Lessons learned in building Hydrometeorological Early Warning Systems in developing countries: Why some systems fail and others succeed

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Outline

• What’s the problem?
• What is an End to End (E2E) Hydromet EWS?
• Lessons are noted but not learned
• Why do E2E Hydromet Systems (EWS) fail?
• Example of Successful E2E System
• Conclusions and recommendations
What is the Problem?

- Populations growth
- Settlement in high risk areas
- Environmental and natural resource degradation
- Governance
- Resources, financial and human
- Sustainability
- Poverty
- Climate change
What is an End-to-End Process?

Multi Hazard forecast, warnings and Decision making

- Data
- Communication
- River/Flood Forecast
- Decision Support
- Disseminate
- Coordinate
- Actions
Lessons are noted but not learned

- USAID OFDA and University of Colorado study to understand why lessons are not learned

- USAID, WMO, Turkish Meteorological Service and Univ of Colorado, Lessons Learned report and forum in February, 2015.

- Experiences of World Bank Hydrometeorological projects

- The key question: “Lessons are noted but not learned at all level”
Why do E2E Hydromet projects fail?

- Short project time frames
- No strategy or vision
- Limited capacity building
- Lack of technical champion
- Short-term political will/interest
- Lack of incentives to keep qualified staff
- Limited funds to maintain, repair and operate the systems
- Lack of donor coordination
- Lack of integration
- Sustainability of the systems Chevy versus Cadillac
Hurricane MITCH ravages Central America

- Mitch, “the Storm of the Century”
- Over 11,000 deaths
- 75 inches of rain in a week
- Damage 80% of Honduras GDP
- $6B in Damage
- USG provided $1B in aid

- USAID goal: Build an Early Warning System 2000-2003
In 2000 USAID OFDA Funds NOAA to develop two regional Systems

- Regional Flash Flood Forecasting System for Central America Region

- Establish Rio Lempa River and Flood Forecasting System

- Local Flash Flood EWS's
Elements of Success

• Hydromet Champion assures maintenance and operational system
• Public-Private Partnership between CEL and SNET (El Salvador NMHS)
• Strong Political Will
• Technical support by NOAA
• Complied with WMO Hydromet standards
• NOAA Partnership with Private Sector Integrator
• Users active in demanding forecast service
CONCLUSIONS

- Need for a new approach for Hydrometeorological modernization efforts
- Find a way to incorporate valuable lessons learned that can serve to re-define how projects are implemented to improve sustainability of E2E EWS
- Better donor, UN, development bak and host country coordination to assure no duplication and proper integration
- Need for WMO to develop best practices guidelines to and advice donors, banks and NMHS’s
- Critical need to build capacity of NMHSs
- Invest in locally sustainable systems
Warnings Save Lives...

FLOODING AHEAD
TURN AROUND
DON’T DROWN