Decision Tools Conference: Lessons Learned

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General insights:

 Great conference, large variety of tools that we did not know about, good blend of time to interact and network, good to learn how people developed their tools

 Reinventing the wheel in some areas, there is **redundancy**, overlap, not enough interaction where one effort could lead to another – on the cusp of making some of this what it could be (Steve McNulty) – how can all of us working together to hit a home run? (Art De Gaetano)

 Road Analogy: Currently we have pieces of road that people can drive on for a while. These need to be linked together so that people can get from A to B and so we can identify where pieces are missing. Pre-meeting strategy is required to string tools and areas together and discuss where the gaps are – steering committee's responsibility (Steve McNulty)

 Car industry analogy – at first there were all these companies, few survived and eventually became standardized. We are doing much experimentation but are starting to coalesce and it's good to now **think about how to standardize** methods, algorithms, data sources etc. (Steve Mc Nulty)

 Lack of long-term funding is an issue

Gaps and next steps:

 Web services that offer a systematic approach for us all to get data from different sources, open library of models like Penman, Hargreaves, and that ensure that everyone keeps their credit (Clyde) –.

 Use the open-source community to string tools together e.g. Highcharts http://www.highcharts.com/– common format, one way it accepts data, I can put it on my website and customize it for my region, you can customize it for yours – shows ownership from the trusted person/team in each region (Art De Gaetano)

 We have to capture **the back side of the tools** (currently a black box), code, metadata so that people can replicate that – **catalogue of tools** or **toolbox archive** including requirements to run the tools – include all tools both public and private sector efforts (Leslie Boby)

 drought.gov, **climate.gov** are inventories that currently help us stay up to date with all the apps that come online – why not **use those** or a similar model to add our tools? (Marc Svoboda)

 In the catalogue, include costs, benefits and drawbacks of each tool (Saqib) so agents can show these tools to end users, also how can be integrated on multi-use farm operations (e.g. row crops and cattle) so they can be more holistically usable – benefitting their pocket book and also the environment

 People are not so much looking for data, they are looking for answers to questions: Do we have **replicable delivery mechanisms** so that we can use all our different systems to be able to deliver (Steve McNulty)

 We need **a standardized way** of comparing tools and **measuring tool effectiveness** (**e.g. 5 star rating**?) giving people the ability to comment and provide feedback so that when we call our representatives or write grant proposals, we can just give them the reviews

 Projects that participants may be able to co-invest in for mutual benefit such as **common map viewers, common graph tools, common web map or web feature services** for **interoperability** (David Herring)

 Go beyond describing what we have and aim **to produce decision points** – facilitated community of practice **FCoP** – national or global dialogue on mechanisms for aggregating the conversation around particular decision points or desired outcomes of mutual benefit (David Herring). Collaborative projects of mutual benefit – using an alternative model **Coopetition** instead of the standard model of competition. Use common definitions of success, and ways of measuring progress and outcomes so that we can intercompare results. Projects that participants may be able to co-invest in for mutual benefit

"*Coopetition is the act of cooperation between competing companies; businesses that engage in both competition and cooperation are said to be in coopetition. Certain businesses gain an advantage by using a judicious mixture of cooperation with suppliers, customers and firms producing complementary or related products*."

 Funders should indicate how they plan to reward collaborative work – currently pro-bono, little incentive to stray from our silos

 We have to integrate weather forecasting to more tools 7-14, 2-4 week out to seasonal (Emily Christ)

 we need tools that address long term infrastructure decisions – e.g. irrigation, wind machines – how to help managers make those decisions more wisely? (Art De Gaetano)

 Not clear what sort of transferability we currently have between regions

 Climate conversation gap (Saqib) – ISTs - **In Service Training** for educators (both beginners and more advanced levels) with testimonials that the tools actually work – or at least provide a probability that they actually work – we need a concrete way of delivering this information. Which data do I use, which program language, how accessible is it? Seen eHandbook of drought indicators (space where they can leave comments and feedback on how the indicators were used and how they can be improved – *add that space to AgroClimate **eWorkbook**) (Mark Svoboda)

 Message to Randy (NIFA): we need funding not only tools but also for the social infrastructure, the networks that provide the space for the delivery and application of the tools (WL) – we need more commodity groups represented, peach, blueberry, strawberry

 Next conference should include more on engagement strategies, social science in general – how to ensure that we are reaching our intended users (Mark Svoboda)

 Next conference should include a discussion session with growers and agents providing the end-user perspective on tool usability and usefulness (Mike Mulvaney)

Sustaining tools long term:

 Developers should have a plan for sustaining the tool long term from the get go.

 Privatized partners (we could reach out to fund our tools) should be better represented at conferences like this one (Mike Mulvaney)

 There used to be a transition program within the NOAA system that focused on sustaining tools long term that is no longer there – USDA? (Mark Svoboda)

 We have to get a quantitative measure the **value of the data** and what we are doing (Guy from Delaware (Kevin)). We can do that by using the tool – NOAA did **case studies** for Adapt N – interviewed the scientists, interviewed the group that did it and came up with a **publication** – which went a long way up the chain at NOAA – that way NOAA can see the value of their data and the value of the tool (Art De Gaetano). Econometrics study, should be included in grant proposals (Mark Svoboda)

 The private sector has a big role in ensuring the long term sustainability of tools. Take advantage of **small business incubators** at your university like CFAN did with VentureLab at Georgia Tech to develop the networking and clients that they needed to fund their products.

 Collaborate with private companies that have already gone through the commercialization process e.g. CFAN –maybe a short cut to getting the customers and network

 Interdisciplinary institutes as incubators of talent and solution to long term sustainability of tools and talent: e.g. UNC Chapel Hill organization **NIMAC** http://www.nimac.us/ (a co-developer of the climate resilience toolkit) they are situated within academia but have established a subsidiary LLC so that the can interoperate across that fence into the commercial domain providing services or development but they can also operate within a cooperative institute so they can apply for and get money from government agencies – so they straddle different domains to recruit talent and move things are commercially viable and turn them into commercial products – this is done in athletics and medicine, why not agricultural services (David Herring)

 Use **end-users as champions of our tools** – to help get them get funded. If these tools benefit them, benefit their pocket book they won't mind calling up their political representatives on the phone and asking them for support on our behalf because they also want to keep these tools. Provide space in tool for user reviews, e.g. 5 tar-rating.

<u>Final thoughts:</u>

 Climate change is coming faster and harder than people thought 3-4 years ago. There will come a time, sooner than you might think, where these tools will go beyond being optimization tools for greater efficiency and profitability – they will become survival tools, we need these tools

 A lot of enthusiasm in the room – USE that momentum otherwise you will lose it!