- **Proposal: Towards Preparedness and Mitigation** of Water logging (designing incidence mitigation and adaptation)

- **By**
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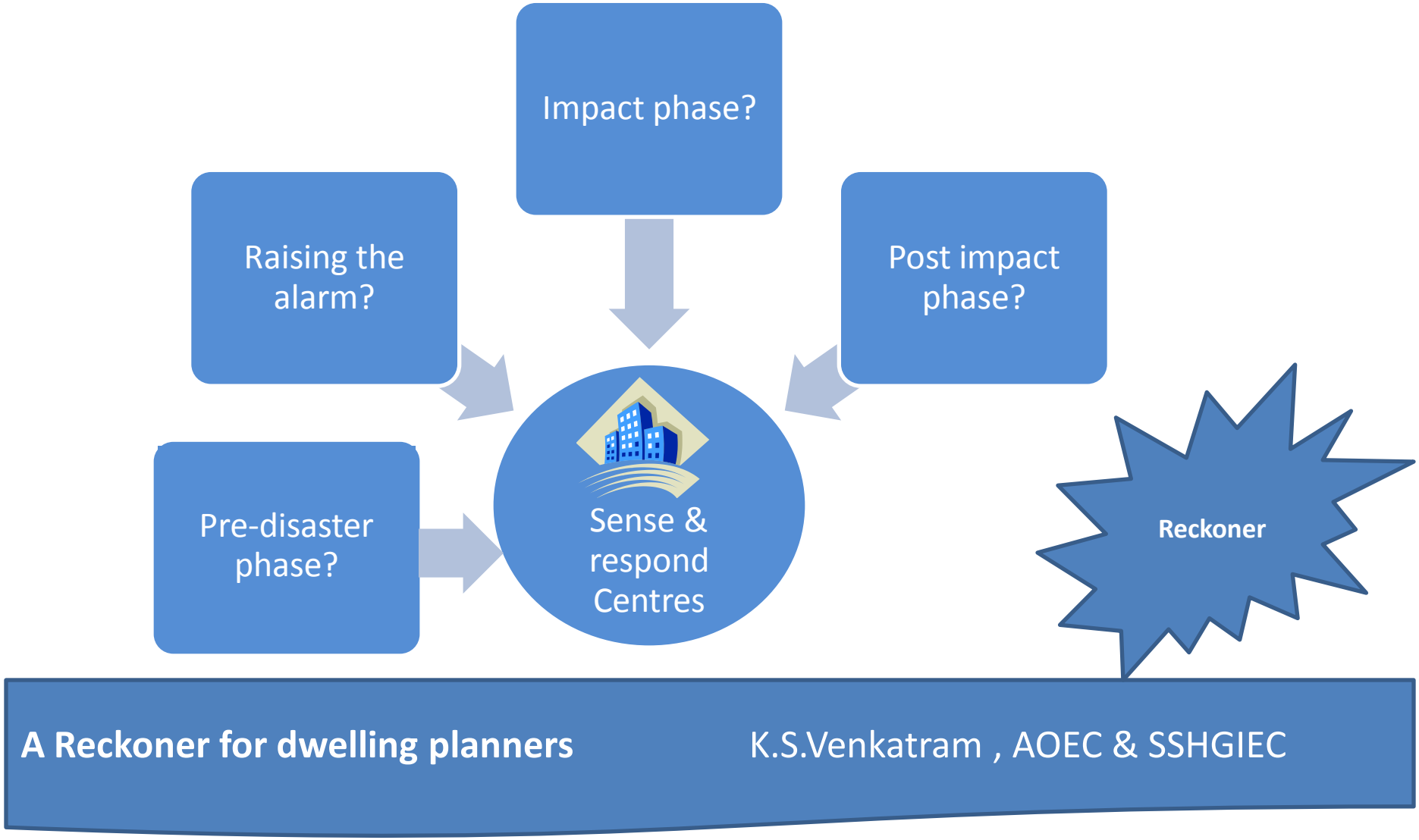
Considerations for SMART City	**Suitability (High, Medium, Low, Not rated)**	**Other details**
Impact of proposal	High, can serve as a model for dedicated organizations brain storming for this purpose	Solution for Disaster Management
Feasibility, results orientation and cost effectiveness	Medium to High	Needs Financial & Human Capital investment and R & D
Innovativeness and Scalability	Medium to High	Seen as a solution for readiness and preparedness that gives an edge
Risk mitigation for the future	High	Will help develop agile solutions for Disaster Management
Process methodologies and Process group involvements	Medium to High	Needs approvals by different governing bodies

Towards Preparedness and Mitigation



Disaster Management and Safety (Introduction)

Disaster Management and Safety

What is a disaster?

WHO defines a disaster as any occurrence that causes damage, disruption, loss of human life and sudden deterioration of health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area.

What are the needs of a disaster affected community?

The needs depend upon a number of factors like

+ The type of disaster

+ The resources of the community

+ It’s degree of preparedness, availability of a master plan

+ The stage in the disaster’s evolution or deterioration

Disaster Management and Safety

What does this mean to a planning team?

A **planning team** must be organized and ready to act in a disaster or mass emergency situation. A well-prepared or well-informed **planning team** will already know what is needed to provide crucial information or take decisive steps for relief and restoration services / programmes.

Understanding phases of any disaster

+ The Pre-disaster phase

+ Raising the alarm or being on the alert phase

+ The Impact phase

+ The Post impact phase

Disaster Management and Safety

What does a planning team have to do to address disasters or emergency situations?

All **planning teams** have to be prepared for 3 kinds of disasters

+ Internal disasters like a fire or an explosion

+ External disasters like an earthquake, heavy rainfall leading to water logging, collapse of a building/part of the building

+ Forewarned disaster like the outbreak of an epidemic, drought, famine

What does a planning team have to do for each phase in a disaster?

Pre-disaster phase: Urban landscape, Semi-urban or Rural landscape (relief and rehabilitation) planning, SMART Prioritization, Risk assessment or mitigation

Alert phase: Utilization of a window or duration of time available for preparedness accordingly (if this is possible for a disaster category)

Impact phase: Utilization of prior planning or preparedness to activate a response mechanism, Switching over to alternate systems, updating of status of response measures and if necessary coordinating for outside assistance.

Disaster Management and Safety

During or Post-impact phase:

+ Setting up of Control Room infrastructure, Help Lines, Emergency Call Centres
+ Health, Wellness and Safety advisories
+ Commuter advisories and remedial steps
+ Landscape specific Evacuation / Rehabilitation / Relief assessment
+ Initiating of relief and restorative programmes
+ Re-establishment of primary services, deployment or reinforcement of warning signages at vulnerable locations, provisioning of dewatering pumps, focus on clog free "storm water drainage, septic systems and manholes", mitigating of hazards like landslides, mudslides, building collapse, bridge or flyover damage, tunnels or roads caving in, railway or metro tracks damage, tree fall
+ Re-establishment of drainage & sanitary support to prevent outbreak of epidemics and mosquito bred diseases
+ Registering of needy patients via a Portal to establish, continue a triage to take decisive remedial action to ensure healthcare services for the afflicted, injured or sick (termed as SMART healthcare)

Disaster Management and Safety

What is triaging?

It is a methodology to help a disaster management team act on a person's need for healthcare. This keeps in mind that the disaster site may be in a remote place, the person sick or afflicted aprior, injured due to the disaster or accident is incapable of action, or is unfamiliar with the need for treatment (or may even be from a far off area, another city, state or country).

The triage system categorizes a person's need for healthcare under different conditions such as:

a. Category 1: Critical / will need to be rushed to a hospital and needs resuscitation

b. Category 2: Serious / Needs medical treatment immediately but can wait for an ambulance

c. Category 3: Urgent / Needs medical treatment within an hour

d. Category 4: Simple / Needs care when possible

e. Category 5: Needs to be kept under observation

f. Category 6: Can avail of mobile healthcare unit services whenever required

Disaster Management and Safety

What is the SMART Prioritization for planning teams?

1. City Landscape planning with Incidence Mitigation and Adaptation as a primary interest

2. Enforcing structural mitigation for all facilities and dwellings in locations prone to disasters

3. Setting up of Relief and Rehabilitation Centres whose primary role is to help improve the relief, restorative and rehabilitative steps available to people in locations prone to disasters

4. Planning and deploying of prediction based or timely signposts at vulnerable locations prone to disasters

5. Quality assurance for drainage systems, emergency drainage systems, storm water drains, rainwater harvesting systems, septic systems, manholes

Disaster Management and Safety

Note on emergency response based drainage systems:

- + Design parking, pavements, roads and landscaping to maximize flow of storm water (part of rainwater harvesting)

- + Incorporate roofing design to naturally drain storm water (part of rainwater harvesting for more volume of water), where one does incorporate storm water management for run-off water, excess water from roofs so the same is specifically redirected into well-designed storm water drains and not harvested at the site

- + Ensuring the implementing of well-designed storm water drains that take care of unpredictable rainfall or flood like situations by being inter-connected and forced to drain into a set of connected water bodies that can signal over flooding to divert flow into the next less filled water body. The need to plan for sets of water bodies (in what we can term as will-possibly-be-affected areas) that can be used for receiving storm water in flood like situations or that can control drainage into them may be the next step to drainage management.

Disaster Management and Safety

6. **Deployment of a Help Commute infrastructure** that helps a Control Centre and Help Commute Desk monitor, manage and react to situations affecting commuters depending upon the disaster incidence.

Including components to record and configure details about the various rail tracks, subways, tunnels, road systems, flyovers and bridges that are important for congestion free commuting or during disaster incidences.

7. Development of a Tree Grid programme to record and configure trees sidelining road systems, vital public infrastructure and facility neighborhoods to help reduce hazards due to tree fall or branch collapse

8. **Development of a Save Lakes and associated water bodies programme** that can help keep the water bodies clean, pollution free and as critical endpoints during any water crisis management

Disaster Management and Safety

9. Design and development of a vital resource programme where there is provisioning and guidelines to the utilization of resources important in mitigating climate change influences, implementing disaster management and ensuring SMART Prioritization to control spread of bird, animal or mosquito bred diseases

- **10. Accordance assessment of quality of water** being supplied to locations prone to disaster incidences, where
- + The government can address deviations like contamination by **colour coding the existing water connections, or sanctioning of water supply to consumers in specific locations.**

- + The **color code could tag a consumer with the risk of either (a) being affected or (b) causing water contamination. Such consumers or locations can then be monitored, protected or managed more easily.**

- + The government could also mandate that during building handover, annual tax collection or post disaster occupancy i.e. a No objection certificate is to be obtained from the Water Supply and Sewage Department for the new Accordance Assessment implementation.

Disaster Management and Safety

What is the NEXT Step for planning teams?

There are organizations like Civil Defence that are working on different programmes to help implement disaster mitigation and disaster management. This work cannot be substituted or sidelined.

Consultants interested in sustainable societies could contribute in their own way to raising awareness, incorporating more readiness and preparedness in organizations and communities. Each early link in risk mitigation is vital.

Incidence Mitigation and Adaptation may become more challenging till we take the right steps today. This reckoner looks at a sense and respond perspective that can grow to become a stitch in time concept that can plug many loopholes found in our planning for disaster mitigation and disaster management in dwellings and other urban, semi-urban and rural landscapes.

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