number of casualties could be minimized because of the timely intervention and continued activity of the Police and the Forest Department. Canoes and oars were brought from the Adavi Ecotourism site. The most risky part of the entire operation was the rescue of 22 persons trapped in a brick factory near Pulimukku. The spot was a dangerous one, with several deep pits that were the result of the digging activity there. The police ventured into the dark with no thought of their personal safety. The inhabitants of the tribal colony at Kokkathod were a group of people who did not get much attention initially. The colony was completely inundated by torrential rain and water flowing down the hills. Their life had been miserable without food, medicines and essential goods. The helping hands of the Janmaithri police at Konni came to their assistance. They were provided with food, clothing and the services of three doctors from Ernakulam. Twelve relief camps functioned in the Konni station limits. They were deprived of power supply for around seven days.

Adoor Police Station

When water overflowed from the canal at Puthuval, a place in the Adoor station limits, road traffic was obstructed. The three families on the shore of the canal were shifted to Elamannor High School and they were provided with essential requirements. Steps were taken to regulate the traffic. On 16 August, one family was shifted from Thengamom area and they were given necessary assistance. A total of 125 people including 4 bedridden patients, 21 senior citizens, 48 women and 82 men were evacuated to the safety of the relief camp at Kottakkakam.

Pulikeezhu police Station

Ninety five percent of the places in the four Panchayats in the limits of Pulikeezhu police station was flooded. Pamba and Manimala, the two rivers flowing on either side of Pulikeezhu, swelled with strong currents Unprecedented was the level of flood and the strength of the currents. Upper Kuttanad which includes the location of the Police Station was under water. Sixty families comprising 246 persons including men, women and children residing near Mulappetta temple in Kadapra Grama panchayat were shifted to the idle station boat and with much difficulty we rowed through the dangerous current (in troubled waters the boat was securely tied with rope) and finally reached the safety of an isolated building of the Travancore Sugar factory. Around 450 persons stranded in Parumala, Thevery and Kadappara were rescued in boats or by expert swimmers and they were given shelter in the camps. The phone calls and requests for information were responded to promptly and steps were taken to dispel the fear and anxiety of the people. The flood worsened on 16 August and

subsequently the Police Station was flooded and the communications network affected.

People who were reluctant to leave their houses were given good advice and made aware of the gravity of the situation and evacuated to safe camps. Two people lost their lives in the station limits. The patients living in the sugar factory were airlifted to Thiruvalla.

“Me and other senior officers were deputed to coordinate rescue work in the Central office of Matsyafed. Thus I got an opportunity to participate in the rescue operations with the fishermen. Smt Sandhya IPS, ADGP, requested the Matsyafed to make arrangements for a team of police officers from the Police Training College to join the fishermen. Together with them, I too engaged in the rescue work near Parumala on 18.08.2018.”

Serial No	Police Station	Number	Cause of Death
1	Aranmula	3	Drowning
2	Pandalam	2	Drowning
3	Pathanamthitta	2	1 Drowning 1 well-cleaning
4	Keezhavoor	2	1 Falling from tree, 1 Drowning
5	Adoor	1	Drowning
6	Vechoochira	1	Drowning
7	Ranni	4	2.Drowning 1.Electric shock 1 ICU stopped working because of the floods

8	Chittar	5	Landslide
9	Konni	1	Drowning
10	Thiruvalla	6	Drowning
11	Kaipuram	2	Drowning
12	Pulikeezhu	4	Drowning
13	Kadathuruthi	1	Drowning
14	Pamba	1	Drowning
Total	35		

Alappuzha District

Alappuzha, which is known as ‘the Venice of the East’ was Aleppey in the days of British rule. The town in the central Kerala earned the title because of the criss-cross of canals. Some believe that Alapuzha got the title because of the river encircling the banyan tree (*aal*) and some others argue that Alapuzha is the land of deep rivers. Banyan tree is significant for worship in Buddhism. In ancient times Buddhism was quite prevalent in Alapuzha.

Geologists believe that the coastal areas of Alapuzha such as Karthikappally, Ambalapuzha and Cherthala were part of the Arabian sea in the past before CE 2 and that they were then on the eastern side of the Vembanad lake. The literay work *UnnuneeliSandesam* of the Sangha period gives a description of the landscape of Alapuzha in those days. This place, lying close to sea level does not have hills or forests. So also the district does not

have rivers worthy of mention. Though this place is linked with water, flood was unheard of in the district except in Kuttanad.

Raja Kesava Das, who was the Diwan of Travancore, was the architect of modern Alleppey. The area of Alapuzha is 1415 square kilometres and the population is 2,127,789. In the district comprising 6 Taluks, 93 villages, 12 blocks, 6 Municipalities and 72 Grama Panchayats, there are 36 Police Stations.

Around CE 1800 Marthanda Varma entered into a war with Kayamkulam state, and the Kayamkulam King was defeated in the battle. With a view to destroying the Budhannur elite, who had declared allegiance to the Kayamkulam King, the course of the river Achankovil which initially flowed through Pandand, Budhannur and Ala was redirected to create a new river through Kollakadavu. Later this new river came to be called Vettiyar. As the course of the river was thus changed, the places in the earlier course of the river came to be inhabited and used for agriculture. With the passage of time, any signs of a river having ever flowed across these places also vanished.

When the worst-affected spots of the 2018 flood are examined closely, one can get an idea of the places through which the river had once flowed. Pandanaad is situated 5 kilometres west of Chengannur, the highest spot by altitude in the entire district. One can hardly believe that this very spot—Pandanaad and neighbouring places—is 5 feet below sea-level. Several such streams and canals have been filled and lost forever. Uthirappillyar, which deviated from the Achankovil river and joined the Pamba now exists only in documents and records. The places along which the river flowed at one time are now valuable plots of land for which tax is now remitted.

Chengannur

The place known in ancient times as ‘Shonadri’ has in modern times become Chengannur. The place does not have any geographical connection to the coastal places of the district of Alappuzha and Kuttanad lying below sea level. The place filled with hills, valleys, plains and meadows is situated on the eastern boundary of the district. The place has gathered the power of the rivers Pamba, Achankovil and the tributaries of Pamba, Varattar and Manimalayar. Pamba winds its way through the heart of the town. Chengannur Taluk is constituted by 9 gramapanchayats, Ala, Cheriyanad, Thiruvanvandur, Pandanad, Puliur, Budhannur, Mannar, Mulakkuzha and Venmani.

Chengannur is the most elevated place in Alapuzha district, situated 129 feet above the sea level. But Pandanad situated 5 kilometres west of the town lies 5 feet below the sea level. This geographical fact is unknown to many.

In the wake of torrential rain and the unplanned release of water from dams and the resultant floods, Shri B Suhas IAS, the District Collector and the Chair of Disaster Management Authority gave orders to suspend the Independence Day parade. In the meeting convened by the Collector, attended by Shri S Surendran IPS, the District Police Chief, Shri Krishna Teja IAS and other revenue officials, the charge of the activities in Alapuzha division was given to Shri Krishna Teja IAS and that of Chengannur division to Shri Athul Swaminathan, the RDO. Subsequently District authorities took emergency measures. Strong warning was issued that torrential rain had made the immediate raising of the shutters at Kakki, and Kochu Pamba dams inevitable and that the water level of Achankovil, Pamba and Manimala was likely to swell. The people on the shores of the river were directed to move to safer places. But they were under the conviction that

Chengannur would never be flooded. The representatives of people also supported the belief. The decision to start Saras Fair, despite objections from various corners, was an instance of this over-confidence.

People had ignored the timely warning given by the police and other Government agencies. This increased the gravity of the situation and made rescue operations very difficult. Police started evacuating people from Puthenkavu, Edanadu and Mangalam on 15th itself. Pandanad and Thiruvanvundur were the panchayats initially affected by flood. As these places are below sea level, very powerful currents were experienced here. Pandanad later became the emblem of the misery of the whole of Chengannur. Neighbouring places such as Aaal, Venmani, Puliyur and Budhannur were also submerged by water.

As the water level was rising, the Police, Fire Force, the local people and the Nooranad unit of ITBP started rescue operations. Private boats were used initially. Later more equipment was required. Control rooms had started operation in the Police station. The MLA of Chengannur, Shri Saji Cherian had been giving leadership to the efforts. Shri Anish V Kora, the Dy SP and Shri Sudhilal, Inspector, were in the forefront leading the rescue operation under the guidance of the District Police Chief.

On receiving information and requests, the Police stations in the coastal areas began sending fishermen and boats for the rescue efforts in the early hours of 16th. Central forces also came forward to provide assistance. Hon. Ministers, Shri G Sudhakaran, Dr Thomas Isaac, and Shri P Thilothaman, camped at Chengannur and participated in the rescue mission.

Under the directions of the DGP, Dr Sandhya IPS entrusted Shri Reji Jacob, the outdoor SP of the Police Academy with the

charge of controlling the rescue operation along with Shri Surendran IPS. The telecommunication network of the police made communication easier in the flood-hit areas. Everything shut down when the electric power system failed. The telecommunications wing installed an extra repeater and with the cooperation of BSNL, CUG SIMs were activated.

More and more boats from Thiruvananthapuram, Kollam, Needakara, Karunagappally, Thottappally, Arattupuzha, Thrikkunnapuzha, Purakad, Ambalapuzha, Punnapra and Aruthungal reached Chengannur for the rescue operation. The fishermen who struggled every day with the sea for their daily bread stood their ground before the gushing current. The courage of the fishermen coupled with their dexterity, with the assistance and guidance of the public and the police made the rescue operation a success. Several of the boats were damaged when they hit against concrete walls and trees. These boats which had been the sole means of livelihood of the fishermen had to be abandoned. The broken boats are still grounded in Venmani and Pandanad even now. Apart from the fishermen, the concerted efforts of the NDRF, Navy, Air Force, CISF and Fire Force units of Odisha and Tamil Nadu were instrumental in saving the land.

Chengannur Police Station

The fishermen came with fishing boats from Kollam , Neendakara, Paravur and Challi on 16 August itself, but police could not provide necessary directions or lead them to places where their service was required.

The police took complete control of the rescue operation from the 16th. The Janamaithri Beat officers who were quite familiar with the places, and local persons were deputed to each fishing boat and were soon sent to specific locations. Around 68 fishing boats

were thus assigned by the police for rescue operations at different locations. It was an untiring job to rescue several people and evacuate them to the camps.

The services of the policemen Sathish Kumar, Rajagopal, Sunderlal of the Chengannur Police Station and Pratapachandra Menon of the Veeyapuram Police Station were praiseworthy. Both rescue operation and relief work had to be carried out simultaneously in Chengannur. The people stranded at different places had to be rescued. At the same time arrangements had to be made to supply food to people who had sought temporary shelter in multi-storeyed buildings. Food and drinking water were stored in boats that went for the rescue operation. Several tipper lorries and Taurus vehicles were commandeered by the Chengannur RTO and used for this purpose. The camps functioned in the town. Meanwhile food and clothing collected and sent by voluntary organizations from within the State and outside it, were arriving in huge quantities at the Engineering College and the Christian College, Chengannur. The police and revenue officials took receipt of these and distributed them to the victims of the flood. Articles received at the Taluk Offices were loaded and unloaded by the police and voluntary organizations.

The NCC cadets of the Engineering College, Chengannur, did stellar service under the leadership of Mr Biju, their teacher. They went to each room of the camp and distributed essential goods. They also did the cleaning work in the camp. Women constables were also deployed.

It was a colossal task to retrieve the spirit of Chengannur that had sunk deep in the flood. A massive cleaning campaign was implemented in which ministers, the entire district administration under the leadership of the District Collector, Senior Police

Officers, Womens' Batallion, members of the SAP, and the KAP 1,3,5 batallions actively participated.

Venmani Police Station

Water reached Pulikkadavu, first of all, since it lies at the lowest level. Later in the afternoon places like West Thuruthi and East Thuruthi situated on the banks of Achankovil river were flooded. Soon rescue operations began in these places. Relief camps were opened in Kollakadavu, Punthala and St Jude School. Residents of East Thuruthy were evacuated to camps. Around 36 families in West Thuruthy took refuge in the office of the Young Men's Association and neighbouring houses which were situated at a higher altitude. The service of the youth of the area was commendable. They saved all the cattle of the locality and helped them reach the places near the camp. By evening water level was still rising. Essential things such as life jackets, boats and other equipment were not available.

The SHO contacted the fishermen of the coastal area of Cheriyazhikkal and arranged for one fishing boat and 4 fishermen. The first operation was at East Thuruthy, from where all the remaining people had been shifted to the camp at St Jude School. The rescue operation here was very risky, as the boat had to move in reverse gear against the current. The long experience and skill of the fishermen was indeed a blessing.

Boats from Chengannur reached Venmani on 17th. The rescue operation was made easier by the timely intervention of the police and the young men of the locality. The Station SI had a very good support with the youth of the locality. The Janmaithri Youth Club had been working very methodically under the guidance of the SI. Hence he could bring them all together.

Mannar Police Station

Mannar Police Station includes the extensive paddy fields lying to the west of Chennithala and Mannar Panchayats. It is a place naturally surrounded by water with paddy fields and marshy land. The paddy fields of Upper Kuttanad, the *puncha* fields, Budhannur panchayat and numerous canals and streams fall within the limits of the Police Station. The special geographical features of the place makes around 50% of the residents perennially vulnerable to floods.

The Police in Mannar Police Station, at the outset, ventured into the floods equipped with the rubber tubes used as playthings by children in the quarters. Small boats arrived soon. The rescue operation on the 15th was ill-equipped. The situation became worse on 16th. The rivers Achankovil and Pamba overflowed to submerge the entire place in water. Ninety percent of the locality was flooded. The people of the locality used private boats in addition to rubber tubes and small boats to evacuate people to the camps. Later fishing boats came from Azhikkal, in the Thrikkunnappuzha Police Station limits.

Relief activities started on 18th. Different organizations worked with a competitive spirit to supply food and drinking water to the camps. The police took the initiative to collect food at the station to be distributed promptly to the needy. In areas inaccessible to small vehicles, the service of tipper lorries was availed for the distribution.

The service of youngsters from Kollam, and Karunagappally areas was really great. They were in the forefront in making food and clothes available to the camps. The SPC cadets of Mahatma School also did excellent work in cleaning and waste disposal, under the leadership of the ASI, Shri Aji Prasad.

Edathuva Police Station

The Police Station was thoroughly unprepared to meet the flood situation. The Police at first made use of the two available boats of the Fire Force. In addition to this, the public also assisted. By 16th evening fishing boats began arriving from Purakad, in the limits of Ambalpuzha station. These boats were made use of and the rescue operation became active. The rising level of water and the strong current were impediments to the rescue operation. Reports came that several old people and patients were entrapped in Thayankari. Soon a team comprising Police officers, Vinu and Jithin moved in that direction. But the attempt failed as there was insufficient space for the boat to pass under the bridge due to the rising water level. The next attempt was to proceed in small boats through small canals ignoring the obstructions of small bridges. Another hindrance for the rescue operation was the unwillingness of the old people to leave their houses. They got into the boat only when the Police used strong language. Around twenty people were rescued and helped to reach Thayankari bridge. The strong current prevented large boats from reaching the area. The people could not be shifted from the bridge even during night time. The situation of a group of the aged and the patients remaining on the bridge in rain was indeed pathetic. The Police was waiting with them. Some of the people turned against the Police. Information was sent from the Police Station to wait there as the situation was adverse. But by 11 o'clock two engine boats were sent from the Police Station and they were carried to Pacha, a place on Ambalappuzha Thiruvalla State Highway and from there to camps.

The Police Station was under water on the 17th. The swelling Pamba submerged the Highway and flowed through the Police Station. It was located below the road and because of the strength of the current the magnitude of damage was immense. The wireless

system was affected. Furniture was partially damaged. When the entire locality was under water, the primary preoccupation of the Police became the protection of their own workplace. Articles like files, registers, computers and accessories, evidence to be produced in court, and the wireless equipment were shifted to the SI quarters. Wireless system soon stopped working. As a result of this the communication with Chengannur was snapped. Subsequently, the communications to this station was sent to nearby stations like Ambalapuzha and Veeyapuram. This created delay in the rescue operation. Still it was an advantage that the Police could reach everywhere. Moreover, as a place located in the coastal area, more boats could be sent when the situation came to be known. As a result of all this damage was minimized.

Though Edathuva is part of Kuttanad, it is under the Chengannur Sub Division. The place that first experienced floods in the district was Lower Kuttand. The houses of around ten of the policemen working in the Police Station were flooded.

Haripad Police Station

Situations were under control in Pallippad and northern side of Karuvatta by the evening of 15th. With the intervention of Naushad, Station PRO, and with the cooperation of Sri Sathyan, the teacher of Mangalam Higher Secondary School small boats were made with thermocol and these boats were sent to Payippad, and Mannar. Meanwhile steps were taken to bring larger fibre boats. Since bringing boats along lakes takes time, lorries were commandeered and these were loaded with boats and sent to Karuvatta, Payippad and Edathuva along with fishermen.

The Northern side of Karuvatta remained isolated. There were about a thousand families in this place. Karuvatta Panhayat lies on the southern and northern sides of Karuvatta river. Karamutta was

not easily accessible because of the absence of roads or bridges. Hence when the place was flooded, it was not possible to reach there. The only available railway bridge was vulnerable. The rescuers could reach there in the boats of Veeyapuram Police Station and from Thakazy. The boats were insufficient to meet the needs. Soon fishermen came with their boats and rescued all the people to safe places and later to the camps at Haripad and Ambalapuzha. The Inspector endorsed the fact that they could not be saved through any other means.

In the border areas of Veeyapuram and Edathuva, the SI of Police coordinated the activities. Rescue operation in the narrow roads and canals were carried out with the help of floating boats. These light weight boats could be lifted up and carried away in shallow areas. The fishermen themselves brought additional boats to these areas, realizing the gravity of the situation.

Kainady Police Station

Kainady is Police Station is located in the north eastern border of Alapuzha district. Majority of places of Lower Kuttanad come under the limit of the Station. Land area comprises only 30%. The remaining portions are paddy fields, and areas made cultivable by filling lakes. The place being surrounded by water, flood management has become the style of their life.

There were places that were submerged by the floods in July itself. By the arrival of deluge all the houses were flooded. Two-storeyed buildings are very rare in this area. The people could not properly heed the warning of District Police authority and Disaster Management Authority. The reason was that the available roads were only limited- a road from Kainadi to Kavalam, a second from the eastern side of the Police Station to Kottayam district via Nilamperor and a third from Nilamperor junction in the direction of

Alapuzha- and they were all adversely affected by flood. The Police vehicles were parked on the bridge and thus protected from danger. Police made warning announcements using all available Police boats and boats of individuals. It was a hard task for the Police to evacuate people. As the Police Station was sinking in water, Police struggled hard to remove the electronic devices and wireless system to elevated areas. A majority of people fled from their homes, collecting what they got and holding on to them like a treasure, to the relief camps at Chenganassery and Kottayam.

Pulinkunnu Police Station

To reach Pulinkunnu Police Station one has to travel 17 kilometres eastward from Alapuzha to Block Junction and from there 500 metres northward. Kuttanad village office is close to Pulinkunnu Police Station. Areas surrounding Pulinkunnu had to face many difficulties in the flood in the month of July. The place was gradually recovering from the situation when on 16 August Pamba river started swelling uncontrollably. The Station is under the charge of SHO of Pulinkunnu Police Station. This is a very old Station in Alapuzha district. The main entrance to the Station is from the northern side of MC Road. As the road was adversely affected by flood in July itself, the traffic had been obstructed for two months. As most of the areas are surrounded by water, the main means of transportation is boat. The buildings at elevated places are KE Carmel School, St. Joseph's School and Pulinkunnu Engineering College.

The Engineering College at Pulinkunnu is situated at the most elevated spot in Kuttanad. Around a thousand people from the locality and students from other States took refuge in the college. But thousands of residents found it very difficult to manage, because of power failure and the lack of drinking water and also the insufficiency of basic amenities. Following this the young men,

students and local people made arrangements to bring the water transport boat and managed to help them reach camps at Alapuzha and Cherthala within two days.

The Activities of Janmaithri Police System in the face of Flood

The Janmaithri Safety Scheme was launched by the Janmaithri Police with the objective of preventing and reducing criminal activities, ensuring better cooperation between the public and the Police and mutual cooperation in the Safety zone. When the entire State was reeling under the floods, the Janmaithri members voluntarily came with their support and their activities were praiseworthy. The mutual cooperation between the Police and the public was cemented during the flood situation. The Police Stations at Chengannur, Venmani, Mannar and Edathuva under Chengannur division were all hit by flood. Chengannur Police Station, situated at the heart of the Chengannur town was very active in Janmaithri activities. When the floods were submerging the places surrounding Chengannur, only the Fire Force personnel were there to assist the Police at the initial stage. Soon the members of the Janmaithri realized that it was their duty to save the lives of their fellow beings and cooperated with the Police in the rescue operation.

The activities of Janmaithri members at Kodamthuruthu, Mangalam and Idanadu were the best examples of Janmaithri service. The beat officers of Janmaithri Police knew the isolated places very well and hence they could direct the fishing boats to those areas. The honours received by Shri Rajoob Khan, the Janmaithri CRO Sub Inspector show the magnitude of the rescue operation undertaken by Janmaithri. The influence exerted by Sri KK Vijayakumar, Janmaithri PRO of Edathuva Police Station increased the speed of rescue operation in the Edathuva Police Station limits. As Haripad and Veeyapuram were sinking, the PRO

of Police Station contacted the authorities concerned through Janmaithri system and arranged the School auditoriums and auditoriums of worship centres. Boats and boat houses of individuals came to assistance at Ambalapuzha and the places under the Alapuzha Police subdivision such as Kainadi, Ramankari, Pulinkunnu, Nedumudi and Ramankari mainly because of the excellence of Janmaithri Safety Scheme.

Janmaithri Relief Activities – ‘Sandvanam’

The leadership of Smt Sandhya IPS, ADGP (Training) in the flood rehabilitation activities was a source of inspiration to the Janmaithri Police set up. The scheme Sandvanam worked as a helping hand to the flood victims of Kuttanad and Chengannur. The objective of the Sandvanam scheme was to help reach the hands of the deserving people, the essential goods for daily use, lotion and power essential for cleaning purposes, household utensils and cooking devices. The scheme was inaugurated in Chengannur by Shri Saji Cherian, MLA. The programme Sandvanam organized by the Police with several programmes like songs and games was with a difference. It went deep into the minds of the camp residents, who had lost everything except their life, as a solace. Indeed it promoted a sense of unity among people.

Chengannur and Kuttanad are the areas in the Alapuzha District worst affected by floods. The gates of reservoirs had to be opened all together. When the flow surged in all its fury towards Arabian Sea, Chengannur, the beautiful village was slowly sinking. The next target of the violent flood was Kuttanad, a place lying lower than the sea level, and a place the scenic beauty of which is praised world over. The earnings and savings piled up over entire lifetimes were washed away with a single day's rain.

In the fury and violence of river Pamba and Achankovil, the dreams, hopes and happiness of poor kids also were washed away. In the floods they lost many invaluable possessions: small toys, models, beloved puppets and learning equipment. The kids are not still free from the fear and mental agony of the terrifying situation. The District Police at Alapuzha has started a new venture, 'HOPE - 2' with the hope of weaving together the dreams of children and regaining the lost happiness. The programme is the brainchild of Shri S Surendran, the S P of Police, Alapuzha district to offer a helping hand, a hope, to the kids who live in the mental agony, the leftover of the floods.

Unknown Good Samaritans of Sustenance

The world has come to know about the selfless service of those who worked in the rescue operation from the visual media and social media. They have received social approbation and acceptance. But there are others in every nook and corner of the State, where the media could hardly reach. There are thousands still unknown, who struggled hard, without food or clothing or even the necessary equipment for rescue. They have done very risky work disregarding their life and saved the lives of hundreds of people. They still do the job expecting no reward. Some of them consider it is their duty: to some others it is a vocation.

It is quite inhuman to forget the experiences of some of them who braved the crises risking even their life. There is no doubt that the humans who forget the great lessons taught by the great deluge are likely to forget these poor people also. But it is a necessity that the posterity should know about them: they are the leaders of the locality, not known to anybody. They are the good Samaritans of Alapuzha, yet unknown.

When Satheesh Kumar reported for sentry duty on 16th he could hardly know that he would have to face a disaster of this magnitude. He was on station duty on 15th and 16th. He started the work along with three fishermen and a teacher Siva. There came a message from the Control Room that people were entrapped in the interior areas of Parambathurpadi. Boats had not reached here because the boats coming for rescue had to be diverted in response to the helpless laments of people in distress in other areas. Thus the state of the people in interior areas was quite miserable. As the PRO of the Station, Satheesh Kumar was familiar with each and every place. The very first people whom he saved were a mother and her two children. They had been entrapped since 16th. They managed their hunger with guava fruit. The next attempt was far more dreadful. When Satheesh and his team reached there, they were hanging for safety on the railings of the window. Remaining in that posture for about 30 hours, they had faced death in front of them. They seemed to have lost their mental balance. They were speaking without any connection. The team had reached there travelling against the current for about four kilometers. It was impossible to make a return trip. They were brought to safety on the second floor of another house. The next operation was in a colony situated in the southern side of Parambathurpadi. The paddy fields in this area were filled with water and it resembled a river in full spate. No boat had reached there. Nearly 200 people were present there. They were evacuated by turns, because there was a limit for the number of persons that could be carried at a time. They were sent to the Illimala bridge in the Pulinkeezhu Police Station limit.

Several people were brought back to life during the operations from 16 to 19 August. To some of them it was more or less a second birth

Crossing the violently flowing Pamba was really a challenge. But it had to be crossed somehow, as all the routes to Kuthithodu and Vanavathukkara were flooded. People took up the challenge ignoring the safety of their lives. The boat proceeded pressing both the engines into service. The sight of the boat staggering in the current was beyond description. On the shore people watched with bated breath and apprehension till the boat reached the other shore. They worked till night to evacuate people to the Illimala bridge. Those were the anxious hours. The area worked like a harbor. People arriving from different places were evacuated to safety from this place.

It was on 17th that Sunderlal could reach Pandanad. The decision of the Station SI to depute Sunderlal to the area was also crucial. People who had been entrapped since 15th were desperately waiting for some help. They spent the three days drinking rain water and eating the coconut that flowed down to them. Among them was Ambili, a pregnant woman and 6 bedridden patients. They spent the days in the rain and mist on the terrace holding a plastic sheet above their head.

It took four hours for Sunderlal and his team to evacuate them to the first floor of the neighbouring Primary Health Centre. They had entered the first floor after breaking open the lock as the ground floor of the hospital was submerged. Another instance of the advantage of Sunderlal's familiarity with the place is in saving Gopalakrishnan, the ex-serviceman and his wife, Sarojini. Sunderlal sensed danger when Gopalakrishnan could not be found among the people thronging the terrace of the house. Sunderlal and the team did not waste a minute. The team broke open the roof of the house to find the two of them holding on to the rails of the window. Their house situated as it was near the fields, was full of water in no time.

They were shifted from the hospital to the relief camp at Patumala, the next day itself. Sunderlal did not forget to give Ambili financial assistance. Later Ambili delivered a girl child at Medical College, Kottayam.

The names of the fishermen were heard throughout this journey. The report would be incomplete without referring to their services. They are a lot who fight with the shoreless sea in the endless fury of the torrential rain, the scorching heat of the month of *Medam* and the freezing cold of *Makaram*. The colossal devastation of Tsunami and later of Okhi did not dispirit them. The undaunted courage and indomitable strength of the fishermen will always be a model for Kerala in tiding over the disaster in the days to come.

When the rivers were roaring forth in the torrential rain, the fishermen courageously pressed their oars into the troubled waters, moved across the flood and saved thousands of people. They know the intensity of the disaster, because they have always been the victims of calamities. The stretch of wilderness of the flooded area was not strange to them; the sea with its never ending wilderness had ever been their school and playfield. They took up the rescue operation as their life's vocation. They came forward, exerting themselves when the people remained dumbfounded in the face of the calamity. It was easy for them to reach Kuttanad, the place always associated with water. But the case of Chengannur was different.

The instruction received in the Police Stations of the coastal area was to load and send the necessary number of boats to Chengannur area. Accordingly boats were sent from Arthunkal and Thottappally to Chengannur. Necessary lorries and larger vehicles were made available by the Motor Vehicles Department.

The boats that attempted rescue operations in the initial stage encountered difficulties in getting fuel. They worked day and night without proper food. The Police and the locals gave them the necessary guidelines. As per directions of the Coastal DIG, around 84 fishermen and 5 policemen from Arthunkal Police Station reported at Munambam and later worked in Chendamangalam, Puthenvelikara and Muthakunnam.

Several people have become part and parcel of the rescue operation, but have not come to the limelight. 'We haven't done anything to let the world know,' they say with true rustic simplicity. Ratnakumar, a native of Aratupuzha was one among them. He belonged to a very poor family. He was severely injured when an arecanut tree coming in the strong current hit his abdomen. 43 stitches were required to close the wound. He is gradually recovering.

The fishermen were active in the rescue operation till 20 August. They did not have proper food. They managed at first with the coconut and tender coconut they received from the flood. Moving against the current and making use of the narrow alleys, there was no place that they failed to reach. On several occasions, their boats got damaged, hitting against trees or compound walls. They could not attend their routine duty during the days they attended the rescue operation and till they got their boats repaired. The condition of their houses on these days was very miserable.

4.3 Kottayam District

Kottayam district was officially constituted on 1st July 1949. The total area of the district is 2208 square km and the Police unit is divided into 5 subdivisions, Kottayam, Chenganacherry, Kanjirappally, Pala and Vaikom. There are 33 Police Stations in

Kottayam district including one Women's Police Station and 2 traffic sub-units.

The worst affected stations in Kottayam district in August were Kumarakam, Vaikom, Chenganacherry, Kottayam West, Kottayam East, Erattupetta, Pala, Gandhinagar, Thalayolaparamabu, Erumeli and Mundakkayam. In Erattupetta and Mundakkayam stations, along with the flood, landslides caused fear among the people.

In Kottayam district, 1209 personnel from various departments participated in the rescue operation.

Sl No	Description of Force	Number	Dinghy/ Boat
1	Police	809	35 (local boats)
2	NDRF	40	20
3	Navy	42	4
4	Odisha Fire Force	112	28
5	Andhra Fire Force	50	8
6	Kerala Fire & Rescue	136	
7	Coast guard	4	2
8	BSF	16	2

Relief Camps

In the Flood Relief camps in the 5 Taluks of Kottayam district, there were 1,59, 134 residents.

Taluk	Number of camps	Number of Families	Male	Female	Children	Total
Kottayam	243	13203	16414	18974	6230	41618
Chenganacherry	116	1066	14149	15623	5358	35130
Kanjirappally	14	494	644	638	433	1715
Meenachil	24	395	360	334	160	854
Vaikom	106	23357	32544	39232	8041	79817

21 deaths related to floods were reported from Kottayam district in the month of August.

Details of the houses damaged in Kottayam district

Number of persons who lost both house and land : 19

Number of houses completely damaged : 584

Number of houses partially damaged : 17427

Chenganacherry Police Station

Chenganacherry Municipality in Kottayam district comprises Vazhappally East, Vazhappally West and Chethipuaha villages. Police made announcements going around in vehicles in areas likely to be flooded such as Poovam, Puthuval, Thuruthy, Layikad, Cheeramchira, Kumaramkary, Paral and Vettithuruthu on 15-08-

2018. People residing in low lying areas in the station limits were shifted to camps by noon.

Water level was uncontrollably rising in Kuttanad area in Alapuzha district. Sub Inspector Abhilash received information that a family was stranded near the SNDP building in the Ramankary Police Station limit of Alapuzha. In response to this information, Sub Inspector, Abhilash together with SCPO Shibu, and CPO Ajithkumar arranged a large boat and rowers, filled fuel and moved for about 45 minutes and reached the spot concerned. The family along with their neighbours, numbering about 120 people were brought to the boat jetty at Chenganacherry.

Alapuzha Chenganacherry road was flooded and the traffic came to a halt. The water level at Ramankari and Kidangara reached unprecedented heights and people desperately took refuge in the elevated places and bridges along the route. The moment the news reached the Police Station at Chenganacherry, they contacted the construction company at Palathara and arranged 5 Taurus lorries. Following this, with the help of the labourers of the construction company, Police saved around 1500 people stranded on bridges and elevated places and they were moved to safe camps.

There was an unhappy instance of the people residing on either side of the Alapuzha Chenganacherry road obstructing the road, saying that the movement of lorries caused greater water flow into the houses and it might damage their houses. Police explained to them the gravity of the situation. Those who continued to be recalcitrant were removed by force. The people rescued in vehicles were dropped near Kondur bridge on the MC Road. They were given refreshments by voluntary organizations and then they were moved in KSRTC buses and sent to different camps with the help of revenue authorities.

The condition worsened on the 17th and the entire area of Kuttanad was under water. Following this a control room was opened in the DySP office at Chenganacherry. Rescue operation team was divided into two. Rescue operation by road was entrusted with SI Abhilash and deployed at Kondur. Charge of the operation on water was given to Inspector Vinod KP who was deployed in the boat jetty area. Under the leadership of the Police Officer Vinod KP, service of 3 boats of the State Water Transport Department was availed of and with the help of the Policemen deputed to the boats, several people in the Kidangara area were brought to safety without any confusion or casualties. In addition to this with the help of voluntary organizations, Police made use of small boats and saved many people stranded in the Kuttanad area. Meanwhile SI Abhilash got his leg caught under a slab as he was helping the victims get down from the tipper lorry. Eleven fishing boats of fishermen and 6 boats of NDRF arrived on 20-08-2018 and the Police provided fuel and gave all assistance to them. They also provided assistance to the SSB and Odisha Fire and Rescue Force.

The Chenganassery Police played the lead role in rescuing around 35,000 persons by road and around 15,000 others from Boat Jetty, Mulackamthuruthy by waterway till 20.08.2018.

As the rescue operation was progressing, Police took care to organise relief camps. There were quarrels in some camps over the distribution of relief materials. Police made timely interventions and solved the issues. Knowing that liquor might create trouble in camps, dry law was declared for three days in the Station limits. Round the clock patrolling was also ensured to tackle any likely law and order problem.

The SHO of Police and other officers arranged a cleaning campaign in the following schools functioning as relief camps: Puzhavad UP School, Puzhavad NSS UP School, St Josph LP

School, Layikodu, Govt UP School Perunna and Govt UP School Poovam. The Municipal hall also was cleaned by the Police.

Erattupetta Police Station

Erattupetta Police Station limits include Erattupetta Municipality, Thalanad, Thikkoy, Poonjar, Poonjar South, Thalappalam and Munnilav Grama Panchayats. These areas suffered huge loss in landslide and flood. The largest number of deaths in the district of Kottayam was reported from Erattupetta Station. Five deaths have been reported in the Police Station limits.

There was heavy downpour on 15 August and the check dams overflowed. Seeing the alarming rise of water level, the DySP took necessary precautions. Service of Fire Force and swimming experts were ensured. The Police made loudspeaker announcements going around in their vehicles asking people to vacate themselves to safe places. It was heard that a landslide had occurred in Theekoy. Pathampuzha was flooded by then.

On 15 August, there occurred 4 landslides, both major and minor, on the Mangalgiri road in Theekoy. In a powerful landslide, a bike rider was suspected to be missing. Sub Inspector Sudhir made enquiries and found that Joby Mathew, a government employee was reportedly missing. Later his dead body was recovered. Road traffic was blocked on Wagamon route due to landslide. A JCB was arranged and with the help of the people the obstruction was removed and traffic resumed. It was reported at 10.15 in the night that in the landslide that occurred at Ottayiti, a place on Erattupetta Wagamon route, a family of seven members were trapped under the earth. Within no time Sub Inspector Sudhir and a team of officers rushed to the spot. The road was obstructed due to landslide. The team parked the vehicle and proceeded on foot. Soon there was another landslide near the parked vehicle.

The SI and his team had just narrowly escaped. Rescue operation was very difficult because of the absence of electric supply. They proceeded with the rescue operation in the light of mobile phones and torches. Police saved the lives of three. Four people died.

In light of the repeatedly occurring landslides in Theekoy area, Police contacted the Panchayat authorities, made announcements that very night and started relief camps at Vellikulam school. People were evacuated. Five relief camps were working under the Police Station at Vellikulam, Vellani, Mangalagiri, Velathusseri and Plassanal. Mobile Patrolling was arranged connecting five camps with a view to preventing law and order issues. While Sub Inspector Sudhir was on duty at Erattupetta, his house at Ernakulam was under the threat of water and his family members were in the relief camp.

Erumeli Police Station

Erumeli Police Station in Kottayam district includes Erumeli South village and Erumeli Grama Panchayat. Manimala and Pamba are the main rivers here. Idakadathi, Kanamal and Angel Valley on the banks of Pamba were the worst affected in the flood in August. A death was reported in the Station limits. Forty five year old Joseph Mathew, a resident of Vadyamala had died in connection with flood.

The suspension bridge at Idakadathi area was swept away by the flood. As a result of this Arayanjilimon, the village in the Erumeli Vechoochira Police Station limit was isolated. The residents here were in distress. Police and the people of the neighbouring areas tied a strong rope connecting the two sides, and essential articles including food were sent along the rope.

Reports reached Erumeli Police Station that a lady in an advanced stage of pregnancy was undergoing labour pain in the

Arattukayam area of Angelvalley and she was in need of conveyance. The two bridges to this route were submerged under water and the entire area was surrounded by water. The Police immediately contacted higher authorities and a helicopter was made available. The lady was saved and shifted to Government Hospital at Kanjirappally, where she delivered a boy child. The selfless service of Sri Sreejith, the CPO is worth mentioning.

The Police received information that the shopkeepers were hiking prices arbitrarily. Immediately they made public announcements in the area giving strict warning that stringent action would be initiated against those who charge exorbitant rates. There were about 5 relief camps and 209 members of 47 families in the Erumeli Station limits. Mobile patrolling was also implemented connecting the 5 camps to prevent any law and order problem. All activities of the camp were managed by the Police. At the initial stages police collected a sum of money from them to buy food and clothes to be distributed to the inmates of the camp.

The Police conducted awareness classes for people returning from camps about the precautionary measures to be adopted when they reached home. In addition to this, following the request of voluntary organizations, drinking water, rice and other essential articles were made available to people at Ranni, the worst-affected place in Pathanamthitta district. The service of the Student Police Cadets were also availed of in the cleaning work.

Gandhinagar Police Station

The villages of Perumbaikad, Arpukara, Kaippuzha and Athirampuzha and some parts of Kottayam Municipality come under Gandhinagar Police Station. The deluge of 2018 had directly affected nearly 30,000 people. Moreover, the places in Arpukara Panchayat limits encountered large scale destruction of agricultural

crops. Two deaths in connection with flood have been reported in the Police Station limits. Rajendran Nair (54 years) while swimming across the field to reach his house, met with his death. Rishikesh (15 years) son of Sri Rajesh constable of the Control Room Kottayam, slipped and fell into the Meenachil river near Puthettu Suryakalady mana, and drowned. A total of 3,290 people had been staying in 36 relief camps for one week. The activities of the camp were monitored by Janmaithri members, Panchayat members and voluntary organizations. Around 35 Police Officers were deputed for several duties connected with relief work such as rescue work, rehabilitation, camp patrolling and help desk. Two deaths by drowning were reported in the Station limits.

By 16th rain intensified and subsequently red and orange alerts were declared . The places where the tributaries of Meenachil river flowed were now dangerous and the Police travelled in vehicles and issued warnings to people of Puthettu, Parambuzha and Nattassery and asked them to vacate to safer places and the houses of relatives. They gave proper assistance in this regard with the help of Janmaithri members, Panchayat members and volunteers.

.On 16th, when reports reached the station that the roads in Parambuzha and Nattassery areas were submerged and hundreds of residents were isolated, SHO Anoop Jose and ASIs Naushad and Anil Kumar were deputed for the rescue operation. They sprang into action immediately. Soon they arranged for the boats of Dr Joseph and Radhakrishnan and saved about 70 people by turns and helped them reach camps. The operation continued till 9.30 in the night. If they had not continued the rescue late into the night, casualties would have arisen. The activities of the Police in this area received the attention of the media and the approbation of the public.

In response to a report from Kumaranelloor that 5 members of a family were trapped in a house, Police reached the spot. But the powerful stream surrounding the house prevented any access to the house. Being afraid of the current the local public were hesitant to help the Police. There came a group of enthusiastic young men from Illickal ready to take up the challenge. With the help of ASI Naushad they tied the boat with a rope and very courageously reached the house and saved the people.

The CRO coordinated the post-flood-cleaning campaign. Under the leadership of Gandhinagar Police, 2 schools and 30 houses were cleaned. Police constables, Student Police Cadets, and Sisters of the Holy Cross hospital participated in the cleaning programme. The cleaning of the public road under the Sankranthi railway overbridge heaped with waste was a remarkable service that they undertook.

The timely intervention of the Police in the rescue operation and in the rehabilitation work created a sensation and it became a topic of discussion in the social media. Those who witnessed the adventurous and humane rescue operations of the Police were ready to change their attitude to the Police.

Mundakkayam Police Station

Mundakayam police station limit includes Mundakayam , Parathodu, Kuttickal villages in Kottayam district. The Police sensed the danger likely to be created by Azhutha and Manimala rivers flowing in the Station limits. As a precautionary step the Police gave safety warnings using department vehicles and through the public address system of religious institutions. A death related to flood was reported in the Station limits.

It was the threat of landslide rather than the flood that spread fear in the Station limits. People of the Kuttikkal area which is

geographically similar to Idukki district had joined hands even in the past to help prevent major hazards of the landslide.

In the landslide that occurred at Meledam area in Kuttikkal Panchayat seven families were trapped. On receiving this information, the Police sought the help of Fire and Rescue Wing and the families were shifted to safe places. On the same day, following a landslide at Mangappara, steps were taken urgently to open camps at Sea View School. The strange phenomenon of earth drying up and forming cracks on the surface was a cause of anxiety amidst the misery of floods.

Pala Police Station

Pala Police Station of Kottayam district comprises Pala municipality, and the panchayats, Kozhuvanal, Mutholi, and Karur. Meenachil river, its canals and streams swelled in the heavy downpour and landslide on 15th. Two camps were opened in the Station limits.

The timely warning and announcements given by the Police were beneficial to the public. They could move their household articles and domestic animals to safe places to a certain extent. By 2.30 in the afternoon, Meenachil river overflowed and the nearby canals and ponds also began to overflow. The houses on the banks were all submerged in water. In the first phase of floods, the business centres suffered heavy losses. But this time, as the warning was given in time, goods could be shifted from shops sufficiently early. Hence a huge loss could be averted.

Around 5000 students of Brilliant Study Centre, Pala were staying in several private hostels and houses in Mutholi. These students were isolated following floods. Forty students were rescued in air-filled tubes of vehicles and small boats from the hostels situated near Alphonsa College. It was indeed a risky job.

The Police reached the nuns convent at Vellappad on the banks of the Meenachil river on 16th, following the information that the nuns were in danger. The Police along with the auto workers went along roads that had become very deep ditches, worked till 8.30 in the night and rescued around 40 nuns from two convents.

Thalayolaparambu Police Station

Vadayar, Kulasekharamangalam, Chembu and Vellur villages of Kottayam district constitute the station limit of Thalayolaparambu. The places worst affected in the flood of August 2018 were Vadayar, Thevalakad, Pazhampatty, Korikkal, Idavattom, Palamkadavu, Manakkunnam, Thonnalloor and Maravanthuruthu. Muvattupuzha river had changed its course. The people living on the banks and shores of the river and its tributaries were affected by the flood. The Janmaithri Police of Thalayolaparambu played a key role in rescuing the people and bringing them back to normal life. Due to the timely intervention of the Police, no casualty was reported in connection with the flood.

There was an unusual rise of flood water on 17-08-2018. Suresh Kumar, PRO received information that 20 persons aged between 80 and 90 were remaining isolated in the Amritanandmayi Geriatric Care centre at Thalayolaparambu. Responding to this CPOs Girish and Nagi, were deputed to rescue them. It was difficult to help them climb the boats. They were hence allowed to sit on chairs or in huge cauldrons and rescued. Malayala Manorama covered the news live and on watching the news several youngsters and volunteers came to the Station to take up the duty.

Since the shops in Thalayolaparambu remained closed, there arose the problem of providing food to the volunteers working in the Station. Janmaithri committee members found a solution to this by preparing food and providing it to them.

Eighty percent of the places, excluding the place where the Police Station is situated came under water by 18th. All the houses in Maravanthuruthu were inundated and the inmates were rescued by the Police. The people rescued in small boats were brought to the station, given food and drinking water and then sent to relief camps in tipper and Taurus lorries. Thousands of people were rescued from Pazhampatty, Korikkal, Idavattom and Palamkadavu and sent to camps.

Nineteen official camps and 2 unofficial camps were functioning in Thalayolaparambu Station limits. The cattle of the flood victims, accommodated in the camp premises were given cattle feed and leaves and the service of a veterinary doctor was also ensured. It was informed that an inmate of the camp was stricken by chickenpox. The Police intervened without delay and made available medical aid. The Police deputed a constable to the aid of a cancer patient in the camp at St. George School.

The Police came to know about the shortage of drinking water for the people returning home. They sought the assistance of the Panchayat and supplied drinking water in tankers to the houses. The Police did not forget to invite and felicitate the Asha workers who had tirelessly worked in the camp and Sri Sabu VP, the driver of the tractor used in the Station during the floods.

Vaikom Police Station

In the flood that occurred in August 2018, the Police participated in the relief activities and supplied essential food materials, clothes and mats to several camps in the Station limit. They took the full charge of the camp at Kodyattu. At the orders of the District Police Chief, Kottayam, necessary assistance was provided to the camps. They also supplied rice and other essential materials to the residents of the colony who were in misery. The

relief activities of the Police were excellent. Three deaths were reported in the Station limits in connection with the flood.

The two vehicles of the Vaikom station were damaged. The Police hired 5 private vehicles and tractors to make announcements. In anticipation of the worsening situation 10 boats were commandeered. At the direction of the District Police Chief, 2 boats were sent by vehicles to Pathanamthitta district, 2 to Aluva and 2 boats to Pala for rescue operations.

As the Police team under the lead of Inspector Binu was conducting patrolling at 11 o'clock at night in Vadayar, they noticed a person walking in neck-deep water in the light of a mobile phone. On enquiry, he told them that 5 persons were trapped in a house. Inspector Binu, CRO Santhosh and CPO Sajeev walked in the direction braving the current in one metre deep water. Making use of a raft made of plantain trunks tied together, they saved a mentally challenged 72 year old lady, her 80 year old husband, their son, his wife and two children.

News reached the Station that a bed-ridden patient and his wife were stranded in Thuravelikunnu area. Inspector Binu reached the spot in a boat and rescued them.

Sixty official camps and 40 unofficial camps were functioning in Vaikom Station limits. Following a law and order issue, a case was registered and two persons were taken into custody. The District Police Chief, Kottayam, arrived in a tractor and visited the camps. Those people who assisted the Police in the rescue operation by providing boats, lorries, Taurus and tipper lorries and tractors were invited to the Police Station, felicitated and honoured. Police also gave financial assistance for the repair of the damaged boats that helped in the rescue efforts in Pathanamthitta and Aluva.

Vellur Police Station

Vellur Police Station limits include the villages Vellur and Mulakulam in Kottayam district. The flood brought destruction on the banks of the Muvattupuzha river. When red alert was declared in the State on 15th, Police made announcements about the necessity of vacating the houses in the areas surrounding the river, using megaphones. Those who refused to go to the camps were made aware of the danger and sent to camps.

When the Police received information that a mother and a baby 10 days old were stranded, a team under the leadership of Sub Inspector Manju Das reached the spot and ignoring the powerful current, rescued them and brought them safely ashore.

The water level was found to be rising unusually high at the camp in Mulakulam Government UP School. The inmates of the camp were shifted to elevated places, St Mary's Church Parish Hall at Kayurickal and KAM UP School after obtaining the permission of the Church authorities and the Manager of the School.

As the water level in Muvattupuzha river rose still higher on 18th, water filled the ground floor of two storied houses. Twenty seven persons who sought refuge on the first floor of a house were saved by Sub Inspector Manju Das by boat. The women in the camp were provided with clothes, mats and sheets with the help of voluntary organizations.

Police, together with Janmaithri members and SPC, arranged the cleaning of several Schools and main junctions. The house of Maryamma Pulyat, a widow staying alone was also cleaned with the help of SPC and neighbours.

Kumarakom Police Station

Kumarakom Police Station includes the western areas of Kottayam district such as Thiruvarp and Kumarakom. Four houses in Thiruvarp Panchayat area were completely destroyed, 37 houses have become uninhabitable and 1329 houses were partially damaged. In the case of Kumarakom Panchayat 23 houses were completely damaged, 195 houses have become uninhabitable and 1514 houses underwent partial damage. In the Station limits, 40 official camps and several unofficial camps functioned. More than 16,000 persons were brought to the shore of safety under the supervision of the Police. The ground floor of the Station was under water. The files, computers and inverter had to be shifted to the upper floor.

The Police tirelessly worked to persuade the reluctant people to leave their houses making them aware of the danger. It was reported that a bed-ridden lady, with belt fastened to her waist, and her husband had to be rescued. The SHO, Rejan Kumar came to rescue them by boat and to bring them to a safe place. By evening the currents of the river became strong and all the roads in the Station limits came under water.

Kumarakom was cut off because in some parts of the road the depth of the water was more than 6 feet. At the direction of the District Police Chief, a large boat was to be sent in the direction of Chengannur area. CPO, Sudhir, who had a boat driving license, was entrusted with the duty. By 3 o'clock in the afternoon the boat was sent by lorry to Chengannur. When the lorry reached Thiruvalla, the people obstructed the lorry and the boat had to be unloaded and they had to start rescue operations at Vallamkulam. It was from Kumarakom Police Station that the first boat was made available in Thiruvalla.

One death was reported from the Station limits. Anilkumar, aged 41, a native of Thiruvarp was electrocuted. Anilkumar and the seven members of his family had already been rescued and sent to relief camp. But Anilkumar went back to his home on 17-08-18 to shift his household articles and it was then that he was electrocuted. The people of Kumarakom Station limits set aside their political affinities and loyalties for a while, joined hands like brothers and braved the flood situation. Several people had been rescued using the two speed boats of the Police Station and the Kumarakom Tourist Station. As there were 4 Policemen who had a boat driving license, the rescue operation by boat was very successful.

The people who refused to leave the houses even after warning announcements sought the assistance of the Police when the water level reached their upper window sill. Following this, under the leadership of SHO, a special boat was arranged and around 400 persons were shifted to the camps. Forty official camps and several unofficial camps functioned in the station limits.

Ettumanoor Police Station

Ettumanoor Police Station includes Ettumanoor, Atihrampuzha, Onamthuruthu and Peroor villages. As a result of the heavy downpour and the landslide in the eastern areas on 15th, the major river in the area, Meenachil overflowed and the canals and ponds of the neighbouring areas began to overflow. Twenty one camps were functioning in the Ettumanoor Station limits.

The houses in this area were flooded in the strong current, and when the information reached the Police Station, a team of officers comprising Inspector A J Thomas, Sub Inspector Prasanth Kumar, Senior Civil Police Officers, Roshan Xaviour and K Udayan reached the area and with the help of local people started rescue operations. Around 70 persons were rescued in boats and cauldrons

braving the strong current of Meenachil river. Some 35 youngsters assisted the police throughout the day and night.

All the officers of the station worked together in collecting and distributing food, drinking water and other essential goods including food for the victims in misery. The Police cleaned the SKV School Neendoor, JB L P School, St Sebastian School, Peroor, that were functioning as relief camps. In addition to this, the Police also cleaned two houses at Peroor and Kattachira.

The beat officers were told to identify the people in distress after the floods and based on this, 50 people from the most impoverished families were invited to the Station and given the food materials collected by voluntary organizations.

Kottayam East Police Station.

The entire area of Muttambalam village, and the areas of Vijayapuram and Puthuppally panchayats and some parts of Panachikad and Nattakom villages and 8 wards of Kottayam Municipality fall within the limits of Kottayam East Police Station. Iranjal, Ponpally, Kosamattom and Kalathippady were the places in the Station limits that were slightly affected by floods. The East Police Station constituted an emergency team and started relief work. Under the leadership of Station authorities a total of 496 people were rescued and shifted to relief camps.

It was reported from Ponpally that a woman in the 9th month of her pregnancy was stranded with her family in a flooded house and they were waiting to be saved. Sub Inspector Reneesh TS started forthwith with CPOs, Anish and Suresh arranging a private dinghy boat. It was a herculean task to save the lady along with her two children, aged five and three years, in the boat which had to navigate against the current and tied to a rope. The relatives of the

lady informed the Sub Inspector that the lady delivered a girl child after two days.

A lady resident of the Kosamattom relief camp, who was in the 6th month of her pregnancy had an acute pain in her stomach. A Police team under the leadership of the Sub Inspector reached the camp, arranged a canoe, allowed the lady to sit in it, and holding tightly to the boat, the team swam across to safety.

Information reached the same day that the camp at Kosamattom school was flooded. The Inspector and a team of officers reached there. There was nobody to extend a helping hand to the Police. Shri Thiruvanchoor Radhakrishnan, the MLA, who came that way offered the use of the boat he was travelling in for the rescue operation. Hundreds of people including children were shifted from Kosamattom camp to the neighbouring Carmel School and Thellakam Chaithanya. Around 460 people found refuge in 16 relief camps.

The heroic activities of the Police in rescuing the pregnant women, children and the old people by swimming across the flood water, or reaching inaccessible places in boats with great difficulty have created an indelible impression in the minds of the people.

Kottayam West Police Station

Veloor and Aimanam villages of Kottayam district and 16 wards of Kottayam Municipality come under Kottayam West Police Station limits. The flood had affected 70% of the areas in the station limits. The worst affected areas were Thazhathangady, Thiruvapur, Kudamalur, Parippu and Pulikkuttissery. The rest room of the Police station was also flooded by the water from Kodur river. Some 32 relief camps functioned in the Station limits in the flood of August.

The Police took the lead role in rescuing hundreds of people in the station limits and sending them to the camps. The Police came to know that a mentally challenged person and his aged mother (65 years) were stranded in a house in Karapuzha, Parakulam area. The police patrolling the area of Thiruvathukkal was immediately sent to there. The mentally challenged person was made to sit on a chair placed on a bus-tire tube filled with air and he and his mother were rescued.

Ayarkunnam Police Station

Ayarkunnam Police limits include the entire Ayarkunnam village, and some areas of Akalakunnam, Kuroppada, and Manarkadu villages. The low lying areas in the station limits such as Punnathura East, Kambanikadavu, Arumanoor, Thiruvanchur, Neerikad and Puvathumoodu were slightly affected by flood. Meenachil river overflowed and the area surrounding its tributaries were completely flooded. Seventeen relief camps functioned in connection with the flood.

The Police officers in the station were divided into two teams and they engaged in relief operation. As there were no canoes and boats available in the station rescue operation by water was delayed. The station received on the 19th a pedal boat from DTPC that could accommodate 7 persons. The boat was made use of in the rescue operation. Police came to know that several people were cut off in Thiruvanchoor Cheenakuzhi area and reached there and rescued old people, women and children with the help of the youngsters of the locality. The people were then shifted to relief camps.

From the areas inaccessible by canoe or boat, people were lifted on strong shoulders and brought to boats. As the SCPO, Abhilash and CPO, Sabu Sunny along with the local people were returning along with the rescued people, the boat lost control and got

into a powerful current. That was moment they saw death in front of their eyes. The situation arose because the person assisting the Police had an attack of muscle cramp and attention was diverted. Nearly 1,350 people sought refuge in the 17 official camps in the station limits of Ayarkunnam.

4.4 Idukki District

Idukki district came into existence in 1972. The place abounds in agricultural crops such as tea, cardamom, pepper and lemon grass. The downpour and the flood almost crushed the district to pieces and its progress was arrested. The fruit of human labour and ecological foundations were smashed to smithereens. The summer rain received in 2018 was in excess by more than 39%, which was unprecedented. Monsoon started in the month of May itself. There was unprecedented rise in the water level of dams with the heavy rain received in June and July.

The major cause of the disaster in Idukki, a place with higher hills and hillocks than other districts, was landslip and landslide. When the towns and residential areas of the districts of Pathanamthitta, Ernakulam and Kottayam were reeling under the floods, Idukki district experienced the tremors of landslide.

A channel was constructed in Periyar at Cheruthoni town to divert the flow of water.

The news that seven persons had reportedly died in the two landslides that occurred in the Adimali station limit of Munnar subdivision after August 18 sowed fear in the minds of the people of the High Range. District Collector, Shri Jeevan Babu IAS, and District Police Chief, Shri K B Venugoopal IPS, led the rescue operations of the district.

Idukki Police Station.

Idukki Police Station limit includes Idukki dam, the second biggest arch dam in the entire world, Cheruthoni dam and Painavu, the district headquarters. The water level in Idukki dam had risen considerably in the incessant monsoon rain. Subsequently a combined review meeting of Dam Safety Authority, Police, Fire Force and other departments was held under the chairmanship Shri MM Mani, Minister for Electricity. The meeting discussed in detail, the likely impact of the release of dam water, monsoon disasters, and the precautionary safety measures. It was decided to declare orange alert when the water level reached 2,393 feet. On the basis of the meeting held on 30-07-2018 by Shri Roshi Ausgustine, MLA, Idukki at Taluk Office, Idukki, notice was served to Grama Panchayats and Revenue authorities to issue warning to the people residing on either side of Periyar and to evacuate them to safe places on 1st, 2nd and 3rd July.

The district administration declared red alert after the water level reached 2,397 feet. Efforts were on to evacuate people on either side of Periyar, such as Cheruthoni, Thadiyambad and Karimpan to safer places. At 12.30 in the afternoon, the shutter was opened in a trial run. The evacuation process was going on. Police officers from different zones, District AR camp and the 5th battalion of KAP were all assigned duty. Traffic through Cheruthoni, Thadiyambad and Chapath, was blocked. The incessant rain created a situation preventing the closing of the shutters which had been opened for a trial run. Several instances of landslides were reported from different parts of the Police Station limits. The vehicle of Inspector Sri Sibichan Jospheh was stranded in his attempt to save five persons trapped in Thannimood area. Sri Murukan and his team saved many including an expecting lady quite courageously. Six persons were reportedly missing in the landslip.

Two days later, their bodies were recovered. There occurred another landslide at Perumkala at 6 o'clock in the evening and the residents were evacuated to camps. Four persons were lost in the debris. Their bodies were recovered the next day.

Three deaths were reported in the Karimpan area in the landslide on 16th. As the search for the people missing in the landslide at Upputhodu in the Thankamony station limits went on, the occurrence of another landslide adversely affected the rescue operation.

In the post- flood situation a meeting of District collector, Shri Jeevan Babu IAS, Dr B Sindhya IPS and Sibichan, SHO, Idukki, was held at PWD Guest House, Idukki, to discuss the details of the calamity and the rehabilitation. The situation was hazardous. The soil was like water-soaked sponge liable to slip at any time. Discussions were going on at the same time in connection with the opening of the shutters of the dam as the water level had risen to an alarming level. The general public, to whom the opening of dam was a matter of curiosity at first, had to face a terrifying situation when it was opened.

Crises

In order to reach Gandhinagar, a landslide spot, which was actually 150 metres away, one had to traverse 8 kilometres. Since all the roads had been damaged by landslips, transport was very difficult. In an unnecessary aggravation of the crisis, police had to counter the spread of fake news on social media that the Mullaperiyar dam had broken down.

Karimanal Police Station

Karimanal Police Station was opened to safeguard law and order during the stages of construction of lower Periyar Power Station commissioned in 1997. The station limit includes only the

first ward of Kanjikuzhy Grama Panchayat and the total number of families is about 300. On the Neriya Mangalam-Idukki State Highway that passes through the Station limits, in a stretch of 20 km, landslips and landslides occurred in 28 places. Fourteen houses were completely damaged and twenty one partially damaged and uninhabitable due to landslips. Immediately after the Police who were on guard duty at the Power station were shifted to safe places in the afternoon of 14th, a landslide occurred and the sentry post and the power house were covered in soil. A major casualty was averted because by that time Police on guard duty had stopped work at the Power house and vacated to safer places. Information reached the police station that in the torrential rain, landslips and uprooting of trees, 12 persons including 6 natives of Oman and three vehicles were stranded. In the heavy rain that night, rescue operations could not be conducted. The next morning the rescuers proceeded half a kilometre through the thick bamboo forest and reached the top of the landslide spot. They then went down and rescued all of them.

Three relief camps were opened in the station limits. The Policemen who went to attend the parade on 15 August were stranded on the way at Keerithodu due to a landslide. More landslides were reported from Manyam, Thattekkanni, Thukkupara, Pambala, KSEB area, Kaduvakkuzhi, Kudakkallu, Audit 1-2, and Anathara.

Kanjikuzhy Police Station

There were both landslips and landslides in Panamkutty, Keerithodu, Chelachuvad, Attikalam, Pazhayarikandam, Venmany, Vanchikallu, Varikkamuthan areas in the station limits. Agasthy (71), and Elikutty (70), died in a landslide on 9-8-18, after they had moved to another house when their house was washed away in the floods. Sarojini died on 15-8-2018 following a landslide in the

Keerithodu area. Six relief camps were opened and 80 families were shifted to the camps. In connection with the opening of the dam, people residing in the 15 km stretch were evacuated. Janmaithri members, public servants and the authorities of Revenue and Panchayat actively participated in the relief operation.

Karimannur Police Station.

The Police personally reached almost all areas of the station limits, especially Malayinchi, Chelakad and Velliyani where landslides had occurred in previous years and issued timely warnings. They compelled 30 families to leave to safe places, after which several houses were swept away. The timely intervention of the Police averted many calamities and casualties. They evacuated about 200 families to the camps in the neighbouring schools. Nine relief camps were opened in the station limits. As a precautionary measure for the rescue operation, torches, sword, knife and fuel had been stored in advance and JCBs procured. The place witnessed the full success of the Janamaithri Police. Police could ensure the active participation of all the people in the safety mission because of this very reason.

Marayur Police Station.

Marayur is a place that receives the lowest rate of rainfall in the State. The place did not face any other serious problems before August. There was excess rainfall and landslips occurred in Kanthalloor, Kovilkadavu and Thalayar. Six girls going from Tamil Nadu to Palakad were stranded at Marayur. The Police helped them reach Mattupetty and they were then sent along with their parents.

Rajakkad Police Station

Landslips occurred at Panniyarkutty, Josegiri, Mullakkanam, Manjakuzhy and Vallyakandam. In a massive land slip at

Panniyarkudy near Konnathady, commercial buildings and roads were destroyed. Three houses were completely damaged and 11 houses partially damaged in the area. Around seven camps were opened by the 15th.

Santhanpara Police Station

Though there was heavy rain from the first week of August, no serious danger or destructions occurred in the station limit. Major and minor landslips occurred at Chemmannar, Sleevamala, Pampupara, Melachemmannar, Jandanirappu, Bodimettu Road, Mangathotty, Shankappan Para, Cheriya and Myladumpara and this resulted in crop damage.

Two houses were completely damaged. One vehicle was buried and 4 houses collapsed. Eleven relief camps were opened from 9-8-2018 to 14-8-2018.

Vellathuval Police Station

Vellathuval Police Station limits was one the places worst-affected by the disaster. Panniyar and Vellathuval power houses went out of order with earth covering the entire area. The calamity that took place in Vellathuval has no parallel in its history: landslide, landslip, loss of agricultural crops and cattle, devastation of roads, sinking of the earth, and to top it all, the death of 8 persons. The rural township disappeared into oblivion. Small scale landslips were reported in the station limits in the first half of July. Traffic was obstructed at S-Valavu on the Vimala city –Rajakad route due to landslips that occurred five times. Following this; many serious landslides and landslips occurred in Salyampara, Thottappura, Uthupara, Ambazhachal, Anachal, Muthuvankudy, Ellackal, Puthalanirappu, Pothupara, Vellathuval, Vimala city, S-Valavu, Pnniyarkutty, Marakanam, Konnathady, Purayidam city, Kailasom, Bethel, Mullarikudy, Ancham mile, Kallarkutty,

Muthirapuzha, Inchapathal, Mukudam, Kambilikandam, Parathodu, Mankuva, Chinnar, Panickankudy, Perinchamkuttu and Thinkalkadu in the first two weeks of August.

A total of 34 camps were opened by 14 August. Eight persons died in the landslide that occurred in the station limit on 9,10,13, 15 and 16 August. In the landslide that occurred in S-Valav in the early morning of 16-08-2018, 5 members of 2 families died, one person was injured and 4 houses destroyed. The dead bodies of 3 persons have not yet been recovered. The damaged roads were repaired and reconstructed in several places by Police, local people and village authorities. Five JCBs were on permanent duty to remove earth from the roads. Four jeeps were hired for the Station use. Police were deputed to petrol pumps for duty to ensure availability of fuel.

As road transport was obstructed, several Police officers had to walk an additional distance of 14 kilometres for about a week to attend duty in the Station. A person trapped in the debris of a landslide at S Valav was rescued but because of the delay in reaching the hospital he died after two hours. Eight deaths were reported on 9, 10 and 16 August. Electricity and telecommunication connections remained snapped during the rescue operation.

Devikulam Police Station

Devikulam, Lockhart and Vadavatta received heavy rain from 8 August. There were landslides at different places from the 14th. Flex boards with warning messages were displayed at several spots on Devikulam-PHC road, Devikulam -Munnar road, Devikulam-Munnar bye pass road, etc. The first relief camp was started in Devikulam Govt HS. 80 families were sent to this camp under the supervision of the Police.

There was heavy downpour and landslide at Devikulam and Irachippara on 16th. Three persons died. It was quite perilously that the Police and the local people saved two male adults and a lady. Madhu, an employee of the KSRTC Depot, Munnar, was trapped neck deep in soil, following a landslip. While attempting to save Madhu, another landslide came and all the rescuers fled for safety. If they had not escaped, it would have been a great tragedy.

Fifteen personnel of RRF were with the Police. Hitachi, JCB and other equipment and vehicles used for the construction of Highway and five hired jeeps were part of the rescue operation. Electric connection was cut off for a week. VHF was the only source of communication. But the availability of fuel from Munnar was ensured. As the houses of constables, Sanj and Rajeshkumar were destroyed in the landslip, they sought refuge in the relief camp.

Munnar Police Station

Places like Munnar, Pallivasal, Rajamala and Mankulam received heavy rain from the first of August. The Police had sent messages of warning directly and through WhatsApp groups and people's representatives to the people residing on the shores of rivers Muthirapuzha, Nallathanni, and Kannimala and also people residing in estate *layamsto* evacuate. They equipped the Anganwadis and auditoriums to receive the victims. Five relief camps were opened in the station limits. People from areas under the threat of landslips were compulsorily shifted to relief camps.

By the 10th, College Junction, Nallathanni, Munnar town, Headworks dam, Parts of NH and several areas of Munnar–Mankulam road were damaged in landslip. Landslide was reported in Idamalakudy road and Pallivasal road. Kannimalayar overflowed, Periyavara bridge was shattered by the current.

Vehicle Transport on Munnar- Udumalai road came to a standstill. Electricity connection and communication network stopped. VHF was the only source of communication.

Five JCBs were brought to restore transportation. Other implements and equipment were collected with the help of Fire Force and transportation was restored.

KSEB road to Plum Judy resort was damaged on 12th and several people were stranded in the resort. The Police and Fire Force rushed to the area, saved the tourists, both natives and foreigners, and sent them to safe places in government vehicles. Joseph died on 14th after he fell into a nearby canal at Mankulam Pamapukayam and Madankumar, a native of Tamil Nadu died in a landslip. Four members of a family met with their death in a landslide at 3 o'clock in the morning of 16 August at Munnunuri *layam*, Nallathanni estate. The building of Arts College on the Munnar Devikulam road was completely destroyed by the continuous landslide from the nearby hill on 15, 16 and 17 August.

The Police acted in time and averted a crisis when some people tried to snatch away the food materials brought for the relief camps and saw to it that it was distributed in the camp. Under the leadership of the Police a mammoth cleaning campaign was organised. They cleaned up the town, the premises of the relief camp, a 3 kilometre stretch of National Highway, Muthirapuzhayar, the Bus stand, the Stadium ground and several estate *layams* in ten days.

Murikkassery Police Station.

Relief camps were opened at four places, Murikkassery, Rajapuram, Bethel, Kaliyarkandam and the people residing in vulnerable areas were shifted to the camps. Road transportation was made impossible by the landslip in Rajapuram, Bethel,

Perinchamkutty, Melechinnar, Kallippara, Chinnar and Chappath. Parts of Murikkassery- Chelachuvadu road were completely damaged and it took three weeks to repair it and make it suitable for traffic.

Three persons were buried in the debris of the landslip in the morning of the 9th at Rajapuram and at Senapathy, an old man, Joseph (70) died in the landslip at his house. The Police hired a JCB for removing obstructions and two jeeps for transportation. Availability of fuel was ensured at Murikkassery petrol pump. The equipment and machines essential for rescue operation were either hired or organised locally by the Police.

Adimaly Police Station

Heavy downpour started from the first week of August. The stream flowing down from Thalamaly overflowed. The Police instructed the residents on the banks to leave for safer places. On 6 August land slipped behind a tea shop near Ambalappady area and a lady trapped in a toilet was saved with injuries all over her body after a toil of several hours by the Police and local people. In another instance five inmates of a house including two infants died in the landslip at Ettumuri. Earth sank down at almost the same time in the tribal colony at Korangatty and two members of a family died. Kunjumol, who was under treatment after a landslip-related accident, died after a month. The number of deaths mounted to 8 in the Adimaly Police Station limits.

The worst affected areas on the National Highway were those between Neryamangalam and Iruttukanam. Conveyance was obstructed by uprooted trees and landslip. The Police worked cautiously round the clock, removed the obstructions in time and took steps to restore transport. Due to the landslips in two spots near Valara waterfalls, larger vehicles were directed to the Pambala

route. The attempt of NH authorities to restore vehicle transport by reinforcing the walls with the help of iron girders and rock succeeded. Some 40 relief camps were started in the station limits and around 300 families were evacuated following a landslide in the early hours of the morning of the 6th. The Fire unit was active in clearing the road at Adimaly, Vellathuval, Ponmudi, Rajakad, Ellakal and Unjithanny areas. The Fire Force from Kothamangalam and Muvattupuzha participated in the relief work at Adimaly. They worked hard with the Police and locals to save five members of a family trapped at Ettumuri.

Normal life was paralyzed at Kallarkutty, Kathippara, Naikkunnu, Odakka city, Vadakke Ayiramekkar, Smasanbhgom at Kumpanpara, Machiplavu, Chattupara, Iruttukanam, Valara and Jathithottam areas by the landslips occurring on several days.

The level of water began to rise in Adimaly town and the neighbouring areas, Mannamkala, Mukambika Nagar, Camco junction, Ambalappady Bhagom, Karimkulam, Vivekananda Nagar, Polinja Palam, Viswadeepthi Bhagom and Eastern Factory areas as the downpour intensified on 12 August. Several houses came under water. Around 150 families were shifted to relief camps. A three storey building near the National Highway sank down 50 feet. As part of the rescue operation at Mukambika Nagar area the Fire Force personnel proceeded towards a transformer without knowing that there was power supply. But danger was averted when they noticed the indicator light on the switch board of the next house; they intimated the matter to the KSEB. The Janmaithri canteen at Adimali gave Onam kits to more than 300 people.

Kattappana Police Station

Landslips occurred at Irattayar and Vellayamkudy areas of Kattappana Police Station limit on 12 and 13 August and following

this four relief camps were opened. A base camp was functioning at Kattappana to provide food materials to the camps functioning in other station limits. The shops and commercial centres in Kattappana town were closed due to heavy rain and food was made available to rescuers and public by the Janmaithri canteen.

Thankamony Police Station

Upputhodu, in the station limits of Thankamony, had to face the largest landslide in the district at 9.30 pm on 17 August. Three members of a house and their neighbour lost their lives. The body of Rajamma has not yet been recovered. Large areas of agricultural land were lost in the landslide. Prabhakaran who was on his way to the medical college, Idukki, died on the way in the landslide. Road transportation was disrupted for days together at Kamakshi, Pandippara, Mariapuram areas in station limits due to landslide and also on the Kattappana-Idukki and Thankamony–Murikkassery routes.

Vandiperiyar Police Station

Many people on the banks of Periyar flowing along Mullaperiyar to Idukki were evacuated following the opening of the gates of the Mullaperiyar dam. Seven camps were opened in the station limits. Road transport was obstructed on the Kumily–Kottayam route because the areas from Kakkikavala to Valadi were flooded. The newly constructed church at Keerikara was shattered in a landslide.

Kumily Police Station

Thekkady, a tourist centre of international importance was isolated in the heavy rain. Vehicle transportation on Kumily – Tamil Nadu and Kumily – Vandiperiyar routes were obstructed due to landslip and flood. A major landslip occurred near the camp. The district administration had instructed to stop the boat service on

Thekkaday lake from 9 August as part of the safety measures. Minor landslides were reported from Sasthamnada and Arupatham mile.

Nedumkandam Police Station

Following the very heavy monsoon rain, three members of a family at Pathuvalavu Bagom died in a landslide. The other two members were rescued courageously by Police and Fire Force. Fourteen relief camps were started at different areas of the station limits from 9 to 14 August and 502 families comprising 1,818 members were shifted as part of the safety measures. The estate owners were instructed to stop work during these days in fear of the danger of branches of trees falling down. Transportation was obstructed by landslips and uprooted trees. All the obstructions were removed and traffic was restored.

Upputhara Police Station

When the water level in Mullaperiyar dam rose to 142 feet, the shutters were opened. Following this Santhipalam, Chappath and Upputhara areas were flooded by the water from Periyar. Santhipalam and Chapath were completely under water and the banks on either side were isolated. More than a hundred houses and shops at Chappath on the banks of Periyar were cut off by the floods. As the families had been shifted in advance, danger was averted. The Upputhara bridge across Periyar went under water for the first time in history and hence several areas were cut off. As a result of this the rescue mission was obstructed in many places.

Seven flood relief camps were opened in the Upputhara Police station limits and the Police monitored and ensured the essential services in all the places. Police also distributed the food and clothes obtained from Thodupuzha and Bison valley areas to the

tribal areas of Memary. The team of NDRF was very active in the Upputhara police station limits.

Death Rate

No.	T a l u k	Cause of death			
		Landslide	Flood	Fall of trees	Total
1	Idukki	27	1	0	28
2	Devikulam	17	2	0	19
3	Udambanchola	3	0	3	6
4	Peerumedu	0	4	0	4
5	Thodupuzha	1	1	0	2
		48	8	3	59

Details of Persons Missing in Idukki District in the Floods

No.	Taluk	No. of persons missing
1	Idukki	5
2	Peerumedu	1
3	Devikulam	1
	Total	7

Details of the damage to houses

No.	Taluk	Houses Completely destroyed	Houses Partially destroyed
1	Idukki	564	2062
2	Devikulam	315	2788
3	Udumbanchola	407	2196
4	Peerumedu	248	250
5	Thodupuzha	97	331
		1631	7627

4.5 Ernakulam District

Consequent on the heavy flow of rainwater into the Periyar, Chalakudi and Muvattupuzha rivers, parts of the Ernakulam District

(Rural) were fully or partially submerged. The water level rose in many areas due to the overflow from drains and waterways over many kilometres. According to the list of the Disaster Management Authority, seven villages were totally destroyed. The official reports of the district administration give the figure of 28 deaths and mention 3 persons who suffered grievous bodily injuries. The fishermen of the district joined hands with the police force to save the lives and belongings of many thousands of people.

The commendable service, leadership and courage of the District (Rural) Chief of Police, Sri Rahul R. Nair inspired the entire police force of the area. The 19 member team of diving experts of the Kerala Armed Police Battalion-I were on constant alert for rescue activities. The services rendered by the police to the public after the floods is inestimable. The police worked selflessly to ensure that the donations received and collected by organizations from philanthropists and the funds from the government reached the hands of those who needed them most. After the floods, the police took up the challenge of rebuilding and rehabilitation in addition to the extremely important activity of cleaning-up. Approximately four hundred thousand people were moved to relief camps during the deluge.

POLICE STATIONS SUBMERGED UNDER WATER

1. Kalady
2. Vadakkekara
3. Ayyampuzha
4. Eloor
5. Puthenvelikara
6. Muvattupuzha

POLICE STATIONS PARTIALLY SUBMERGED

1. Nedumbasseri
2. Njarackal

FLOOD-AFFECTED POLICE STATIONS IN ERNAKULAM RURAL

1	Kalady	14	Perumbavoor
2	North Parur	15	Kodanad
3	Puthenvelikara	16	Kothamangalam
4	Ayyampuzha	17	Pothanikad
5	Muvattupuzha	18	Kuttampuzha
6	Vadakkekara	19.	Kuruppampady
7	Nedumbasseri	20	Binanipuram
8	Njarackal	21	Munanbam
9	Varapuzha	22	Oonukal
10	Aluva West	23	Thadittaparambu
11	Aluva East	24	Chengamanad
12	Piravam	25	Kottapady
13	Ramamangalam	26	Angamaly

Number of Flood Relief Camps: 486

Number of police deployed: 3949

Worst-affected areas:Varapuzha, Chengamanad, North Parur,Vadakkekara, Alangad, Puthenvelikara

FLOOD-AFFECTED POLICE STATIONS IN ERNAKULAM DISTRICT (CITY)

1. Palarivattom
2. Cheranalloor
3. Thrikkakara
4. Eloor
5. Kalamasseri

Puthenvelikara Station:

It is believed that the village of Puthenvelikara was formed by the ebbing action of strong tides. The main areas in the flood zone of Parur taluk come under this station. Chalakudy river merges with the Periyar in Elenthikara. Puthenvelikara station is located on the banks of the Chalakudy, Periyar and Kottapuram backwaters. The floods caused by rising tides and incessant heavy rain submerged the police station and the surrounding areas. The water level in the police station rose to as high as five feet above ground level. When this began on the 15th of August, the S.H.O., E.V. Shibu, who had gone to the hospital with his own child, went back to the station as directed by the District (Rural) Police Chief and saw to it that the equipment and files were immediately moved to the top floor. The telephone and related instruments were also moved upstairs and the station continued to function from there. His direction that all calls relating to flood-rescue should be recorded in writing was followed with due diligence. A Whatsapp group of the leaders of people's organizations and panchayat members, 'Ready to Move' was formed.

As many as nine relief camps were started and when six of these camps were affected by the floods, the inmates were moved to

other camps. The floods in the station limits started on the 15th and the water began to drain away only around the 20th.

The rescue operations had been conducted using a boat the Munambam S.I. had somehow managed to procure. The people in the Fatima Mata church at Cherukada were rescued in smaller boats. Six people were killed when the hillocks around the St Francis church in Kuthiyathodu (in the Chengamanadu station limits) caved in. At the request of the Chengamanad S.I., combing and rescue operations were initiated in this area by a team comprising members of the local police, the navy, the coastal police and the army.

The inmates of the Karunyalayam Home for Nuns and the Aged were taken to safe shelters. H.S.A. Murali managed to transport a snake-bite victim by boat and police vehicle to the Little Flower Hospital in Angamali, surmounting all obstacles. The rescue operations carried out by Rino attached to K.AP. 1, and Umesh, CPO of Puthenvelikara station were remarkably praiseworthy. Three deaths occurred in the police station limits during the floods. The police officers who took part in the rescue operations were affected by skin infections and minor hazards.

A Whatsapp group called 'Kochuveedu' [Small Cottage] comprising the police and the local people was formed to rebuild thirty homes that were destroyed by the floods. 10 of these houses have been rebuilt so far. A sum of two hundred thousand rupees which had gone missing from a relief camp was recovered after police investigation.

The police did their best to ensure the return of lost boats and cattle to their rightful owners. They also helped in the conduct of the last rites of those who had died in the floods.

Sister Federick recalls with gratitude the services of A.S.I. Shibu, H.S.A. Balakrishnan, C.P.O. Umesh and others, in rescuing and transporting the aged women and the nuns including her own self who weighed over a hundred kg from the Karunyalayam Old Age Home in Puthenvelikara police station limits, in neck-deep water, on their shoulders and backs to safe relief shelters.

The army and navy officers who participated in the rescue operations were dedicated teams well-equipped and trained for such emergencies. However, the Kerala Police who rose to the occasion without any such training or equipment and used the help of common people and whatever was available to rescue the stranded, was commended by the entire populace of the state.

Vadakkerala Police Station

Water entered the police station to the level of four and a half feet. On the morning of August 15th, even before the water rose to alarming levels in Veliyaperumballithuruthu and Cheriaperumballithuruthu, people were moved to the relief camps. The continuous stream of hoax calls and messages were a constant headache to the police. Four deaths occurred in the relief camps. An individual who had been rescued by an army helicopter later fell into the currents at Chendamangalam bridge and drowned. The police joined hands with the army, the fire force, the NDRF and local volunteers to conduct relief operations in Chendamangalam, Thattukadavu and Chittethukara limits. As large numbers of

people had turned up for relief operations, the police initiated the co-ordination of relief and rescue activities rather than direct rescue and relief. The police also had to investigate cases of goat-stealing and suchlike during the floods.

North Parur police station

The police station limits were inundated by the floods, road transport proved impossible, and the region was isolated. 31 camps were started. 6 of these were affected by the floods and the inmates moved to other camps. The pillars of the Chemmayam bridge were washed away by the floods.

“ All along there was a superstar singlehandedly coordinating with multiple people and departments. I don't know if this Sub-Inspector of Varapuzha (Soni Mathai) was trained in disaster management.”

The distress caused by the floods in Varapuzha station limits could be compared to that of the great deluge of 1924. Two deaths occurred. The major operation was co-ordination. The police also took over the entire responsibility of rehabilitation and distribution of relief materials. Even outside the station limits, within the limits of the Binanipuram station in the Kongorpilly region, rescue operations were conducted with the help of boats and lorries. Boat patrol and distribution of food materials was done with the help of the coastal police. Police took the initiative to bury the remains of dead animals and to supply drinking water to these areas. Moreover, one hundred Onam kits were distributed for the state festival. On August 16th when some of the camps were affected by the floods, around 8000 people were transported to three camps in Ernakulam, Kalamasseri and the Infopark.

Relief workers rescued around 6500 people from Alangad, Binanipuram and Karingamthuruthu. The navy helped in the rescue operations in the Pizhala region.

Around 1200 people including pregnant women, children, youth, and elderly men and women, who had been stranded for over 72 hours without even sufficient food in the Kovoov Kongorpilly

HSS were rescued on August 17th using available boats and vehicles and co-ordinating the services of the local people and other volunteers. Some food materials were filched. Some utensils that had been stored in a Christian church as merchandise for a festival were stolen, and these were recovered and restored with the help of the police.

Rescue operations were carried out in boats in Puthenpally, Valanad, SNDP Junction, Varapuzha, Koonammavu, Chanthapadi and Kocharal. Fishermen who comprised the majority of the people in the area had themselves moved away in small boats. A jankar was made available to the police.

Chengamanad Police station

The largest number of deaths in the Aluva sub-division occurred in the Chengamand police station limits. The police began rescue operations along with the members of the Kunnukara panchayat in the Ayiroorpadam Kuthiyathodu region. Road transport was affected by the overflow from the Periyar and Chalakudi rivers. This overflow had started with the heavy rains on the 6th. Although the waters receded, when the water-level rose again, relief camps were again started on 14th morning. The water level was at its highest on the 15th because of the overflow from the Periyar and Chalakudi rivers and the rising tides.

Reports came of a person hugging on to a tree in Puthenthodu region. A police team braved the strong currents and sped to the young man's rescue in a boat. At one point, he almost drowned, but because he swam on without losing heart, he was saved. Telecommunications were totally disrupted. Only an area of 15 km around the police station was spared from the rising water. Relief operations were co-ordinated from this relatively safe area.

12 camps were started. By the 17th of August, the water had risen to a level of 12 feet. St Francis Church, Kuthiyathodu, had collapsed, resulting in the death of 6 people. Strong undercurrents and floods obstructed all ingress and egress in the region on the 17th and the 18th. On the morning of the 19th a joint force comprising personnel of the army, the Puthenvelikara police and the Chengamanad police reached the site of the collapsed church at 2.30 am, and recovered two dead bodies. Later the next evening, two more bodies were recovered. The dinghy boats of the army proved extremely useful.

Binanipuram Police station

In the Binanipuram police station limits, the places severely affected by the floods were Kadungallur East, Kadungallur, Panaikulam, Kongorpilly, and Muppathedam. The houses of thousands of people were damaged. Water entered most places except the police station. Dinghy boats, Taurus, small country boats and other boats were made use of for rescue operations.

Around 10000 people sought refuge in the relief camps. Two women died. One youth committed suicide alarmed by the rising water levels. Telecommunications ceased. Apart from a few law and order problems due to minor quarrels, no other untoward incidents happened. SCPO Santhosh swam to his own house from the station to rescue his mother.

Police conducted relief operations in many places without wearing their uniform. Therefore the misunderstanding arose that the police were not involved in the relief work. Some materials were transported from the Consumerfed godown, ostensibly to the camp. On the basis of a complaint, police arrested nine persons after investigation. Merchants who arbitrarily raised prices of goods were

prevented from doing so by the police. After the floods, the public organized ceremonial functions to honour the police.

The police joined hands with the armed police and voluntary organizations to clean the houses in the area. Police played a major role in transporting essential materials to camps, and in rehabilitation.

Angamaly Police station

In Angamaly police station limits, water rose to high levels in Mambra, Elavoor and Paalupuzha areas in Parakadavu panchayat, and in Angamaly municipality, Peechanikad and Thuruthu. The people in four households in the Ezhatumukham locality who refused to move from their houses despite the rising water, were forcibly removed to a safer location, following which their houses were washed away in the overflow. A shop in Angamaly was opened and food and other materials valued at around two lakhs were distributed.

The pavements constructed on either side of the Manjali canal in the Angamali station limits, obstructed the free flow of water.

Aluva East Police station

Thuruthu, Iliyanoor and Kunjunnikara areas in the Aluva East police station limits were totally cut off by the floods. Companyyadi, Thottumukham and Keezhmadu regions were also submerged.

On 17 August 2018, C.P.O. Rajeev, who was attached to the Aluva East police station rescued an entire household comprising two septuagenarian women, two elderly men, two children below the age of ten and a housewife who had been stranded on the upper floor of a house in Manuppuram, Thottukattukara. On their way to the camp, the boat capsized near the camp office, and they were

trapped in eight-foot high water. C.P.O Rajeev dove into the water, brought up an old man and a child, and seated them on the ledge of a wall. He managed to tie the capsized boat to a post, and used the rope to help two older people and the housewife to the ledge of the wall. Then he swam with one of the old men on his shoulders and moved him safe to a nearby flat. He took off his own life-jacket, and gave it to the family whom he transported in another boat to a safe location. Rajeev, and the head of the household, Faisal, were able to find shelter for themselves only after two and a half hours. Moreover, CPOs Rajeev and Sudheer and a few others were able to save a eight-months pregnant woman from a flat on Thailoth Road where she had been stranded for three days, and pushed her seated in a tire-tube across neck-deep water to the hospital.

Aluva West Police station

The water level rose high in the following areas in the police station limits: Mambra, Naalucentu colony, Veliyathuruthu, Karumallur, Purapillykavu, Manjali, Mattupuram, Kottapuram, Alangad, Thiruvallur, Malikampeedika, Cherthanad and Neethikodu. These areas were totally cut-off. Water had risen over as much as 95% of the areas in the police station limits. Only the roads from Cherai still remained open. All the other areas were under water.

In order to arrest the spread of contagious diseases, activities like distribution of preventive medicines and awareness-sessions were organized with the help of the medical team based in Parur. The flood-damaged houses of the public and police personnel were cleaned in operations managed at the police-station. One house in the station limits was completely washed away. The police initiated the construction of three houses for the needy. The festival celebrations of the Marad church which had been delayed by the

floods was carried on in the camps where the police distributed the food.

Nedumbassery Police station

Heavy rains commenced from August 16th in the police station limits. Most of the areas in the station limits, including Avanamkodu, Thuruthisseri, Nayathodu, Thuravumkara, Chovvara, Kondotty, Pattoorkunnu, Colonybhagom, Athani, Moozhiyar, Akaparambu, Aaruentucolony, and Kuzhupallom colony, were affected by the floods.

When the waters overflowed the Chengal canal near the Coast Guard Quarters in Thuravumkara, police reached the location instantly in boats and rescued the people.

In the areas surrounding Chengalthodu, the water level rose to around eight feet and consequent to the strong currents the eastern walls of the International Airport collapsed. Water entered the airport.

During the rescue operations police managed to save from drowning a group of eight people whose boat had capsized in the currents. 9406 people from the region were rescued and relocated to safety.

Njarackal Police station

Njarackal is a place of unique geographical diversity, with coastline, backwaters and rivers. Fisherfolk abound here. They joined forces with the police to rescue a number of people. In the station limits, the water rose especially high in Kuzhupilly, Vachakkal, Aniyal, Nedungad, Puthenkadappuram, Kudungassery, Valiyavattam, Manjanakad, Arattuvazhi, Perumpilly, Elamkunnappuzha, Pallampilly, Pookad, Karuthedam, Ochenthuruthu and Valappu.

A youth by the name of Midhun Kumar who had gone on rescue operations and whose boat capsized was seen no more. Station Inspector M.K. Murali sent fisherfolk in as many as 35 boats to other station limits for rescue operations in tandem with coastal authorities.

An unidentified boat that had been beached at the time of the Ockhi storm and which had been safeguarded in the station was put to good use. As many as 250 people including 34 police personnel took part in the rescue operations. 56944 people belonging to 17303 households were given shelter in 43 camps. Police rescued around 2000 persons. As it was an area under constant attack from the sea, there were permanent relief camps attached to the village offices in Nayarambalam and Elakunnapuzha in the station limits.

Perumbavoor police station

In the Perumbavoor station limits, Ockalthuruthu, Parappuram, Vallam, Rayonpuram, South Vallom, and Kochangadi were cut off by the floods. Moreover, water rose in Chelamatton, Thannipuzha, Mudickal, Paathipalam, Thandekad, Palakkatuthazham, Kandenthara, and Saddam Road. All the roads except Perumbavoor-Kothamangalam MM Road were submerged in water. Water flowed over the station limits from the 14th to the 18th of August.

Despite the warnings, people in double-storey houses in Chelamattam, Perumattam, South Vallam, Onampilly, Mudickal and Madampilly refused to move. Rescue operations had to be undertaken in these areas again on the 16th and the 17th. Around twenty vehicles including four boats of the navy, tippers and Taurus lorries were put into service here. As water flowed into 6 of the 18 camps, people from those camps had to be relocated again. As part of the station limits were bounded by the Periyar, the water overflowed in those areas and some damage occurred. It was

reported that people were stranded in a building near the Chelamattam temple.

Consequently, SI Faisal led a team to the location in a fishing boat, braving strong currents. All the stranded persons, including two ladies in highly advanced stages of pregnancy, were rescued. The two pregnant women were moved to the hospital.

The news and visuals of Perumbavoor Crime Branch Sub-Inspector Soofy, who took part in the rescue operations wearing but a towel as a loin-cloth, in the Vaarapetty Inchiyoor region on the banks of the Periyar, were flashed across the media.

Seeing that the rescue operations in the Kalady area were not making much progress, Inspector Baiju Paulose took the initiative to organize a few fishing boats from Alapuzha. Later, on the 17th, Sub-Inspector Soofy distributed food materials in the worst-affected places in Kalady with the help of two fishermen. They distributed food and drinking water to the houses that had been cut off by the floods.

Some 28 relief camps operated in the Perumbavoor station limits. The police were present in the camps, supervising the activities the entire time. Police made their presence felt in such activities as cleaning and food-distribution.

Kalady Police station

In the Kalady station limits, the following places were isolated by the floods—Malayattoor, Nileeshwaram, Kottamam, Mekaladi, Kalady station, Kaipattoor, Manikyamangalam, Kalady town, Chengal, Kanjoor and Thettali. Moreover, extensive flood-related damage to property occurred in Madurima junction, Naduvattam and Companypadi areas. Following this, 39 camps were started, and when water rose in three of these camps, the inmates were relocated. The water had begun to rise on the evening of the 14th in

the Kalady region. By 15th night, the files, weapons and equipment in the police station were moved to a safe location. On the evening of the 16th a navy boat arrived for rescue operations. On the 17th, boats from Alapuzha began to arrive. By the evening of the 18th, the water had begun to recede. When the water receded, the houses were left with dirt around two and a half feet high.

As the rivers had changed their course, almost all roads were submerged and transport was at a standstill. Moreover, the bridge near the Federal Bank on the road to Kanjoor was completely destroyed. Kalady police station was for some time under nearly six feet of water. Some untoward incidents attributable to drinking occurred in a few camps. CPO Robin, attached to the Kalady station suffered snake-bite while engaged in rescue work, and was given treatment for the same. CPO Joshi underwent surgery for an injury to his eye. CPO Anil was grievously injured in the leg.

When the water rose very high on the 15th in the station limits, road transport against the current proved impossible. More and more people were stranded in houses, and requests for help and relief piled up. The police and the public joined hands to rescue the stranded using whatever was available, including oversize cooking utensils.

Kuruppampady Police station

In the Kuruppampady station limits, Panamkuzhy, Krariyeli, Kochupurackal kadavu, Society paalam, Paaniyeli, Mekkepaala, and Asamanoor were totally cut off by the floods. Also, landslides occurred at two sites in the Ponginchuvadu adivasi colony. The bridge in the colony was washed away in the floods.

Muvattupuzha Police station

Muvattupuzha station is situated some 300 metres away from the banks of the Muvattupuzha river, at a height of some 10 metres

above the water level. The station is in Central Travancore and comprises the eastern area of Kochi. During the floods, consequent on the overflow of water from the Thodupuzha, Kaliyar, and Kothayar rivers, the heavy downpour and rising tides, the water rose above the Muvattupuzha municipal bridge.

In the Muvattupuzha station limits flood-related damage occurred in the following areas in Muvattupuzha municipality—Thottunkalpeedika, Pallikavu, Petta, Latha Stand, Kizhakkekara, Maniamkulam kavala, Randar, 130 Junction, Murickallu, Kavumpady Road, Kaacherithazam, Kitcheripadi, Velloorkunnam, Vazhapilly, Kadari—in the following places in Arakuzhi panchayat—Thottakara, Arakuzhi Panchayat office region, Vallikada, Peringazha, Perumballoor—in the following places in Avoli Panchayat area—Rackad, Mekadambu, Cheriya Oorayam, Valakam, Peruvamoozhi, Avunda—and in Perumattambhagom in Kunnakkal Panchayat.

The water rose as high as 5.8 feet in the station. Muvattupuzha town was submerged in the incessant rains that began on the 15th. As many as six deaths occurred. When the dinghy boat of the navy was engaged in rescue operations, although Sub-Inspector Yakub was flung overboard an air-boat that struck the roofing-sheets of a house, he leapt into the water, climbed on to the top of a building and saved twelve persons using a strong rope.

Ramamangalam Police station

In the Ramamangalam station limits, Ramamangalam, Kizhumuri, Ooramana, Vettithara, and Nettipalam were totally cut off by the floods. The suspension bridge between Ramamangalam and Thammanimattam was totaled. Ramamangalam police rescued around 45 persons. On August 15th, the Muvattupuzha river began

to overflow its banks. 14 houses in Kayanadu in Maradi Panchayat were isolated. Here the river flowed breaking itself into two parts.

Around twelve houses were cut off in Ooramana. By the night of the 16th, the water entered the police station. The documents and equipment in the station had already been removed. In Attukuzhi, police rescued a family comprising a husband and wife, their son and a two-year-old child in a fibre-boat.

Kuttampuzha Police station

Kuttampuzha is a forest zone in Kothamangalam taluk. 18 Adivasi tribes and various other people live in this region. The floods caused the greatest damage in Inchathotty, Pooyamkutty, and Chappath. Although boat facilities had been available earlier, the boats had perished from lack of regular use and maintenance. Timely and efficient police action helped the people overcome the ill-effects of the flood. As Adivasi families were spread over some 40 kilometres, the police found it difficult to execute rescue operations in the region. As these regions were not accessible by police jeeps,

police had to rely on private jeeps and other facilities to travel to and within the area.

Manikandanchaal, Kallelimedu tribal colony, and Wariyam were totally cut off. It proved impossible for the police to reach these areas. Flood damage had occurred in Inchathotty, Manikandanchaal and Vellaramkunnu. Chappath was completely under water. Crops were damaged on a large scale. Two flood-related deaths occurred.

Pothanikad Police station

Flood-water entered the station limits in Valloor, South Punnammatom, Pothanikad, Pulinthanam, Kadumpidi, West Punnammatom and Vallakadavu. In 2013, seven persons had died following a landslip. The three-storey building which had been constructed near the police station as a shelter for disaster-stricken people after that event, proved extremely useful during the floods.

Piravom Police station

Thottabhagom, Mulakkulam, Kakkad, Kalmboor, and Palachuvaddu areas in the station limits were totally submerged. The Piravom police station was surrounded by water. All the major roads were under water and transport came to a standstill. The river overflowed its banks to the backwaters three kilometers away. As the shutters of the dam in the station limits were opened on the night of the 16th, it proved even more difficult to evacuate the people. Two boats and twelve canoes were in service for the rescue operations. There was total destruction in two or three wards. As the Janamaithri programme was being implemented successfully, relief and rescue were quite smooth. When police arrived at the house of Dr Sunil who worked at the Piravom Government Hospital following a request for assistance, the water had risen above the level of the first floor. The doctor's family was evacuated to safety. In the days that followed, Dr Sunil accompanied the police with his medical kit to take care of the sick and the injured in the camps. The Kalady police took upon themselves the responsibility of cleaning 4 roads, 12 anganavadis and around 150 houses. The police of Piravom station took the initiative to construct two houses for those who had lost their homes.

Eloor Police station

Foreseeing the prospect of flooding, 8 camps commenced operations in the station limits on the 10th. After two days, the water began to recede, and all the camps except two were closed on the 13th. Still, the Janmaithri police called for public meetings on the measures to be taken in the event of the opening of the shutters of the Idukki and Edamalayar dams. The police had cautioned the people to be prepared to obey an evacuation order, if issued. On the 14th, the Municipality convened a meeting of all departments and took necessary precautions.

Of the 31 wards that are within the Eloor station limits, 30 were affected by the rising water. 80% of the areas under the station were thus affected. Five houses were totally destroyed and 845 dwellings suffered partial damage. Police took the initiative to clean 127 houses and also engaged in the chlorination of the public roads. Police took steps in collaboration with service-minded volunteers to organize electricians for repair work in 110 houses. Around 30 houses were rebuilt.

Kalamasseri Police station

Kalamasseri police station area was one of those worst affected by the floods in Ernakulam district. The greatest impact of the floods was in NAD, Vidaakuzha and Edapally. Following the warning of the City Police Commissioner on the 6th that heavy rainfall and floods were likely, the Municipal Chairperson convened a meeting of all concerned on the 7th. Rescue operations and co-ordination was enabled. Many thousands of lives were saved from danger because the entire public engaged in the effort as one. A temporary control room manned by a three-member group was started in the Pathadipalam Guest House. 9 rescue teams were on alert in the police station.

The duties connected with relief and rescue were classified in two categories. One group was dedicated to rescue operations alone. The other group involved themselves in evacuation, providing security in camps, in ensuring the availability of food materials and in patrolling. Around 18 camps were set up in the station limits. Around 3,000 people lived in the camps. Two deaths occurred.

The police had to put up with some rudeness from the public. Those officers who went to rescue flat-dwellers had to face some bitter experiences. When water entered the relief camps in Cheranallor, North Parur, Aluva and Eloor, the inmates had to be relocated to the 18 camps in the Kalamasseri area. Police vehicles and school buses were used for this purpose.

Thrikkakara Police station

In the Thrikkakara station limits, water entered Balan Menon Nagar, Cherumattapuzhakara, Thuthiyoor, Kariyil colony and Keerelimala. 19 houses in Kariyil colony were swamped by the flow of water. In Keerelimala, there are seven houses in the foothills and eight on the hilltop. As the houses did not have concrete walls, it was quite possible that landslips could occur. Police consulted with and assisted the revenue authorities to commandeer schools and other buildings that could serve as relief camps. Since the police took timely precautions, the impact of the floods could be minimized.

Landslips occurred in the Keerelimala region. The equipment and vehicles needed for rescue and relief, the medical team, the fire force, revenue officials, volunteers and municipal councilors, all were on ready alert. When the camps in Cheranallor, Eloor and North Parur went under water, the inmates were safely evacuated to 28 camps in the Thrikkakara station limits. Moreover, police took the initiative to clean the colonies and public spaces, the relief

camps and the dwellings in the Kariyila colony, Koikkarapaadam, Parur and Pathalam region with the help of public-spirited people and members of voluntary organizations.

Palarivattom Police station

The worst affected areas in the Paralivattom station limits were Chalikavattam, Vennala, Koothapaadi and Ponnuruni. It was possible to conduct safe and smooth relief operations without loss of life because of the timely and efficient actions of the police and the public. There were 3147 persons in relief camps. Most of them had been evacuated from areas under the limits of other police stations. Palarivattam police station functioned as a collection centre of food materials.

Cheranalloor police station

As in other areas, the incessant heavy rain and rising water levels caused extreme distress in the Cheranalloor station limits too. There were 9 relief camps in the station limits. Around 7000 people were evacuated. Rescue and relief activities by road were not possible. Abdul Jaleel who lived near the Indrajai Nagar bridge leapt into the water and saved two migrant labourers. After their rescue, when he was trying to get out the water, he drowned and his body was recovered two days later.

4.6 THRISSUR DISTRICT

Thrissur, which goes by the name of Thirusivaperoor is the cultural capital of Kerala. The district of Thrissur came into existence on the 1st of July, 1948, as part of Travancore-Cochin as the state was then called. The district is marked by its geographical diversity, with the mountain ranges of the Western Ghats to its east, and the valleys and plains and the Arabian sea-coast to its west. Parallel to the sea there are numerous backwaters and lakes. Most of the rivers from the east flow into these back-water lakes. These

backwaters open into the sea at the river-mouths in Chettuva and at Kottappuram in Kodungalloor. Thalappilly taluk which is the northern boundary of the district is a range of small hills. The Chalakudi river and Karuvannoor river which have their origin in the Kodasserry hills flow to the south of the district. The main rivers that flow along the district are Bharatapuzha, Karuvannoorpuzha, Chalakudipuzha, Ketcheripuzha, Kurumalipuzha, and Vadakkancheripuzha. Thrissur district is spread out over 3032 square kilometres across 255 villages in seven taluks. There are 86 gramapachayats (including 10 block panchayats), a city corporation and 7 municipalities in the district.

For administrative convenience, Thrissur district was divided into the Thrissur City Police district and Thrissur Rural police district on the 3rd of March 2011 with 45 police stations altogether.

Thrissur City police district has a total of 24 police stations in the Thrissur, Guruvayoor, and Kunnamkulam sub-divisions. There are 21 police stations in the Irinjalakuda and Chalakudy sub-divisions of the Rural police district. Munakkadavu police station in Thrissur city district and Azhikode station in the Rural police district are coastal police stations.

The Floods in Thrissur District

When one follows the course of the floods in the district, as in other parts of the state, one hears about the ‘floods of ‘99’. The walls of the Sree Narayanavilasom School at Elthuruthu in Kodungalloor bears a record of the great deluge of 1924, known as the ‘floods of 99’ in local parlance.

The inscription on the wall of the school at a height of approximately five and a half feet reads ‘Flood Level 1099.’ Although the original inscription had been made on the wall of the then main building, which had to be demolished with the passage of

time, the inscription was carried over, precisely and accurately to the wall of the renovated building. It is a record of the impact of the great flood that had followed three weeks of incessant rain and led to the sight of a convoy of corpses flowing along the Canoli Canal and the other water-bodies of the region. Massive landslips and damage had then occurred in Akamala in Vadakkancheri which was then part of Travancore-Cochin state (Source: *Mathrubhumi*, 5 August 1924).

In August 2018 when the deep depression that had formed in the Arabian sea caused incessant heavy rain and rising levels of water in the Idukki dam, orange alert was declared on the 10th. From that date, cautionary warnings were announced in the Kodungalloor zone in the district. The continuous rainfall on the 15th caused the rivers, canals and kole fields in the district to overflow. Meanwhile, the catchment areas of the dams received heavy rainfall and the water-level in the storage area approached dangerously close to the maximum capacity for intake. By afternoon the shutters of all the dams in the district had been opened, to ensure dam-safety. As a consequence, the rivers and canals soon began to overflow.

By evening water began to flow into houses in the low-lying areas and people began to move out of their houses into safer locations. The water level continued to rise all night and more and more areas came under water. By the night of the 15th, landslides occurred in many places in the district. At 6.30 am on the 16th, the entire state was shocked by the forceful landslide that occurred in Koorancheri in the Vadakkancheri station limits, which claimed the lives of 30 persons. 11, including 5 who had been injured were rescued. The same day the water level of the rivers rose again, bringing more regions under water. More relief camps were opened to manage the impact of the disaster.

As the rivers began to change their course and spread disaster around a larger area, large-scale damage and extreme hazards occurred in Chalakudi and Mala. Many of the camps in the district that had been set up in haste, had to close due to the inflow of water and be relocated elsewhere. When Karuvannur river (into which flow the Chalakudi and Karmali rivers) overflowed its banks, the bunds at Illickal and Ettumuna were destroyed. This worsened the flood situation in the western parts of the district. As this was a time of ebbing tides, water did not flow to the sea, aggravating the situation. Although the rains began to weaken on the 16th, the water level did not fall. The water began to recede only on the 19th. People started to return to their houses on the 20th. However, the majority of the dwellings were not habitable because of the water, silt and filth inside. A large number of houses were completely or partially destroyed. People lost their means of livelihood with the damage to crops and farms, and the loss of cattle and poultry.

A number of lives were lost following the landslides that took place in Thekkumkara, Desamangalam, Aattoor, Mullurkara and Kurumala villages in Talapilly taluk of the district, and the landslips across Kodassery, Kuttichira, Killanoor, Madakkathara, Peechi, Panencheri, Puthut and Kainoor.

The *Mathrubhumi* report of 5 August 1924 records that during the 'Floods of '99' too, widespread landslips had occurred in the Akamala region of Vadakkancheri, resulting in the cessation of train services and other forms of transport. The largest figures of loss of life was reported this time around following the landslide in Kuruvancheri in the Vadakkancheri station limits. 19, including women and children lost their lives there.

Rescue operations

Rescue operations in Thrissur district were conducted from the 14th of August to the 20th. The maximum flood-related damage occurred within the limits of the Chalakudi, Mala, and Kodungalloor police stations. Cautionary announcements were made in the areas that fell within the limits of riverside police stations from the 14th. As a precautionary measure, many people were evacuated to safer locations from the 15th. The first rescue operations using locally available resources such as rubber tubes, basket boats, huge kitchen vessels, plastic drums, banana stems and the like were somewhat slow and ineffectual. Flood damage occurred in the limits of the coastal police stations too. The coastal police had already initiated rescue operations within their own station limits. Moreover, in collaboration with the local Coastal Safety Groups, they organized boats, canoes, and fishermen for rescue operations in various other regions, providing a fillip to the statewide rescue effort.

The Thrissur Range Inspector General of Police Sri M.R. Ajith Kumar I.P.S. led the rescue efforts camping in the worst-affected regions in the Chalakudi zone. The IGP also sprang into action to co-ordinate the reconstruction of the bunds that had collapsed in the Irinjalakuda sub-division.

Sri G.H. Yatheesh Chandra IPS led the rescue operations in the Trichur City district Sri M.K. Krishnan I.P.S. led the operations in the Rural district. The Rural district suffered more damage in the floods than the City. The City and the Rural police fought the floods as one.

In the initial stages, the police, the fire force, and the public were engaged in the rescue operations. By the evening of the 16th, the services of the NDRF, and on the 17th those of the Navy and the

Indian Army were available. The Fire Force in Thrissur rendered competent service under the leadership of the District Fire Officer Asharaf Ali and the Palakkad Regional District Fire Officer Siddha Kumar.

TABLE: NUMBER OF PERSONNEL OF VARIOUS SERVICES INVOLVED IN RESCUE OPERATIONS

AR MY	BS F	CR PF	NDRF	FI RE FO RC E	MSP	KAP 4 th	KEP A	W P Bn	IR Bn	Fis her folk	TOTAL
112	80	300	375	373	70	272	250	75	75	713	2695

Besides these, five teams of the Navy, five Chetak, 24 sorties of the Air Force and

Officers of the local police stations also took part in the rescue efforts.

Most important of all was the fact that the police were able to involve the public too in the rescue efforts. Apart from the rescue operations conducted by the police, the joint efforts of the police, revenue authorities, and the public were successful in evacuating 1.36,343 people to places of safety. The police were able to win the co-operation of the public on this scale because of interaction with the public in projects like the Janamaithri Police, Coastal Safety Groups and Student Police Cadets. The police and the public worked with all their might day and night to rescue as many of the stranded as possible.

TABLE:NUMBER OF PEOPLE RESCUED BY TEAMS OF THE FORCES IN VARIOUS PARTS OF THE DISTRICT BETWEEN THE 15th AND THE 20th

INDIAN ARMY	INDIAN NAVY	AIR FORCE	NDRF	FIRE FORCE	POLICE	TOTAL
1363	269	57	3690	17000	34781	57160

Post-Flood Operations

A large number of volunteers turned up to collect, provide and distribute food, clothing, drinking water and medicines in the camps. Though people returned to their homes from the camps, the task of making their dwellings clean and habitable, and providing the essential facilities required proved quite arduous. These activities in the district were undertaken jointly by police, local self-government representatives, voluntary organizations and other departments. A collection and distribution camp was organized in the Thrissur Indoor Stadium at the initiative of the Collector to distribute relief kits in the camps in the district. People from all walks of life, and even schoolchildren turned up as volunteers in this effort. Police officers and trainees from the Police Academy and the Battalions actively participated in this endeavour for days at a stretch.

Flood-related deaths in the district

51 persons lost their lives in the floods and the landslides that occurred in the district. 27 of these deaths were on account of landslides, including the one in Vadakkancheri that claimed 19 lives. Three persons who were trapped in a collapsed house in Kuruvancheri were rescued by the Fire Force using a hydraulic cutter. Ten individuals died of natural causes in the camps. Three

persons died in flood-related electrocution, three others died when their building collapsed, 17 drowned to death, one person who was riding through Kuthiran in a car died in a land-slip, and another lost his life under a falling tree. The inhabitants of 19 houses in Anakkayam colony in the Malakkapara station limits had a providential escape when the landslide appeared to divert itself from what would have been its natural course and descended without causing any significant harm.

171 of the 256 villages in Thrissur district were affected by the floods. 742 relief camps were opened in the district. 2,54,775 individuals, including 1,00,146 men, 1,13,610 women, and 41,019 children, sought refuge in the camps.

133481 persons took refuge in the 313 camps in the Chalakudi sub-division. The largest number was in the Kodungalloor station limits. People from Puthenvelikara and Parur in Ernakulam district were evacuated to safety to the camps in the Kodungalloor station limits. Following the requests by the District Collector Smt. T.V. Anupama IAS, the police and various voluntary organizations on social media, a large number of volunteers turned up at the camps with food and other essential requirements. Dr B. Sandhya IPS, Director of the Kerala Police Academy and State Janamaithri Police Nodal Officer, inspected the flood-affected areas and the relief camps, and gave necessary directions to the police. 87 individuals in the district lost house and land in the floods, the dwellings of 3670 persons were totally destroyed while the houses of 21,102 others were partially destroyed.

Police maintained a significant presence in all the camps. Various disputes arose in the relief camps and most of these were amicably settled by the police, but in some places criminal cases had to be registered.

Chalakuudi Police station

Chalakuudi station limits experienced some of the worst effects of the deluge. Large-scale crop-damage occurred in the station limits. One person died in a house-collapse. Transport came to a standstill on the State highway. There were landslides in Chalakuudi. On the banks of the Chalakuudi river, the water level rose to up to 20 feet in low-lying areas and to 3 feet in the higher regions. Following the floods, in the station limits, the Dy SP Office, the Circle Office, the Police Quarters, the Taluk Hospital, the KSRTC bus station, the private bus-stand, the railway station, post offices, village offices, schools, colleges, places of worship, financial institutions, merchant and other establishments, agricultural areas, farms, etc. were submerged.

Inspector Haridas and Sub-Inspector Jayesh, who had gone to Athirapilly on L & O duty, were briefed on the possibility of floods by the Athirapilly Sub-Inspector. Since precautionary announcements were issued the same day, and a large number of people evacuated to safety, the impact of the deluge was reduced considerably. Personnel of the Indian Navy, the Tamil Nadu Fire Force and the BSF arrived in Chalakuudi. Rescue operations were carried out using available resources such as canoes, rubber tubes, large kitchen utensils and vessels, rope, cords and the like.

SCPO Haridas of Chalakuudi Police station, whose own house was submerged in the floods, rescued a number of people from the rising water in Ethayamkudi in Mambra. Police personnel Rajeesh and Ajin went by boat to the treacherous currents in Chenathunadu for the rescue operations.

Twin Challenges of Rescue Operations

- The delay in procuring boats and other equipment in time.

- The undersides of boats and canoes were damaged by contact with the sharp grills atop the gates and walls of houses submerged in the flood.

Athirapilly and Malakkapara Police stations

Landslips and landslides abounded within the limits of these hill-side police stations on a larger scale than anywhere else. A woman lost her life when her house in the Athirapilly station limits collapsed. The water in Peringalkooth Dam overflowed over a level of three feet. Trees, branches and bamboo flowed down and were trapped in the top of the dam, and in its shutters and reservoir. The entry of tourists into centres such as Athirapilly, Vazhachal and Thumburmuzhi was stopped to prevent untoward incidents.

Landslides in the Cattle Rearing Centre of the Veterinary University in Konnakuzhy resulted in the deaths of 39 cows. The entry of helicopters into hilly areas like Athirapilly was quite difficult. The inhabitants of 19 houses in Anakkayam colony in the Malakkapara station limits had a providential escape when the landslide appeared to divert itself from what would have been its natural course and descended without causing any significant harm. It could have easily become one of the worst disasters of the floods of 2018.

Malakkappara, which is at the outskirts of the district, was totally isolated by the floods. The plantation-workers and adivasis of the region had to undergo untold misery because of landslides and water avalanches from the hills. Transport over most parts of the Athirapilly-Malakkapara State Highway came to a standstill for around two weeks. Food, medicine and clothing were made available here from regions such as Valpara and Tirupur. The fact that around 60 people were trapped in the Sholayar Power House quarters was known only because KSEB Assistant Engineer V. Jose

traversed seven kilometers of the forest on foot to the station to relay the information. The police were then able to evacuate them to safety.

Varanthirapilly Police station

Three persons lost their lives in the floods. Landslide occurred in the forest area of the 13th block of Aechipara Chinivila Kundai Mupliyam estate, and a landslip occurred in Pulikanni. Cracks rendered three houses in the area uninhabitable. Many areas in the station limits saw water rise to the level of 15 feet, causing destruction of roads, houses and crops.

On the evening of the 15th, police and public began rescue operations under the leadership of Sub-Inspector Anoop in Manackalakadavu, Varanthirapilly, Pallikunnu, and Noorukulam. Although a 15 member team of the NDRF reached Vettingapaadam in Varanthirapilly in an engine-less boat by midnight, they could not begin rescue operations because of the strong currents. On the morning of the 16th a 10 member team of the Fire Force arrived in a motor boat (engine-intact) and evacuated around 250 people from Vettingapaadam and Kaarikulam. Two engine-powered boats of the NDRF with a team of 25 personnel arrived at around 11 am and conducted rescue operations in Velupadam, Pulikanni, Manjoor and Attupilly. However, not everyone in these areas could be rescued because of the strong currents. Three engine-powered boats from Kannur manned by fishermen arrived on the 17th. A woman named Leelamma had been missing in the water from the 14th. On the 17th her body was recovered from Kallai.

Peechi Police station

There were more of floods than landslides in the station limits. Fields, roads and bridges were destroyed. Trees were uprooted in landslips, agricultural areas were laid waste, and transport came to a

standstill. Around five vehicles were buried in the landslide. Soil and other objects falling on a running car in Kuthiran resulted in the death of the driver.

Viyyur Police station

Two deaths occurred in a landslide at the foot of the Poomala hills. The police had the harrowing task of evacuating 1200 patients and their relatives when water flowed into the Daya Hospital. Every single patient was evacuated to safety by 6.30 pm by police, youth and other volunteers in tipper lorries, pedal boats and improvised rafts.

As the water had risen very high over Peringavu, Pandikavu, Manalarkavu, Kalladimoola and Gandhi Nagar, police and public could reach these places only in country boats and tubes that had been transformed into improvised rafts, using which they rescued a large number of people. Police and public had to demolish the walls of the Poor Home and adjacent buildings near the Kattachira temple to effect the risky rescue of a large number of old and ailing and feeble inmates. As more than a hundred residents of a flat in Pulackal Corporation were stranded (in no immediate danger but with no possibility of egress), police took supplies of food and clothing to the flat.

The 'Arat' festival of the Thanikudam Devi temple is observed when the deity is immerses in water flowing in from the river. At that time, devotees too immerse themselves worshipfully in the water. Devotees flocked to the temple for the festival this year when it was submerged under water on the 15th. However, when the water rose to enormous levels, the police advised the devotees to desist from the customary immersion and convinced them to leave the premises. When the temple and its surroundings were 90% under

water, the police persuaded the temple authorities to lock the temple gates, considering the hazards.

Chavakkad, Valappad and Vadanapilly Police stations

The police stations in the coastal regions of Thrissur district showed their might by not only conducting rescue operations locally but also by joining hands with the Coastal Safety Authorities to organize boats, canoes and fisherfolk for rescue missions all over the state.

Mala Police station

Following the incessant downpour from the 14th to the 18th, the shutters of the dams in Lower Sholayar, Upper Sholayar, Peringalkoothu and Boothathankettu were opened. The Chalakudi river overflowed after this on the morning of the 15th and diverted its path by as much as half a kilometre. By the afternoon of that day, an area of 1 km around was under 4 feet of water. When the shutters of the Idukki dam were also opened, water flowed in from Kanakkenkadavu where the Periyar and the Chalakudi rivers come together. The ebbing tides during the lunar eclipse prevented the flow of river-water into the sea. For around 2km around Chalakudi river, the water rose to the height of 6 feet.

In the nearby regions such as Poovathussery, Kochukavu, Kundoor, Alamattam, Kuzhoor and Eravathoor, water first entered the fields and then the houses. In the Vynthala Thekkutam area, the river diverted its course and flowed in parallel streams. Along Vennoorpaadam the floodwater flowed to the regions lying to the north-west such as Edayattoor, Meladoor, Vennur and Kodavathukunnu, and thence via Mala some 10 km towards Poyya, Konchithara, Komathukadavu, Thirutha and Madathhupadi, leaving the people of these regions in utter misery. Cattle and dwellings, merchant establishments, government institutions and many acres of

agricultural fields were devastated. The floodwater destroyed most of the roads either completely or partially, and traffic was obstructed. Food was distributed by helicopter and by volunteers on the ground.

Many who had been stranded in isolated regions within the station limits were taken to the relief camps with the help of the NDRF. Voluntary organizations took upon themselves the task of food distribution. Three boats and a team of volunteers arrived from Kannur in lorries on the 18th. CPO Shiju MX OF Mala Police station engaged in hazardous rescue operations by raft and canoe from the very beginning.

Two persons died in the avalanche of water from the hills and four others died in the camps in the station limits.

The station was informed by the office of the Inspector-General of Police (Ernakulam) on the 18th that a French lady named Priya Angel was stranded at Athikadavu in Poyya. She was rescued with the help of the Fire Force.

When Dr B. Sandhya IPS, ADGP (Training), State Nodal Officer of the Janamaithri Suraksha Programme launched in connection with 'Operation Jalaraksha-2' visited the flood-affected areas, she saw heaps of plastic and other waste being burnt in the Mala Police station limits and gave on-the-spot instructions to the Station House Officer about the proper means of waste-disposal.

Koratty Police station

Most of the places in Meloor, Muringoor, Vadakkumuri, Thekkumuri, Kizhakkumuri, and Kaloor villages in the Koratty station limits were affected by the floods. Houses, government institutions and offices and roads were damaged. Lakhs of rupees were lost in damage to agricultural crops. The inhabitants on the river-sides were rescued and evacuated to places of safety. Around

3000 people were rescued in 20 boats including 8 of the NDRF, 5 of the Navy, 7 of the fisherfolk, and Naval helicopters. In Valoor, Cheruvalloor, Kathikoodam and Thekkudam, where the rescue operations involved great danger, the personnel of the Fire Force joined hands with the police, unawed by the perils.

Puthukad and Kodagara Police stations

By the afternoon of the 14th of August, following incessant rain, the Panthalloor (Kurumali) river overflowed its banks and diverted its course. Consequently, in the Parappukara gramapanchayat area, the region of Vayaloor was totally submerged and so were Nellore and Pantalloor, as well as the Mattathoor Padinjattumuri region in Mattathoor gramapanchayat. Moreover, in the same station limits, the western region of Kodakara town, the fields of Kuzhikani and the surrounding areas and the low-lying regions of the Kanakamala zone were cut off by the flood. A large number of houses came under water. When the Pantalloor river overflowed off-course, the traffic on the National highway between Kulathoor and Nellore junction came to a complete stop.

Vellikulangara Police station

Vellikulangara station limits encompasses the panchayats of Mattathoor and Kodassery and the villages of Mattathoor, Kuttichira and Vellikulangara. When the shutters of the dams in Chimmini and Peringalkoothu were opened following the incessant rain, water overflowed the station limits and caused great damage. 17 employees who were stranded in the Vasupuram Drinking Water Company were rescued by police, the Fire Force and the public.

The floods caused extensive damage to houses and agricultural fields. When water flowed into the Kaarikadavu adivasi colony, 14 households were safely evacuated to the Sasthapuram Community Hall.

Landslides occurred within the station limits in Arichankuzhi, Varankuzhi, Choolakadavu hill, and Balanpeedika. Two houses in the area were totally destroyed. In Randukai, Choolakadavu, Kuttichira Pallom and Koorkamattam, the Kappathodu canal overflowed to a height of 12 feet, bringing the Koorkamattam seminary under water.

Aloor Police station

In the heavy downpour that followed the deep depression, water overflowed into 6 villages in the Aloor station limits, destroying roads, houses and fields. When water hyacinth and other aquaflora debris accumulated under the Thommanapaadom bridge on the Irinjalakuda-Chalakuudi State Highway obstructing the free flow of water, the water rose above the road-level, and Aloor was completely cut off from Irinjalakuda.

GASIs Reghu and Gladwin of the Aloor police station guided the NDRF team who had come with 8 boats from Kannur and the six member team from Palakkad with a huge water-traversing truck to the centre of rescue operations in Mala. Moreover, they rescued a woman in the final stages of pregnancy with her mother from the flooded regions of Thuruthiparambu by boat and took them to their home in Kottanelloor in a police vehicle.

Irinjalakuda Police station

Because of the heavy rains and the opening of the shutters of the dams, water flowed into the station limits on the 15th. Roads and houses were wholly or partially destroyed. In the beginning, the rescue operations progressed at a very slow pace, using available resources such as cords and kitchen utensils. Therefore when ISHO MK Suresh contacted the coastal stations for boats the small boats that could be procured gave a fresh impetus to the rescue efforts.

The station got the information that food was scarce in the camps in the Chalakudi station limits. Sub-Inspector Sushanth led a team in two vehicles along water-logged roads at immense risk and delivered two truck-loads of food to the camps. This was but one instance of the heroism of the staff of the Irinjalakuda station. It was also noted in Irinjalakuda that those who were closely associated with the Janmaithri police programme immersed themselves with utmost dedication in the rescue operations and in the relief activities in the camps.

Kattoor Police station

Most of the places in the station limits were affected by the floods from the 15th. Houses and workplaces were destroyed or damaged in the deluge. Large-scale losses were incurred in merchant establishments and other workplaces. There was loss of property and a large number of domestic animals perished.

The rescue operations had to be undertaken with readily available resources such as banana-stem rafts, rubber tubes, PVC pipe rafts and large kitchen utensils. On the 16th the overflow of water caused the Thanissery canal bund (KLDC) to break and the surrounding areas were submerged.

For various reasons the canals and other water-bodies had been reduced in area. Because of the heedless exploitation of the Canoli canal and because of the ebbing tides that lasted till Ashtami, the National Highway was walled up by the relentless floods for quite a long time. The impact of the floods was compounded by the fact that most of the canals and waterways in the station limits had either been reclaimed or reduced considerably.

Cherpu Police station

Because of the tremendous overflow from the Karuvannur river, the makeshift dam at Ettumana Illickal collapsed. Low-lying

areas such as Chirakkal and Inchamudi then came under water. Karuvannur river overflowed its banks. On the 18th the Arattupuzha bund road was destroyed. Consequently, 12 villages in the station limits—Kodanoor, Venginisseri, Pallipuram, Paralam, Kurunilavu, Inchamudi, Cherpu, Urakam, Chovoor, Vallachira, Arattupuzha and Pallisseri—bore the brunt of the floods.

Two persons drowned to death in the floods in the station limits. Another died of heart attack in the relief camp. A team of doctors from Andhra camped in the Cherpu government school, examined the ill, and also distributed food and medicine and other necessities. Students and teachers of technical institutions such as the Government engineering College, Thrissur, the Maharaja's Technological Institute, Universal Engineering College, Christ Engineering College, and others, undertook the re-wiring and repair of electrical equipment in houses after the floods, rendering stellar service.

Mathilakom Police station

As a result of the heavy rains and the opening of the shutters of the dams in Chimmuni and Peechi, Pappinivattom, Kulimattom, Padinjare Vemballoor and Ala-Panangad village areas in the station limits were affected by the floods. 105 villages in Pappinivattam village were completely destroyed and a 100 others suffered partial damage. In Ala-Panangad village, 173 houses were completely destroyed while 213 suffered partial damage.

Anthikad Police station

After the Ettumana bund broke on the 16th, water overflowed into the fields and the canals and the eastern regions of the police station limits came under water. After various dams were opened, the Canoli canal overflowed and brought the western regions of the station limits too under water.

Water began to flow into the station limits by the afternoon of the 15th. In the beginning the rescue operations were undertaken using ready-to-hand materials such as banana-stem rafts, large kitchen vessels, PVC pipes, tubes and utensils. The flood impacted 16 villages in the station limits, causing considerable damage. An aged woman named Mallika was evacuated to the camp from her dwelling in Kallidavazhi by CPO Sony of the Anthikad Police station just a day before her house was completely destroyed in the floods. Transport came to a complete standstill when water overflowed on to the roads in Perumbuzhapaadam and Cherupuzhapaadam. The vehicles that had been submerged in the floods on the roads in the Kanjani region were removed by the police. The police started distributing food to the camps from the stadium opposite to the police station where a wedding had taken place and the food donated for relief. The police took the initiative to organize public efforts to clean the land of Mallika who had been brought to the camp with her aged mother, and to build them a temporary shelter costing sixty thousand rupees.

After three days of rescue operations, without any information about the well-being of his own mother in Parur, CPO Sony was granted permission on the 18th to go to Parur. However, on his hazardous journey by boat to Parur, when he came to Kottapuram bridge, he responded generously to cries for help from the little isles all around. In this manner, he continued to rescue as many people as he could along the way, and reached his own home only on the evening of the 19th. Only then did he know that his mother and other relatives were stranded on the top floor of their house which was still under construction. It was only then that Sony could evacuate his own household to the safety of the camps.

Kodungalloor Police station

Kodungalloor station limits are surrounded by the sea-coast, rivers and lakes. In 80% of the station limits, water rose to the height of 4 feet between the 15th and the 18th. Police issued cautionary announcements and spread awareness about the necessary precautions among the people living by the side of the Canoli canal in Pullut and close to the banks of the Kanjirapuzha in Kottappuram.

The local people say that the impact of the floods was heightened by the fact that the ebbing tides prevented the inflow of water to the sea. The misery was compounded when water entered the relief camps too. People from Parur in Ernakulam district were rescued and given shelter

When water entered the relief camp set up in the Kalyanidayani Sabha in Anapuzha on the 16th, hundreds of inmates who had taken shelter there had to be transferred to another building of the Kalyanidayani Sabha in Kodungalloor.

Kaipamangalam Police station

Following the incessant rain that started on the 14th in the Kaipamangalam station limits, the Canoli canal overflowed its banks. With the help of the public, people were taken to schools, madrasas and other buildings that functioned as relief camps. The assistance of the fisherfolk and other essential services were made available. Police transported 1,200 people to the relief camps, and made arrangements for the transportation of around 10,000 others. The essential requirements of this group were also provided.

Due to illegal encroachments on the Chirakkal Cherupuzha canal, various parts of Thampuratty canal, and a number of places

on the Canoli canal, the width and depth of these canals had reduced considerably. This contributed in no small measure to the distress at the time of the floods.

Azhikode Coastal police station

For the first time, the police team led by Inspector Bijoy and assisted by a large number of fisherfolk, were able to use fibre boats to rescue around 4000 persons. The Azhikode Coastal police were also able to organize as many as 17 boats and a number of fishermen and send them on rescue operations to various parts of the state for the Fisheries department. Azhikode coastal police played a major role in the rescue operations in Aluva.

Kunnamkulam Police station

The areas that bore the brunt of the floods in the Kunnamkulam station limits were Choondal, Kecheri, Pazhanji, Kattukambal, Aduputty, Vaduthala, Keezhoor, Chiraparambu, Korattikara, Paranoor, and Chemmanur. Following the incessant downpour from the morning of the 16th to the 19th, there was intense flooding. Major disaster was avoided because of timely intervention by the police in organizing boats for rescue operations without any delay. Two duck farmers were carried away by the water in the Chiraparambu fields. On receipt of this information, search-operations were carried out in the flowing currents on 16th afternoon. The sixty-two year old duck-farmer from Alapuzha, Vijayan, who had been clinging on to a coconut frond for dear life after his boat had capsized, was rescued by the police. However, Vijayan's colleague, 58 year old Maniyan lost his life in the currents.

Erumapetty Police station

Water flowed into government buildings in the station limits such as the Pazhavor Village office, Erumapetty Forest station,

Thayyur Jalanidhi Pump-house, Vellatanjoor Village office, Puliyanoor school, and Thayyur No 90 Anganawadi. Following the heavy downpour and the opening of the shutters of Vazhani dam on the 15th around 80 persons were evacuated from Kottappuram and Kuttamcheri, and another 30 when a landslide warning was issued. 70 persons from Puliyanoor and around 200 from Thayyur were also evacuated to the relief camps by the police with help from the public.

Kuttancheri desam in Nelluvayi village is prone to landslips and landslides during heavy rain. Heavy rain can cause the banks of the canal to overflow on to the land. As the canal has this tendency to leak, Muttichira and its surrounding areas in the Puliyanoor desam of Vellatanjoor village can prove quite dangerous in a heavy downpour.

Pavaratty Police station

The low-lying regions in the Pavaratty station limits came under water when the Ettumana bund was broken. Water-logging also occurred in many areas in the station limits when the water overflowed the Enamavu Idiyanchira bund, aided by the fact that it was a time of ebbing tides. Five fishermen from Chavakkad with their boats, rafts and canoes, and the 'Nagoor Andavan' boat from Blangad beach joined the police in the rescue efforts. A thirty-four year old inmate of a relief camp, Prakasan, lost his life when he slipped into the water on his way to find out the state of things in his own home.

Guruvayoor Police station

Guruvayoor station was one of the stations in Thrissur district submerged under water. Water rose to the level of four feet inside the station. Station files and equipment were damaged.

Cheruthuruthi Police station

As people had been evacuated from the Pallom region of Kottambathoor on the 15th in the interest of abundant caution, a great disaster was avoided. However, Harinarayanan (aged 38), Sivadasan (35), Sajive (36) and Ranjith (25) lost their lives and Sudhakaran (38) was grievously injured in the landslips and avalanche caused by a landslide after they left the camp at around 6.30 am on the 16th, to collect their ration cards and other identifying documents from their homes. Their bodies of the dead were recovered only on the 16th, the 17th and the 19th by a team led by Sub-Inspector VP Sibeesh. The rescue and recovery was conducted braving the heavy rain and the landslips.

Vadakkancheri Police station

Although the station was established in 1882, there are no records relating to the Great Kerala Flood of 1924. In the landslides that followed the heavy downpour of August 2018, 19 persons, including 9 women lost their lives in Kurancheri and one person died in Kanjirasseri in Mulloorkara gramapanchayat. Following the heavy rains there was a landslide in the southern parts of the Machadu hills on the Kurancheri-Nayarangadi road at 6.30 am on the 16th. Three houses on the southern foothills were completely destroyed. The vegetable shop beside a house, a petty shop and the bus stop to the east of the Vadakkancheri-Thrissur State Highway were buried in the landslide. In the heavy rain and landslips, rescue operations were carried out under the leadership of the police, fully aware of the hazards and the possibility of further landslides. The people at the site were evacuated to safety to prevent further loss of life. Commendable co-ordination of efforts at the initiative of the police who organized around 40 tipper lorries, 13 dredgers and 9 ambulances helped to rescue 7 individuals and recover 19 dead bodies from the debris. Night-time inquests, which are rare

occurrences, were conducted. On learning that every member of 2 households had perished, the police took the initiative to conduct the last rites. Police rendered stellar service in making the Vadakkancheri-Thrissur State Highway traffic-ready in 7 days.

In the interest of documentation, the Director of the Forest Research Institute in Peechi, Dr Syam Visvanath, and the Deputy Director of Soil Research in Thrissur, Smt. Ambika, were consulted about the reasons for the landslides in Kurancheri and the reports received from the Soil Research Department, the Forest Research Institute and the Geology Department have been studied.

The major findings were the following. Water from the incessant heavy rain seeped down into the ground, and because there were not enough trees with strong taproots in the region, the pressure of the underground water mixed with the surrounding alluvial soil caused the landslide that robbed 19 lives in Kurancheri. [p. 210] Moreover the ill-planned changes in land-utilisation and the felling of the natural flora of the region aggravated the soil-erosion. The experts cautioned that people be evacuated from the region because of the possibility of further landslides and the active railway-tracks and quarries in the region, advised the re-introduction of traditional outlets for the flow of water, and suggested the large-scale afforestation of the region with traditional flora such as bamboo and *ramacham*.

Chelakara Police station

The heavy downpour of August 2018 resulted in floods in which water entered the police station premises and various places within the station limits, bringing a number of houses and fields under water causing damage to business establishments, transport and communication facilities and leaving the people of the area in

great distress. In certain areas, landslides and landslips caused great damage to houses and crops.

Pazhayanoor Police station

In the limits of this station, located to the northwest of Thrissur district, large-scale damage occurred on account of the flood and landslides. Although the station was established in 1912, no records of the 1924 floods have been found.

Ollur Police station

The greatest impact was experienced between the 15th and the 17th in the station limits. The incessant downpour and the opening of the shutters of Peechi dam were the major cause of the floods. People suffered great hardships in landslides and landslips. A landslide occurred at Ettamkallu in Mandamangalam on the 15th. Landslips occurred in Panampadi, Kolaamkundu, Thampurattimala, Ezhamkallu, Chembamkandam and Kokkaath the same day. The rescue operations led by the police were assisted by the members of the Janamaithri Council, the taluk employees, the Vyapari Vyavasayi Samithi, voluntary organizations and the public.

BOX: In Mannavu, police officers Jomon, Reghu, Sangeeth and Vineeth, used strong tug-ropes to rescue 19 persons from the currents. During this endeavour, Jomon slipped and fell into the water and was swept away to a distance of some 60 metres, but he was fortunate to catch hold of a telephone pole that drifted his way. His colleagues were able to rescue him with the help of the rope.

On 16th morning, when no boats were yet available, a police team led by Inspector Benny Jacob rescued 65 persons including women and children in makeshift rafts braving strong undercurrents over a treacherous two kilometre stretch of water. Since these rafts were not sturdy, in the afternoon two fibre-boats were procured and used for rescue. When one of the boats found it difficult to navigate

the current it had to be moored. The second boat triumphed over the strong undercurrents and managed to rescue 64 persons to the safety of the relief camps.

SCPOs Radhakrishnan and Thulasidas spent the entire night of the 16th in the rain and the floods providing succour and encouragement to the people of the little Puzhamballath islets and assisting them in hazardous rescue operations. On learning that 138 persons were cut off by the floods in Puzhaballath and that they were facing starvation, a team of policemen led by SI Sinoj fought their way there braving the treacherous currents, with supplies of food and drinking water for the stranded. The next morning, all the 138 persons, including women, children and the aged, were rescued in two boats and taken to the relief camps.

An isolated house at Thengumthara was inaccessible even by boat, blocked by fallen trees for a distance of 1500 metres. Equipment needed such as wood-cutter and rope were taken there by boat, the obstacles were cleared, and the people rescued safely by the police. On the 17th a team led by SI Vijayarajan used a basket-boat to traverse two km of neck-deep water in Puthoor and Kainoor, and attempted to rescue people who were stranded in the Kainoor temple auditorium, the Ezhuthachan Samajam, the NSS auditorium and on the top floor of houses in the area. However, when the people refused to move, they were provided with food and clothing and medicines. That evening, the people were made aware of the gravity of the situation and they were transported to Mulayam safely by basket-boat or on strong shoulders (and in the case of dialysis patients, on stretchers)—the count of the rescued was 480, including the ill and the aged. From there, they were taken in police and other vehicles to the relief camp in Poochatti.

On hearing that people were stranded in the Idakunni sandbank, the police reached there, and brought 20 persons to safety

wading through half a kilometre of neck-deep water. The bedridden and ailing Meenakshi (86 years) was seated in a chair and carried across the water on the shoulders of four policemen.

While engaged in rescue operations in Mannavu at Marathakara, the strong currents caused engine-failure of the 'Nagoor Andavan' boat which went out of control. Police swam against the current to the boat, tied strong ropes to it, and pulling the boat to the land, rescued the people in it.

Sri Murali Gopalan, Commanding officer of the Indian Army who had come on leave to his home in Koorkencheri accompanied the police in boat and water in Puzhamballam, Kenoor and Thengumthara, and helped rescue a number of people. Moreover, he made his car available for the rescue efforts.

Thrissur Town West Police station

The station limits, which include kole fields, underwent intense flooding. Severe damage to person and property occurred in various places in the Thrissur West station limits.

In Pulezhi at the eastern tip of the Aenamavu bund in the border of the station within the Corporation limits, strong currents of water flowed into many houses on the 18th. A large number of houses in the station limits were submerged by water. People abandoned their houses and sought refuge in the houses of their relatives or the relief camps.

Christina Home, which sheltered around a hundred women including the mentally and physically challenged, orphans, and infants—two of whom were hardly 56 and 90 days old, went under around five feet of water in the morning of the 18th. Police and the local youth strove hard to rescue them all to safety with the help of small boats, tubes and large kitchen utensils.

Mannuthy Police Station

In the Mannuthy Police station limits, water entered the houses in the villages of Mulayam, Kozhukulli, Madakkathara and Ollukkara.

4.7 Palakkad District

In a New Year's gift, Palakkad, abounding in *paala* trees became part of Kerala state in 1957. It is indeed the 'granary' of Kerala, rich in paddy fields. History has chronicled the fact that the land known as 'Palakattussery' in many works of the Sangam era, later came to be known as 'Palakkad.' Along with its geographical diversity, Palakkad offers a rich cultural mix, a true variety of different cultures. It is the largest of all districts in Kerala with an area of 4480 square kilometers, 40% of which is forest land. The major tribal settlements of the state such as Attappadi and Nelliampathi are located here. To Palakkad which had grown accustomed to rising temperature, 'flood' was a somewhat unfamiliar word and concept. Apart from a few minor landslides and landslips, natural calamities were relatively unknown. However, the heavy rains that battered the land in the month of August left in their wake tales of great damage and destruction. Such tales came to be heard from every corner of the district that had heretofore been unaccustomed to any precautions against the calamity of heavy rain.

As a result of the heavy rains, the water in the 12 major dams in the district including Malampuzha, Mangalam, Pothundi, Parambikulam and Kanjirapuzha exceeded catchment capacity and the authorities were forced to throw open the shutters. In the incessant rains and the overflow from the dams, the Kalpathi, Chittur, Kunthi and Kanjirapuzha rivers overflowed their banks. When all the branches of the Bharathapuzha too overflowed, the

bridges at Pattambi, Mayanoor and Cheruthuruthi went under water, and transport in the district, and in neighbouring districts came to a standstill. When traffic on NH 544 which was the main highway connecting Thrissur and Palakkad was barred completely, the entry of the Disaster Relief Force and other volunteers faced unavoidable delay.

Flood: Death, Grievous Injury

Following the heavy rains on August 8th, landslides occurred in the district in Akalavaaram within the Malampuzha station limits, and at Kottamudi in the Walayar station limits, after which an alert warning was issued across the district.

Police engaged in rescue operations with the support of the public and co-ordinated the disaster management efforts. The landslides that occurred in Cherukad and Kaaradiyodu colony claimed a number of lives and caused the destruction of a large number of houses.

15 persons lost their lives in the floods in Palakkad district. This number would have been much higher were it not for the timely intervention of the police, other government departments, and the public which resulted in the evacuation of people from disaster-prone zones to places of safety. The police, the Fire force and other agencies rendered stellar service.

Table of Lives Lost			
SI No.	Police station	Number of deaths	Cause of death
1	Nenmara (Cherumkad)	10	Landslide
2	Annarkad (Kaaradiyodu)	3	Landslide

3	Pattambi	1	Drowning
4	Alathur	1	Collapsed wall

Moreover, a number of houses in these regions were washed away in landslides.

The situation in Nelliampathi, one of the major hilly areas of the district, was quite alarming. Most of the population in this area devoted to the cultivation of tea, coffee and oranges, are plantation labourers. A single forest path provides the only means of ingress. Around 3000 persons were therefore cut off by the heavy rains that started on Friday the 17th of August 2018. Roads and bridges disappeared from sight in the heavy rain and the resultant landslips. Transport and communication facilities came to a standstill. The helicopter that set out for Nelliampathi on the 19th from Bimala in Kanjikode with food, medicine and drinking water was unable to land. Later, the Rapid Action Force together with the police and the public constructed a makeshift bridge and transported headloads of around 4000 kits of essential materials over 20 km to the stranded populace of the region. Afterwards, 9 pregnant women and a group of nine aged persons were evacuated by helicopter from the area in two sorties on the 21st and the 22nd.

Besides, in continuing efforts to rescue the stranded, the services of two helicopters was requested of the Southern Air Command at Suloor in Coimbatore, and these were quickly made available.

To provide some relief to those who were forced to evacuate their houses without even a spare set of clothes, the District Chief of Police sought the assistance of the Tamil Nadu police to transport from Chennai, Coimbatore and Tiruppur the clothes collected by a

number of voluntary organizations and these were then distributed in Pathanamthitta, Alapuzha, Ernakulam and Thrissur too.

Nenmara Police station

Nenmara police station serves the panchayats of Vallangi, Nenmara, Ayilur, Thiruvizhiyadu, and Kairadi in the Alathur division and all the estates in the Nelliampathy region. As these areas in the station limits were surrounded by hills, heavy losses occurred due to heavy rains and landslips.

These areas, which had begun to receive heavy rains from the first week of August woke up to shocking news on the 16th. A landslip had occurred in the Aluvassery Cherumkad region in the station limits, in which three houses had been completely destroyed and 10 lives lost. However, the police acted with lightning speed, reaching the spot in five minutes and rescuing five persons who were immediately taken to the hospital. The police also effectively controlled the crowd that had begun to gather there on hearing the news. Police also immersed themselves in the task of recovering the bodies from the debris, a task which took 80 hours to complete.

Mannarkad Police station

Mannarkad police station falls under the Shoranur sub-division and serves the panchayats of Mannarkad, Kumaramputhur, Kanjirapuzha, Kottoppadam, Thenkara, Karimbuzha and Karakurissi.

As there are a number of low-lying areas along with hilly regions, many of the areas in the station limits had always been flood-prone. When Kunthipuzha overflowed its banks following the heavy rains in August, many parts of Mannarkad fell under water.

The landslip in Karasiyodu colony was the cause of the greatest alarm. Karasiyodu is a colony area in Ambalapara in the Marrakad station limits. Three persons lost their lives in the heavy downpour and landslips and a large number of people were totally isolated. The police had to strive long and hard to rescue the stranded and bring them to the relief camps.

Alathur Police station

Alathur Police station serves the panchayats of Alathur, Erimayoor, Kavasseri, Tharoor and Melarcode in the Alathur sub-division and some of the areas in Thengurissi panchayat. The police were somewhat successful in mitigating the impact of the flood. The proactive presence of police from Alathur and Vadakkancheri stations on the National highway at Kuthiran connecting Thrissur and Palakkad proved helpful in managing the smooth flow of traffic in the heavy rain. The heavy downpour had brought Padur and Thonikadavu under water. Alathur police strove manfully with the help of three fishing boats, two Friends Club boats and a Fire Force boat and rescued around 150 persons. Moreover, the police in an extremely hazardous operation, succeeded in rescuing three persons in a pick-up van that had turned turtle and fallen into the river.

TABLE OF POLICE EFFORTS IN RELIEF AND RESCUE

Sl No.	Operation	Number of Persons
1	Rescue and Relocation	10635
2	Relief Camps	119
3	Number of police personnel in action	1300

4.8 Malappuram District

Malappuram district is bounded by hills and mountains in the east and by the sea in the west. Large areas of Malappuram district were affected by the flood of August 2018. 120 of the 138 villages in the district bore the brunt of the impact. Of the 48 deaths reported at the time, 28 were the result of landslides and landslips. Although the rescue and relief operations were hindered by the forces of nature and the susceptibility of the terrain, it must be said that timely warnings and evacuation of people to places of safety considerably mitigated the extent of the possible disaster. It could be said that a far greater disaster was thus prevented. 24734 were evacuated to the safety of 243 relief camps. 550 houses were completely destroyed and 4531 others faced partial destruction. The first figures speak of crop damage over 5550 hectares of land.

Three rivers provided the main cause of the water overflow in the district—Bharatapuzha, Chaliyar and Kadalundipuzha. The largest overflow of water was in the path of the Bharatapuzha, and the number of people who had to be rescued by boat were the people of these very regions—Tirur, Purathoorr and Ponnani. When the Bharatapuzha diverted from its usual course, it created problems in the rescue operations. Further disaster accompanied the overflow of water from the Chaliyar in Vazhakad, and from the Kadalundipuzha in Malappuram.

The flood and related suffering mainly affected the people living within the limits of 11 police stations of the district. Although the areas within the limits of the other police stations too were affected, the extent of the damage was not as severe. The police stations that bore the brunt of the floods were the following:

1. Karvarukundu, 2. Vengara, 3. Parappanangadi
4. Ponnani, 5. Vazhakad, 6. Kondotty

7. Tirur
8. Malappuram,
9. Pothukallu
10. Nilambur,
11. Edakara

Karuvarakundu Police station

In the natural disaster of August 2018, within the limits of the Karuvarakundu station, in two stages, major and minor landslides, landslips, and floods occurred in the following regions that are in the buffer zone of the Silent Valley—Kalkundu, Kerala Estate, Manjalamchola, Puttala colony, Atti, Panthra, Pandenpara, Koombanmala, Cheri and Iringattiri. The impact of this was borne directly or indirectly by around 400 families.

At the panchayat level, the rehabilitation committee formed with the President of the Panchayat as the Chairman and the Karuvarakundu SHO as Convenor started two relief camps which provided shelter to 516 distressed persons belonging to 159 households. They were provided with good quality food and other essential amenities. 25 persons belonging to the Scheduled tribes were inmates of these camps.

25 families whose houses were completely destroyed and who had no other relatives to help them were rehabilitated in suitable dwellings either at no rent or, in some cases with the rent for the first six months borne by the committee.

To quote Jyotheendrakumar, SHO Karuvarakundu Station, who led the rescue and relief operations in the station limits:

‘Karuvarakundu was one of the places in Malappuram district that bore the greatest brunt of the floods and the landslides. After the very first landslide, we sent alert messages and requests for assistance to various clubs and Whatsapp groups such as the Cherambu Volunteers Group, the Trauma-care Group, and others who had been co-operating with the police initiatives that had been

established as part of the Janamaithri Police programme, with the result that around a hundred youthful volunteers were ready for action right then. Six persons who refused to move out of their houses in Kalkundu insisting that no harm would come to them, were coaxed out somewhat forcefully. In the landslide that occurred the very next day, their house and the vehicles parked in front of it were washed away. The fact that I could save 42 lives in these two incidents made the experience unforgettable for me in my career as a police officer.’

Vengara Police station

Water rose over Palachiramadu, Kallackayam, Illiplackal, Pandikasala, Muthalamadu, Mambeeri, Kooriyad and Purackad and other regions in the Vengara station limits on 15th August. As rescue operations were hindered by the strong currents, and knowing that the police vehicles would find it impossible to navigate the terrain, contact was immediately established with all the available local fishermen and their services requested for the rescue efforts. Vengara was in fact one of the first places in the state to recruit local fishermen in the rescue operations. Trauma-care volunteers, members of voluntary organizations, fishermen, members of the Janamaithri council and the general public too participated in the endeavour. Around 3000 persons were housed in 7 camps.

‘On learning that people were stranded in their houses in the aftermath of the August 2018 floods in our neighbouring village of Vengara, we fishermen immediately went there in our boats. However, when we went there we found that the situation there was far more precarious than even the sea-storms that we were used to. Unable to gauge the depth of the water, three of our boats were destroyed. However, the timely instructions of the local people and the police were extremely helpful.

When I saw an aged lady struggling to get on a boat and I bent my body for her to use as a stepping-stone, it turned out to be the most memorable experience of my entire life. I will always be proud of the fact that we fishermen could rescue thousands of people from the floods.’

The timely efforts of the police at the time of the floods gained the force great popular recognition. Moreover, the contributions of the police to the post-flood cleaning efforts went a great deal to reduce the distance between police and public. As part of ‘Operation Jalaraksha-2’ it was possible to clean up more than a hundred houses, and with the help of the Revenue department and the general public to distribute kits to all who were affected by the floods.

Parappangadi Police station

PIC & BOX: The rescue operations in Parappangadi were led by Station House Officer SI Ranjith, a native of Kuttanad in Alapuzha, where the floods had unleashed their worst fury. It is remarkable that, even as rescue operations in the Parappanangadi station limits were being carried out, a team of 60 fishermen in six boats led by an Additional SI was deployed for relief and rescue to North Parur.

Parappangadi is a coastal region in Malappuram district. Floods occurred when the Kadalundipuzha overflowed its banks. The floods caused the greatest damage in the natural course of the river at Attachangadi, Ullanam, Kootumudachi and other areas. As the flow of the water was quite strong, rescue operations were hampered and the services of fishermen was obtained on request from areas such as Chettipadi and Kadalundi in the station limits. Rescue operations were thus conducted in places inaccessible to police vehicles, using canoes and fibre-boats. Since there were a

large number of people in the station limits who depended on fishing for their livelihood, rescue operations could be conducted without delay. 7784 persons sought refuge in 14 camps.

Ponnani Police station

The water that overflowed from the Bharatapuzha was the source of problems in the police station limits. In the first overflow of water on the 9th of August, water entered nine shanties built on public land on the banks of the Bharatapuzha, near the Ponnani Civil Service Academy, but the inhabitants returned to their dwellings on the 13th after the water had receded. However, when floods followed an even stronger downpour on the 15th, their sheds were destroyed and all of them sought refuge in the camps. When water flowed into the first camp too, they were again transferred to a safer camp in vehicles provided by the police, who also took care of their essential requirements.

The fact that the police and the public shared the task of rescue and relief during the floods and the cleaning-up operations thereafter not only helped to bring police and public closer, but also helped to create a peaceful atmosphere all around.

Kondotty Police station

Kondotty station limits are particularly prone to landslips. The highest number of deaths in Malappuram district occurred in the limits of this station. Kondotty, which has neither coast nor river, gets its water from the canal which has its origin in the Urakam hills and flows along the town to Ramanattukara. When the water rose to very high levels, Kondotty National highway and the regions around Pulickal and Aickarapadi were flooded. In the Thaitthottam zone, a number of houses went under water. A child that had gone to bathe in the Kizhisseri Kuzhiyamparambil canal was washed away in the current. In Kottapuram and Poochal 12 persons lost

their lives in landslips. Although the inhabitants of this region marked by small and large hills had been evacuated fearing the possibility of landslips, a group of nine neighbours who had returned to repair a hen-coop lost their lives in the landslip that occurred while they were engaged in that unfortunate endeavour. Moreover, 3 persons in Poochal died when their house came under an avalanche of soil in a landslip.

Poochal and Kottappuram are situated in Pulickal and Aickarapetty, places where hills had been demolished in quarrying work for the renovation of the Karipur airport and the Kozhikode bypass, and for the construction of the Indian Oil Corporation plant. Since land that has suffered such destruction is relatively cheap, more and more houses are built in these disaster-prone zones, thus compounding the danger. Three people died in Poochal on August 15th, when their house collapsed. There were 295 persons staying in 7 camps in the station limits.

Vazhakad police station

With the very first rains on August 9th, most of the regions in the station limits came under water. A camp was then started in Azhinjilam. However, with the strong downpour that occurred on August 15th, water entered the camp too. As the area had always been prone to flood during heavy rains, the people had taken precautions, considerably easing the anxiety of the police. Police reported for duty at the station in small canoes and country boats as the water in the surrounding area had risen to between five and six feet. Besides the police boat 'Chaliyar Rakshagan' (Saviour of the Chaliyar) locally available resources like rubber tubes and country boats were all made use of in the rescue efforts. Around 1500 persons were housed in 13 camps.

Tirur Police station

This was one of the areas most badly affected by the floods in Malappuram district. The floods were caused when the Bharatapuzha overflowed and diverted from its normal course. The flood caused the greatest damage in the course of the river through Thirunavaya, Purathoor, Chamravattam, Muttannoor, Mangalam, Pullooni, Eloor, Kavilakad and such places. As signs of flooding were noticed in these regions on the 9th of August, a large number of people from low-lying areas had been evacuated to safety. However, when the water rose without warning on the 15th of August, many others were left stranded in their homes.

As the river had diverted from its normal course, the police could rescue people from their houses in Purathoor only with great difficulty and at great peril to their own safety. The police team had embarked on the rescue operations in huge lorries, braving the strong currents. Fishermen were then contacted and their help was sought in the rescue efforts.

Around 6000 persons were rescued from there. Meanwhile an ailing householder had to be coaxed out forcibly when he refused to be rescued to safety. Tirur station Sub-Inspector Sumesh Sudhakar led the police rescue team on a life-threatening rescue mission across places that even the local populace feared to tread.

Regions inaccessible to other vehicles were navigated for rescue with the help of small canoes and fibre boats. As there were a number of fishermen in the station limits, the rescue operations were not delayed. The fact that there were excellent swimmers among the police aided to rescue efforts. Besides fishermen, Trauma-care volunteers, members of voluntary organizations, members of the Janamaithri council and the Coastal Safety council, and the general public too participated in the rescue efforts. By the

time the Army arrived, the police had already evacuated the entire populace to safety. More than 12000 persons were housed in 25 camps in the station limits.

PIC & BOX: In the heavy downpour on the 15th, when water overflowed the Bharatapuzha, we got the information that a number of people in the Purathoor region were stranded, and we instantly sprang into action and reached the spot. Water had also begun to enter the first camp in which people had sought refuge after the first heavy rain. The heavy currents prevented the use of small vehicles. Later we procured a huge lorry for the rescue efforts and managed to reach the low-lying areas purely because of the presence of mind shown by the driver. After we reached, we contacted the fisherfolk and sought their help in the rescue efforts. We were then able to rescue around 6000 people from that single spot.

Malappuram Police station

The landslide that occurred in Karuvarakundu, Nilambur and the overflow of water from the Kadalundipuzha river after the heavy rains caused floods in Malppuram, Kizhakkethala, Kavungal, Valyangadi, Pattarkadavu, and Thamarakuzhi. Most of the houses in the region came under water, and household utensils were washed away. Water began to rise in these areas on the 15th of August. Police rescued a number of people stranded in various establishments at great peril to their own lives. The rescue of 25 children including a 4 month-old infant from the Kattungal CWC, and a group of 150 students of nursing from the flooded Orchid Hospital were feathers in the cap of the police. As the river had diverted from its normal course, most of the houses below the Collectorate were submerged under water. Moreover, when the National Highway went under water, people turned up from everywhere to witness the spectacle hindering in no small measure the rescue efforts of the police. Excellent swimmers in the police

force, however, provided a fillip to the operation. These officers rescued 20 persons including women and children from Valiyaparambu, and 420 persons including 20 migrant labourers from Malappuram, and took them to the relief camps. 1200 individuals were given refuge in 9 camps.

Pothukal Police station

Pothukal station which is situated at the eastern tip of the district is noted for the presence of several adivasi colonies. On August 8th, the first landslide in the station limits occurred in the Pettiyampara colony. 7 houses were completely destroyed and 4 others suffered partial damage. Moreover, 6 lives were claimed by the landslide. That very night a team led by the SI, Pothukal, went to the colony and evacuated all the remaining inhabitants to safety. On the 10th, the six bodies were recovered from the debris. In Mathilmoola colony in the 4th ward of Chaliyar panchayat, in the floods that resulted from the overflow of water from Kanjirapuzha, 57 houses went under water and the residents were left stranded in the colony. They were evacuated to safety with the help of the Fire force and the public. Two relief camps were started on the 9th.

Nilambur Police station

Nilambur region was assaulted both by floods and landslides in the natural disaster of August 2018. Tragedy struck in the form of landslides in the hilly regions in the station limits such as Chaliyar, Akampaadam, Pongalloor and Moolepadam, and by water overflow into areas like Nilambur, Idivanna, Ramankoothu, Karimbuzha, Chanthakunnu, and Nambooripotti. On August 8th, water flowed into various parts of Nilambur, blocking the flow of traffic.

On August 15th, many of the places in the station limits came under water and many landslides occurred. A large number of

houses went under water in Nambooripotti when the river diverted from its normal course. Police used boats to rescue three families stranded here. As many of the people in the areas where the landslides occurred had been evacuated in perilous operations assisted by the Fire Force, there were no fatalities. The evacuation of 63 persons from the landslide-prone Vettilakolli colony with the help of the NDRF helped prevent a horrendous tragedy in the area. Such precautionary measures helped avoid considerable loss of life or limb. Water rose in an uncontrolled manner in the low-lying regions of Nilambur because much of the wetland had been reclaimed and houses built thereon. 1355 persons sought refuge in 16 camps in the station limits.

Edakkara Police station

The natural disaster of August 2018 wreaked great havoc in the Edakkara station limits. In various places in the station limits, such as Kattadi, Onnampotti, Kunnath, and Muttikadavu, the water rose to a height of 2 metres, causing great damage to crops and destruction of houses. Police evacuated to safety around ten families from Kattadi, eight households from Kunnath, eleven individuals from Onnampotti, and 19 migrant labourers from Mulakadavu. Many roads in the station limits were water-logged, and the traffic had to be diverted.

4.9 Kozhikode District

Kozhikode district comprises four taluks—Vadakara, Koilandi, Thamarasseri and Kozhikode. The greatest damage and loss of lives occurred in villages such as Koodaranji, Thiruvambadi, Kodencheri, and Poorappadi in Thamarasseri taluk. 34 persons lost their lives in the natural disaster that struck Kozhikode district from June to August.

Thamarasseri Police station

In the Thamarasseri station limits, widespread landslides and avalanches of water from the hills occurred in two phases in Karinjolamala, Mattikkunnu and Kanappankundu. 15 persons lost their lives as a result of this. On the 14th of June, a landslide in Karinjolamala claimed the lives of 14 persons, caused considerable crop damage, entirely destroyed 5 houses and left two houses in a state of partial destruction. On getting information of the landslide, Thamarasseri police sped to the site and conducted rescue operations with the help of the Fire Force and the public.

While 5 houses were completely destroyed, and all the inhabitants of four of these houses were covered by the debris, and the police initiated immediate rescue operations, it was a difficult task to recover the bodies.

On learning that there were more persons trapped under the debris, the help of the National Disaster Relief Force was sought and a Control Room for co-ordination of rescue efforts was established in a house near the site of the tragedy. Sri P. Prakash, District Co-ordinator of the Haritha Kerala Mission whose contributions to the rescue and recovery efforts were immense, and who chalked out the guidelines for the search and recovery, deserves special mention. Dredgers, the dog squad, and the latest technology including ground-penetrating radar were all made use of.

Thamarasseri SI Sayooj Kumar and his team were engaged in rescue operations in Kaithapoyil in the station limits where water had flowed into houses after the heavy downpour on the 8th of August. While engaged in this action, the team received the information that a landslide and an avalanche of water from the hills had occurred in Kannappankundu in the Puthuppaadi panchayat. A

police team sped to the spot in Kannappankundu and with the help of the Fire force and the public, rescued those who had been stranded in their homes. Meanwhile, minor and major landslides occurred in around 18 places in Mattikkunnu, as a result of which the force of the water avalanche from the hills became stronger and the houses and shops in the region were submerged under water. Following this, Rijith Mon, 24 years, who had been riding along Mattikkunnu bridge in a car was trapped in the currents inside the vehicle and his body recovered from the river near Valliyodu Angadi in the afternoon of the 9th. At 2.30 pm on the 14th, landslide struck Kannappankundu again, and four families who had been cut off by this event were rescued to the safety of the relief camp. Those who had lost their dwellings in the disaster were helped by the panchayat to acquire rented accommodation.

Thiruvambady Police station

Floods occurred in the Cherusserimala, Kalpini, Thiruvambadi bus stand, and the Pulloorambara regions of Koodaranji Panchayat in the Thiruvambady station limits. At 1.45 am on the 16th of August, landslides occurred in Koodaranji and Kalpini, and 2 houses were damaged. Two persons of a family lost their lives. Thiruvambadi police reached the spot instantly and rescued a stranded woman named Bindu. 12 houses in the locality were completely destroyed. Thiruvambady police gave monetary assistance to the people of these households. Police contributed fifteen thousand rupees for repair of the houses of the inmates of the relief camps. In places inaccessible to the Fire force by land, the police conducted rescue operations with the help of private boats.

Kodencheri Police station

In the landslide and related natural disaster in Koolothupara in the Kodencheri station limits, two houses were damaged, and 15

persons from 6 families in the locality were evacuated to the safety of the relief camps set up in Mekkavu Anganawadi and Chemmaruthayi Anganawadi. As the SI of Kodencheri sped with his team to Koolothupara immediately on receipt of the information, and evacuated the inhabitants to safety, loss of life was avoided.

Mukkom Police station

Landslides and flooding occurred in Iruvazhinjipuzha, Agastyamoozhi, Mambakkam, Aanayamkunnu, Thottumukkam, Angadi, Pallithazham, and Pulpayarambu in the Mukkam municipality, and in the Kodyathoor and Karasseri panchayats in the Mukkam station limits. At around 2 am on the 15th of August, a landslide occurred in Koombara hills, and consequent to this, the Iruvazhinjipuzha overflowed its banks causing floods that brought under water even the Bent-pipe bridge in Mukkam. However, even as the water had begun to rise in the daylight hours of the 14th, timely action by the police, the Fire force and voluntary organizations had ensured the evacuation of the populace of this flood-prone zone to places of safety. Jayaprakash, Leading Fire Officer of the Mukkam Fire Force, opined that the services of the youth and other members of the Rescue Volunteers Team who had been given government training was quite fruitful in the hour of need.

Following the disaster, those affected were given shelter in the 30 relief camps that functioned in the Mukkam municipality, and in the Karasseri and Kodyathoor panchayats, where they were also supplied with their essential requirements.

Balussery Police station

Floods affected Naduvanoor, Mannamkavu, Balussery, Manjapalam, Kottanada, Iyyad, Thuruthiyadu, Wakayad, Nirmullur, Panangad and Nalmanda in the Balussery station limits. Rescue

operations by the Balussery police in collaboration with the National Disaster Relief Force, the Fire Force, and the Revenue department helped to reduce the impact of the calamity. A seven-year old boy from Iyyad, Muhammed Yasin, was drowned in the current. Following the floods, those affected were evacuated to 21 relief camps and their essential requirements were provided.

Koorachundu Police station

In the Koorachundu station limits, the floods in Kariyathupara and Koovathumchola, and the landslide in Kakkayam prevented road transport to the Kakkayam dam region. A team led by the Koorachundu SI braved the currents and rescued those who had been stranded in Kakkayam. 180 families were housed in the relief camps in Koorachundu, Kallanodu, Kakkayam, Kariyathumpara, and Colony mukku. The policemen on duty at the Kakkayam dam who were stranded there when the road collapsed in the landslip, were rescued to safety by the Koorachundu police.

Thottilpalam Police station

Floods and great damage resulted from the landslides and landslips that occurred at Churam 10th Curve, Chungakutti Churam 6th Curve, in the Thottilpalam village of Kavilampara panchayat between the 11th and the 16th of August. 13 families in the Peedikapara colony were evacuated to the government shelter after the Kadantharapuzha overflowed its banks. On the 14th, when water from the Peruvannamoozhi dam flowed into the Kadantharapuzha at Kanjirolipeedika, causing it to overflow its banks, as a precautionary measure a relief camp was opened in St Joseph's School, Poorampara, and 148 individuals from 48 families were given shelter there.

4.10 Wayanad District

Wayanad District was the twelfth in the state when it was formed on 1 November 1980. Wayanad is a region blessed with geographical diversity and a salubrious climate. Agriculture provides the foundation for the socio-economic framework of Wayanad. It is also the only district in the state that borders both the neighbouring states of Karnataka and Tamil Nadu. The only river that flows across the district is the east-running Kabini. The total area of the district is 2131 square km. 38% of this is forest land. The Banasura and Karapuzha dams of the district help provide for irrigation and the production of hydro-electric power.

Diverse tribes inhabit certain parts of the district. Irula, Paniya, Kurichya and the Kattanaicker have lived for generations in its villages and deep forests. The greatest natural disaster that Wayanad had to face since 1924 were the landslides and floods of August 2018. In the heavy downpour, dams, lakes and rivers overflowed and landslips occurred in a number of locations. The tragedy struck a near-deadly blow at the agricultural system that had been the backbone of the district, and turned the general peace and quiet that had reigned over the district into a situation that could have degenerated into sheer chaos. However, the rescue and relief operations that were set in motion were on an unprecedented scale. 38250 persons were given shelter in 424 relief camps in the district.

All government departments, police, around 320 Fire Force personnel, officers of the Revenue and the Health departments, local and external residents, various voluntary organizations, social and community workers, everyone contributed whole-heartedly to every stage of the rescue operations. The supply of essential materials for the relief efforts came from outside the country, as well as from various parts of the nation, and the state. The Revenue department officials took upon themselves the onerous

responsibility of providing for 38250 inmates of 424 relief camps. After the floods, medical assistance was provided to around 19190 individuals in the district in the relief camps as well as in 888 medical camps.

The police, Student Police Cadets, IR Battalion, KAP IV Battalion Training cadets, members of the Safety Council, and others played a significant role in the post-flood rehabilitation and cleaning operations too. A number of welfare schemes have been launched by the local self-government bodies to provide financial assistance to agricultural farmers and milk-producers.

Turkey Life-savers Society

This is a community of youths based in Kalpetta in Wayanad. The members of the Turkey Jeevan Raksha Samithi have shared the valuable lessons learnt from their personal experience of saving people from flood and landslides at great peril to their own lives. The Society has been active as rescuers and relief providers and as angels of mercy in Wayanad for over half a decade.

A team of officials including the District Police Chief, and others from the Collectorate and the Revenue department led the rescue and relief operations in Wayanad district. 550 personnel of the local police, and teams from the District Armed Police, the India Reserve Battalion, the Home Guard, and Student Police Cadets worked together with commendable efficiency for the success of the rescue and relief efforts in the district. The police worked closely with the local residents at considerable peril in challenging terrain to rescue 7793 persons. Police also took the initiative to procure the equipment and vehicles required for these efforts. Timely action was taken to issue cautionary warnings in areas prone to flood and landslides and to evacuate the populace of such regions. Police also led from the front, along with the general public and members of

the People's Safety Councils, in the post-flood rehabilitation and the cleaning of houses, schools, community halls and government institutions. As most of the police personnel in the district were local residents, they had to take part in the rescue and relief operations even while their own families were facing the fury of the floods.

The police force suffered losses amounting to around Rupees 6,26,099/- in the floods. Besides, the Vythiri and Panmaaram stations were completely destroyed. Losses from these two stations alone amount to around Rs 5, 46, 00,000/-. Moreover police personnel who took part in the rescue and relief have reported other losses including permanent damage to their uniforms and equipment.

The Wayanad Social Service Society, Shreyas, M.S. Swaminathan Foundation, Turkey Jeevan Raksha Samithi and other organizations helped in the rescue and relief and in the rehabilitation efforts. It should be specially mentioned that the members of the Turkey Jeevan Raksha Samithi extended stellar service in the hazardous rescue efforts, working closely with the police and the Fire Force to rescue those stranded in flooded areas. It should also be recorded that the voluntary organizations also strove to make a difference to lighten the mental stress of the flood-affected by organizing cultural programmes in various relief camps.

RESCUE AND RELIEF EFFORTS BY THE POLICE

Sl. No.	Action	Number
1	People rescued and evacuated to the camps	1. 7793
2	Roads repaired and made	208

	traffic-ready	
3	Medical Camps organized with police assistance	2. 84
4	Clothes and Food distribution camps	159
5	Colonies where food and clothes were distributed	3. 475
6	Houses cleaned	4. 1494
7	Schools cleaned	5. 29
8	Community halls/Other institutions cleaned	6. 7
9	Police personnel who took part in the cleaning efforts	7. 630 8.
10	Student Police Cadets who participated in cleaning efforts	9. 672 10.
11	Members of the public who helped in the cleaning efforts	11. 730 12.

Sl. No.	Police station	Number	Cause
1	Kalpetta	1	Landslide

2	Vythiri	2	Landslide
3	Thalapuzha	3	1-Drowning, 2-Landslide
4	Sultan's Battery	1	House collapse
5	Thirunelli	1	Drowning

Kambalakad Police station

Kambalakad Police station serves the villages of Kottathara, Anchukunnu and Kambalakad in the Kalpetta sub-division. Because there are a number of low-lying areas in it, the severest effects of the floods in the district were recorded in the station limits.

Rains occurred in the station limits from the 8th of August. Because of the threat of floods, timely action was initiated the very same day to evacuate people from the adivasi tribal areas to the relief camps. Inhabitants of the Vyshyan colony, Kolavayal colony, Kallatti, Venniyodu and Kottathara were among those evacuated to the safety of the camps. On August 9th, when the shutters of the Banasura Sagar dam were raised, the threat of floods became stronger and a number of low-lying areas in the station limits came under water.

Residents of Mylaady, Cheriya Mottakkunnu, Kolakky Mottakkunnu, Palampoyil, and Kannamvetty colony were rescued in a very intrepid manner. Those who were not able to travel to the camps were supplied with essential requirements by boat and raft. 1365 persons were evacuated to the camps. Policemen were assigned to provide for their security. Day and night patrolling was effectively set in place.

Thalapuzha Police station

Thalapuzha Police station serves the villages of Tavinjal, Peria, and Walad in Wayanad district.

The station limits received heavy rainfall from the 7th of August, and strong currents flowed along the lakes and canals. In various places the normal flow of water in the canals was disrupted by landslides and the low-lying regions soon came under water. Transport on the Mananthavady-Thalassery and Mananthavadi-Irity roads came to a standstill because of landslips. Police procured JCBs and tipper lorries and managed to partially clear the road for traffic with the assistance of the public. Landslides occurred in Walad, Makkimala and Thalapuzha, and flooding in Alaatil, and Peria.

Fatalities were few because of the rescue efforts by police and public and because the people of distress-prone regions had been evacuated to safety as a precautionary measure in good time. Relief materials were distributed to the residents of Walad, Irumanathoor, Periya, Alaatil, Vayyodu colony, Mundiayath colony, and Abhayanagar colony. Night-time patrol was made quite effective. Thalapuzha Police station was also successful in gaining the support of the public and People's Safety Council in the relief efforts.

Vythiri Police station

Vythiri Police station serves the ecologically significant villages of Achuranam, Chundel, Kannathikavala. In the heavy downpour on the 8th of August, a landslide occurred right above the station at 11pm, and the station was filled with dirt and filth. By the timely action of the police, the residents of the four houses in the neighbourhood and the police in the station escaped unscathed.

By dawn on the 9th, landslides had occurred in various places in the Vythiri station limits and road transport had come to a complete

standstill. Transport was blocked in around 9 locations by fallen trees and landslips. The Mysore-Kozhikode Inter-state highway was closed to traffic. The rising floods in Kavinmoola and the landslides in Vythiri hindered the rescue operations of the police. Still police were able to spearhead the disaster management operations with the assistance of the public.

As a holiday location which provides a perennial attraction for tourists from India and abroad, it became necessary to evacuate travellers from the accident-prone areas, and to introduce restrictive measures in tourist sites such as Pookodu lake. The police acted with commendable efficiency in providing security to the flood-relief camps, and in setting up patrol units in various places.

Pramod Papapchen and Policeman Rafeek, who were on customary sentry duty, on noticing an uncontrolled upflow of water and dirt from below their feet, and comprehending the danger, ran uphill to warn the residents of that area and helped evacuate children and the ailing with the help of the public, to safe locations. People could only look on as a part of the hill collapsed on top of the police station with a sound as loud as an explosion. Five of six people who had been buried under their houses that had collapsed at the same time, were rescued from the debris. A number of lives were saved in this timely action by the police.

Thirunelli Police station

Thirunelli police station is nestled within the Tholpetty Wildlife Sanctuary where Wayanad district borders the state of Karnataka. In the heavy downpour on the 8th of August, when the Baveli river overflowed, various places in the station limits were cut off. 12 relief camps were opened in the station limits and 557 persons stranded by the floods were evacuated to the safety of the camps. Police personnel had to negotiate the difficult forest paths of

the landslip-prone terrain to successfully accomplish this feat. The 25 police personnel of the station took part in the rescue efforts as one.

Although the landslides in four locations affected transport and hindered the rescue operations, equipment such as JCB, woodcutting saw, and rope were put to use to clear the roads and reestablish traffic. The help of the public at the sites, and the procurement of the necessary equipment helped the progress of the rescue efforts. Necessary facilities for the accommodation of the inmates of the camps were made available by police and public.

Police were assigned duty in the camps night and day to provide the necessary security. In addition to strengthening the customary night-patrol, the disaster-prone areas were under constant police surveillance.

Vellamunda Police station

Vellamunda station serves the villages of Vellamunda and Peringanoor. A number of places in the station limits fall close to the catchment area of the Banasura Sagar dam. As there are a number of adivasi colonies close to the forest land, this was the area worst affected by the disaster.

On receipt of information from the police station, the inhabitants of the regions close to the Banasura Sagar dam were evacuated to safety by measures that were undertaken in collaboration with the Revenue department and voluntary organizations. As the Fire Force possessed only a limited number of boats, police procured boats from various sources for the rescue efforts.

When transport along the Mananthavady-Kuttiadi road was disrupted by fallen trees, timely action was taken, with the help of the Fire Force and woodcutters to clear the road for traffic. The

rescued were then taken to the schools in Palayana, Tharuvana, Pulinjaal, and Cherukara in vehicles of the police and private individuals.

The relief camps were visited regularly and the supply of essential materials to the camps was carried out, in the early stages with the assistance of the public. Essential materials were also made available to those living in isolated regions of the inner forest. A massive supply of relief materials was received at the station from voluntary organizations and individuals, and steps were taken to distribute these among the needy.

Padinjarethara Police station

The regions worst-hit by the natural disaster in Wayanad district fall within the limits of this police station, which serves the villages of Padinjarethara, Kuppadithara, and Thariyodu. Many ecologically significant areas including the Banasura Sagara dam and its catchment areas are located here.

On the 9th, when the flow of water increased, and the shutters of the dam were opened to a height of 2.85m, the water rose to alarming levels over areas such as Madathupara, Varambatta, Periyamkolli, and Puthusserikadavu and a large number of houses went under water. Meanwhile, landslides and landslips at various places in the villages and the inner forests caused damage to houses and obstructed transport.

Padinjarethara police station rendered stellar service all these days. Boats belonging to the Forest department, the Banasura Hydel-tourism Project, and the DTPC Kalarikad, were procured and with the help of local residents, people who had been stranded by the floods were transported to the safety of the camps. The services of local volunteers was co-ordinated to make JCBs and wood-cutting and other equipment available wherever required. People in

the camps in regions that had been cut off by the floods, such as Pulampally, Northkunnu and Periyamkolli were given a steady supply of food and other essential materials.

Police took the initiative to ensure the steady supply of essential materials to the camps from the beginning. Police personnel were assigned the duty of providing security to the camps, and day and night patrolling was intensified in the disaster-prone areas. Timely action by police, voluntary organizations and the public helped in the co-ordination of rescue efforts without any loss of life or limb. Police conducted a number of post-flood medical camps and co-ordinated the distribution of the relief materials collected by various organizations. Those who had suffered damages in the floods were asked to fill a form for compensation by the village authorities and a counter was set up by the Janamaithri Council to provide assistance to them in this endeavour. Padinjarethara police rendered praiseworthy service, giving occasion for no complaints whatsoever at any time.

Thondernadu Police station

Thondernadu Police station was bifurcated from Vellamunda station in an inaugural function on the 13th of September, to serve the villages of Thondernadu and Kanjirangad. A large number of people in the station limits suffered the after-effects of the overflow of water from the opened shutters of the Banasura Sagar dam. From the inaugural day, the focus of the station has been on relief activities. The relief camps were visited regularly and a constant supply of essential materials was ensured. Particular care was taken to supply food and other essential materials to the tribals who lived in the inner forest. Steps were taken to organize medical camps at various locations in the station limits.

Police took the initiative to distribute the food and clothing collected by voluntary organizations and individuals among the inhabitants of the 28 colonies in the station limits. Police participated in and provided full support to the post-flood cleaning activities organized by voluntary organizations and the public in houses, school and community halls and similar locations.

Panamaram Police station

This station, in the Kalpetta sub-division serves the village of Panmaram, parts of the Naduvayal village and certain regions of the Cherukatoor village. Most of the local populace earn their livelihood by means of agriculture and related occupations. Large-scale flooding occurred in Mathoorvayal, Parakuni and Panamaram town. Panamaram police station which is situated beside the river came completely under water. During the rescue operations, police issued timely warning announcement over loudspeaker in various places in the station limits. Vehicles such as JCBs, tipper lorries and jeeps required for the rescue efforts were procured and deployed as required in the disaster-hit areas. In places where transport had been obstructed by landslides, police took ad hoc measures to clear the roads for traffic. Timely action by police and public helped to remove valuable station documents and equipment to safe locations. In an audit conducted after the floods, it was observed that the rented building in which the police station had functioned was rendered unserviceable and the loss from damage to government property in the station alone amounted to four lakhs of rupees. Janamaithri volunteers from various places were brought together for the rescue efforts. More and more people from flood-prone areas were evacuated to the relief camps.

‘The six of us work in the fields and eke out our daily existence with the little money that we get. For the last two weeks, we could not even stir out of our homes because of the continuous rains and

the floods. We managed to survive because of the supply of food and other materials that good people somehow brought to us in canoes and country boats.’

Police, voluntary organizations and the public also collaborated well in rehabilitating those who had been displaced by the floods.

Police took the initiative to distribute the relief materials collected from various sources wherever they were required, including all the adivasi colonies. Those who could not go to the relief camps were supplied with relief material through the Janamaithri councils. Police also led and co-ordinated the efforts of various voluntary organizations in the cleaning of houses, schools and community halls. Two village officer employees who tried to divert the relief materials meant for the camps for their private use were booked by the police and a case was registered against them (Cr. No. 298/18). The accused were arrested and taken to the magistrate’s court.

Wayanad After the Disaster

The most notable fact is the change of climate in the district after the floods. Many places grew unaccountably warmer. Crowds of earthworms squirmed up to the surface of the earth to die in places such as Sultan’s Battery and Pulpally. The water level of the major rivers in the district dropped drastically. In Meenangadi and Kambalakad, parts of the ground sank six feet down. All told, the disaster has caused extreme damage to the ecologically fragile environment of the district. This has thrown the farming community who depend on a reasonable expectation of climatic stability into an abyss of anxiety. As the socio-economic structure of the district is rooted in agriculture, the disaster has had a severe impact on most of the local populace. The floods began when dry cultivation (depending on artificial irrigation) had just begun. For that very

reason the paddy crops were destroyed by the uncontrolled inflow of water. Similarly the banana and colocasia that had been planted for harvest at Onam also perished. Many banana farmers had taken loans from banks and private individuals. Moreover, those who worked as coolies also found themselves out of work after the floods.

Ever since the Janamaithri programme was begun, People's Safety Councils had been set up within the limits of each station and excellent programmes introduced in the adivasi colonies. For this very reason there exists a very cordial relationship between police and public in many places.

The data collected from every house personally by beat officers as part of the Janamaithri programme proved to be an invaluable source of information about the houses in each area. Janajagratha Samithy (People's Safety Councils) meetings had been regularly conducted, in even the forest areas inhabited by the local people. Police received precise and timely information regarding the nature, location and extent of the disaster by mobile phone from the members of the Councils and from the public who had participated in the meetings. The members of the Councils and the public acted in a timely manner especially in places that were relatively difficult to access. Police acted promptly to pass on the mobile phone messages and to co-ordinate the activities. The services of the members of the councils of the worst-hit areas such as Padinjarethara, Vellamunda, Vythiri, Mananthavady, and Panamaram stations were co-ordinated successfully in the rescue, relief and cleaning efforts. The members of the councils also helped the police in clearing the roads that had been blocked and making them traffic-ready.

This report which has been prepared on the basis of data collected from the various police stations in the district, from the

inhabitants of residences and the inmates of relief camps will go a long way to help the police force in their efforts to manage disasters and will boost their morale and confidence in no small measure. The sincere efforts of the police to rescue and provide relief to those who had been displaced by the floods and landslides of a monsoon gone awry is indeed commendable.

4.11 KANNUR DISTRICT

Damage occurred in various parts of the district in monsoon-related incidents that happened between the months of June and August 2018. Major losses followed the strong landslips and landslides in the hilly areas of the district within the limits of the police stations of Cherupuzha, Sreekantapuram, Iritty, Karikottakari, and Kelakam while damages to a somewhat lesser extent resulted from the natural disaster within the police station limits of Alakode, Kudiyaanmala, Payyavoor, Thaliparambu, Ulickal, Mattanur and Koothuparambu. The damages that were the result of landslips and landslides in the hilly regions of Kannur district occurred mostly in June and July. Between June and August, 9 persons in the district lost their lives in the disaster.

Cherupuzha Police station

The worst-hit area in the Cherupuzha station limits was the Kanamvayal colony in Pulingom village. The water level rose to threatening heights in Kanamvayal on the 16th of August 2018. Police reached the spot immediately and rescued 93 persons who had been stranded on the other side of the Kaariyamkodu river, with the help of the Fire Force and moved them to safety. As the Kanamvayal bridge had been submerged by the water that overflowed from the Kaariyamkodu river, a makeshift wooden bridge had to be put in place for the rescue.

Cherupuzha police took the lead to evacuate the stranded populace to the relief camps organized by the Revenue department and the Cherupuzha panchayat, to ensure a regular supply of food and other essential materials to the inmates of the camps and to provide them security and support.

Sreekandapuram Police station

The flood-affected regions within the limits of the Sreekandapuram station in the Taliparambu taluk of Kannur district were the Chegalayi gramapanchayat and Sreekandapuram municipality. The worst-hit areas were Madambam, Podikalam, Kaniyaarvayal and Kanjileri in Sreekandapuram municipality, and Koyyam, Mungam, Perungonnu, Thavarol and other parts of the Chegalayi gramapanchayat. On receipt of the information regarding the floods, Sreekandapuram police sped to Mungam and evacuated 248 individuals from 42 families to the Chengalayi U.P. School with the help of the Fire Force and the public, and ensured the supply of essential materials to the camp.

Iritty Police station

Following the landslides and avalanche of water in the forest areas of Karnataka state, transport was disrupted in Vilamana village and on the Maakuttam Churam road in the limits of the Iritty station and the inhabitants of the region were isolated.

Police and Fire Force sped to the spot and evacuated the stranded to the safety of the camp in the Kiliyanthara St Thomas high School in Vilamana village. The camp functioned from the 12th to the 17th of June 2018. Chandy, an 88 year-old resident of Maakuttam lost his life in the avalanche of water from the hills and the resultant floods in Iritty river.

Widespread losses also occurred due to the landslides in Idakanam, Wayapara, Parakkamala. Following the landslides that

occurred on 8th August, 8 families from Kacherikadavu and Parakkamala were evacuated to the St Thomas U.P. School. The police team led by the Iritty SHO Rajeevan Valiyavalappil rendered sterling service in the rescue and relief efforts.

Karikottakiri Police station

Widespread damage resulted from the major landslide that occurred on the 8th of August at Mundayanparambu in Ayyankunnu village. The stranded populace was evacuated to the relief camps set up in the St Thomas U.P. School, Karikottakari, and the Unnimesiah Church Parish Hall in Vaniampara.

Two persons lost their lives in Mundayanmparambu when their house collapsed in the landslide on the 8th of August. Police coordinated the rescue operations in the station limits, making good use of the services of a company of DSC jawans and the Fire Force.

Kelakam Police station

The largest incidence of nature's fury in the Kelakam station limits was in the month of August. Although a number of major and minor landslides occurred in the Ambayathodu region in Kottiyoor village since the 8th of August, the most disastrous of these were the landslides and landslips that occurred on the 15th of August. A major tragedy was avoided because the people of the locality had already been evacuated to safety after the earlier occurrences. Following this, the Bavelipuzha overflowed its banks and the houses in the locality were submerged. Consequently, transport was disrupted for days on end and electric power system failed. After the Kottiyoor landslide, transport on the Pachuram road to Wayanad came to a standstill for many days. On the 17th of August 2018, when the Kottiyoor Pambarappan bridge suffered damage blocking the flow of traffic, a team led by the Peravoor Police Inspector repaired the damage and opened the bridge to traffic.

RELIEF CAMPS: FACT FILE

Place	Camps	Families	Persons
Kottiyoor	6	367	1086
Ayyankunnu	5	154	520
Vilamana	1	17	73
Chengalayi	1	42	245
Cherupuzha	1	35	93

5. Contributions of Other Departments**Fire Force**

The Fire force collaborated in the rescue efforts of the police mainly in areas that had suffered the onslaught of landslips. They helped in the rescue operations in ways that include the sawing and removal of fallen trees. The Fire Force helped secure the lives of the people after landslides, landslips, house-collapse and floods. The equipment provided by the Fire force, such as long strong rope, life jackets, life-belts, and small and medium-size wood-cutting saws were extremely helpful to the police in the rescue efforts.

Jail Department

The inmates of jails shared the responsibility of supplying food and water to the relief camps. The staff of the jails provided leadership to this effort.

KSEB

KSEB rendered invaluable service during the floods. Due the landslips and floods, and on account of falling trees, electric posts were destroyed and conducting cables snapped in many areas. The KSEB staff turned up to repair the broken lines in the heavy rain and helped the rescue efforts also by regulating the supply of power as required.

Revenue

The rescue efforts in each district are co-ordinated by a team of Revenue officials led by the District Collector. The operations were managed in a centralized manner in the Disaster Management Cell of the Collectorate. A 24/7 control room was set up. The control room staff responded to calls even from within the district and outside it to pass on the required information and instructions.

Officials of the Revenue department sincerely worked hard for days to organize relief camps for the disaster-hit populace and to provide the camps with all the necessary facilities. The efforts of the Revenue department in collaboration with other government departments in rescue, relief and rehabilitation helped to bring the people out of the abyss of misery that could have swallowed them whole otherwise. Not only the District Collectors who led the team of Revenue officials, every single officer including Tahsildars, Village Officers and other staff worked wholeheartedly for the success of the entire operation. To garner the support of social activists and voluntary organizations, the district administration had requested help using the new media. Food, clothing, drinking water, medicine, cleaning material and all other essentials were collected and distributed to every corner of the districts.

During and after the floods, the contributions received from within and outside the state were sorted and distributed to the needy

by teams of officers led by the Collectors of the districts. The Revenue department also worked hard to deploy the volunteers for cleaning operations who had turned up from various parts of the state wherever their services would be of the greatest use and to collect and distribute the required cleaning materials and equipment.

Around 6.87 lakhs of people sought refuge in the relief camps. 2,55,964 houses suffered damage all over the state. The Revenue department played an important role in providing monetary assistance to them. The camps were provided leadership at the district level by the Collectors. The Revenue department also rendered stellar service in the collection and distribution of relief materials and in co-ordinating the activities of volunteer youth and voluntary organizations. The Revenue department also took up the responsibility of cleaning up the houses of those who had returned home from the camps and in providing them with kits of essential materials. 10,50,837 kits were thus distributed. It was also the responsibility of the Revenue department to ensure the payment of monetary assistance to the needy. Moreover, free rations were provided to those who had been hit by the disaster.

Health Department

A 24/7 medical team was in attendance in all hospitals, ready to act in any situation. Doctors and other health professionals visited the flood-hit areas and the relief camps every day. They provided the police with the necessary support and expertise in the evacuation of the ill and the aged. They also played a leading role in the cleaning-up operations, by giving valuable instructions to the voluntary organizations, social activists and the general public who took part in the cleaning, and in the distribution of cleaning materials through the ASHA workers of the department.

Disaster Management Authority

The DMA, which was on 24/7 duty too played a major part in the operations. They helped set up control rooms and to co-ordinate the activities at the taluk/district/state level. They intervened as required for the assistance of the central forces. The Authority monitored the progress of activities every day and helped steer the operations in the right direction.

Local Self-Government Department

The institutions under the LSG Department acted commendably in the rescue and relief operations. The service of this department in closely associating with the local populace to carry forward the daily functioning of the camps in a flawless manner deserves special mention. The department also played a major role in waste management, especially in the sorting and disposal of waste in the proper way. They also formulated the empathetic and innovative strategy of making available through ‘Kudumbasree’ loans of up to a lakh of rupees to those who had suffered the loss of household equipment and utensils in the floods.

Agriculture Department

The floods laid waste around 2.37 lakh hectares of agricultural land. The loss of crops amounted to around 18,500 crores of rupees. The Agriculture Department strove hard to provide some solace to the farmers. A moratorium was declared on the repayment of agricultural loans. The efforts to provide assistance to ongoing agricultural activities has resulted in a massive increase in the harvest of paddy.

Irrigation Department

The lack of drinking water was a major problem in all the flood-hit areas. The Irrigation played a major role in providing a

solution to this. The efforts on a war-footing to repair the drinking-water system that had been hit by the floods deserve special mention. The department also worked hard to repair the wells that had suffered damage.

Dairy Development Department

The department was active in providing compensation to those whose cattle had perished in the floods, and also in distributing new heads of cattle among them. The department also took necessary action to repair the damage to stables and helped to construct new stables for domestic cattle.

Fisherfolk

Fisherfolk such as Jaisal who bent his back to provide a stepping-stone to three aged women to climb into a boat while on rescue-work in Vengara, Muthalamad and other areas in Malappuram district, worked without sparing a thought for the peril to themselves, and saved a number of lives across the state. Sri Pinarayi Vijayan, Hon. Chief Minister of the state, himself addressed the brave fisherfolk as ‘Kerala’s own army.’

6. Kerala Police Research Wing: Findings & Suggestions

- Unauthorized encroachment of rivers and backwaters and illegal construction on such land should be prohibited. The razing down of hills and mountains and the reclamation of low-lying land and fields for construction aggravated the impact of the floods of 2018.

- The impact of the floods was heightened also by the destruction of forests, quarrying of rocks and illegal sand-mining from rivers.

- Rubber dinghy boats such as those provided to the Fire force should be mandatory equipment at least in the police stations in flood-prone regions. Moreover mock-drills should be conducted once every three months to ensure that these will function properly in an emergency.

- Uniform guidelines should be put in place to suit any emergency situation that might arise at any time. Every policeman needs to be supplied with raincoats and other appropriate clothing for rescue operations and cleaning activities.

- Through programmes such as Janamaithri and Student Police Cadets, children and adults should be trained to swim, to act with presence of mind in emergency situations and to provide first aid in the absence of medical professionals.

- Knowledge of disaster management techniques and awareness of likely disasters should form part of the curriculum.

- Portable aska lights or similar equipment should be supplied to every police station.

- Locations should be earmarked in advance in the limits of each station considering their suitability to function as relief camps and repeater stations in the event of an emergency.

- Members of the Janamaithri council and of the various residents' associations in the limits of each station should be given training on the proper response to natural disasters and emergency situations.

- As the boats allocated to police department at present cannot be used across narrow streams or canals, smaller fiber boats should be made available for the purpose.
- It should be an urgent priority to construct wash-rooms on the top floors of police-stations in flood-prone areas.
- The kinds of natural disasters to which various areas might be prone to should be clearly represented on the maps of police stations. The disaster-prone regions should be studied carefully and precise route-maps should be marked.
- State of the art telecommunication facilities should be put in place to provide for emergency situations. The shortage of handsets should be addressed on a priority basis.
- Emergency fund should be made available to all police stations, well in advance of the actual requirement.
- Special footwear to be used in times of disaster should be made available. To protect police personnel deployed for duty in high water from contracting diseases such as leptospirosis (rat-fever) or skin-disease proper footwear and skin-fit uniforms are an urgent requirement.
- Community policing needs to be strengthened. The kind souls who turned up voluntarily for rescue and relief operations need to be compensated for the losses they would have incurred in the course of such activity. Every police station should draw up a Disaster Management Plan. If such a plan is put in place, in the event of a future disaster, full information regarding relief

camps, hospitals voluntary agencies and activists and so on would be ready to hand.

- The police station building and its premises should be in a safe location. It should always occupy more than one floor on a property.

- Because the rescue operations of the police were not photographed or videographed, most of the courageous efforts of the police have not become known to the general public. Every station should have a videography/documentation team. Although some members of the force possess reasonable videography skills, a secure archive facility for video files is still lacking.

- The methods of house-construction in Kerala obstruct the use of helicopters for rescue. Helicopter rescue was hindered in various places by the kind of roofing that is now common on the terraces of buildings. Therefore guidelines for house construction need to be put in place in flood-prone areas.

- Equipment such as special coats and clothing, life jackets, life-belts, torches and buoys, food and basic medicines for the ailing, and the services of a medical team are required.

- Neither police nor public were familiar with the concept of systematic alerts. Awareness programmes are therefore essential to make up for the lack. Climate-related information of the meteorological agencies should be shared with the police without the slightest delay.

- Residents of flood-prone areas should be made aware of the steps to be taken by them in the event of future floods. Counseling should be provided to those in need.

- Wherever the free flow of natural water has been obstructed, the hindrances should be cleared and the depth and capacity of canals augmented, and the water-bodies cleaned.

- Mangroves should be nurtured on the banks of rivers. Flora such as bamboo and *ramacham* with fibrous roots should be planted on the banks of rivers and on the coasts and hillsides to act as an ecological hedge against soil erosion.

- Regulator-cum-bridges should be made more effective.

- It is imperative that cyber patrolling by the Cyber Cell, Cyber Dome and the Hi-tech Cell be strengthened to limit and counter the spread of alarming fake news, videos and photos on the internet.

- If every police station is equipped with life-saving equipment such as headlights, torches, life jackets, cutting tools and heat-resistant dress, in times of emergency the police can leap into rescue mode without having to wait for the arrival of the Fire Force.

- An official web-site and a mobile app should be created to provide help to the disaster-hit. Facility should be provided to automatically update the location, video and messages of those who request help and for the rescue team to update their instructions to the affected or to other agencies that could provide support.

- To prepare for natural disasters, every year in April/May, there should be a joint meeting of local self-government officials, and officials attached to the Irrigation, Forest, Dam Safety

Authority, Electricity Board, Police, Fire Force and Health departments, who should also visit the disaster-prone regions and take necessary precautions.

- Because it was seen that the base of the dinghy boats used by the Fire Force were damaged when they came into contact with the sharp pointed structures on the gates and walls of flooded houses, the use of better technology to reinforce the bases of such boats may be insisted upon.

- To stem the flow of rumours and fake news the presence on social media of the Janamaithri and Janajagratha councils should be strengthened, making them an effective means to spread the truth of things among the people.

- Every station should keep a record of the contact details of local experts such as the *khalasis* and of the owners of equipment such as industrial woodcutting saw-machines, iron-cutters, massive kitchen vessels, tipper lorries and JCBs.

- The details of the floods of August 2018 should mandatorily be recorded in SCH Part IV.

- Disaster Management Committees should be set up in the limits of each station and ex-servicemen and others should be part of the committee.

- The geographical peculiarities of each region should be carefully noted and a safe route through it should be mapped and ready to hand.

- Through the Janamaithri and Student Police Cadet programmes, children and adults may be taught to tie the fireman's chair-knot.

- In places without the facility of an inverter, two 12 volt batteries used in vehicles can be adapted to provide 230 watts electric current with the help of an AC-DC converter for emergency use.

- A list of persons with ham radio licenses may be maintained in the station and their help can be requested to issue warnings in the event of any disaster.

- The mountain of electronic equipment that turned into electronic waste during the floods could cause grave environmental damage if chemicals such as lead and mercury were to seep from them into the water. Government should seriously consider putting in place a proper waste-management system to avoid a man-made disaster.

The essential equipment required by the police for proper management of rescue and relief operations following flood and landslips/landslides—based on recent first-hand experience:

7. LIMITATIONS

- * Power failure hindered communication and night-time rescue and relief operations.

- * The water-logging was aggravated by the illegal encroachment on the banks of rivers and streams. Since bridges over some areas had been constructed at ground-level, these were quickly submerged under water, leaving the people on either side stranded.

- *Some of the relief camps which were started at the beginning of the disaster came under water in later cloudbursts and landslides and the inmates had to be relocated once again.

*The sharp spikes and grills on the gates and walls of houses hindered the progress of boats in the rescue efforts.

8. Rehabilitation Efforts

Police led from the front not only in the rescue operations during the floods, but also in the rehabilitation efforts thereafter. Police were active also in the rebuilding of houses that had been destroyed in the disaster.

25 truckloads of food and other essential materials were distributed in Trivandrum Rural district. Trivandrum City Police sent 100 tonnes of materials to other districts. Rice and other articles of food, drinking water and other essentials were distributed among the various camps in Kottayam district. Food collected by the families of senior police officers and voluntary organizations were distributed in Pathanamthitta district. Alapuzha police made available 10000 cases of bottled drinking water, 3000 packets of biscuits, 300 sacks of rice, 375 sacks of powdered wheat, and 250 sacks of powdered rice. Idukki police contributed 221 tonnes of rice, 3 tonnes of vegetables, and 5000 bottles of drinking water. Ernakulam police made available 12140 kilogrammes of rice, 7884 kilogrammes of provisions and 4380 packets of biscuits. Kottayam police contributed 5000 kilogrammes of rice.

Apart from food and provisions, police personnel in Ernakulam, Thrissur and Malappuram districts also made available mats and mattresses, kitchen utensils, clothing, bleaching powder, medicine, and materials and equipment for the cleaning of houses. The rice and other materials collected by the Kozhikode City police were handed over to the needy in Wayanad, Thrissur and Ernakulam districts. Police of Kozhikode Rural district, Wayanad, Kannur and Kasaragod districts took the initiative to distribute essential materials to the needy in Wayanad and Thrissur districts.

The deluge of contributions from within the country and abroad was a factor that aided the rehabilitation efforts in no small measure.

Kerala police have helped a number of people whose houses were rendered uninhabitable, by either building new houses or repairing the existing ones. Two houses were constructed by the Thumba police station in Trivandrum City and the Sakthikulangara police station in Kollam district. Kollam City police adopted the Koyipuram Govt. Higher Secondary School in Kollam and undertook the task of renovation, considering the damage it had suffered in the floods. In the Muttom police station limits in Idukki district, police made up the loss of books and study materials suffered by the students. A group of 200 people who had been stranded in the Thodupuzha forest area were given shelter in the Idukki A.R. Camp.

Alapuzha district police distributed 980 Onam festival kits to the inmates of the relief camps. 93 houses were repaired and made habitable. Alapuzha police also took steps to construct houses for their ‘smaller siblings’—the Student Police cadets. 712 policemen were deployed in Kochi city to help remove the dirt and filth from the inside of houses. A house was constructed for family that had been rendered homeless in the station limits of Edakkara in Malappuram district. Wayanad police distributed 306 Onam festival kits to the needy.
