

NASA ASP Water Resources PI Meeting

March 3, 2015

Day 1 Breakout

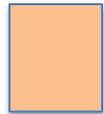
Group 1

Group 2

Group 3

Group 4

Group 5



Podium

Group 1 – Agriculture and Food Security (Brad Doorn , Lauren Childs)

Group 2 – Hydrological Decision Support (John Bolten, Peter)

Group 3 – Drought Forecasting, Monitoring, and Mitigation (Forrest Melton, Colin Doyle)

Group 4 – International Applications (David Toll, Rick Lawford)

Group 5 – Water Quality (Larry Liou, Tiffani)

Topics:

1) Stakeholder engagement – What makes successful stakeholder collaborations?

Examples of successful collaborations

What has worked, what hasn't?

2) What are near-term priority observations and models for your theme?

3) What are near-term information gaps or limitations for improving access to data, information, and decision-making?

Agriculture and Food Security



- Stakeholders
 - Risk associated agencies
 - Multi-nationals (difficult business relationship)
 - Many food security groups
 - Program could be a better venue for those seeking advice
 - Help establish frameworks to use remote sensing
 - Enable demand
- Near-term priorities
 - Root zone SM
 - Accurate precip
 - Resolution (address smaller producers)
 - Baselines (including crop databases)
 - Fused products
 - Global Water/Yield gap analysis
 - Work with Data Systems

Breakout Group 2

Hydrological Decision Support

Jennifer Jacobs, Pedro Restrepo, Jay
Day, Peter Hawman, Jeanne
Roningenn, Sara Larson, John Bolten

1) Stakeholder engagement – What makes successful stakeholder collaborations?

Examples of successful collaborations

What has worked, what hasn't?

USDA FAS

Mekong River

State of California

1) Red River International instate and NOAA. --- Dynamic flood mapping service was provided with very little money

2) New York City - Jay Day has been working with NYC to develop an operational support tool and the implementation of water supply tool

- some reasons why it has been successful - relationship and trust

- Importance to have clear incentive of the stakeholder

3) Central Main Power Company - DID NOT work well of a DSS for optimization, but they were so used to the old ways of business and were hesitant

4) Florida, operational daily Evapotranspiration product based on GOES, used for permitting their water for agriculture use. It worked because the water manager districts, the researchers had the capacity, and the baseline had been developed , and the Stakeholders had \$\$\$\$\$

- It is important to have someone champion the idea .

- Important to have a partner that is willing to extend the capabilities to a regional

Topic 1 - Continued

Idea - Road Show of current capabilities
emphasizing like best management practices

2) What are near-term priority observations and models for your theme?

- All the components of water cycle...

3) What are near-term information gaps or limitations for improving access to data, information, and decision-making?

- Early engagement is key
- Need to show people the value of the information
- Need to show how it can add value
- already have know how, if they don't, project will provide it to them
- being able to tailor the end product to end users needs and capabilities
- critical that end user
- Transition strategy should involve how to use data
- Important to bring people on to the teams to help convey the information in Information visualization
- Important to be able able to convey information to policy makers
- Data formats, bandwidth, storage
- "The way the data is conveyed is not the way the data should be conveyed"
- How to convey the concept of uncertainty
- We need different levels of information based on the capabilities of the user.
- If we want to maximize the impact of the information.
- community of engineering design
- We are doing planning, engineering design, then the operations and management. - BUT we are missing on engineering design

Drought Forecasting, Monitoring and Mitigation Breakout Group Report

Amir AghaKouchak, UCI

Colin Doyle, GSFC

Jeff Dozier, UCSB

Chris Hain, NOAA

Randy Koster, GSFC

Fritz Policelli, GSFC

Ana Prados, UMBC

Rachel McDonnell, ICBA

Tom Painter, JPL

John Wilson, USAID

Drought Forecasting, Monitoring and Mitigation

Breakout Group Report

1. Stakeholder Engagement -- Challenges

- Inertia in large organizations with overcommitted staff (e.g., runoff forecasting in U.S. seen as not perfect but overall “good enough”)
- Lack of sustained investment, especially for international projects when partner or investigator does not have adequate / long-term funding.
- Ability to access ground observations for validation or model development and calibration → sometimes security issue (water), foreign data policy, or just unwillingness to share data
- Need higher accuracy and resolution for certain measurements and applications; e.g. groundwater, ET
- Limited baseline in terms of ground data and technical capacity and need for sustained capacity building → need to train end users on models but also on data itself → what it measures, how to interpret it, how to access
- Political issues and instability; e.g. Middle East and North Africa, Egypt
- Tradeoffs between accuracy and operational reliability → products / systems have to be tailored to institution’s requirements; can be limiting, e.g., NOAA using ALEXI-based drought system → operational reliability is top priority
- Need for training to increase awareness of time-limited operational personnel

Drought Forecasting, Monitoring and Mitigation Breakout Group Report

1. Stakeholder Engagement – Solutions

- Finding advocates and early adopters / innovators in partner organizations
- Sufficient and continuous support for capacity building, especially for international partners → PIER is a great start
- Clearly defined examples of success and impacts (e.g., quantifiable improvement, examples of benefits to previous partners, numbers of users, how much it saved, etc)
- Concise, focused high impact trainings to help overworked technical staff to understand and embrace new products
- Attributes of a strong partner → frequent communication, in-kind or financial support, advocacy to a broader community of behalf of project or capability

Drought Forecasting, Monitoring and Mitigation

Breakout Group Report

2. Near-term priority observations

- Higher temporal and spatial resolution SWE, ET and groundwater measurements (Moore's law for remote sensing?)
- Relative humidity and water vapor (e.g, via AIRS) → improve drought forecasting and early warning
- Improve initialization of seasonal forecasting models via soil moisture measurements → SMAP and SMOS
- Short-term weather forecast models can also be improved, especially for flash droughts → opportunity to engage with NOAA to improve initialization of mesoscale weather models

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3. Near-term information gaps or limitations for improving access to data, information, and decision-making?

- Additional tools to assist in identification and access to . . .
 - data products
 - information/comparison of data products and guidance on strengths / weaknesses of different options when multiple products available
 - info on availability and current uses of various data products (case studies)
- Additional validation studies to quantify uncertainty

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4. John Bolten can *really* play guitar

