

Day 3 Decision Tools Conference

Disclaimer: These notes are limited in terms of completeness and accuracy. The morning's proceedings have been recorded and are available on the conference website for you to access at your leisure.

Session 1: Data Sources for Weather and Climate Tools

(Art deGaetano, Jasmeet Judge, Rish Lusher)

1. Q: Maine doesn't have stations yet, so what is the maintenance cost per station for FAWN?

A: * FAWN: About 10,000/year, 4 trucks, 2 part-time, 2 full time employees

* ACIS network: farmers buy their own stations and send us the data

2. Q: How do you keep the funding coming?

A: FAWN is funded by the government, if grant money stopped coming I am not sure how it would survive. However, we are not subject to budget cuts at UF.

3. Q: Is it possible to merge ground data and satellite data?

A: * Already happening, temporal gaps in satellite data are filled that way.

4. Q: Which software do you use to store the data? Are you requiring authentication from users who want access the data?

A: * The NY network is an in-house network.

* We use https, it's free, open access data

5. Q: How can we make sure that our data are reliable? Anyone here is using spatial data?

A: The growers are responsible for the network, we only receive data. Like FAWN, we also do quality control of the data. If there is an issue with the gauge we notify its owner.

6. Q/A: I'd like to share info about our GA stations. The cost is about \$900-5000, growers choose their own stations and buy them, and they cost about \$300-400 to maintain.

7. Q: Are satellite data good enough for regional-scale applications and will they ever be good enough for field-scale applications?

A: Already used for regional-scale applications. The spatial resolution of satellite data is becoming increasingly fine. Merging satellite with ground station data is the way to go. In the US we are lucky - we have plenty of data, other regions may not - satellite data are critical in those areas.

8. Q: How to can drone data and historical satellite data be used together?

A: We are using machine learning to merge data, we need to process the raw data for our users and provide them with decision-support tools

9. Q: ET depends on fine temporal resolution, could you say a bit more about how satellite data can be used to derive it?

A: The ET models use the ground data which come at daily resolution, then they are re-run at a larger geographic scale by using satellite data at whatever temporal frequency images are available. The model re-runs each time a new image becomes available.

13. Q: How do we go forward - how can we connect and leverage data in such a way that we can collaborate more efficiently?

* We have such a diverse audience here today and we need to cooperate, it's not easy but we'll keep trying.

* Randy Johnson is not here unfortunately, we need the funding community to hear about this, we may need them to change the budget diagram a bit.

Session 2 – Ensuring the long term sustainability of decision tools (Emily Christ, Jeff Melkonian, Clyde Fraisse)

1. Q/A: * From the U2U tool team: don't forget about our regional climate centers. Our project will end this April, but RCC helped extend one more year so we can work on other areas. It has been providing data to stakeholders for 30 years. We have experts and resources that would like to help.

* NECC still cooperates with us and are very helpful to us.

2. Q: Who are your users? How do you make sure that you meet the needs of your users?

A: * First users are big clients, big organizations. We meet their representatives to see if we meet their needs. We also have smaller individual users, we try to incorporate extensions//pre-comm- post-commercialization.

* We go to large number of conferences and get feedback. We sit down and go through the tool with our potential users.

* We have different tools, for different users. For example for Strawberry tool, we have subscribers and their emails; some tools are for educational use, some tools are for growers, it depends on the tool.

4. Q/A: I'd like to add a bit, when our system goes down and we got many emails, that's one way that we hear from our users.

5. Q: Are you tracking who is really using your tool? How can you know that every community is included?

A: * We don't know who users are. We know where they are from though, we use Google Analytics for that.

* We ask for registration, what type of farming, name and email, but we don't track the diversity.

6. Q: How to keep the ownership of the tool when you work with private companies?

A: There is no restriction or proprietary research with them. Cornell is very strict on this. Walmart has strong interest in sustainability.

7. Q: How do you put a value on your tool? How can we estimate the return on investment on a tool? How do we determine how much to charge for a tool?

A: * It's hard to say. It's more of a business question. I couldn't put a monetary value to it. We look at similar and competing products and check that our price is reasonable.

* We use the forecast and then tell our customer to hold on the irrigation, and then transfer the saved amount of water into how much it could be worth, say our product has X dollar impact.

8. Q: Our nightmare is that our users think our data drops down from sky and doesn't need maintaining. How do we make sure that we get the credit? How do you make sure that credit gets attributed to those who deserve it?

A: * If people pay for their data, they thought the data are better. Some of the data source are not advertised enough, like I didn't know many of the data sources we heard about this week.

* Adapt-N does acknowledge ACIS.

9. Q: We need to think like businessmen. We might be overthinking things. Businessmen provide simple products to users. I know academics like to use big model and plots, but if we could provide simpler tools, we might attract a bigger audience.

A: * That's excellent and I think you're right. My husband has a degree in Electronic Engineering, I asked what he thought, I never used to do that before. He said that we scientists are going wild. Our tool needs to be simple.

10. Q: I'd like to hear from all of you if you would like to be part of the way forward, and hear suggestions on how to do it?

A: * We need to form a committee, get recommendations, an inventory of tools and datasets, expertise, database, Cornell can lead with databases, what role the private industry has, and many other key issues.

* Want to reach as many users as possible, address their problems and issues, when I mentioned diversity, it's not about ethnicity, but more of smaller groups of farmers, ranchers and land managers and others.

* NECC would like to be part of it and answer some of the request/needs.

* NOAA would like to be part of it and we have the toolkit to send maps. We'll soon have SE sector as well. We'd like to be a tool encyclopedia, we want to connect, highlight and knit together all of us and more.

* I came from private industry, every time I came to meetings like this, the money is always the issue. FAWN got support from water management company, GA is highly funded by power company, every state has power and water company, we could look into that as well.