

Flood Evacuation Process

and

*Search & Rescue
(Issues & Challenges)*

Dr Muhammad Farhan Khalid

DR. MUHAMMAD FARHAN KHALID

- Registrar Emergency Service Academy (Rescue1122), Lahore, Pakistan.
- Team Leader Disaster Response Force (Pak-USAR Team) INSARG
- Chief Instructor, Urban Search & Rescue
- Master / Regional Instructor PEER Courses
- Senior Technical Officer of the Service
- Worked as District Emergency Officer in Multan

Sequence

- Overview of Punjab Emergency Service*
- Emergency Services Academy*
- Disaster Management*
- Flood Management - Issue & Challenges*
- Water Rescue Techniques for Community*
- Operational Strategies in Pakistan*

Punjab Emergency Service



The Disaster Response Force

Mission of the Service

Establishment of an effective system for emergency preparedness, response, protection & prevention; while contributing towards building socially responsible, healthy, resilient and safer communities.

Ambulance Service



Fire & Rescue Service



Disaster Emergency Response Teams

after Eathquake on 8th October, 2006



HAZMAT Response Unit



Water Rescue



Motorbike Ambulance Service



Community Safety Program



13 Years Emergency Statistics

Emergency Calls Responded	4527603
• Road Traffic Accidents/ Crashes	1612581
• Fire	100492
• Building Collapse	7101
• Crime	165388
• Explosions	1389
• Medical (Drowning 9147, Misc 408791)	2594799
• Average Response Time in Minutes	7 Min.
• Fake Emergency Calls Responded	4040
• Patients Rescued	5251398

Emergency Services Academy

Emergency Services Academy *(National Centre of Excellence)*



Cadets Block



Instructors Block



Academic Block



Admin Block



Model Rescue Station



Water Rescue Lake



Training Ground



Fire Tower



Fire Fitness tower



Self Contained Breathing Apparatus Lab



Swimming Pool



Urban Search & Rescue Rubble Pad



Training Wings of ESA

- Fire & Safety Training
- Emergency Paramedical Training
- Search & Rescue Training
- Physical Training
- Driving Training
- Wireless & IT Training

Disaster Response Force (PAK-SAR Team)



Disaster Management

Disaster Spectrum

Flood

Rescue

Early Warning

Rescue

Relief

Preparedness

1122

Recovery

**Awareness and Capacity
Building**

NDMA

Rehabilitation

Prevention/ Mitigation

Reconstruction

Risk Assessment

Disaster Management Strategy in Pakistan

- Establishment of National & Provincial Disaster Management Authorities
- Establishment of Emergency Service & Community Emergency Response Teams
- Army for air support & law & order in major disasters

Disaster Response Strategy

Disaster Scale	MANAGERS
<ul style="list-style-type: none">• Small scale	<ul style="list-style-type: none">• Emergency Services
<ul style="list-style-type: none">• Medium	<ul style="list-style-type: none">• ES + CERT
<ul style="list-style-type: none">• Large	<ul style="list-style-type: none">• ES + CERT + Army for Complex Emergencies

Flood Management Issues & Challenges

*“1 cm of rain falling over 1
Sq.km produces
10,000,000 liters of
water, all trying to get to
the lowest point”.*

Four Realities of Flooding

- Multi-agency events
- Multi-jurisdictional events
- Hazmat and public health events
- Long term event that can exhaust emergency personnel and community members emotionally, mentally, physically

Four Phases of Flooding

- Phase 1 – Pre-Flood
- Phase 2 – Flash Flood
- Phase 3 – Expansion
- Phase 4 – Recovery

Phase 1 – Pre- Flood

- Development of response plan based on existing hazard assessment and historical flood data
- Training of Personnel and investment in equipments
- Public awareness and training

Phase 2 – Flash-Flood

- Associated with high speed water
- Imminent danger to human lives
- Greatest personal risk to rescuers
- Technical rescue required

Phase 3 – Expansion

- Lateral movement of water leading to loss of more land
- More intensive damage to infrastructure
- Hazmat Issues
- Damage to means of access and egress
- Active evacuation required

Phase 4 – Recovery

- More exposure to accidents & injuries.
- Public health issues
- Search & recovery
- Infrastructure restoration

Challenges

- Diverse topographical features
- Varied Climate in different regions
- Uneven population density
- Unplanned development in flood Plains
- Vulnerability of population segments
- Poverty
- Pressure on natural resources
- Lack of Preparedness for Disaster Management

Issues in Evacuation Process

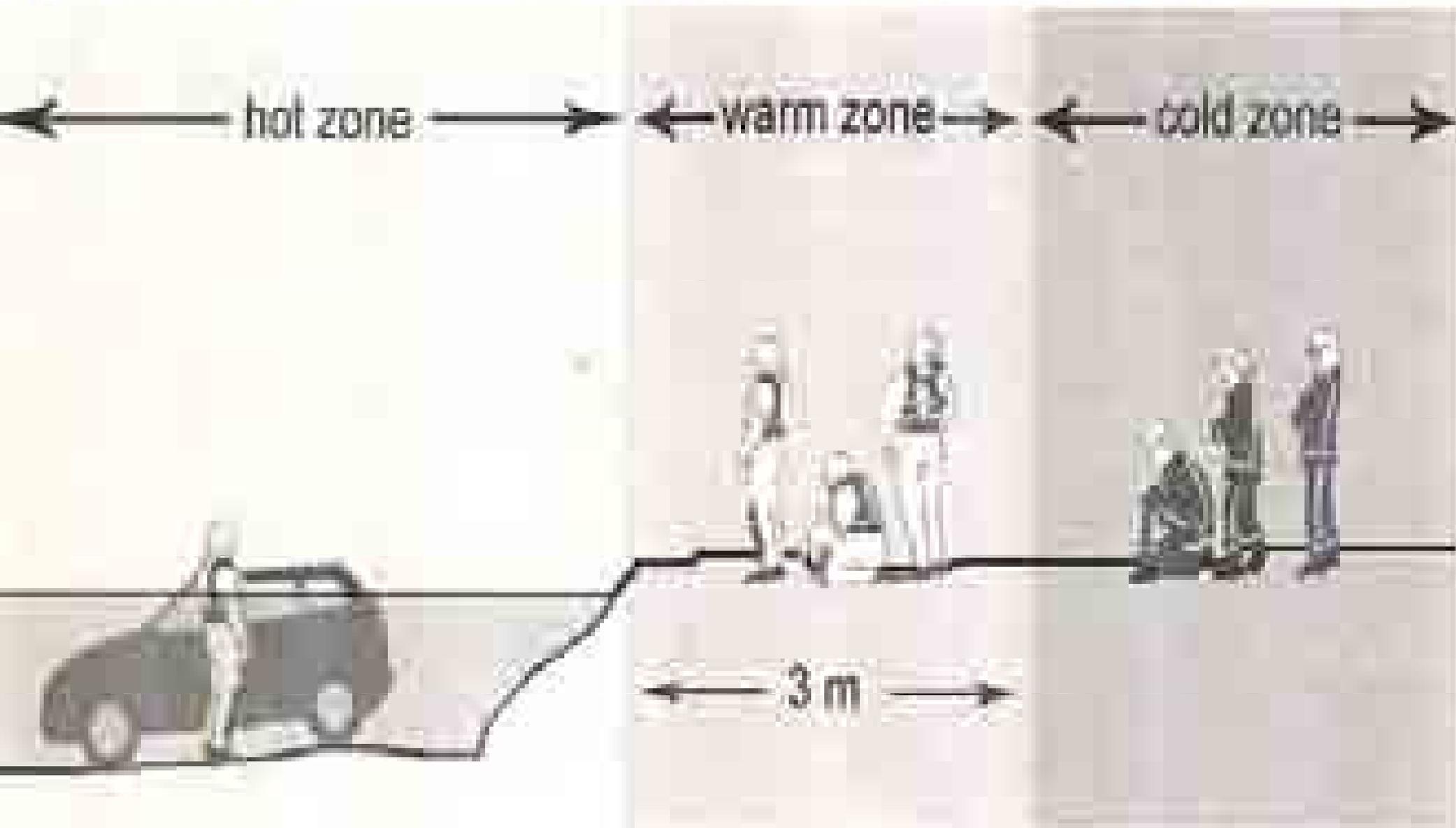
- Lack of community participation in evacuation planning.
- Early Warning System- Timely information Dissemination.
- Validation of evacuation alerts
- Community reaction to the evacuation alerts
- Means of evacuation.

Contd...

- Care of vulnerable groups
- Coordination amongst stakeholders
- Shelters / Relief camps – facilities.
- Documentation (registration & de-registration).
- Care of cultural and social norms.
- Administrative control of the process.

*Water Rescue
Techniques
for
Community*

A Zoned Approach to Water Rescue

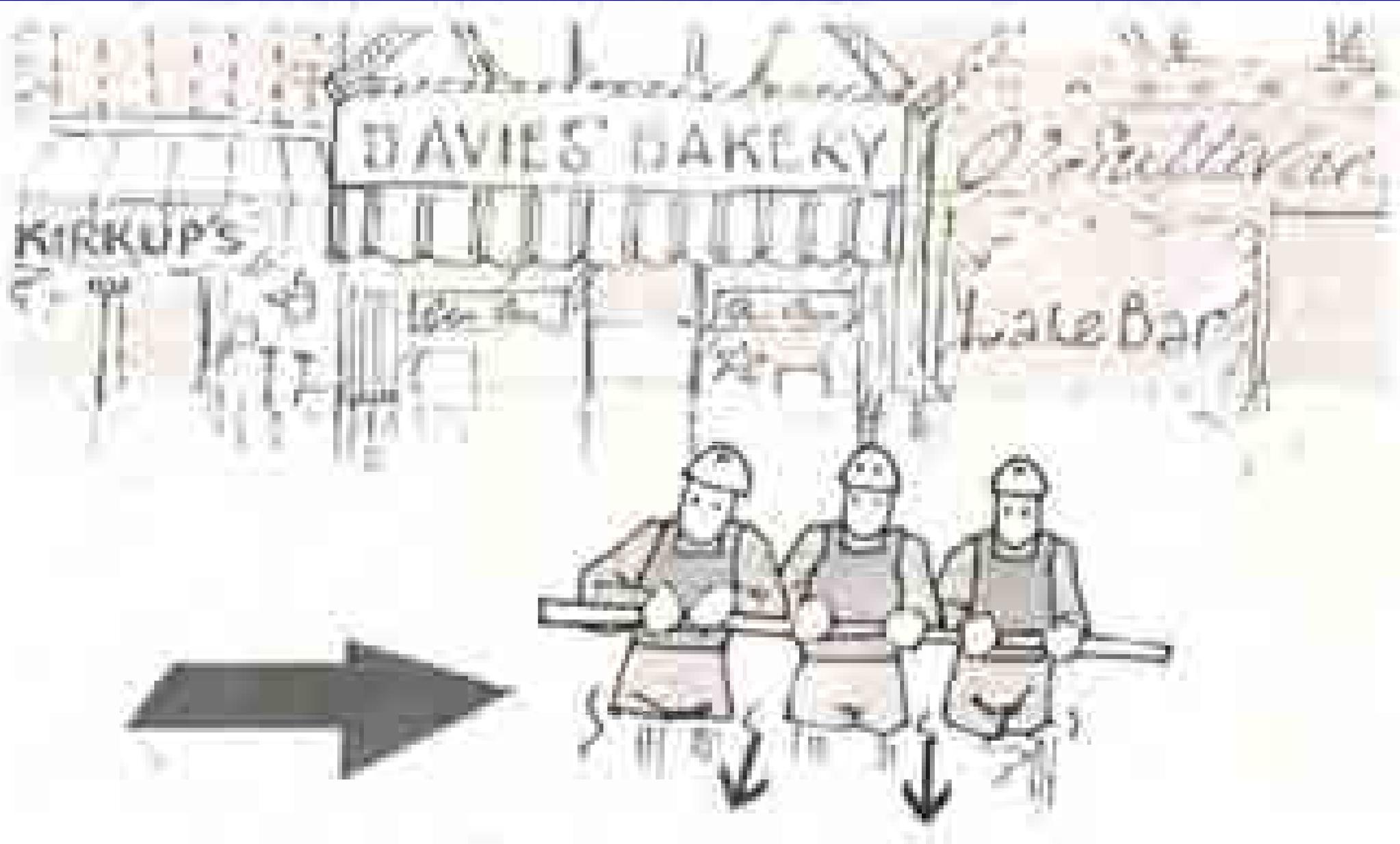


Shallow Water Rescue Techniques

□ Group wading techniques

- Line abreast
- Line astern
- Wedge astern

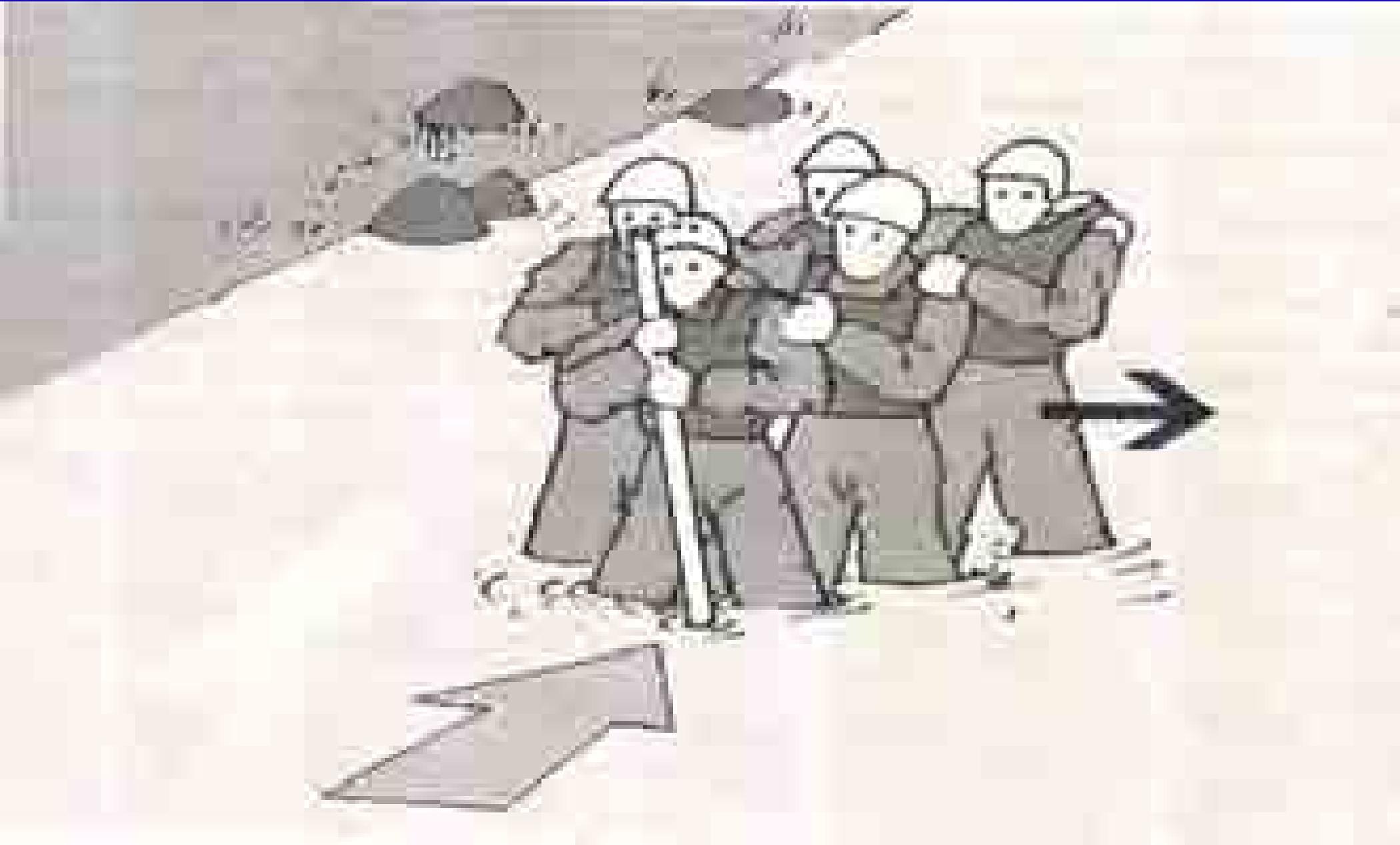
Line Abreast



Line Astern



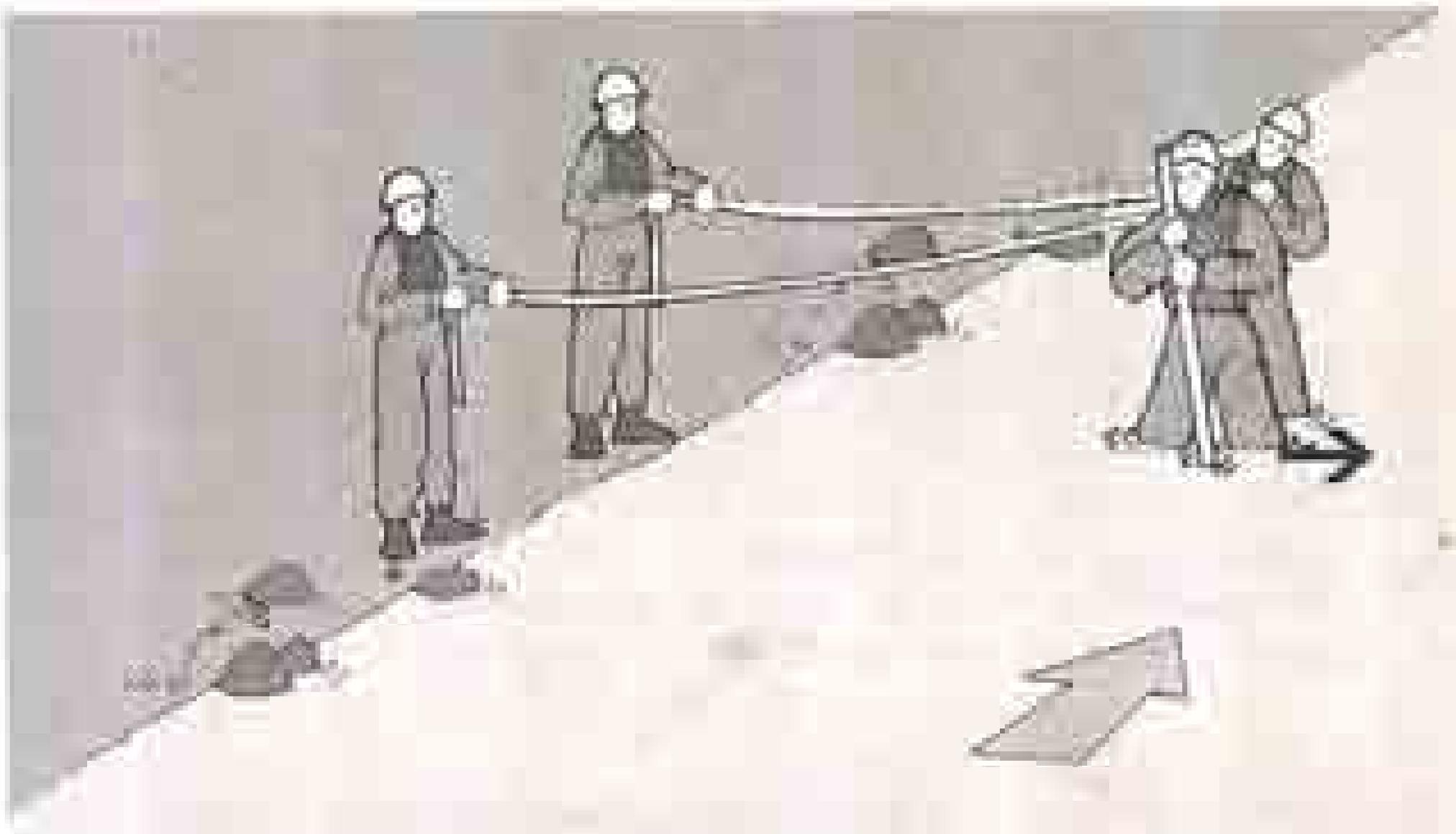
Wedge Astern



Shallow Water Rescue Techniques

- Tethered crossing
- Throw bag rescue
- Belaying
- Vectoring

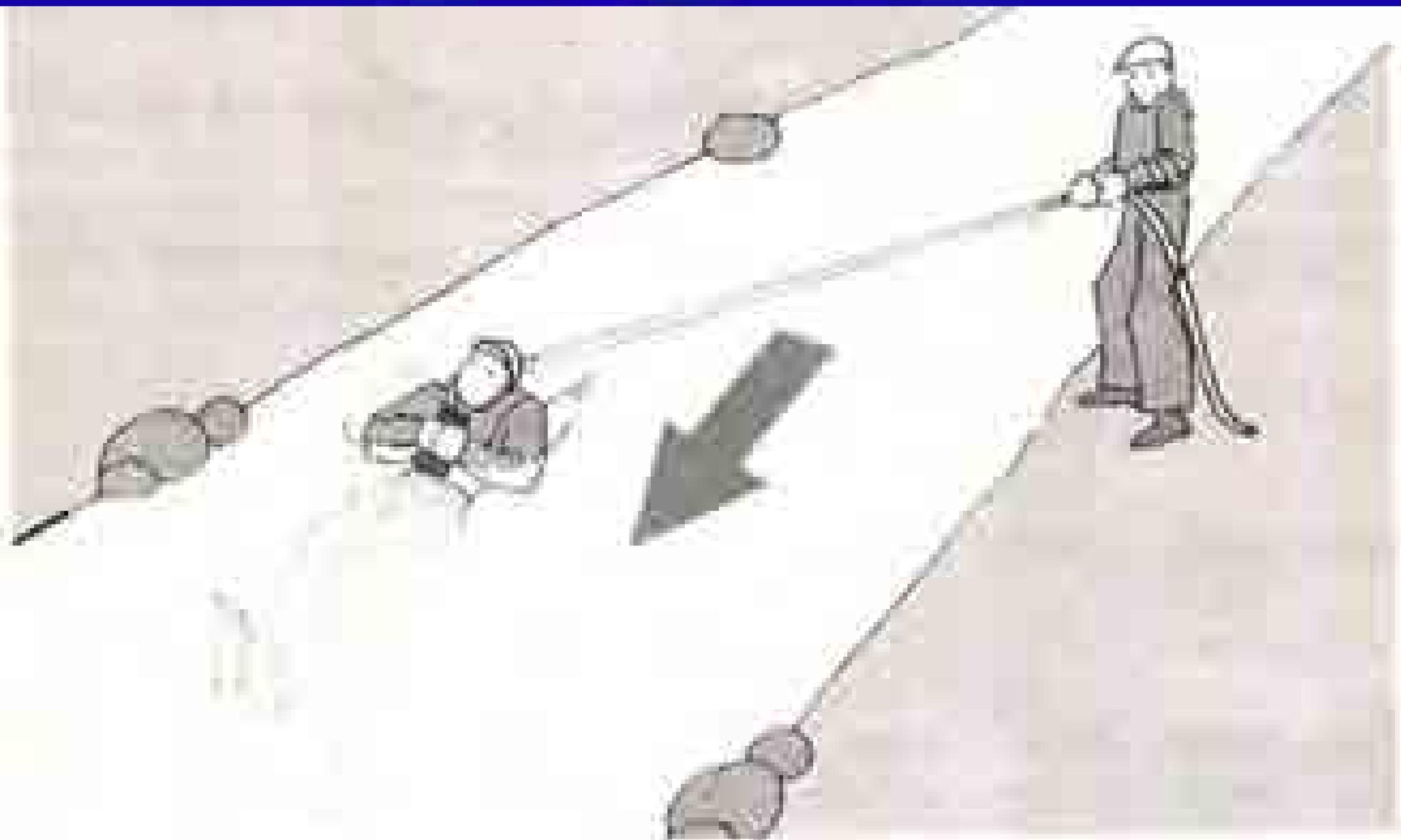
Tethered Crossings



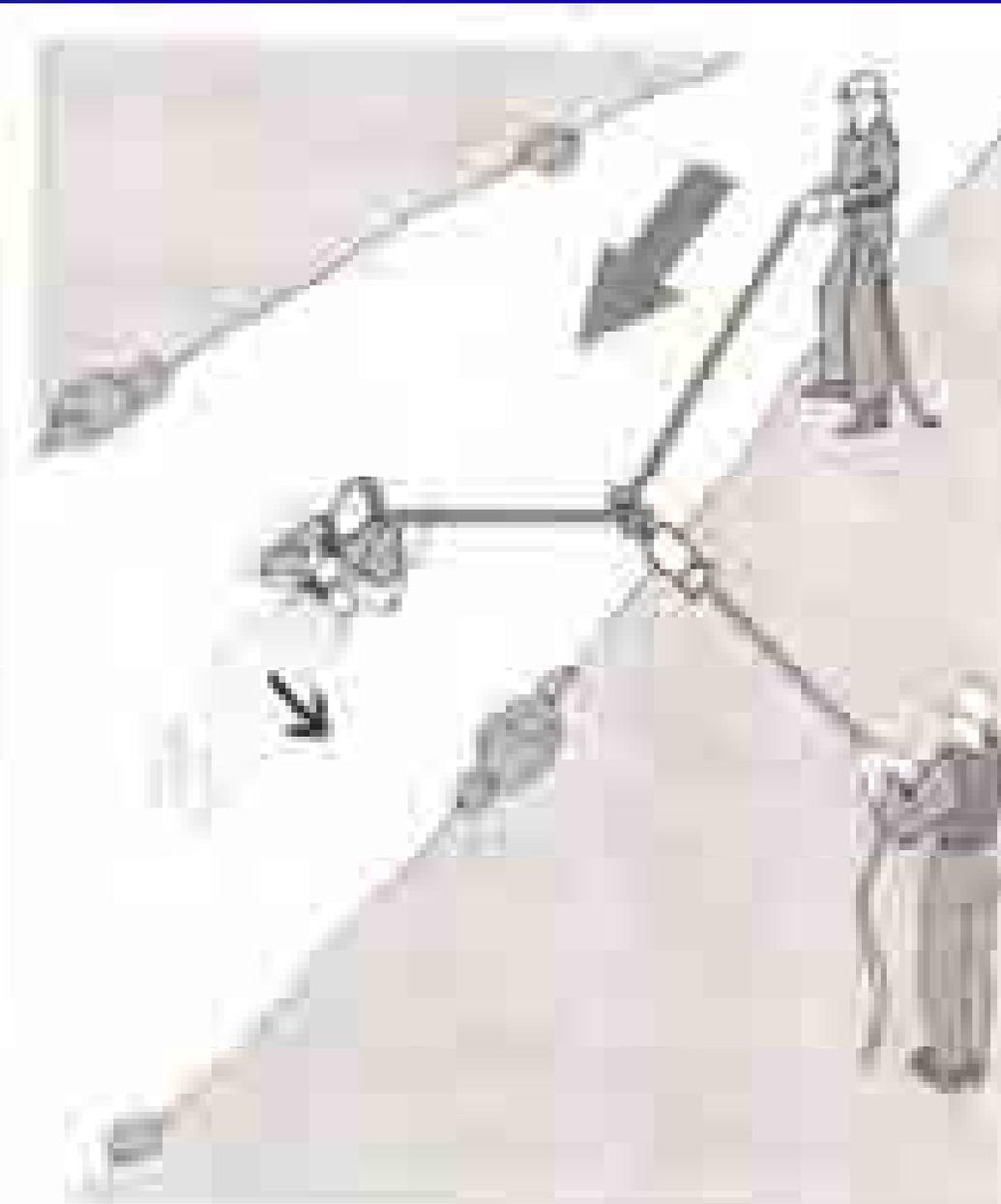
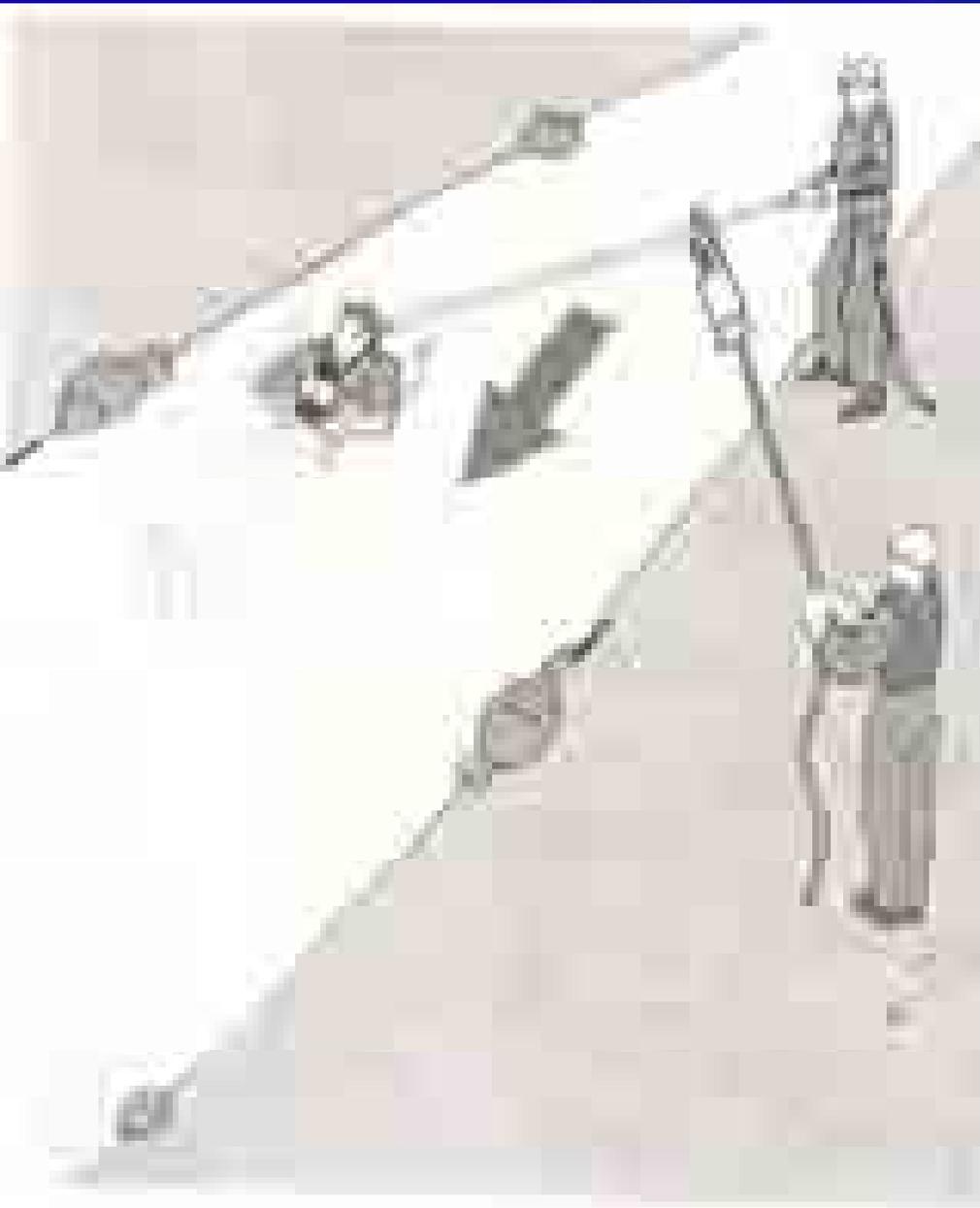
Throw Bag Rescue



Belaying



Vectoring



Boating and Rowing Training



OBM Training in Lake



Shallow water crossing (Wedge Astern)



Shallow water crossing (Line Astern)





Improvised Floating Device



Personal Floatation Device



Capacity Building of Community

- Hazard Identification & Safety Orientation
- Self-rescue Techniques
- Personal Protective Equipment (PPE)
- Rescue Equipment – (Improvised)
- Knots & Anchors
- Swimming - Defensive & Offensive

Strategic Decision Making

SEA DEPTH Model

Situation

Egress

Access

Development

Existing rainfall

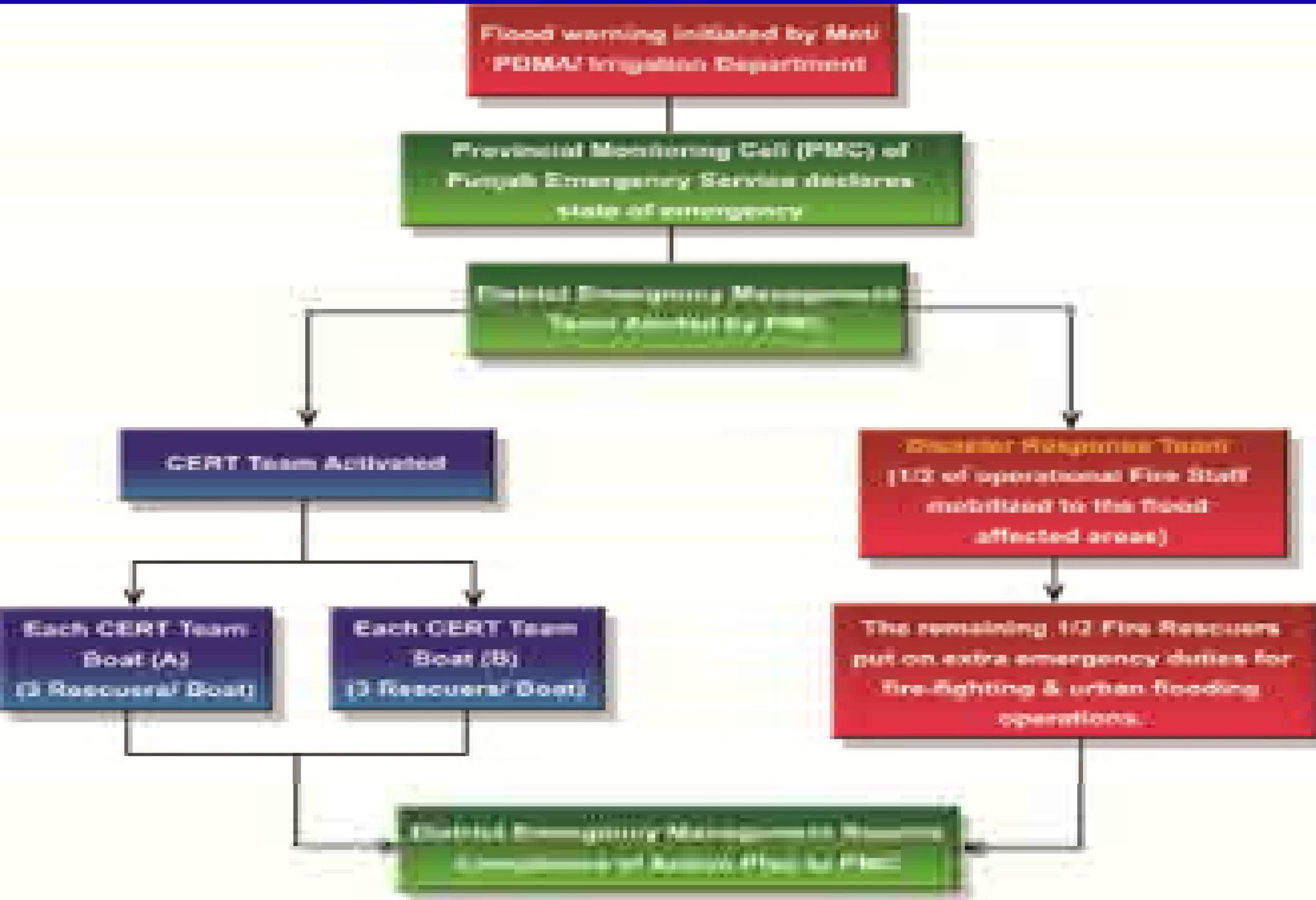
Predicted rainfall

Topography

Hazard

Operational Strategy in Pakistan

Action Plan Flow Chart



Tiers of Response

- **1st Tier:** Local response by District teams of Rescue 1122 with support of District Government.
- **2nd Tier:** Divisional efforts (Logistics / Humane Resources) in support of District Rescue 1122 teams.
- **3rd Tier:** Provincial response by Disaster Response Force in support of District & Divisional Rescue 1122.

Pre-Flood

- Hazard, vulnerability, and capacity assessment of flood prone areas.
- Inter agency coordination through DDMAAs.
- Convene District Emergency Board Meetings to take all stake holders on board.
- OBM training of maximum rescuers.
- Enrollment & training of Community Emergency Response Teams (CERTs)
- Recruitment of contingent OBM operators.

Contd...

- Prepare comprehensive District Flood contingency plan.
- Survey/mapping of vulnerable areas.
- Regular updates from concerned Flood monitoring centers, Pakistan Metrological Department and Flood Forecasting Division.
- To Conduct joint scenario based exercises to test the equipment and on ground coordination amongst all stakeholders.

Contd...

- Devise early deployment pattern/mechanism for Human resource and Equipments at strategic locations duly marked on map.
- Division of available manpower to detail dedicated teams for flood Rescue operation and routine emergencies separately.

During the Flood

- Activation of “Code RED” as per SOPs of service after issuance of Flood warning.
- Engage Early Warning system as per local protocols.
- Deployment of Rescuers in District Government and Police Control Rooms
- Deployment and mobilization of flood fighting resources

Post flood

- Overall review of operational activities.
- Structured debrief session with Responders.
- Submission of consolidated post flood report.
- Submission of need assessment report for upcoming floods.
- Repair & maintenance of damaged boats and other equipments











Summary Of Flood Rescue Activities

No.	Flood Year	Evac./ Trans.	First Aid	Shifted	Dead	Medical camp Victims
1	<u>2010</u>	39812	5673	535	0	36224
2	<u>2012</u>	8361	4652	5	6	0
3	<u>2013</u>	75936	2685	26	25	426
4	<u>2014</u>	91107	633	223	73	270
5	<u>2015</u>	97613	1298	47	15	65
6	<u>2016</u>	3537	0	0	0	18
7	<u>2017</u>	7748	13	0	0	0
TOTAL		324114	14954	836	119	37003

*Every Disaster is an
Opportunity for Development*

*Smart Nations learn from the
past & avoid reinforcing failure!*

*If we are not even prepared for
timely professional management
of small scale emergencies,
should we expect a miracle
when a disaster happens?*





Thanks