**Cal/Val efforts - Ongoing Field and Airborne activities - Martin part 1**

(link to presentation - **http://tinyurl.com/j4t73zj)**

NASA experience w LC side of things – issues with open source data and tools for cal/val

Have spent 2-3 years working with all the projects that have produced global land cover validation data and who were willing to share them. Huge effort to put them together in a standardized way.

Key role for experts to assist

* make them available
* tell people how they can be used and how not to use them

Portal available where you can download the data (GOFC/GOLD web site), table explains where datasets come from, goods/bads.

Have started something similar for biomass. Have put together a lot of biomass data that could be used as a reference. Variable quality, lots had to be thrown out.

* Plots, biomass maps that are underpinned by ground data
* national inventories
* statistics
* regional estimates

Very tedious, but worthwhile effort. Data are made available at the resolution that validation is done, 1 km estimation, not at plot level. Can be downloaded from the GOFC web site.

COJ interrupted Martin’s presentation at this point and there was a long discussion about LPV validation principles for the web site and about what products we should list or the criteria for products to be listed on the LPV web site.

COJ: is there a documented set of principles for validating products?

* Problem with open source data, you can’t enforce how the data are used. We can post principles and recommendations coming from the working group. CEOS endorsed principles. General principles. What are we advocating?

Need to state guidelines, and say why

* data should be open source, quality checked
* tools should be open source (a little pushback from Luigi noted…)
* what is done should also be traceable

Our framework, on the web site is really for achieving the highest level. What are the recommendations for the lower levels, we can provide a suggested approach to validation.

Talked about sites, open data. Question came up (who?) about whether the public validation data could be used as training data. Martin said they had this or considered this issue and said because of this they only make 70% of the sites freely accessible. The rest can be made available upon request. (I think other FAs don’t have the luxury of as much reference data as LC…).

**Discussion on LPV Products on Web Site**

Should we list products that don’t have validation links, or are beta?

Should we be the ones policing the products? We don’t want to be in a position where we appear to be ‘endorsing’ products.

What are the minimum requirements for a product to be listed on LPV site?

Currently we post the product along with validation information, if it exists. If it does not, should we still list the product?

This is really the job of the FA leads.

Need to avoid appearing subjective.

This is one of the functions of LPV, to provide feedback to on the status of global land products.

FC states that Copernicus updates their validation every 6 months.

GS states that the maturity matrix has a validation stage 1, that means there is no validation, but they still see a value for scientific research for that product. So we really shouldn’t kick these out. In the past our criteria for listing products was that they were operationally produced, were regional/continental to global in scale.

It was suggested that maybe we define minimum criteria that products have to meet, such as validation information, and if they do not meeting these, we remove them. We can send the list to the respective communities, and ask that those currently in our lists without this information, please provide this or we will remove it from the list.

MH: EC does refer to LPV protocols as something that producers should use.

MR: NASA applied sciences has decided that validation stage 2 is the minimum requirement for a product in order to use it.

**Back to Martin’s second point:**

Dense time series cal/val for vegetation, in the context of Landsat/Sentinel.

We saw the previous day in the LPS session, this area is moving fast, and the cal/val is non-existent.

GS referenced a communication with Ben Koetz, about this missing piece, and wondering what NASA’s view of this was.

MR: We are closely tied to the Landat8/Sentinel 2 program via Chris and Jeff Masek. The part we need here is ACIX. This exercise provides the basis to get started on the validation of these products, need to first the get the reflectance right. It’s too early for the validation, need a product first. In D. Roy’s presentation we saw how he’s starting to think about how he’s going to do it, but it’s still too early. Chris suggested there needs to be an initiative to pull this together. Validating Landsat products on a regional to global scale is new. The Sentinel2/Landsat8 program is also underfunded, which doesn’t help. Perhaps a workshop, rather than a meeting, on L8/S2 validation, maybe next spring, co-funded by NASA/ESA. Bring together small groups of people, a community of people who have a product they are trying to validate, and have a broad discussion. The dense time series part of the validation has not been solved. Can have a workshop next year, and start with principles.

Terrestrial biomass.

- T-lidar offers new tool, need consensus from the community on approaches.

- Cal/val for biomass estimation from space. Role for LPV, we can define.

Measurements - where do you go and how often do you look (lidar/biomass sites and data collection)

Discussion I missed (something from Martin?) – WW response – look at Fluxnet – SM - data are there, supposed to be homogeneous reliable measurements, but they are not.

How do we standardize measurement quality across disciplines?

Strategy – lidar metrics – what are we reporting? What is the product?

Biomass is an indirect measurement, so what do we report? There are also ancillary parameters (volume derived measurements, point clouds dbh).