

**Zero Order, Rough Draft Notes: GHP side meeting; 7<sup>th</sup> Science Conference, July 2014, The Hague**  
**(Comments/questions are welcome as are Corrections/Clarifications from those who were in attendance)**  
**(12 August 2014)**

**1. Cross-cut (CC) Discussion:**

-Sub-Daily precipitation

This CC is starting with a review paper which is under review. This CC also initiated a European project at U. Newcastle which will help coordinate this effort.

The data access is one of the main issues for sub-daily rainfall and the input from RHPs will be helpful. On the longer term it will be necessary to see how operational agencies, like GPCC/DWD, can contribute to this effort.

The measurement of intense rainfall at the sub-daily scale was also raised as an issue.

It was suggested that this CC promotes its work so that others are encouraged to participate or contribute. This could be done through a website which points to the review paper, the database under construction, software to perform the diagnostics and other studies.

-Phase transition precipitation cross-cut report

A core group comprising Ron Steward, Pasha Groisman and with at least one other TBD participant was constituted. A GEWEX Newsletter and review paper are being considered.

Only a few RHPs would be concerned by this CC but it could be a good case for getting the observational people from the regional experiments involved. This could encourage the implementation of appropriate instrumentation.

-Mountain precipitation

An early proposal was tabled which will be refined for the December GHP meeting. It raised a lot of interest from RHPs and generally addresses one of the lessor focused science topics within GEWEX. This CC will be a possible contribution from GHP to GLDAS at the GEWEX level.

-Mountain hydrology

The CC on mountain hydrology was well received and is highly relevant to a number of existing and upcoming RHPs.

A more formal proposal is expect by December 2014.

It was noted that there are strong links between the mountain hydrology and Alpine precipitation CCs and they should be fostered.

-Water Resources

Discussion related to follow-up on CCs led to note that the Water Resources CC needed to move forward and that Richard Harding should be asked to take further action on bringing together a small group of key persons to develop it as a CC Proposal and set milestones for some near term action/results. Howard Wheeler is working on a review paper that is relevant to this topic.

It was noted by Philippe Drobinski and Howard Wheeler that the Water Resources CC needed to

consider human impacts including irrigation, etc. In that context, it was decided that the RHP's needed to be polled about information/data that could add to the Water Resources CC.

Eric Wood noted that a number of groups are involved in the process of bringing together thousands of reservoirs and introducing them into their models. Advancements are being made where they are being put into regional models and into global models.

GHP has to reach out to GLASS for this CC to determine what data and configurations are leading to model improvements.

It was suggested that two working groups be "organized" that look at irrigation, reservoirs, and Drainage of wetlands!!

Nicole van Lipzig confirmed that the matter of land management and water management is necessary element of the Water Resources CC. She also mentioned Irrigation and dams as big drivers considering the issues of demand and allocation.

Jan Polcher noted that we have to be distinct about land "management" in the sense of how the demand/control of "water" impacts the overall issues of water resources versus the topics of land use/change. GHP must stay with Water resources not land use deforestation etc.

Howard Wheater said the action is to take this discussion to Richard Harding to set up a small working group. Eric Wood mentioned that we do have to interact with GLASS on this CC to ask where are the data and how do you put it into the models. Wheater/Harding/Polcher to frame it out.

-Seasonal Stream-flow Forecasting with HEPEX connection/CC

An initial white-paper was drafted following the agreement at the Rio Meeting that for the GHP to improve its contribution to seasonal forecasting a link with the HEPEX community is necessary.

Action was noted to expand on the initial white-paper by actually proposing an "Experiment" that defines how to move ahead with this CC and which specifies the contribution the RHPs can make. Jason Evans had met with them (Jan Verkade and Julie Demargne). Jason Will contact HEPEX through Andy Wood, Jan Verkade & Julie Demargne to move forward on an experiment design. Eric Wood may be involved.

The proposal will identify "Test" locations in RHPs and will answer the question of what the RHPs need/want to accomplish with regard to "land Hydrology". Connections to GLASS, and WCRP GCs will have to be considered. OzEWEX, SaskRB each have experts who can contribute. A framework should be ready and available prior to the December meeting at Caltech!

- General comments :

Dr Remko Uijlenhoet (New SSG member) will be added to GHP community and invited to the December meeting at Caltech. He may add to some of the GHP topics such as the Water Resources CC going forward.

All agreed that the Sub-Daily Precip CC was the best "template" for the getting the Water Resources and other CC up and running. Initial steps should include a "survey" of what has been done (Currently underway for most CCs). We need to show where GHP and RHPs in particular can add value to this topic. A Newsletter article should be an early step and a call for interested

groups/persons to help.

## **2. Connection to Soil Processes/GDIS Discussion:**

Soil Community was defined in broad terms by Dani Or's presentation. Better representation of soil process is the goal. A number of interesting actions were presented: Formation of global lysimeter network; international soil modeling Consortium; soil moisture monitoring networks; Incorporation of near surface and small scale soil process.

Some RHPs responded to the offer for collaboration: SaskRB is engaged: Soil moisture obs, soil scientists involved. MAHSRI has a precise soil map in Japan. Hugo, GCIP used to have a link to soil sciences. Injecting improved soil maps into land surface scheme would address the hydroclimate questions is an easy way and yield some value. No strong linkage with the soil scientists in projects yet but GHP could spur that. Mike Ek noted the strong IGBP connection. Soil processes connect more strongly to Ecosystems/Chemical cycles and the link to the Energy Cycle seems less important given the current state of our activities. Remco supports it as a natural extension of work already underway.

## **3. Discussion of RHPs contributions to Ccs:**

- HyMeX

GEWEX members are invited to the HyMeX workshop in September in La Valetta, Malta. CORDEX is represented with the MedCORDEX pilot experiment which is unique through its ocean/land/atmosphere coupling.

For the sub-daily precipitation, data availability in the region is an issue for. Philippe proposes a minimum period to enter a coordinated effort 1990-2010 subdaily. The CC could prescribe the diagnostic and provided the software to all HyMeX member wishing to participate in the effort.

No snow community in HyMeX. Still for the mountain hydrology a connection to John Pomeroy should be established. Plus Vincenzo is the way to connect with the Alpine precipitation connection.

Mountains are an important part in HyMeX and thus the involvement in the Alpine precipitation and mountain hydrology should be a given.

Forecasting monthly to seasonal has also been discussed but not of the highest priority, at this time.

Water resources is a very relevant topic, together with droughts, water use, etc. which are also being considered. All the relevant studies in this respect will be provided at the December 2014 GHP annual meeting.

The first version of GDAP data will be integrated in the HyMeX database for analysis within the project. This is just a regional perspective and the Global view will come when RHPs do the same. GLASS says they want to do something in terms intercomparison of models and HyMeX may provide a first prototype.

Comment by Mike Ek; re the GLASS interface with RHPs: We should not limit our view on current RHPs but also look at former campaigns. Howard Wheeler, for instance, named the BERM sites which could be of use by GLASS. Current and former RHPs could list what is available

and would be suitable for GLASS activities.

- MAHASRI:

Jun Matsumoto, to be contacted by CC's to get data. Japan has a relatively open data policy. MAHASRI could use the HyMeX paradigm and apply the CC diagnostics to their own data. This may be a constructive way to move ahead, since it then involves the local scientific community, directly in the process.

- SaskRB:

The RHP has been expanded to a cold region project which will be presented more fully at the GHP December 2014 meeting. Wheeler, wants the expanded network to be part of the full RHP.

-NEESPI:

The contribution to the sub-daily precipitation CC will be difficult because of the lack of free and open data availability. However, some mountain rainfall observations exist that will enable NEESPI participation in the mountain precip CC. The specifics of the extent of this contribution will be provided by Groisman at the December 2014, GHP annual meeting.

#### **4. Upcoming RHPs Discussion :**

-OzEWEX :

The science plan of OzEWEX was presented. As we did not have a quorum of Panel Members, they will be polled and a decision to accept the OzEWEX request for status as an Initiating RHP will be taken at the December 2014 GHP meeting. The action is for the Plan to be distributed and for the Panel members is to review it and comment by the time of the December, 2014 GHP meeting.

A lot of discussion ensued from the science plan presentation on the function and the form of OzEWEX in the context of the existing RHPs. Some of the points and questions raised were:

- What sets it apart from a loosely connected group of scientist who are only comparing notes of interest concerned with water issues in Australia?

- Most of other RHPs have started with institutional funding and/or a field experiment. This is not a criteria for an RHP but it allows a broader set of options to gain momentum in plans and implementations.

- There is funding for an October workshop and there is an effort to secure a small "working" budget.

- Regional data gathering has been done (and continues). Can it become an Australia GEWEX office?

- RHPs based around experiments is not necessarily the most viable/current paradigm. But some kind of dedicated funding, or dedicated personnel from institutions is needed in order to form a project which unites the efforts of all the participants.

- Evans noted that there is a SMAP/soil moisture field campaign that gives it a field campaign framework to build on.

- There is no hosting of a common data center which would give a one stop shop for GEWEX

research in Australia. Could this be a strengthening nuclei for OzEWEX?

There was some final conclusions that led to agreement that the science questions are of high interest and if they were to get more integrated it could be a viable RHP option. Also in support of the request for Initiating status Eric Wood noted that HEPEX had contributed "in kind" and that relevant "work/science" was being done under the OzEWEX "banner". When the number of parts and agencies proposed to be involved in OzEWEX are counted/"added up" it equals a large amount of funding. To make these contributions more visible, a letter of commitment from the agencies and institutions would make a difference and should be considered for a follow-up action. Finally, it was noted that it is encouraging investigations into a broad range of issues that need to be worked on and that relate directly to the WCRP GCs and GEWEX GSQs.

Jan Polcher summarized the discussion by saying that it has all the ingredients to be an RHP but that GHP would want it to be more "ambitious" and more focused with a commitment to a longer term set of goals. GHP will therefore wait to hear the outcome of the October workshop and will want to review and consider any new information that may help with the deliberations on the request for Initiating RHP Status that will take place at the December 2014 GHP meeting at Caltech. Action is on Albert Van Dijk to keep the Panel thusly informed.

-HyVic :

The project would like to apply as an initiating RHP. The panel was extremely satisfied with the progress that has been made. HyNews (WWRP project) will join with HyVic for the observation campaign. Marine transportation is practical issue for HyNews but GEWEX gets information on the hydroclimate part on weather scales but climate as well. Howard Wheeler notes that the science plan addresses river flows and that there is an important need for that data and related information if the goal of getting the the water budget correctly characterized is to be achieved. Also ground water component, population growth, water extraction, etc. are important human dimensions of impact of population growth. How will it evolve from financial/funding point of view is an important consideration. Two threads leading to more direct support and interest by the broader community are HyNews and connections to stakeholders. Polcher, Evans and Semazzi agreed to work to get relevant documents together for review by the Panel and for presentation at the Panel Meeting in December 2014.

-RELAMPAGO:

Polcher gave the presentation in the absence of a key representative for this regional study at the GHP Science Conference meeting. Polcher's impression of this effort are good, but he noted that the project is focused on Meteorological aspects and should be extended to the Hydrological issues/community. Hugo Berbery noted that CLARIS/LPB started in this region with floods and river flow questions, but it was slow to evolve. RELAMPAGO should consider that for deep convection looking at the land surface processes is essential for the initiation process and for understanding the Hydrology for the floods which are thusly generated. These are two clear directions, together with some longer term perspectives, in which this study could evolve in order to make an attractive RHP. A revised request for RHP status should be submitted by December 2014. Van Oevelen noted that this study should be viewed with consideration to the other options for regional studies in South America that look at important climate issues beyond the "plains" including some proposals already being developed in mountain (Andes and Columbia) and coastal areas.

- Other Regions for GHP regional study consideration

#### Monsoonal Region

Subsequently it was agreed by the GHP Co-Chairs that the Panel should be informed on the possibility of instigating a new RHP-style study in an active Monsoon Region, (e.g. India). The SSG Co-chairs noted that this could be a topic for discussion at the December 2014 GHP meeting, in the context of the newly constituted “Monsoon Panel”.

#### North America

Similarly, the Co-Chairs, subsequently, agreed with the GEWEX SSG that there were important water resources considerations in the NA region and that there was a need to both broaden and sharpen the science issues to allow for the possibility of a regional study, synergistic with SaskRB, to evolve.

#### **5. December meeting Discussion: (See draft of the Agenda)**

The planning of the GHP December meeting in Pasadena (10-13 December 2014) was discussed. A second draft Agenda has been distributed.