

**Postmortem Report on Disaster Response and Relief Operation
during the Forest Fire below Sangchhoekhor area at Lamgong
Gewog, Paro**



**Department of Disaster Management (DDM)
Ministry of Home and Cultural Affairs (MoHCA), February 17, 2020**

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Background

The Department of Disaster Management is a nodal agency to lead all the disaster management activities in the country and mandated to promote, support and facilitate disaster management to reduce disaster risks in Bhutan. The Disaster Management Act of Bhutan 2013 also mandates the Department to monitor and evaluate measures taken for prevention, mitigation, preparedness and response carried out during the phases of disasters. Therefore, in line with the mandates, the department has initiated to conduct postmortem study on disaster incidents as one of the disaster management activity towards reducing disaster risks in the country. Accordingly, a team comprising of two officials namely Kinley Gyelmo and Tshering Dorji from the Department has undertaken a post mortem study on the forest fire below Sangchhoekhor area at Lamgong Gewog, Paro.

The forest fire below Sangchhoekhor area at Lamgong Gewog, Paro occurred on February 12, 2020. The Incident Commander (Dasho Dzongdag) reported the incident in the Disaster Alert group (forum for sharing disaster incidents among the Dzongkhag and DDM officials). He reported that the fire started from the burning of bushes and thorns in and around the apple orchard at Tshentona (Rashi) under Paro Dzongkhag. He submitted that the two persons were suspected to have caused the fire and were therefore detained by the RBP for further investigation.

Purpose of the Report

This report is intended to study the effectiveness of the existing disaster response mechanism has really succeeded in fulfilling its expectations and further, enable us to study the response time taken during the forest fire incident. It would also provide an opportunity for further improvement of the system. Besides that, the information from this study will help policy makers to enact and review existing policies. Simultaneously, this study is also expected to help the department and the concerned Dzongkhag in enhancing the disaster response mechanism. It is also expected to help in educating the Dzongkhag officials and the public on disaster management.

Objective of the study

The main objective of the study is to;

- a) Study the coordination mechanism of response during the disaster.
- b) Study gaps/challenges during the course of responding.
- c) Recommend corrective measures and way forward to ensure better response during any disaster.

Methodology of the study

For the purpose of the report, the department developed structured questionnaire, visited the site of fire incident and conducted interviews with the key responders of the fire incident. The team met with the Incident Commander and Dzongkhag Disaster Management Officer (DDMO) since they were fully involved as responders during the said fire incident.

Findings

From the meeting with the Incident Commander and DDMO, the team came up with the following findings and observations;

1. The forest fire below Sangchhoekhor area at Lamgong Gewog, Paro started at around 12:30 PM on February 12, 2020. There was a strong wind during the incident which aggravated the situation.
2. The Dzongkhag Tshogdu Thrizin saw the fire and reported the incident in the Inter-agency Forest Fire Coordinating Group (IFFCG). The group immediately responded and a sequence of communications and resources deployment took place under the leadership of the Incident Commander.
3. The RBP was called instantly to control the fire while the Lamgong Gup was called for coordinating appropriate actions at the incident site.
4. Besides the RBP personnel, the students from the nearby Rigsum School were the first responders at the incident site.
5. The Commandant, RBA Shaba, Superintendent of Police, De-suung Volunteers, Forestry personnel, Gups & Tshokpas (Local Government), members of the Inter-agency Forest Fire Coordinating Group, students of Rigsum School and people from the community were actively involved in controlling the fire.

6. More than 400 persons were deployed during the incident including 181 RBA personnel.
7. As per the risk assessment carried out by the IFFCG, the fire threatened Sangchhoekhor and Kuengachholing Lhakhangs and few nearby houses. Thus, all the available resources were mobilized and deployed to contain the forest fire to save the heritage sites and homes.
8. Based on risk assessment, the Incident Commander requested the Director General, DDM for deployment of Helicopters. As per the procedure and as recommended by Home Secretary, the Cabinet Secretary's approval was obtained to deploy the helicopters. The cost of helicopter services was Nu. 2, 37,500/- (Two Hundred Thirty Seven Thousand Five Hundred).
9. The vehicles listed as follows were deployed during the incident;
 - a) One drinking water tanker of Dantak, Paro
 - b) Two fire brigade vehicles of Paro Dzongkhag
 - c) One sewerage tanker of Paro Dzongkhag
 - d) Two fire brigade vehicles from Thimphu Dzongkhag
10. Water jerry cans and knives as used by the Army personnel were useful and effective in combating forest fire.
11. After the fire was contained, mopping was carried out immediately as per standard practice.
12. No lives and properties were lost during the incident.
13. Mobile phones and social media (WeChat) were used for communication which was smooth and efficient among the stakeholders.
14. Incident Commander expressed satisfaction on the effectiveness of the coordination and participation of the stakeholders.
15. Firefighting water bags were used which were convenient. However, the water bags were found to be sub-standard as they got easily damaged by protruding objects in the forest. Other challenges were also observed and highlighted by the responders as follows;
 - a) Inadequate fire brigades and tankers.
 - b) Inadequate numbers of water bags.
 - c) Scarcity of water sources for effective use of fire brigades.
 - d) Responders' safety is an issue as sometimes fire fighters and volunteers get trapped inside the fire.

- e) Efforts by Local Governments to raise awareness on fire hazard have not been effective in the communities.
 - f) Fire lines were not useful in containing fire.
 - g) No budget to buy required equipment.
16. The forest fire below Sangchhoekhor area at Lamgong Gewog, Paro was finally contained at around 5:15 PM on the same day. The mopping activity was conducted till 6:30 PM followed by monitoring of the incident site by Forestry Department.

Issues

The following were the issues identified from the interviews and observation;

1. Inadequate equipments; The study found that the Dzongkhag does not have adequate equipment such as fire brigades, water tankers, water bags and fire extinguishers.
2. Scarce water source: There were no natural water sources such as streams and lakes near by the incident area. Further, structures such as fire hydrants, running water pipes or ponds were not available at the incident site to facilitate the operation of fire brigade.
3. Risk to the responders' safety: Due to lack of safety measures, the responders' safety is compromised during fire fighting.
4. Complacent attitude of people: Despite the Local Governments raising awareness and issuing orders prohibiting unsafe use of fire, the community's compliance is poor.
5. Ineffective fire lines: Making of fire lines is not effective as the fire easily spreads across the fire lines due to presence of combustible pine trees along the fire lines.
6. Budget constraints for Disaster Risk Reduction (DRR): In view of the budget ceiling, allocation of budget for DRR activities including purchase of necessary equipments gets competitive. In the process, DRR gets the least priority in budget allocation hampering the capacity development in DRR.

Recommendations

1. The Dzongkhag needs to procure the following equipment in adequate quantity for effective forest fire fighting.
 - ✓ Fire brigade
 - ✓ Water bags
 - ✓ Jerry cans
 - ✓ Shovels and spades
 - ✓ Cutting tools (Knives, power chain, axe)

The equipment must meet the standard quality and same equipment will be useful during the structural fire as well.
2. Forest fires being common incidents, fire hydrants needs to be installed and alternative water sources needs to be identified and developed in the settlements and heritage sites located in the forest.
3. The advocacy on fire safety and its mechanisms at the community level should be enhanced to prevent such forest fire incidents in future.
4. It is necessary that the Dzongkhag prioritize allocating budget for DRR activities (Simulation exercise to enhance coordination, equipment, awareness and advocacy)
5. Although mobile was used efficiently for the forest fire, it would be necessary to put in place and ensure reliable radio communication.
6. Fire-line may be created on annual basis by burning selected stage of forest near the vulnerable communities by the professional fire fighters.

Annexure

Incident site pictures at below Sangchhoekhor area at Lamgong Gewog,
Paro



