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**Second telecon to design the  
WCRP Home on Regional Information for Society (RifS)  
13 November 2020, 15:00-16:30 CET**

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**Participants**

Bill Gutowski, Silvina Solman, Daniela Jacobs (CORDEX)  
Clare Goodess, Willem Landman, Tim Carter, Bruce Hewitson (Working Group on Regional Climate-WGCR)  
Jens Hesselbjerg (WCRP Joint Scientific Committee)  
Rupa Kumar Kolli (CLIVAR Monsoon Panel)  
Narelle van der Wel (WCRP Secretariat)  
Anke Schlünsen-Rico (Coordination Office for WCRP Regional Activities-CORA. Note taker)

**Apologies**

Xuebin, Lisa Alexander, Sonia Seneviratne, Gaby Hegerl (GC Extremes), Ken Takahashi (JSC), Beatriz Balino (CORA)

Jacob chaired the meeting

**Agenda**

1. Discuss whom to invite for the 3<sup>rd</sup> Telecon on Friday 20<sup>th</sup> Nov
2. Report from the meeting with the LHAs on *My climate Risk*: how to go forward, what is their approach to the JSC presentation, an interesting model, probably we could go along a similar line.
3. Clare definition of “Information for regions”

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**Actions**

1. **Everybody** to contribute with 1-3 scientific questions to each of the Home building blocks at.
2. Issue an invitation to join the 3<sup>rd</sup> RifS Telecon on Friday 20 November to the people suggested in this meeting, the CORDEX Points of Contact (POC) and the International Project Offices of WCRP Core Projects. The purpose is to get their feedback on the Home structure. ASAP. Responsible: **CORA**
3. Adapt the template of the LHA *My Climate Risk* for the development of a working document for the design of the Home RifS. Responsible: **CORA**
4. Put all these documents in Google Docs and share with the participants of the 3<sup>rd</sup> Telecon of RifS. Responsible: **CORA**

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**Discussion highlights**

- The way forward: Agreed to adopt the work approach of the Lighthouse Activity (LHA) *My Climate Risk*: to collect expectations, scientific questions, connections within and outside WCRP community, tentative timeline, etc. It is envisioned that there will be a strong overlap with the this LHS as they are discussing topics similar to here. For instance, regarding the boundaries: *where does RifS Home end, and “My Climate Risk” start?* will be a key issue to discuss in the future. Put it together in a working document adapted from LHA template for the RifS Home purposes. This document will be the basis for the discussions at the next RifS telecon on

November 20<sup>th</sup>. Lastly, the information from this RifS working document will form the basis for the presentation of the Home at the JSC-41B in December

- On the group's future composition and leadership:
  - Prior to JSC-41B: merge the members of the Task Team on Regional Activities (TTRA) with the Working Group on Regional Climate (WGRC) to work on the science questions
  - Post JSC-41B: with the JSC comments and recommendations we will establish a team/committee with sub-groups to proceed with the design of the science plan, organisation, structure and implementation of the RifS Home. The co-chairs of the Core Projects will be asked to nominate 2-3 people connected to regional activities. Other scientists will be invited to join the sub-groups as well. Duties and responsibilities will be agreed upon.
- Definition of "Information for regions". It was agreed to adopt - as a working definition- the one proposed by the *Framework for Climate Information (FoCI)*<sup>1</sup> projects, also used at the "*Scoping Framework for WCRP Regional Activities*"<sup>2</sup>, which read as follows:

*"A FoCI Project adopts an important and specific phrasing of "information for regions" – as distinct from "regional information". While the latter implies a focus on resolution and location specific data, especially via downscaling, the concept of "information for regions" infers a broader scope to consider scales of processes ranging from local to global in-so-far as these inform our understanding of the regional climate dynamics and the local response to climate forcings. FoCI Projects would approach this through a lens wherein the needs for robust, scale-relevant information for regional decision making expressly help steer and prioritize foundational research on the relevant climate processes that operate and interact across all scales".*

- Scientific challenges related to the development of "Information for regions": How do we combine information in a region from data and models, from multiple methodology and on different time and space scales into something useful (for the user)? How robust, or uncertain, is our understanding of the information being produced? Is there added value in the production of information for regions? Downscaling is good for understanding processes at high-resolution, but does it really matter when we do climate change?

Another aspect is that we do not always pose the proper scientific question(s) mainly because the users do not get properly involved in the production of information. Users do not always know what their needs are, expectations can be too high or solutions sometimes are not feasible because there is no predictability. In the case of lack of prediction skills, we should be able to provide guidance based on, e.g. historical information, so that the users can make knowledge-based decisions. Instead of asking the user what they need, ask them what they do or how they work. This requires a different type of listening from the scientists and will hopefully lead to new and inspired research. In short: Co-design is fundamental here. We have failed to address these key issues in the past but this new Home provides a perfect opportunity to do it. A connection with the LHA WCRP Academy is envisioned here, as well as food for thought for the early career scientists.

It was also recalled that a number of on-going WCRP regional projects do actually involve stakeholders/users in their activities, so we should learn and bring their best practices to the new Home.

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<sup>1</sup> [https://docs.google.com/document/d/1UupmylwzJE6IEU5DoGDHJlspFha\\_0-nlWE0R\\_h4Pww/edit?usp=sharing](https://docs.google.com/document/d/1UupmylwzJE6IEU5DoGDHJlspFha_0-nlWE0R_h4Pww/edit?usp=sharing)

<sup>2</sup> [https://www.wcrp-climate.org/WCRP-publications/2016/WCRP\\_Report\\_23\\_2016\\_Regional\\_Scoping.pdf](https://www.wcrp-climate.org/WCRP-publications/2016/WCRP_Report_23_2016_Regional_Scoping.pdf)

*The meeting was recorded. For those who could not attend, we are providing a transcript below*

## Transcript

Daniela: More or less the same group as last time. The challenge is to discuss a bit towards what we can present the JSC in 2 weeks.

1. We should discuss if we want to invite someone else for the last meeting on Friday. We could reach out to 10 or 20 more people, maybe 5 could come at short notice. Write them an email asap.
2. Report from the meeting with the LHAs on “My climate risk”, how they go forward, what is their approach to the JSC presentation, an interesting model; probably we could go along a similar line.
3. Then we can go forward to working towards “the strategic goals” (Clare).

Clare: Send an email to D, S, N referring the HH meeting, looked at the strategic plan, then went to HH meeting report, there were some useful definitions – last meeting we said to come up with clear definitions and also from the document from the FoCi projects there is a definition of information for regions. If we could reach agreement from the top level.

Daniela: Report from the LHA My Climate Risk, then we have the template here, and we can go towards the definitions as Clare mentioned. Two meetings were Jens and, I think, Willem participated. The chairs are collecting the expectations from the LHAs in a template, which are the scientific objectives of those LHAs. Under the headings of the template, the individual members of the task force for the LHAs are putting in bullet points their ideas. It is a collection of expectation and challenges for the design of the LHAs and for the scientific content of the LHAs and it has questions along what would be the scientific challenges, where are the boundaries of the LHA My Climate Risk, where are the connections to other WCRP activities and beyond the WCRP community. These sections fit also very nicely to our home. I like very much the approach, time is too short and we are too few people to come up with a common sense on all those questions. We can prepare a kind of first collection of important points, which need to be considered informing such an activity. We are on the right track within our discussions and the very good minutes from last time, that we could also have a few of those headings under which we present our status of the discussion and also our concerns, for instance that we would like to outreach a broader community, within and beyond WCRP. This method with a template from Ted and Virginia organizes somehow our discussion. If you agree, we could follow this approach using some parts of the template and adjust it to our needs.

We can have a look at what we have to present to the JSC, the ppt template, to know what they are expecting from us. The other template I was talking about is more a reframing of our discussion.

Narelle shares the ppt template.

We cannot reach more than this bottom-up collection information of what we are discussing.

This is what they are asking for, the progress towards identifying the goals and relationships. The idea is that we now use these bullet points, we are in our discussion under these elements. We cannot answer all of those questions. The template I was mentioning from the LHAs for the science plan is a bit different but I would try to join both. It is more activity oriented, relevance for the WCRP, partnership, scope of the activity etc. It is partly similar, partly different since the LHA is only a scientific activity, the home is a bit broader.

I would now merge some of the headings from what we see here with some of the headings, which I expected in our PPT. Then we would put together some bullet points from last protocol and the today's discussion in each of these activities and then distribute this to you, maybe next Tuesday. Then we should continue working on this document next Friday. So we would have at least under the most important headings a sort of a structure and a document from which we can prepare a PPT and report – if you agree. We would create this document perhaps with the support of CORA. I would call it a template for the development of the new home. Would that be ok?

Then there is the issue of charing this group. As mentioned in last meeting, it was Bruce, Clare, Silvina and myself. We should discuss the structure for this group and maybe someone else would like to take the lead and chair the

next steps forward, I think the interesting discussions will come up after the JSC. What we do for the JSC is: We will layout our first collection of important topics of ideas, then we see what they say and we will following their suggestions and only afterwards, the work with the community starts and then it needs to be developed. The scientific and structural team have to work on it, maybe we have some subgroups. I at least, would like to have 40 people being involved and maybe work in subgroups towards an interesting home structure and scientific challenges. We have the different building blocks, it cannot only done in one goal, we have also to find out the boundaries. This is the administrative part.

Clare: Reporting on the situation of the TTRA. Next will be the last meeting.

Narelle: We are looking for the actions now in the JSC-meeting and then decide on another format.

Daniela: We have to discuss in next TTRA meeting about the scientific work. Now it would be natural bringing all together. That is exactly the reason why we invited the full TTRA-team together with the WGRC members for these home activities, so that we merge all this people and activities and then we continue after the JSC with the structure and dialogues. I think we will have a strong overlap with the "my climate risk". There is a similar discussion about what we have discussed with Bruce last time, where are the boundaries? Are we researching, our stakeholder dialogues are functioning? There was a similar discussion also about the wording, they had a small group meeting with Ted and Virginia last Monday like "which definition of risk we do want to reach"? Do we want to inform the risk analysis etc.? They were also mentioning the work of CORDEX but also the work of seasonal prediction and the data analysis. So, we can merge all this together.

Silvina: Giving that My Climate Risk is so much connected with what we are discussing here, do we have some representatives in order to guide this home? The same thing would go for the other projects.

Daniela: Jens is in this LHA

Narelle: Paco (Francisco Doblaz Reyes) is on the model data community. We do only have Daniela from CORDEX in the home and you are allowed to have another person as well.

Daniela: For the home, we can collect from all LHAs.

Narelle: Not yet. In Explaining and Prediction Earth System and Change and Save Landing Climates we don't have any reps. In the TTRA they are not officially presenting the home.

Daniela: Who is officially representing the home is unclear. We have the full Task Team on Regional Activities invited to design with us the home. Those who are in the TTRA are in different LHAs. Since they are sitting in other LHAs we have them as a connection between the home development and the LHAs.

Narelle: As long as they are aware of they'll got their job, means they have to report to the home.

Silvina: We have to clarify who is a member of this home and whom we are going to invite become a member of the home? We surely have to identify the members.

Daniela: This is the objective of today, but I'd like to held this meeting a bit open, I think after the JSC others might be interested in joining in addition. I also liked Ted's comment on the adaption in the LHA. He said that adaptation science is a very bottom-up approach and it is unorganised. I would say regional and local climate change information for regions is also a bottom-up approach and it might be a bit unorganised. I hope we can make this an interesting open club.

We need a few group members who belong to the group to develop the home, scientifically and organisationally. They have probably official functions, like the co-chairs of CORDEX, which have the connections to CORDEX and others have the connections to others, LHAs for instance. That is the minimum group, those have to be defined. In addition, we should allow interested scientists to join. I know that there are the CORDEX POCs who are very

interested, and it might be the similar in other communities. So: we have the core group with a bit transparent halo around. In the core group, there are clear duties or demands in reporting and making connections.

Chat Clare: I'm not sure how many people in total are on TTRA and WGRC - but it would be good to get a commitment from those interested in continuing to be involved in the Home discussions. Those who are not can then be dropped from the mailing list.

Daniela: We can write to the TTRA and WGRC and ask for the commitment of those who are interested in joining; I think we could have a commitment ideally before the JSC. After the JSC meeting, the situation might change. We could leave it open a bit, but this are the steps we will have to do. However, you are right; we have to get a commitment. Let's talk about whom we should inform about next meeting on Friday? The TTRA, WGRC members and CORDEX chairs are informed. Should we reach out to a few more?

Silvina: There was circulated a list of suggestions.

Daniela: For Friday, we do invite the IPOs, the people suggested on the list and the CORDEX POCs if you do agree.

Silvina: The CORDEX Point of Contact (POCs) or sub-members?

Daniela: Maybe sub-members, maybe both.

Clare: Go for which ever has a greater geographical diversity.

Jens: If we don't can activate the people on the list, maybe we can activate them after the JSC.

Daniela: There are 2 phases:

- We just invite those we can think of, it's a preparatory phase, it's not to invite them to be a member of the group for the next 10 years. The objective is to get a kind of feedback.
- After the JSC we should then establish the group

Kumar: Another dimension of representation is to bring the regional aspects, like Monsoons, the global coverage about regional elements should be well represented, otherwise we are missing some important aspect.

Daniela: That was why I was looking for the CORDEX POCs, the point of contact, they are regional focused and also through the regional offices.

After the JSC meeting, I personally would open up this group here, in a way that I don't want the co-chairs or IPOs from the CORE projects sitting there but naming 2 or 3 people which are connected to the regional activities of the CORE projects. It must not be always the lead, we are always overloaded. After the JSC I would ask those chairs to come up with some reps of their activity in this home designing group. For the moment, the dialogue should go through the chairs.

For next Friday, we will invite these people on an informal and open level and after the JSC we will try to formalize this group a bit more and work through the next steps, something we should present also in the roadmap and timeline on the PPT for the JSC meeting. We can bring then 2 or 3 bullets to develop the CORE group, the associated group or shadow committee for the different building blocks for next JSC meeting in June.

Then let us go to what Clare brought up to the definitions. Good point to catch up what we did already agree some years ago.

Clare: The definition of regions in the Foci report: "A FoCI Project adopts an important and specific phrasing of "information for regions" – as distinct from "regional information". While the latter implies a focus on resolution and location specific data, especially via downscaling, the concept of "information for regions" infers a broader scope to consider scales of processes ranging from local to global in-so-far as these inform our understanding of the regional

climate dynamics and the local response to climate forcings. FoCi Projects would approach this through a lens wherein the needs for robust, scale-relevant information for regional decision making expressly help steer and prioritize foundational research on the relevant climate processes that operate and interact across all scales”.

That’s the definition of information for regions. This def. comes from the FoCi proposal which originally came from the WCRP in 2016 and it’s an annex to the 1<sup>st</sup> report from last December of the Task Team.

And this one: [https://www.wcrp-climate.org/WCRP-publications/2016/WCRP\\_Report\\_23\\_2016\\_Regional\\_Scoping.pdf](https://www.wcrp-climate.org/WCRP-publications/2016/WCRP_Report_23_2016_Regional_Scoping.pdf)

Quite relevant, how that differs from data, the others are more related to scope.

Daniela: Let’s start with the definition, the phrasing for information for regions is still valid. We are not talking only about downscaling information, but on this broader. It’s still our bottom line of many activities in our home. That is a good starting point.

Bill: A lot of the recommendations of the 2016 Hamburg meeting were not carried through.

Daniela: It’s time to implement the 3 legs. Are all aware of all these documents.

Clare: They are in the google drive.

Jens: We are in an organisational discussion

Daniela: We should again have a look at those documents and try to bring some content in the structure that we have discussed in the beginning. I would say for a large part of the home the definitions are still fine and valid, properly there are some flavours as we have not at that time looked so much at the prediction scale, we might have overlooked things. Clare, If we can take your list of words and definitions and circulate them also for the next meeting. So we can all have a look and see if we all agree.

Clare: I send it around to Narelle.>> ask Narelle!

Daniela: Then we would have the outreach to the other people. I would like to include for the next week the definitions and for now agree with the FoCi definition on information for region instead of regional information. We work under the assumption of information for regions defined in the FoCi project.

I would like to come to the scientific challenges now, when it comes to the information for region. If we could collect a list of 5 to 6 bullets of what is important from a scientific point of view to be looked at in order to develop information for region, to use and communicate it. If we go under these 3 activities for a moment and think what would be the scientific challenges and they are probably different on a different time scale in order to produce information for region, for example, the challenge of harmonisation of the information for regions which comes through many different data and model information = Compound evidence”. How do we bridge between the different space and time scales? This type of scientific challenges I’m looking for.

Bill: As much as attractive the word harmonization is, I think we should be a little careful with that because it implies that everything is going to come together neatly. And obviously there will be a time where we have conductivity information. We might acknowledge that this is part of the generation of the information. How robust is our understanding? The information we are producing. We throwed in the chat window this term distillation, that we had around for a while. I am not sure how people will feel about that. And you don’t like it, I see you shaking your hat (referring to Daniela). Obviously, we need to talk about something about how you pull together this descriptive sources and information in a way that is meaningful.

Daniela: I am shaking my hat because there was a good comment in the My Climate Risk. Clare you are right, it is a topic of My Climate Risk but the idea behind the LHAs is, that the community sits in the core projects and homes and works together on topics that are important for example in My Climate Risk. It is not that the community who works

on a question in My Climate Risk is not anchored in a home or core project anymore. There is this misunderstanding in some discussions. The idea is that the entire community sits in the six homes or core projects and then they have challenges they want jointly to solve. And they bring the information from their community/ home towards this question. It is natural that some of the CORDEX and other would work on exactly this question in the framing of My Climate Risk-idea. That is a framing for some of the scientific question but of course some basic science needs to be carried out in order to be able to inform the science, which is needed to look into this climate risk. And that resonates in the homes or co-projects. Coming back to distillation, somebody said this week "there is alcohol coming out of distillation and that's not good." So, distillation is not a good word.

Jens: is shortly interrupting: I think these days we have to wash our hands in alcohol all the time so that is good.

Daniela: I know it is around for some time, I might have to adjust to it, but I prefer another word. I am not against what it means in action. It is just the word that I don't like.

Bill: We are using it in the IPCC chapter, so it will have some resonance in the IPCC.

Jens: What is the alternative? What is the opposite of distillation? We here as a group, we know what the intension behind that vocabulary is. What is the opposite actually? That is what is equally valid. We would like to understand where the differences in this approach are come from. That is the more fundamental scientific question. How can we combine the information to something useful? These are two different approaches. It is easier to apply funding or ask for funding for figuring out why my downscaling technique giving something different than GCMs. I think we know part of that answer, but I don't think we have explored it to the end. That's why we talk about distillation, we haven't figured out exactly what it is. Coming back to the fundamental questions: Is there any added value in the 2<sup>nd</sup> order? I know that downscaling is great for having high resolution and understanding things. But does it really matter when we do climate change? These are fundamental questions we have failed to address. And this is now the chance that we bring this forward. It fits extremely with these ideas.

Bill: Couple of little points I want to address. If you want to get really picky you can say distillation is about removing impurities, but we don't want to remove them. Because we want to be aware of those in the climate information. To say what is the source of uncertainties. The other thing is going back to what you were saying Daniela about basic research. This term has been throwing around a lot. The time is used, inspired research which is carried with the notion that it is basic research. But it is really coming from that bottom-upper approach that you are paying attention to what the stakeholder community needs. And implies that dialogue that we always keep talking about and that might be a term we want to fall into this.

Daniela: Absolutely, much better than my wording. I fully agree. I also liked what Jens said, phrasing it into a scientific question. I would like to ask you Jens to send us this scientific question to this. Having those both sides in it. What actually is the distillation doing to the information and what would be the other way around?

Silvina: I was thinking that we are trying to identify great scientific questions in this big home. But I think it would be easier if we focus on the specific building blocks or smaller pieces. Because if not it would be much more difficult to start from the general "how to harmonize" science and that kind of question. But if we look into the specific issues associated with each of the proposed building block may be then we can come up with a more general scientific challenge and not the other way around because that is much more complicated. This is my view.

Daniela: Agreed. That would mean we are aiming for one or two scientific questions/ ideas for each building block. Some are overarching. The distillation is an overarching question. I think it is similar on prediction timescale. It might have different ingredients but the overall question is similar. Maybe I could ask Willem and Kumar about prediction and data analysis, because we talked a lot about climate change timescale.

Willem: When we talk about sub-seasonal to seasonal, we certainly can have the end-user much more involved in an iterative process, when we come up with something that will look different at the end of the process and at the beginning of the process. And at the same time during that process the modeling would not really change much. Take the information from the model and make something useful out of it. We have some examples where we have

developed prediction systems and we find no interest afterwards because had never this people involved in the process. I don't know if that is similar to what people do in climate change. But I know for sure that when we are having the post come up with a solution that we think is viable. That that solution is completely ignored. Even though we learned the lessons we continue to make the same mistakes. We don't get the users properly involved in the iterative process and get a product that they start using. The users don't know what they want. Expectations are something bizarre. We have to come up with solutions to their bizarre problems. And something the solutions is not feasible because there is no predictability. In terms of regional applications. My work with the Philippines (CMIP4 forecast) is not really working well... There is a whole process on this sub-season to seasonal timescale which is an operational timescale and really different to timescales of decadal to multi-decadal. We have been talking about this in our community for decades and we did not come up with a viable solution. Maybe because we have not phrased proper scientific questions. One dominating factor is that we continue to not go into any trouble and trying to get users involved in the process. At least in our region as much as we should.

Daniela: There are similarities on the climate service production side. We sometimes produce climate service products that nobody is using. But with a co-creation process it helped a lot and it is also an iterative process. So, there are similarities.

Kumar: Being involved in seasonal prediction, in particularly regional climate outlook, we try to bring countries together and interpret seasonal prediction products. One challenge that has remain quite some time, is to make sense out of the multiple sources of information. We have a large number of seasonal predictions available and regions have no guidance to optimize the information coming from this multiple sources. Select the possible best one to combine things so that the user has the best possible outlook. This is an aid of research that is not being addressed adequately with the result. Most of the regions are using whatever that come to their mind. The other aspect is unlike climate projections the sub-seasonal to seasonal predictions are very ... in real time. How do we actually maintain great ability? To convince users that they can use whatever information is provided with confidence. We are not in a good position, which is the reason why some of this regional prediction products are not used. People use it in a qualified sense. How the people use the information is not really upgraded to the decision, which involves the sources. That is where we have to figure out how we actually provide additional information along with the forecast that improves the confidence of the users.

Daniela: Question for Kumar: You are probably aware of C3S quality control system. For the climate timescale question was always about transparency and evaluation. For what you said first making sense of the multiple sources of information is it along the lines of guidance and indicated development which would be needed in order to inform people to make sense out of the different information or are you more thinking about doing this beforehand and then provide a unified product?

Kumar: The tools that regional information providers can use to optimize the information are coming from multiple sources. What are the ways in which people can combine? For example in regional climate protocols as a constant development. In all the countries in a given region, we are looking at the same climate variable. They agree on a particular aspect of the seasonal forecast. This is done in a very subjective way. Now WCRP is strongly pushing for an objective way of doing this. Because it should not be dependent on who is sitting in the room at that point of time. It should be something that can be verified... And that is something that is not available.

Bill: Coming back to the point of people not being graded up taking some of the predictor systems. Where could our research question could be posted and why they are not picking it up? My experience is that physical climate community makes a lot of presumptions about what the users wants and never really asked the question of why don't they like our presumptions. I think there is a real research question there, now the competence in WCRP is not there. For the physical climate services, we do research on why the systems are not been taken up.

Daniela: Fully agree. There are interesting questions to be posted. They are partly within the building blocks and partly overarching. Let us get some scientific challenges which are also looking at new funding research opportunities. Like we had it with regional climate modeling years ago with push and pull. We are partly pulled and partly pulled by the communities.

Tim: I don't have much to add.

Bill: ... reminds me of a statement I heard somebody makes several years ago which was “don’t ask me what I want, ask me what I do”. This requires a different kind of listening and really pay attention to how people actually use weather climate and their work. If we are not prepared to do that, we are not really listening the right way. Referring to Willem, to recognize that this is not a short-term process that involves dialogues over a quiet intensive period of time. Need to understand what people are doing with their work. This will lead to new inspired research.

Daniela: Would require a close connection to the WCRP academy approach, because that is also a question for the young generation and early career scientists and to get into the mood earlier.

Willem: We developed a seasonal approach (5-month leap prediction system) for the Kariba lake (biggest man-made lake on the planet). But they wanted to have a seasonal approach (couple of weeks ahead of time). We worked three years on something they didn’t want. Flipside of this, we wanted to try again to contact them, but they were not interested anymore. We thought we will help, developed something that worked, but they had no interest. It is a lot of embarrassment.

Kumar: Want to make a big comment. Too much emphasis on prediction on seasonal timescales. There are many ... when we have no prediction skills and the models do not give us reliable information that we can pass on to the users. Then we can simply say that we cannot predict and walk away. There should be some way of providing information to the users so that they can make decisions in that kind of situation based on historical information of guidance. This should be part of the whole exercise, combining knowledge and then use the weather prediction we have and helping the user to take a decision.

Daniela: This is a method of expert judgement, which is not so well suited in WCRP now. I think it is something, which helps a lot also in this situation.

Silvina: One issue to arise from our online meeting last week. Ongoing projects are doing this kind of process where they involve the stakeholder/users. Maybe we need some input from those projects, some experience how they deal with this dialogue with users.

Daniela: Everybody should send the science question, ideally until Tuesday evening. On Wednesday afternoon, fill them into the template, which we discussed at the beginning. Continue discussion on next Friday. At least one question.

Narelle: We could have a shared document where everybody has access. Anke should set up the document.

Silvina: Related to the scientific challenges, reliability of the information is one key challenge to try to focus on.

Daniela: We need to distribute some tasks, invite more people, if you have more names let us know. The most important task is to submit the scientific questions (1-3) from your particular background for the different building block, the user dialogs, for the adaptation impact (referring to Tim).

Thank you to everybody. It was a great