ISO 22327 Guidelines for implementation of a community-based landslide early warning system: A Tool towards Sustainable Community Development on DRR

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Standards for SDGs – ISO and UN – 2018

Background

- It is difficult to relocate a community living in a vulnerable area
- The most effective DRR effort is to improve the community's preparedness by implementing EWS.

Objectives

- Integrating technical and social networks to establish an International Standard of landslide EWS.
- Increasing the community awareness and preparedness
- Community empowerment in landslide-vulnerable areas

Users

- International organization
- Central and local government
- Private sectors, NGOs
- Local community

4 Key Elements for Community-Based EWS (UNISDR, 2006)

RISK KNOWLEDGE

Systematically collect data and undertake risk assessments

Are the hazards and the vulnerabilities well known?

What are the patterns and trends in these factors?

Are risk maps and data widely available?

MONITORING & WARNING DEVICE

Develop hazard monitoring and early warning services

Are the right parameters being monitored?

Is there a sound scientific basis for making forecasts?

Can accurate and timely warnings be generated?

DISSEMINATION & COMMUNICATION

Communicate risk information and early warnings

Do warnings reach all of those at risk?

Are the risks and warnings understood?

Is the warning information clear and useable?

RESPONSE CAPABILITY

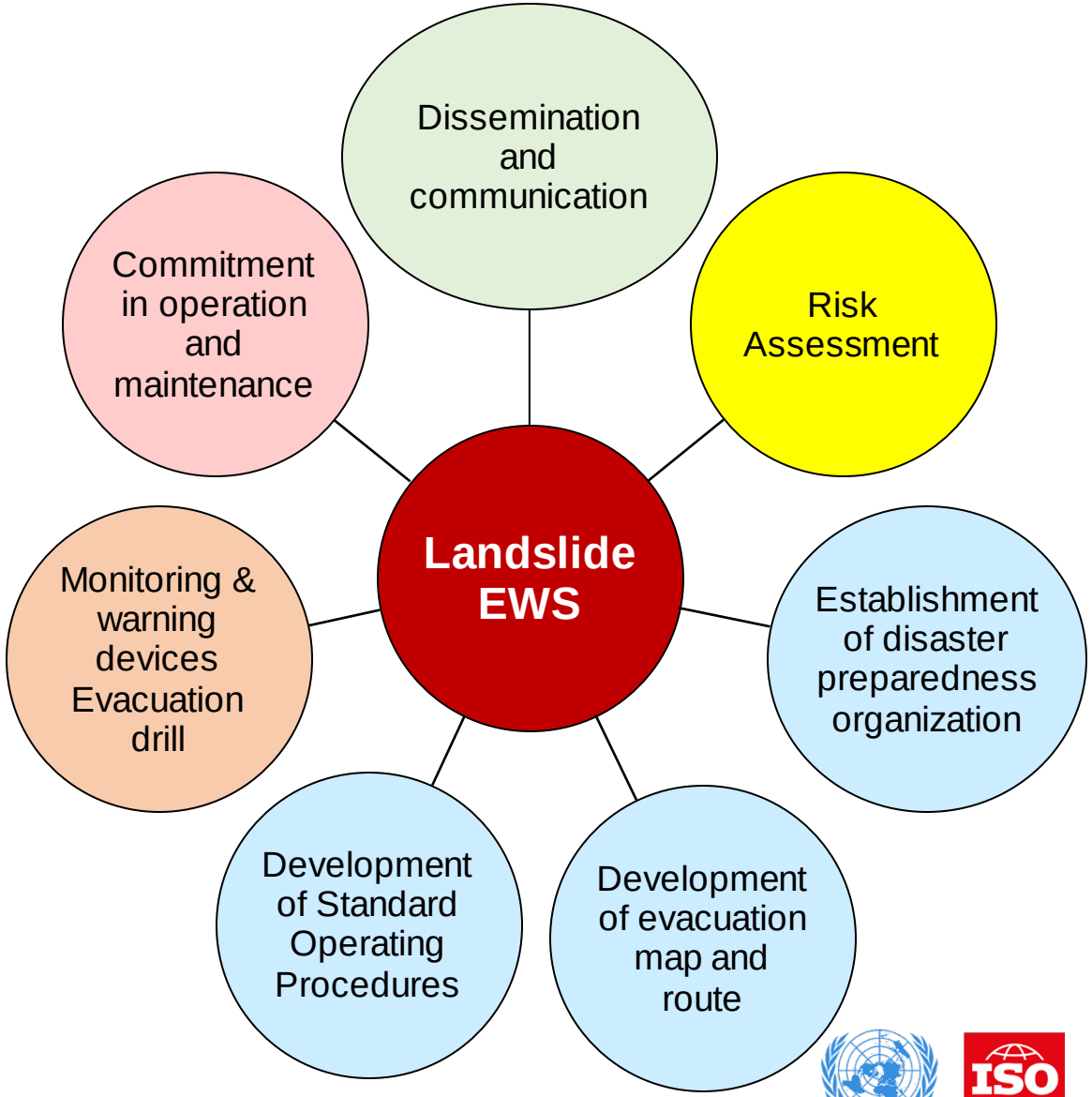
Build national and community response capabilites

Are response plans up to date and tested?

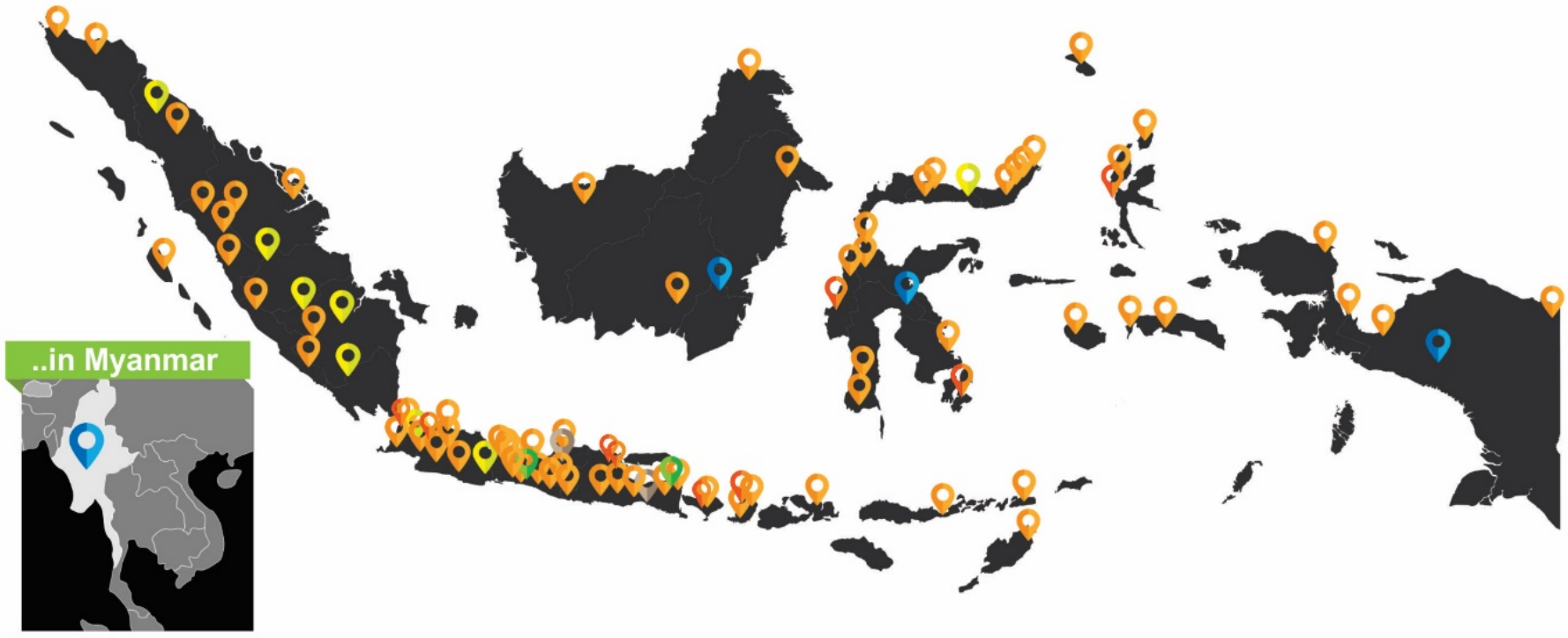
Are local capacities and knowledge made use of?

Are people prepared and ready react to warnings?

7 Sub-systems of Landslide Early Warning System



Implementation of Landslide EWS



UGM in cooperation with National Authority for Disaster Management (BNPB) and Regional Authority for Disaster Management (BPBD)

UGM in cooperation with Pertamina Geothermal Energy (PGE)

UGM in cooperation with Ministry for the Development of Village, Disadvantage Region and Transmigration (KPDTT)

UGM in cooperation with International Consortium on Landslides (ICL-UNESCO)

UGM in cooperation with Private Mining Company

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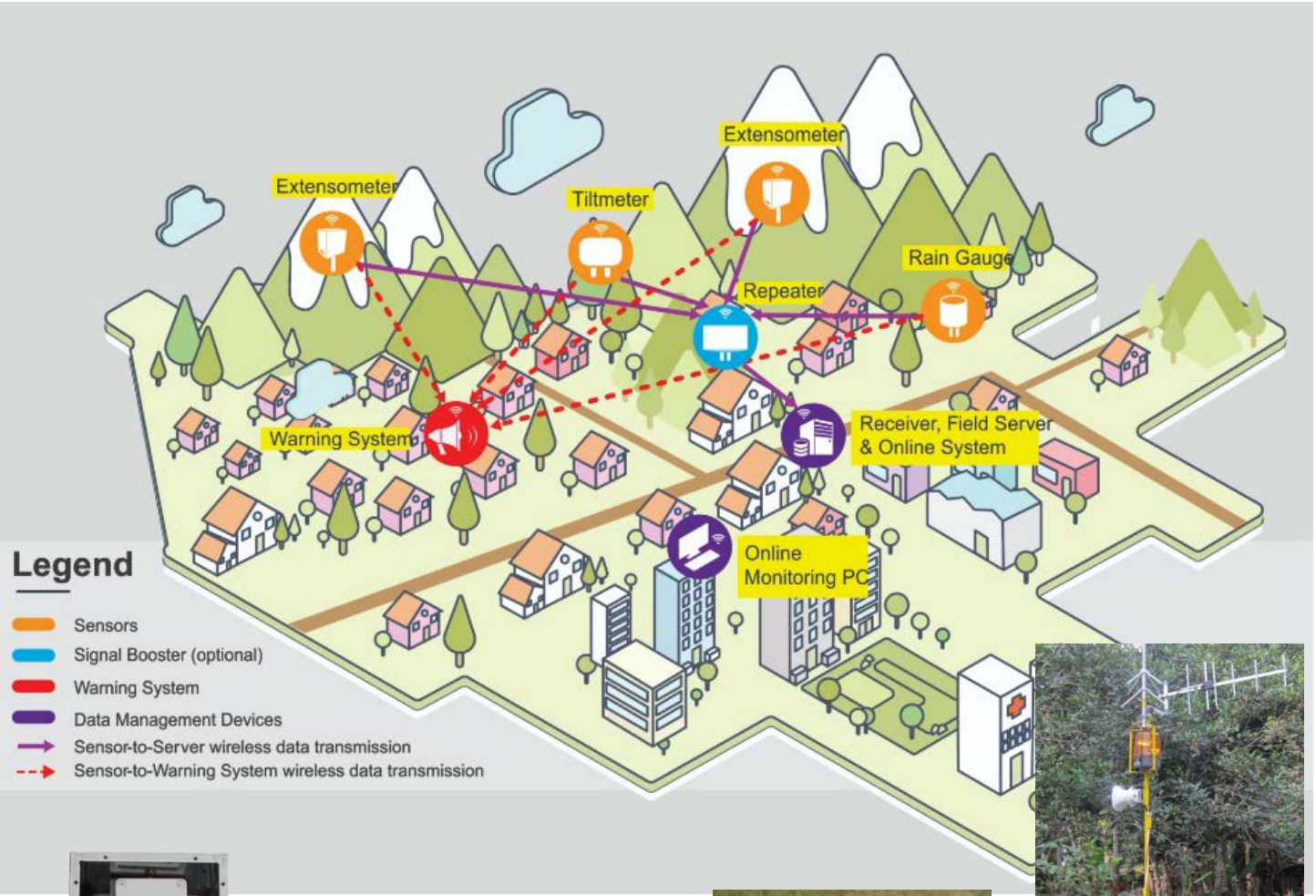
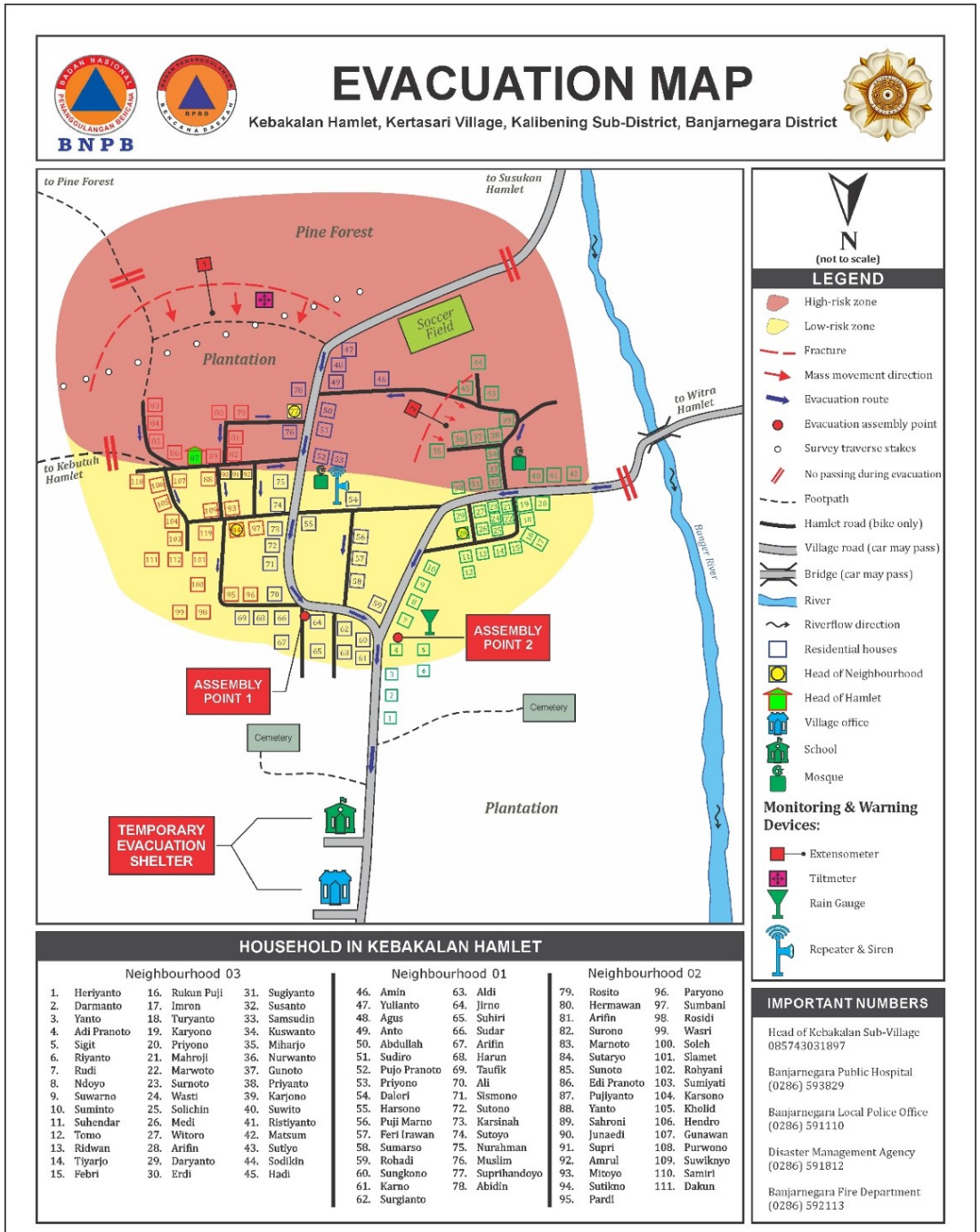
How the system works





www.bnpb.go.id/berita/2734/ews-longsor-selamatkan-100-kk-di-aceh-besar

BNPB

NATIONAL DISASTER MANAGEMENT AUTHORITY (BNPB)

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EWS Saves 100 Households in Aceh Besar

29 November 2015 22:0 WIB

Share

Heavy rain falling in Aceh Besar has caused landslide and flush flood in Neuhun Village, Masjid Raya Sub-district, Aceh Besar district, Aceh Province on Saturday (28/11) at 19.30 PM. This village which is located at hillious area is a relocation area provided to survivals of tsunami 2004. Drainage facility was in bad condition triggered inundation. Potential risk is worsen by mining activities at the uphill.

At the beginning, the relocation site has been identified having a risk of landslide. Therefore, National Disaster Management Authority (BNPB) and Local Disaster Management Agency (BPBD) Aceh Besar working with Gadjah Mada University (UGM) have installed early warning system (EWS) tool in 2015.

It was coincidental before incident of landslide and flush flood occured. UGM team with BPBD was preparing the last phase of EWS, that is preparing evacuation exercise. The exercise became a real evacuation activity. Meanwhile EWS tool already installed worked properly when sirine rang 5 hours before landslide and flush

Outcome

- The standard strengthens community resilience and proves capable of saving lives
- Indonesian government includes this standard as a reference for National Medium-term Development Plan (2015-2019)

Challenges and Lessons Learned

- The application of ISO 22327 requires consistent commitment and support from all related stakeholders.
- The level of local community awareness and preparedness is not always constant → sustainability