What are the requirements for successful drought information/early warning systems?

Comparing with learnings from www.hmndp.org

High Level Meeting on National Drought Policy (HMNDP), CICG, Geneva, 11-15 March 2013. Science Document: Best Practices on National Drought Management Policy

Drought Monitoring and Information Systems (1)

- Neil Plummer, Australian drought
  - Maintaining a broad suite of products and indices for wide sector adoption
  - Fit with Australian government priority on drought information and tools to manage risks
- Gerhard Rappold, Climate Change Information System
  - End to end approach from data to information; maximising value from networks and data
  - Greater capability to respond to questions on climate change, including drought

Drought Monitoring and Information Systems (2)

- Dr Lynette Bettio, Pacific drought
  - SCoPIC monitoring and forecasting tool informing decisions on rain tank use, domestic wells, large freshwater lenses
  - Interface with national drought response plans
- Dr Brett Mullan, New Zealand drought
  - 2012-13 drought and value of soil moisture, streamflow products, etc, to stakeholders, including Primary Industries Ministry and media
  - Potential Evaporation Deficit highest in 41 years over significant area

Drought Monitoring and Information Systems (3)

- Dr Jinyoung Rhee, drought remote sensing
  - Good correlations between streamflow percentiles and P minus PET
  - Very good opportunities for hydrological drought monitoring, particularly in data sparse areas
- Dr Shinichi Sobue, earth observation programs
  - Wide sector applications through international programs, including GEOSS
  - Advancements in precipitation, solar radiation, soil moisture, snow depth and other variables important to drought

Drought Monitoring and Information Systems (4)

- Prof. Denis Lettenmaier, Global Drought Information System
  - Coupling historical and remotely sensed data and coupling monitoring and forecasting systems
  - Global multimodel drought nowcasting is entirely feasible

Integrated drought monitoring systems

- Identify and evaluate existing comprehensive, integrated drought monitoring systems which couple multiple climate, water, soil and crop parameters, socio-economic and environmental indicators and indices to fully characterize the magnitude, spatial extent, trends, duration, and potential impacts of droughts.

Some very good examples to build upon.

Adequacy of networks

- Assess the adequacy of networks, in particular, meteorological, hydrological and ecological networks for drought monitoring and data quality.

Need improvement but let's not be too hard on ourselves.

Institutional coordination on data

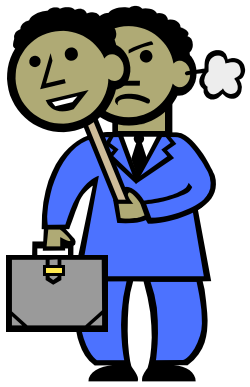
- Examine current arrangements and procedures for coordinating the collection and analysis of meteorological, hydrological, and ecological data and eliminate fragmentation between many agencies and ministries at the different administrative levels.

Patchy, improvements needed.

Data sharing

- Evaluate existing procedures for data sharing and their applications of drought monitoring, preparedness, mitigation and response.

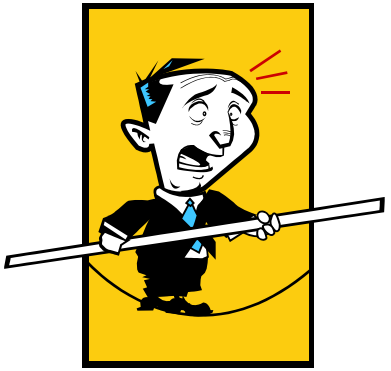
Depends where you are – need greater sharing.



Early warning/decision support

- Assess the availability of early warning and decision-support tools and methodologies in support of drought preparedness planning and policy development.

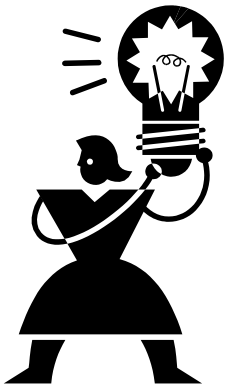
More work needed on vulnerability assessments.



Outlooks and forecasts

- Assess the current capabilities of regional outlooks and forecasts for the duration and severity of drought, improve the skill of these forecasts and enhance communication to users.

- Some very good systems but communication and adoption needs work.



Risk management

- Evaluate the four phases in drought risk management: vulnerability and risk assessment; monitoring and early warning systems; preparedness and mitigation; and emergency response and recovery.
- Gaps in risk approach and in engaging several sectors.

End user products

- Examine the need for the development of useful end products, information or decision-support tools for delivery to the end users.

- User interface platform in GFCS – needs to mature.

Delivery systems

- Assess the capacity of delivery systems to disseminate data, information, products and services to users in a timely manner to enhance their usefulness for decision support.
- Not making best use of mobile, social media, etc – but there's hope.