

Cost-effective strengthening of warnings through informal networks and channels

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What are warnings for?

- Warnings are to empower those at risk to take protective action;
- Official warnings are developed and delivered through a complex chain of organisations;
- The primary purpose of these organisational chains is to serve the needs of those at risk.

Warnings are difficult

- There are numerous issues and challenges with warnings – as we've heard.
- Today, I will comment on one of these – which is key to making warnings deliver on their promise of empowering, or increasing the resilience, of those at risk.

風球號數 NÚMERO DOS SINAIS NUMBER OF SIGNALS	信號形狀 ASPECTO DOS SINAIS SHAPE OF SYMBOLS DISPLAYED		信號之意義 SIGNIFICADO DOS SINAIS MEANING OF SIGNALS	安全措施提示
	日間 DE DIA DURING THE DAY	晚間 DE NOITE AT NIGHT		

戒備信號：熱帶氣旋中心在澳門特
公里範圍內，可能影響澳門特別行



附近的地區有山泥傾瀉危險，部份
The areas in the vicinity are subject
Some squatter dwellings have been re



			The center of the on-coming tropical cyclone shall strike at the immediate approaches of MSAR. The mean wind speed should exceed 118 km/h with gusts of great intensity.
強烈季候風信號	SINAL DE VENTOS FORTES DE MONÇÃO		
黑球 BOLA PRETA BLACK BALL	●	○	在澳門特別行政區錄得超過每小時 41 公里以上之季候風。 São registados na RAEM ventos de monção excedendo 41 km/h. Strong monsoon winds of exceeding 41 km/h is recorded in MSAR.

查詢 ENQUIRIES
土力工程處 Geotechnical Engineering Office
民政事務總署 Home Affairs Department

Ⓢ 土木工程署 Civil Engineering Department

Note: This signal is not applied during tropical cyclone situation

Warnings depend on establishing shared meaning

- Most warnings depend on critical actions by those outside the official system - usually be those at risk and the mass media;
- Warnings depend on connecting the science of prediction with those at risk;
- But cannot do this without establishing shared meaning between those issuing the warning and those expected to act on it;
- Those at risk and the media that serves them are typically “free agents” seeking information through their own networks and channels – they are both key to the functioning of official warning systems as well as constituting part of the unofficial or informal system.

Use existing capacities

- One way of dealing with these needs is through people's pre-existing personal networks – these are very cost-effective as they exist and are maintained for other reasons. They are often very large and increasingly global;
- They are also finely tuned to people's needs, priorities and “language”;
- They have a well documented history of use by emergency managers raising resources in a hurry.

Warnings and advice from personal networks



- During a recent Australian wildfire, many people mobilised their personal networks seeking & providing advice & warnings. These networks often included officials acting informally, mixed with personal observations of the developing wildfire.
- Research from UK, Australia & elsewhere provides numerous examples of the power of personal observations and networks. Often a majority receive warnings from these informal sources.
- The residents of Nallavadu were saved from the Indian Ocean tsunami by a phone call from distant Singapore.



Informal warnings in the Pacific

- In much of the world the institutions needed for effective warning systems are weak or ineffective. Official warning systems may be non-existent. Are there alternatives?
- The head of the national disaster management office in a Pacific Island country heard on Radio Australia that a cyclone was about to strike his territory.
- He had no phone or transport – infrastructure was crippled and institutions paralysed by conflict. But the NDO chief mobilised resources through his local and international personal and professional networks, organising a needs assessment and emergency relief missions.
- In addition to personal networks, the issue here is that areas may be alerted and mobilised by international media. Warnings and weather are provided through global govt, commercial and private media, eg internet, blogs, phones, radio and TV. Internet communications are reaching some isolated areas in the Solomon Islands for example (through the “People First” project), and in Indian fishing communities.

Personal networks

- Even where sound warning systems exist, those at risk often mobilise their personal networks to seek additional or more personally relevant information.
- People at risk will often demand and receive information from many informal – in addition to official – sources, including their own observations and those provided by their personal networks, as well as an increasingly diverse range of local and global media. The result is a complex network activated to satisfy demands for information from its members as well as from those at risk.

Educate or cooperate?

- Education of those at risk is the usual solution, but there are many hundreds of millions and the task is daunting;
- Maybe we could educate ourselves on the needs and priorities of those at risk? We are relatively few;
- Or work with those already familiar with local needs and support pre-existing local networks. The Australian Bureau of Meteorology does this with its approach to cyclone warning and tracking. Local knowledge about tsunamis in the Pacific has been commented on often;

Dual emphasis on people and institutions

- Most warnings systems depend on the informal for dissemination, understanding and action. As that is where they often fail – regardless of technical competence - priority should go to reinforcing the informal.
- In many areas, international warnings geared to local people through mass media, modern communication technology and personal networks may be a key to success - at least in the medium term, as national institutions develop.
- Improved local networks should help make global monitoring and warning systems work. They could work well in tandem.