

Classification of Disasters

Kaustuv Chaudhuri

Science Communicators' Forum

Cast: Rohit Sharma (male, 35 years), Ratna (female, 30 years), Ronit (boy, 5 years), kalpana (female, 28 years), Sagar (male, 27 years), TV news reader (female), Sraddha (female, 28 years), Dr Prakash & Dr Vinayak (male, 45 years), Nurse (female, 24 years), Captain NDRF (male 45 years), Susant, Vineet, Rakesh (all male, 25 years), Pilot and Co-pilot (male 35 years)

Scene I

Play Starts ... (Loud wailing of women and background noises)

Ratna : **(Crying)** Oh ... How this happened to me? Oh god, what I will do now?
Sagar : Oh bhaviji, don't break down ... we haven't get the ultimate news.
Ratna : **(Crying)** What news Sagar? He will not come back again ... I know
Sagar : Don't say so ... Indian Army is trying their best.
Ronit : Mama, why are you crying? Why isn't my papa coming home?
Ratna : **(Breaking down)** Oh dear, I don't know ...
Ronit : I know, I know ... papa has gone to the mountains ... he promised me to bring the snow from the peak.
Sagar : Yes Ronit. He will certainly bring the snow from the peak.
Ronit : Which peak, Sagar uncle?
Sagar : The peak that he has gone to conquer. Its Nanda Devi.
Kalpana : Sagar, why is Ratna crying? Any news from the Army?
Sagar : No Kalpana. They are trying.
Kalpana : Then bhabiji ... there is still a hope, isn't it? Don't break down so fast. **(Turning to Sagar)** Sagar, what is the latest news?
Sagar : Latest news ... nothing new in the last 24 hours. Two days back, Rohit called bhaviji in the morning when they are just 500 meters from the peak. Just one hour after the call, an avalanche hits them. From that moment they are lost. Indian Army has started a search and rescue mission.
Ronit : **(Suddenly in an excited tone)** Mama, mama, look...they are showing my papa in the tv.
Sagar : **(Hurriedly)** Oh yes, yes ... they are giving the latest news ... look bhabiji
Ratna : Sagar, increase the volume a bit.
Sagar : Ok ... now listen ...
TV telecast : Our source in the Army has said that there is a very little chance of the climbers to survive the avalanche. It may be reported here that Captain Rohit Sharma and his seven friends has set out to climb the Nanda Devi one month back. Last week they have left the Base Camp. Four days ago one of the climbers suffered frost bite and so they have to delay for one day. Two days back, an avalanche hits them when they are just 500 meters away from the summit. From that moment they are lost ... no radio contact can be made since then. Indian Army has started an airborne search and rescue operation. Two helicopters, Cheetah and Dhruv are pressed into service. But still now no one has been rescued.

Ratna : **(Crying)** Sagar ... they are telling ... **(voice breaking down)** they are telling that there is a very little hope ... **(cry)**
(Ratna's cry will fade into music.)

(Interlude music of scene change)

Scene II

Play starts ... (scene of a hospital ward. Background noises of patients have to be given here).

Sraddha : **(Wailing in fever)** Oh ... doctor sab ... please get me well soon.
Dr Prakash : Nurse, nurse, please check her fever.
Nurse : Yes sir. I am coming with a thermometer.
Dr Prakash : **(To Sraddha)** Nurse is coming. Don't get tensed. We will certainly cure your fever.
Nurse : Sir, here is the thermometer.
Dr Prakash : Check it quickly.
Nurse : **(After a short delay)** Sir, her fever is 104 degree Farhenheit.
Dr Prakash : I see. Immediately administer paracetamol. And see me with the chart.
Dr Vinayak : Good Morning Dr Prakash.
Dr Prakash : Good Morning, Good Morning. You are at this hour, Dr Vinayak?
Dr Vinayak : What to do ... one of my patients is in serious condition.
Dr Prakash : Oh I see. What's the case?
Dr Vinayak : Pneumonia. But it is not the simple type that we treat.
Dr Prakash : Then what is it?
Dr Vinayak : At first we thought it is the common variety. But now it seems to be a complicated one. Both lungs are badly affected.
Dr Prakash : Which antibiotics are you giving?
Dr Vinayak : There lies the million dollar question. Which antibiotic! We have tried almost all the known types. But they are failed.
Dr Prakash : Failed? Why?
Dr Vinayak : The bacteria seem to be resistant to all these drugs.
Dr Prakash : Oh God! Mine may be the same.
Dr Vinayak : What's your case?
Dr Prakash : This patient ... her name is Sraddha ... has come here two days ago with a high fever from a urinary tract infection. I am administering nitrofurantoin but of no avail. Now her urine sample has been sent for culture sensitivity. I am waiting for it. **(To nurse in a loud voice)** Nurse, has her sensitivity report arrived?
Nurse : Yes sir.
Dr Prakash : Then bring it to my chamber, now. **(Turning to Dr Vinayak)** Dr Vinayak, will you mind to come in my chamber? We can discuss the two cases in private.
Dr Vinayak : Gladly. Actually I am at a loss, what to do.
Dr Prakash : Then come ...
(Sound of footsteps, opening of door. Background noise vanishes).
Nurse : May I come in sir?
Dr Prakash : Yes yes, come in nurse. Where is the report?
Nurse : Sir, this is the case file of the patient. Report is within the file.
Dr Prakash : Ok. Let's open it.
(Sound of opening the file has to be given here).
Dr Prakash : Hmm ... here it is ... urine culture and sensitivity report of Sraddha ... age 28 years ... hmm, culture shows million colonies of *Escherichia coli* ... a large number of pus cells ... that means we are on the right tract. Her fever is due to this infection.

Dr vinayak : But what about the sensitivity test?

Dr Prakash : Hmm ... sensitivity report ... where it is, where it is ... yes ... **(loudly)** Oh my God!

Dr Vinayak : What happened Dr Prakash?

Nurse : What happened sir? Is the report not right?

Dr Prakash : It's not the question of right or wrong, nurse. It's the question of sensitivity.

Dr Vinayak : What it says?

Dr Prakash : See with your own eyes.

Dr Vinayak : Ok ... hmm ... sensitivity report ... **(excitedly)** Oh my God! It shows the bacteria are resistant to all the known antibiotics!

Nurse : What sir? It is resistant to all of the antibiotics!

Dr Vinayak : Yes ... look here ... it is resistant to Norfloxacin, Ciprofloxacin, Levofloxacin, Pefloxacin, Prulifloxacin, Sperfloxacin, Ofloxacin ...

Dr Prakash : Nitrofurantoin, Chloramphenicol, Bacitracin, Ampicillin, Amoxicillin, Cefuroxime ... and the list goes on.

Nurse : Sir, that means whole of the floxacin and cephalosporin group are ineffective here?

Dr Prakash : Yes ... In fact all generation of antibiotics fall short here.

Nurse : **(Horried)** Then what to do sir?

Dr Prakash : I don't know ... I don't know ... only one hope is Gentamicin. Here it shows a medium sensitivity.

Nurse : But sir, Gentamicin is well known for its side effects.

Dr Prakash : Yes, it is a nephrotoxic drug. But what to do? I have to save her life first ... bring the medicine sheet ... and send the requisition for Gentamicin injection ampules ...

Dr Vinayak : I am also bogged down with a similar case.

Dr Prakash : What is your case? You are telling of a pneumonia case.

Dr Vinayak : The patient is a boy of 16 years. He is admitted a week ago with severe bronchitis, lung congestion and high fever. Tests reveal that he is suffering from pneumonia. At first I don't pay much heed. But to my horror, he is not responding to any of the new generation of antibiotics.

Nurse : Which patient sir? The boy on bed number 15 in male medicine ward?

Dr Vinayak : Yes. He is my patient.

Nurse : Yesterday my duty was on that ward. I noticed the boy. He is suffering from asphyxia. RMO Dr Trivedi instructed me to give him the oxygen mask.

Dr Vinayak : Today he has developed chest pain. His breathlessness also increased. His condition is getting worse day by day.

Nurse : But sir, if antibiotics do not work, how will we treat patients?

Dr Vinayak : I don't know ... I don't know

Dr Prakash : Dr Vinayak ... don't you think we are heading towards a disaster ... a sort of biological disaster you may call?

Dr Vinayak : **(Firmly)** Yes Dr Prakash, yes ... you are absolutely right. One day will come when no antibiotics will work ... and we will have to die from common ailments.

Nurse : But why such things happen, sir?

Dr Vinayak : Why happen? ... Well, it happens due to us ... us means doctors and patients as well.

Nurse : But how sir?

Dr Vinayak : We doctors have a tendency to prescribe antibiotics even for trivial ailments. The condition is more serious in villages.

Nurse : Why sir?

Dr Prakash : Because there is a dearth of qualified doctors in rural areas.

Nurse : Yes sir, I know. Mostly quacks practise there.

Dr Vinayak : These quacks, due to their poor medical knowledge and tendency to gain quick confidence from the rural people, prescribe high doses of antibiotics even for simple cases. This led to over-usage of these life-saving drugs.

Dr Prakash : Even some patients are also responsible. In order to skip the doctor's fees, they consume antibiotics without proper knowhow. And in our country, you know, there is no government control of selling of Schedule H1 drugs over the counter.

Dr Vinayak : Right. And these led to the development of antibiotic resistant strain of bacteria. Recently, some findings have sighted few bacterial strains that are totally resistant to all known antibiotics. These bacteria are therefore virtually immortal.

Nurse : And these immortal bacteria cause the mortal man to die helplessly. Isn't it sir?

Dr Prakash : Absolutely right. See how we two are fighting to control two most common ailments. Really we are heading towards a biological disaster.

(Suddenly the phone rings. Sound of ringing has to be given here.)

Dr Vinayak : **(To phone)** Dr Vinayak speaking ... **(loudly)** what? Condition of bed 15 serious? ... ok ... ok ... I am going ... I'm going ...

(Interlude music of scene change)

Scene III

Voice over : In a country like India, crisscrossed by numerous rivers and caressed by the seas on three sides and crowned by the lofty Himalayas in the North, disaster seems to be the next commonest happenings after the sunrise and sunset. Being situated on the mobile Indian plate, the country exhibits the dynamic geological features that spark massive geological devastations from time to time while its geo-positional characteristics make it vulnerable to the ravaging tropical cyclones, scorching draught inviting summer, flood washing monsoon and snowy winter seasons. Moreover, being the second most populous country in the world, these devastations kill hundreds of people and inflict damages worth of billions of rupees every year. In addition to these, the tropical climate with high relative humidity, changing weather patterns and high population density also invite biological disasters by encouraging explosive pest and microbial growth and spread of vector borne and infectious diseases.

In the light of the above scenario, Government of India set up a High Powered Committee under the chairmanship of Sri J. C. Pant in August 1999. The members were drawn from the Ministries, States, NGOs and experts drawn from relevant fields. It was a first attempt in India towards drawing up a systematic, comprehensive and holistic approach towards disasters. The original mandate was confined to preparation of management plans for natural disasters only. However, it was expanded to include man-made disasters and towards developing an effective plan of action that would encompass disasters of all origins.

Play starts... (A training session of National Disaster Response Force. Background noise to be given.)

Captain : Good Morning boys.

All together : Good Morning sir

Captain : Today we will discuss a very important issue ... classification of disaster.

Rakesh : Sir, I have one question.

Captain : Come on Rakesh. What's your question?

Rakesh : Sir, we are from National Disaster Response Force. Our duty is to help and save people during disasters. Then what is the point of knowing classification of disasters.

Vineet : Oh Rakesh. You are asking like a ... In order to serve better in disasters, we have to know the types and other technical tit-bits of disasters.

Captain : Right Vineet, right. You are absolutely correct.

Susant : Sir, I have learnt that a high powered committee by J. C. Pant have categorized disasters into six broad types.

Captain : Well Susant, you are correct to a some extent.

Susant : Why sir? Why not fully?

Captain : Because it's not six but five. Five broad types of disasters they have identified.

Rakesh : What are the types sir?

Captain : Ok. I am writing these on the board. First one is Water and climate related disasters ... second one ... geologically related disasters ... third nuclear, chemical, industrial and nuclear related disasters ... fourth one ... accident related disasters and the last one ...

Susant : **(Interrupting)** I know sir ... the last one is biologically related disasters.

Captain : Right. Biologically related disasters.

Vineet : Can you sir elaborate the categories for us?

Captain : Sure, why not Vineet. The first one is easy. Water and Climate related disasters include all types of calamities occurring due to weather and climatic disturbances. Like flood, cyclones and all types of storms, draught, snow avalanches, heat and cold waves, sea erosion and thunder and lightning.

Susant : Actually sir, the names are self explanatory. Geological disasters encompass those ones that arise either from geological activities or have roots deep down into the Earth.

Rakesh : Like? Do you mean earthquakes, Susant?

Susant : Yes, but not only earthquakes, Rakesh. Its meaning is far more broad.

Captain : You are right Susant. Geological disasters include landslides, mudflows, mine fires, dam failures and dam bursts. (After a brief pause) Rakesh can you elaborate the the third category?

Rakesh : Third category? ... That is chemical, industrial and nuclear disasters? ... Well sir, can I cite the example of Bhopal gas tragedy in this regard?

Captain : Absolutely right Rakesh. It is both chemical as well as industrial disaster. And also another point, this type is more anthropogenic than natural.

Vineet : Sir, another one is the great Chernobyl nuclear disaster in Russia.

Susant : It belongs to nuclear disaster category.

Captain : This type of disaster is extremely dangerous. Because like all other types, it not only kills people but affects the future generation as well.

Rakesh : How sir? How the future generation will be affected?

Captain : This is the most unique characteristic of the nuclear disaster. Radio-isotopes spilled during the accident contaminate food, air and water and due to their prolonged half-life they continue to exist on the contaminated material for years to come.

Susant : Sir, I have read these radio-isotopes can trigger genetic mutations.

Captain : This is the most serious issue in the whole picture. Due to their radiative properties, these isotopes can damage genetic material inside a living cell. These lead to outbreak of diseases related to cell growth, immunological disorders, birth defects, deformity and so on. Also the mutations may get carried over from generation to generation thereby affecting the new-borns in future.

Vineet : Oh! What a risk ...

Captain : Well, now the fourth category. Can anyone try to elaborate?

Rakesh : Sir I can try. Fourth one is accident related disasters. This means all rail and road accidents, fire, electrical disasters ... Am I right sir?

Captain : Right, right. But it is far broader. I includes oil spill, mine flooding, building collapse, boat capsize, terrorist activities like serial bomb blasts and so on.

Susant : Sir you have told fire. Which type of fire sir?

Captain : Susant, fire means all major and minor fires like village fire, forest fire, urban fire ...

Rakesh : And sir, the last one?

Captain : Ok the last one is biologically related disaster. It is rather a new but very serious and pertinent topic.

Vineet : What does it mean sir? Is it related to epidemics?

Captain : Well said Vineet. Obviously outbreak of epidemics is related to it. But its meaning is far more encompassing.

Susant : Can you elaborate it Sir?

Captain : Well, it also includes pest attacks and food poisoning.

Rakesh : Sir, pest attack?

Captain : Yes, why not? Don't you know, millions of rupees, food grains and agricultural crops are damaged every year due to attack of pests?

Vineet : But sir this can be checked by spreading pesticides.

Captain : No no Vineet. Thing is not so simple. Pesticide is a poisonous thing, harmful both to life and environment. Spreading toxic pesticides can trigger dreadful diseases in man and animals. Also pesticides can disturb the ecological balance.

Rakesh : How sir?

Captain : Because the ecological balance depends on food chain of predator and prey. Killing the preys will also deprive the predators of food. Moreover, pesticides also kill friendly insects that help in pollination.

(Suddely the mobile rings)

Captain : Hello ... oh.. fire has broken out? Ok Ok I am going with my team. Please wait a few minutes ...

(Interlude music of scene change)

Scene IV

Play starts ... (Rescue mission going on in the mountains. Sound of helicopter hovering around.)

Pilot : Can you see anything? Susant, Vineet search carefully.

Susant, Vineet: We are doing, sir.

Co-pilot : Nothing, nothing ... only white snows...

Pilot : Look down there ... a flag is seen on the snow.

Co-pilot : Where? Where? ... Ok I got it ... please lower the altitude of the copter.

Pilot : Ok. I am coming down.

(Sound of the helicopter intensified)

Susant : Yes yes ... that's a flag ... Oh there is a cylinder ... oxygen cylinder.

Pilot : That means this is the place where avalanche strikes. Captain Rohit Sharma and his team mates must be around here.

Co-pilot : **(Excitedly)** Look look there ... a body ... half covered with snow ...

Pilot : I am sending the message ... **(over radio-phones)** Captain Vishal speaking from the mission ... a body has been found on the snow ... I don't know whether he is alive or dead ... we are trying to airdrop Susant and Vineet ... over.

Co-pilot : Susant, Vineet jump ... now

(Susant, Vineet airdropped on the spot. From the ground...)

Vineet : I hope he is Captain Rohit Sharma. Susant, look for his name. Is he alive?

Susant : Hope so Vineet. He is breathing. He is alive.

Vineet : **(over the phone)** Captain, please drop the rope. He is alive ... now ... fast...

(Interlude music of scene change)

Scene V

Play starts ... (In the house of Rohit Sharma.)

Ronit : Mama, when my papa will come?

Ratna : I don't know dear, I don't know.

Sagar : Bhaviji, today morning I got a phone from army. They told me they are trying their best.

Ratna : **(crying)** No point of searching ... I know he is not alive ... Nanda Devi has taken his life ..

Kalpana : Don't say so ... please don't say so ... remember, no news is good news.

(Suddenly the mobile rings. Mobile ringtone is to be given here)

Sagar : Let me receive the phone ... Hello... Oh Smita... what happened? Yes ... We will turn on the radio ... they are giving the news of dada ... Oh oh certainly ...

Ratna : **(Eagerly)** What news Sagar? Who is in the phone?

Sagar : Its Smita. She told me that All India Radio is broadcasting some latest updates of the rescue mission.

Kalpana : Where is the radio? Ronit, where it is?

Ronit : I am bringing it ... I have taken it to my room to listen to papa.

Sagar : Go dear ... and bring it quick.

Ronit : sagar uncle, here it is.

Sagar : Give give ... I am tuning to ...

(Sounds of radio noises, intermittent music, broken dialogues to be given)

Radio broadcast: Just now we have received the news that the Indian Army had obtained a major breakthrough in the rescue operation on Mount Nanda Devi. Army helicopter has rescued Captain Rohit Sharma and three of his team mates from an altitude of 25,000 feet. Captain Sharma and his mates are undergoing treatment in the State hospital of Uttarakhand. Their condition is stable. Search operation for the rest of the mountaineers are still going on.

Sagar : **(In joy of ecstasy)** Hurrah ... they have found dada ... bhaviji ... dada is alive, alive.

Ratna : **(Crying in joy)** Oh God ... Where is he now, Sagar?

Sagar : He is in hospital.

Kalpana : We will have to go now. Sagar, contact the army headquarters. They have indeed done a great job.

Ronit : Hurrah ... papa will bring snow for me ...

Ratna : **(Laughing and crying mixed)** Yes son ... he will ... he will

Ronit : Who saved my papa, uncle?

Sagar : Army dear. They have airlifted your papa to the hospital.

Ronit : Hip hip hurrah for the army ... jai Hind.

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