FRACTAL Inception Workshop Report

Cape Town, 12 – 14 August 2015


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FUTURE
CLIMATE
FOR
AFRICA


NERC
SCIENCE OF THE
ENVIRONMENT


Climate System
Analysis Group

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Introduction

The Future Resilience for African Cities and Lands (FRACTAL) project inception workshop was hosted by the Climate System Analysis Group (CSAG) in Cape Town 12-14 August 2015. The workshop brought together consortium members and city partners at the Steenberg Golf Estate. Through a three day process participants worked: to improve the understanding and collaboration between all FRACTAL partners; and to finalise an integrated FRACTAL work plan that is solidly predicated on well posed science questions, matched with details about targets and actions for year one.

This report outlines the main sessions that took place during the workshop, focusing mainly on discussion points and outputs where appropriate. The report, and presentations and other supporting documents, will also be made available in the password protected side of the FRACTAL website.

Picture 1: The FRACTAL team

Day One: Intro and focus on city partnerships

Day 1 was focused on the city partners; getting to know them and their context, and exploring how this frames the whole project.

Session 1: Setting the stage

Welcome and opening statements

Bruce Hewitson did an introductory presentation, outlining FRACTAL's aim and meta-objectives, and expectations, objectives and framing for the inception workshop.

FRACTAL's aims are to: **Advance** scientific knowledge on regional climate responses to global change; **Enhance** knowledge on how to integrate this information into decision making at the city-region scale; **Responsibly** contribute to decisions for resilient development pathways; **Approach** through iterative, transdisciplinary co-exploration / co-production processes and enhance the understanding of these.

FRACTAL's Meta-objectives are to: **Understand** climate processes driving the regional climate system's natural variability and response to global change in history and climate models; **Distil defensible**, scale-relevant climate information, informed by and tailored to urban decision making and risk management within their regional dependencies; **Use pilot studies** to enhance our understanding of co-exploration processes with urban partners to integrate climate messages within real-world decisions, and strengthen development pathways to resilience.

Exercise on working in a 3rd space

The trans-disciplinary nature of FRACTAL means that people from different backgrounds and work settings, natural scientists, social scientists and practitioners, are working together. In this context Dianne Scott introduced the concept of a 3rd space, where people with different "safe home spaces" come together in a hybrid space. Her presentation was followed by an interactive exercise that was aimed at illustrating the 3rd space in the context of FRACTAL.

Overview to ensure we have a common understanding

Bruce Hewitson did a short presentation, outlining principles to set the stage for the inception workshop and providing a quick initial overview of practical FRACTAL elements (Finances, Logistics, Project Management, Communications, Points of contact and key responsibility roles, Website, Document management, etc).

Overview of the Theory of Change

Chris Jack introduced the concept of a Theory of Change (ToC), the Future Climate for Africa (FCFA) ToC and the FRACTAL ToC, and how these relate. A ToC outlines the building blocks, outcomes, outputs, assumptions, results and so on, that are required to achieve a goal or an aim. The ToC approach is particularly useful in the context of multi-disciplinarity, which has cycles of iteration and interaction. FCFA is developing at ToC, with input from FRACTAL and the other consortia. This ToC will to some extent shape FRACTAL's reporting to FCFA.

FRACTAL is also developing its own ToC, which is likely to change and evolve throughout project implementation.

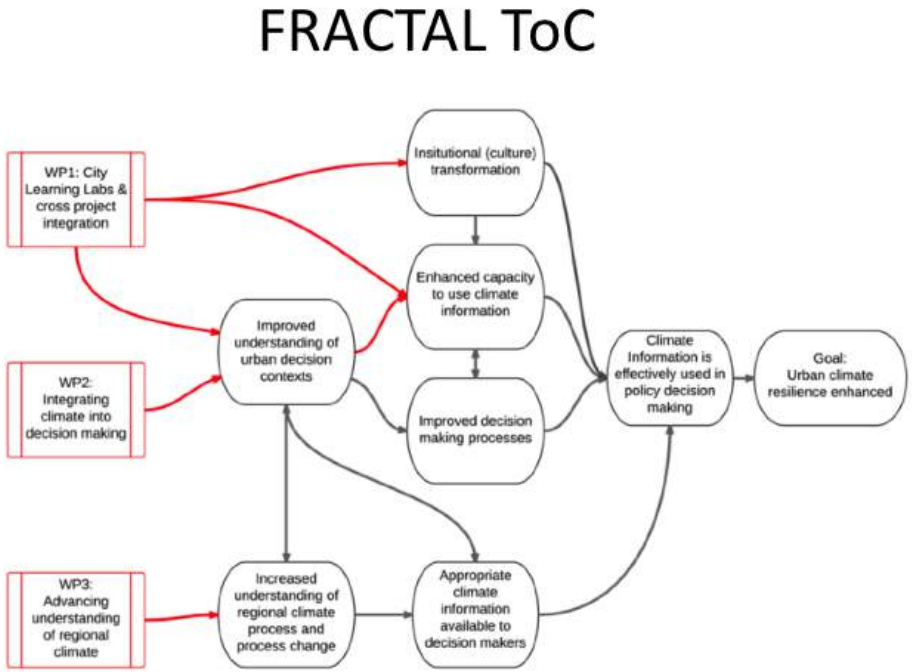

Figure 1: Draft FRACTAL ToC

Points raised in response to the presentation:

- It may be worth focusing on “degrees of success,” rather than “degrees of failure.”
- Should we develop city level ToCs?
- Maybe add Werner-Trayner paper values, aspirations, cycles, and so on to TOC.

Interactive exercise

Bettina Koelle facilitated an interactive exercise out on the lawn, where the participants had to collectively manouver and direct different sized balls around a piece of cloth. The exercise sparked reflections around working collectively as a team and simultaneously dealing with a number of activities, goals and pressures, in the context of FRACTAL implementation.

Picture 2: FRACTAL workshop participants trying to manouver balls around a piece of cloth

Session 2: City Partners

Co-production of Knowledge

Dianne Scott started the session with a presentation on the co-production of knowledge in a 3rd space. This was followed by a presentation by Anna Taylor on relationships for co-producing knowledge.

Understanding the context of the city officials

Researchers often have a limited or partial understanding of what city-level government decision-making really involves. City officials from Tier 1 and self-funded cities were therefore asked to give short presentations about how policy-making and planning really happens in their city.

Jonathan Mwanza from Lusaka presented on the process through which a city plan is developed, implemented and reviewed, using the city's Comprehensive Urban Development Plan as an example.

Friedrich Koujo from Windhoek presented on the general process through which a policy is formulated, approved and implemented.

Helen Davies from Cape Town presented on the city's water management, focusing on the multiple influencing factors and the difficulties of making decisions in the context of the band of uncertainty related to future climate change.

Session 3: Breakout groups around structural questions

Participants split into four different groups, two city focused groups and two work package focused groups. For each group the discussions were focused on unpacking everyone's understanding of the main purpose of FRACTAL, and on unpacking the values as well as challenges of partnerships within the project city's, partnerships between the cities and partnerships with other international partners. The two city focused groups were also asked to discuss current city level debates that are relevant to FRACTAL.

<u>Each group reported back from their discussions, and the main messages that came out were:</u>

- Some issues are similar across some of the cities, such as challenges relating to energy, food, water and rural urban migration;
- Rapid urbanisation, development/informality and service delivery are important underlying factors in cities;
- City partners are critical to FRACTAL, and need regular meetings/interactions between city partners and academics;
- Cities need information, not data;
- FRACTAL will be using case studies, yet the questioning how/whether they can add value,
- Timeframes for information: practitioners might need urgent information, while academics might only be able to deliver over longer time periods;
- Important to note the awkwardness of tier 1 versus tier 2 cities.

Session 4: Short breakout groups followed by assessment of initial emerging issues

Participants split into three mixed groups for preliminary brainstorming about the relevant information content needed for building an effective science-policy relationship.

Each group reported back from their discussions, and the main messages that came out were:

- The baseline assessment is important to understand the context. Need context in order to better understand what information is needed;
- Need to understand the city context in terms of: entry points (who?) and timing of information required to inform policy, timing and sequencing of decisions, the mandates of government bodies and where decisions are made, time frames for climate information, city capacities, current perceptions around climate impacts, how policy makers use scientific terms;
- Need dialogue around when a city crisis occurs, what the related thresholds are and how these can be used as a planning tool;
- Need to understand the private sector landscape;
- Need to understand resource flows to and from cities;
- Need to understand economic impacts related to current climate related impacts, in order to then consider future economic impacts.

End of day wrap up & analysis

Gina Ziervogel and Sukaina Bharwani provided an overview and brief analysis of the activities and discussions that had taken place throughout the day.

They highlighted the status quo, in terms of the resources, people and relationships that currently exists within the FRACTAL consortium:

- international academic experts across climate science and social science;
- experts in policy and planning at city level;
- experts in facilitation.

Gina and Sukaina highlighted how the day had shown that the FRACTAL project is starting from a real world context, yet is answering well-posed science questions. They outlined how academic partnerships with practice expose limitations and gaps, and that while there are already some strong foundations in relationships and working together there are areas where the consortium will still need to build relationships and trust.

Gina and Sukaina noted that FRACTAL will require new ways of working, as interactions and relationships need to address how to provide information for a more targeted approach, rather than a 'any road will take you there' approach. They highlighted how Co-production in a '3rd space' entails all partners being involved with joint power, joint working from the outset of the project right through to joint decisions, to avoid working in silos. Some fear of entering this '3rd space' had been noted. It was further noted that the FRACTAL '3rd space' was key, in that it forms the platform through which partners figure out how they are going to work together, and the platform through which project relationships that enable the group to answer the research questions are formed. Gina and Sukaina hightlighted how everyone working remotely will pose a challenge to the '3rd space,' yet that there are different options for engagement.

Gina and Sukaina summarised discussions around the Theory of Change (ToC) for FCFA and for FRACTAL, and highlighted how pathways of change are not always obvious. They noted the possible addition of city level ToCs, and how, at the city level, it would be interesting to add different types of values and aspirations, as well as assumptions and indicators to city ToCs. This way City partners would broaden the entry points for integrating climate science.

The issues raised around the ethical responsibility of FRACTAL were also highlighted by Gina and Sukaina, with the push and pull between what city officials need and scientists feel comfortalbe to provide potentially creating tradeoffs. They also asked the question: "how transparent can scientists be with decision-makers, if it may mean that decisions can't be influenced?"

Lastly, Gina and Sukaina noted how FRACTAL innovations are going to come from the project's transdisciplinary aspect, which in turn highlights the need to prioritise cross-institutional work, ways of working and capturing learning.

Matchmaking exercise

To end the day Gina Ziervogel ran a small exercise at the end of the day, asking everyone present to take two post-it notes and to write:

What do you have to offer FRACTAL?

What would you like to learn/gain from FRACTAL?

Participants were then asked to move around the room and share this with a participant they hadn't yet spoken to. Table 1 below provides an overview of the responses.

What I have to offer	What I would like to learn/gain
Games & Ways of experiential learning	Whether this sort of thing can work
To facilitate the project in my institution & country	Experience what does not work
Bigger Picture; critical view of climate society interface	How decision makers use climate information
Urban planning & design issues	The most crucial city-scale vulnerabilities

Hydrology: climate impact analysis	Insight into how climate sensitive decisions are made at the city level and what information(sources) are needed VS desired
Knowledge & expertise on water-energy nexus & management of opportunities, grants fund	How to reconcile incompatible paradigms
Engineering + developmental planning in Africa	How to work with different countries for the same objective
Information on informality & rapid urbanization in Lusaka City	How to meaningfully engage with cities and decision-makers/ how the embedded researcher will work
Process of group learning and research techniques to study how FRACTAL works	Understand how climate science can be used more efficiently in planning processes
Knowledge of regional climate dynamics and production of climate projections	Packaging of Climate information for decision-making to use in Lusaka
Knowledge of Southern Africa climate processes	Better understanding of the decision making process for African Cities
Expertise on climate data analysis	City specific challenges & learn how co-exploration and co-production can be used to incorporate climate information into decision-making at the municipal level
Tailor-made dynamic climate modelling	Acquire knowledge and information related to climate change that can be integrated into city planning processes
Climate change information at regional scale	How to use the climate information in a way that they are useful to policy makers
Translation of complex climate information to make it accessible	Project Management + Climate information sharing
WP2/WP3 intersection- Extracting + communicating climate information from the mass of climate data	New understanding on how to generate relevant information
Application of climate information in Urban planning	How other cities are integrating climate change considerations into decision making; what climate data could be available (how to decrease uncertainty)
Defining climate information relevant to decision context	Innovative ways of communicating climate information for use in policy making
Insight in the frontier on data- information aka the distillation dilemma	Insights into city decision making processes and entry points for climate information into decision making
Energy & curiosity	How cities can make use of climate information for policy making

Willingness to go to the third space	Enhanced sustainable relationships between science & decision makers
Humility & commitment to working towards a trans disciplinary approach	Decision making context and city governance context
Excitement for working across academia, government + implications for socio-economic development	Expecting practical results
City decision making/ policy experience	How to really influence strategic plans; overcoming common barriers and constraints
Real world context, decision making/policy development knowledge +challenges	Explore how to solve complex challenges altogether
Methods of understanding main drivers of decision-making	How is what I know relevant to city context?
Trans disciplinary working experience	How to simplify complex systems to allow information to have an impact
Multidisciplinarity: some understanding of science and the socio-economic aspects	To see if business as unusual works
Experience in multidisciplinary research/ 3rd space	Optimism that science can benefit society
Pass to link science with society	The potential for cities to reduce climate risk & address socio-economic goals
My bad experience from other projects	Willingness to come to third space
Organizational & Communication Skills	Jump into the unknown & learn (getting into 3rd space)
	Learning more about Theory of Change from the fractal involvement
	Willingness to learn + explore & build networks
	Tools/Model for Climate analysis

Table 1: Responses from match making exercise

Day Two: Hypotheses & Science Questions

Day two was focused on the project hypotheses and on formulating the science questions, in order to set the scene for developing workplans, actions and milestones

Session 5: Working in collaboration

The Marshmallow Challenge

Katinka Waagsaether ran the Marshmallow Challenge, an exercise where participants worked in teams to build the highest possible free-standing structure with a marshmallow on top. Participants had 18 minutes, and could only use uncooked spaghetti, string and tape as construction material. The exercise created some discussion and reflections on aspects such as working in teams under time pressure, group work dynamics and planning versus implementing.

Figure 2: Teams working on the Marshmallow challenge

For more information on the Marshmallow Challenge see:
http://marshmallowchallenge.com/Welcome.html

African Centre for Cities (ACC) CityLab Experience

The ACC CityLabs were set up to broker knowledge between the academy and broader society (in particular local government, but not confined to this) and also to broker knowledge between different disciplines. Each CityLab had to work towards a publication of sorts. these varied hugely, from online unreviewed through to books, and then peer-reviewed special issues. This was a galvanizing element, and one that was consistent across Labs. The ACC CityLabs varied hugely – some had a thematic focus while others were geographically informed. They all took different forms (seminar series, question-driven, reactive and so on).

Pippin Anderson from ACC shared her experience from running the ACC City-Labs. She started by noting the danger of getting bogged down in debates about terminology, and highlighted that while the CityLab space is a challenging work space, the challenges are not insurmountable. Pippin noted the following aspects, in terms of what worked and what did not work:

Engagement: Real co-production probably emerged most through question-driven Labs focused on joint projects. Forging boundaries between different disciplines was probably more difficult than linking people in the same disciplines across institutions. The establishment of TRUST between institutions was key, and achieved simply through exposure and listening and engaging.
Personal Growth: The personal growth opportunity for a young (ish!) researcher to lead a CityLab was fantastic. It exposed them to facilitation, academic framing, engagement, logistics, organisation, and all with a certain degree of autonomy.

The issue of publication: Publication was a focal element, but it also caused a lot of pain. Different writing styles, formats, making time to write, frustrations over different work cultures, the need to invoke theory versus a good practical story, people sitting on work and not sharing and so on. Negotiating this kind of space takes TIME.

Micro-politics: Personality clashes, who gets invited to participate, who doesn't, who decides, how is the money spent, what terminology from the field will be used, what methods, who sets the boundaries … and so on are all fraught issues. Participants were lost on these issues in a number of cases. The role of the leader is critical here. Tensions are unavoidable, but if managed well can be productive. Its ok to agree to differ.

Access: Both physical space and cultural space need to be considered. Not everyone feels comfortable in a university space. Neutral venues work best. Field trips and out doors gatherings were very productive spaces.

The personal biography of the CityLab leader: On reflection, the CityLabs team found that their personal interests, experiences, agendas as leaders had been pretty influential. It would be good to acknowledge this from the outset probably and to be aware of it.

In conclusion Pippin provided some key words that reflect aspects that the FRACTAL team should strive for: RESPECT, TRUST, RECIPROCITY, EASE OF ACCESS (cultural and physical), ALLOW FOR EXTRA TIME, BE BOLD, FUN, REFLECTIVE, FLEXIBLE (but establish some goals / direction), RECORD THE PROCESS.

Session 6: Intro to work plans

Articulation of Hypotheses and Questions

Bruce Hewitson did an introductory presentation to set the scene for group work on the articulation of the project hypotheses and science questions.

A few points were raised and discussed after Bruce's presentation:

- Creating workplans in which work packages link might require plenary discussions;
- Should we be linking the hypotheses and questions to the Theory of Change?;
- Where do we start thinking about the enabling environment that ensures co-production, rather than working in silos?;
- Need to think about the real impact that can be created (important for DFID);
- Let us really encourage the city people here today to co-produce the science questions with us;
- Need to ensure that the questions that we come up with integrate across the project.

Refining project hypotheses

Participants went into a group work session based on the World Café approach, with four different stations, each anchored by two facilitators. There were three stations focused on work packages, each of which focused on refining the hypotheses related to that work package. The fourth station was city focused, and led discussions around the development of the city engagement structures and activities. As per the World Café approach groups had a set time at each station, and everyone had the opportunity to rotate and give input at at least three stations.

From the discussions at the different stations the facilitators collated a document that provided a framing for the next session by outlining the outputs from the World Café hypotheses discussions and providing guidance on how to develop science questions (document will be available online).

Developing specific science questions

Participants split into three different groups according to work packages. In each work package the group worked on articulating research questions in order to frame the multi-year directions and the 1st year goals. Some participants moved between the different research packages, in order to ensure cross-fertilization and to try to avoid overlaps.

Day 3: Year 1 Work plan development

Day three was focused on bringing the discussions of the previous days together into a cohesive whole.

Session 6 continued: Intro to work plans

Work package feedback on science questions

A representative for each work package fed back to plenary, outlining the science questions that had been developed on the previous day.

The following questions were collated by the work packages:

Work package 1:

1. How effective is co-exploration as a research and learning tool in fostering collaboration?
2. What enabling factors (i.e. mechanisms, conditions, skills) need to be created for co-exploration to integrate climate information into decision making?
3. What are the constraints that undermine the integration of climate information into decision making into cities?
4. To what extent does co-exploration contribute to mutual learning (intra & inter city) and good governance that leads to decision making for climate resilient cities?
5. Does co-exploration lead to identifying and addressing climate issues, information, integration, and decision making?
6. Besides embedded researchers, what are other useful methods that can be used in integrating climate information into decision making?
7. What are the attributes of risk information that will facilitate its use in decision making? (availability, relevance, accuracy, legitimacy, credibility)

Work package 2:

1. What form (scale, time horizon, resolution, confidence, type-means, thresholds…) of climate information proves useful in decision making in the co-exploration framework?
2. And how does it relate to what can possibly be made available, interpreted and presented?
3. To what extent and how does co-production of knowledge change the practice of decision-making in cities?
4. Who are the city “decision-makers” (multi-scalar)?
5. What are the power relations in city?
6. What sort of decisions are in the domain of cities?
7. What are dominant discourses in the city?

8. Where is the current institutional position of climate change in city governance?
9. How could decisions be made to ensure implementation? What makes a difference between implemented and unimplemented decisions?
10. To what extent does climate information currently inform decision-making in all sectors within city governance?
11. What is the added value of climate-related information in city decision-making context (currently, and potentially)?
12. Can interactive learning process support decision-making at longer time scales?
13. Does institutional position of climate change in city structures affect effectiveness of adoption/uptake of climate information?
14. How do planning frameworks used in city context incorporate uncertainty, in theory and in practice?
15. How much uncertainty in climate information can cities tolerate?
16. What constrains and enables considering climate change as a significant issue in city decision-making?
17. What prevents climate change from being seen as socio-economic rather than environmental issue?
18. What is the role of physical and governance local-regional linkages in climate change relevant decision making? (e.g. catchment boundaries extending beyond city…)
19. What influences/defines resilience in African cities?
20. What is the practical meaning of "low-regret decision-making" in the context of southern African cities? ('robust decision-making')

Work package 3:

1.

a) What are the relevant baselines and their associated uncertainty in the observations/observationally-based products? (Both climate and non-climate.)
b) How do we quantify it?
c) How does it vary with temporal and spatial scales, e.g. macroclimates (province/nation scale) versus microclimates (within cities)?

2. What are the multi-scale (time and space) atmospheric/land/ocean drivers, processes, process chains, and interactions that drive local scale climate variability and long-term climate change?

a) Includes: external drivers (e.g. land use/cover change); meathods of identification / indexing

3. What are the causal reasons for the range of projections from predictive tools and methods (e.g. GCMs, downscaling methods, and spatial disaggregation methods)?

a) At the process-based level (multi-scale in time and space), including inter-process relationships.
b) At the method level
c) How do we use this understanding to form more defensible messages?
d) How does this inform the disaggregation of sources of uncertainties

4. How could climate scientists better analyze the spread of data to facilitate the co-production of useful climate information for the impacts/adaptation/vulnerability practitioners?
    a) Within the specific context of the vulnerabilities of partner cities.

Some issues raised in response to the questions presented:

- Concerns around the very different framing of the various questions;
- The time frames for which the co-exploration "outputs" are actually incorporated into policy/plans may not align with the project time frames;

- If different models giving different results we won't use this information for city decision making. So how to communicate the variance between different model outputs so that the city persons can understand that this is still relevant information?;
- We are looking to understand *why* the models are giving different answers, though in some cases we won't be able to say that.

Session 7: Actions and Milestones for Year 1 Work Plans

Thematic Clusters of Collaboration Task Teams

It was decided that rather than working on actions and milestones in work package groups it would make more sense to establish thematic cluster task teams. The following thematic clusters, with the following leads (co-chairs) were established:

Thematic Cluster:	**Co-chairs:**
City Learning Cluster	Anna Taylor & Bettina Koelle
Climate Information Cluster	Richard Jones & Chris Jack
Water and Energy Baseline Cluster	Simon Dadson & Piotr Wolski
Decision Making Cluster	Sukaina Bharwani & Sarah Schweizer
Cross-cutting integration	Tahia Devisscher & Anna Steynor

The co-chairs set up working stations for each thematic cluster to start fleshing out actions and milestones for the first year of the project. Workshop participants joined the thematic clusters most relevant to them. As most people will be contributing to more than one thematic cluster, participants were encouraged to rotate and input on several clusters. Inputting on several clusters was also encouraged as a means to try and cross-fertilize between the clusters, to avoid overlaps and to work towards alignment between the clusters.

The co-chairs for each thematic cluster then presented their actions and milestones back to plenary. See Appenix X for a summary of the preliminary actions, milestones and timeframes presented by the co-chairs. It should be noted that these are all work in progress, and will need to be refined in the first quarter following the inception workshop.

Points raised in response to the various presentations include (agreements that were made are in bold):

- **It was agreed that the water and energy baseline cluster will be leading the baseline work,** with the climate information cluster and other key people contributing;
- Identification of the key issues will anchor all the baseline work;
- Baseline documents will be dynamic, evolving documents;
- Instead of Fractal providing information, they will depend on information from the local stakeholders;
- Suggested overlap between water and energy baseline cluster and the decision making cluster in terms of workshops and engagements and collation of information;
- The water and energy baseline cluster work also overlaps somewhat with the city learning cluster baseline work;
- The key thing for the water and energy baseline cluster will be to work on a specific context;
- City learning cluster needs to think about the science questions that they are working towards;
- Small opportunity grants are for Fractal, not just cities. So the screening committee needs to include representatives from a variety of thematic clusters. It was **agreed that small opportunity grants should be moved to the cross-cutting group, still managed by Niki West**;
- Concerns that the project is creating "orphans" with the tier 2 cities, and that they should therefore be favoured for the small opportunity grants;
- There is a gap in the questions, as the distillation challenge is not apparent. Might need to add some text to make this clearer;
- The decision making cluster needs city representatives on its task team;
- Maputo is the only Portuguese speaking city, so materials, website, newsletter etc, would need to be translated;
- The PAT group names are still being finalised. Mark New provides a direct link to Future Earth;
- Would be good if next project meeting could tag on to learning lab, as there are concerns about travel budgets. Next meeting in about 12 months from now;
- The embedded researchers, they could be employed staff but also graduate students. FCFA will not fund students (bursaries), but this does not mean that embedded researchers can simultaneously be a student;
- If embedded researchers publish then the host institution and FRACTAL would take credit;
- It would be good to have some focal points for other FRACTAL activities, ie Richard Jones to be focal point for IMPALA;
- Climate Change and Development in Africa (CCDA) have their annual conference in late October this year. The Africa Climate Research for Development (CR4D) programme will have an official launch at the conference, and it might also be an idea to launch FRACTAL at the conference/have FRACTAL representatives present.

Additional actions that were highlighted through the discussions:

- Cross-cutting cluster to map actions and milestones back on the Theory of Practice;

- Cross-cutting cluster to trace the outlined year 1 actions and milestones back to the proposal, to ensure that nothing is missing (look at log-frame etc).

Important admin issues that need to be flagged:
- Contract between University partners and UCT need to happen;
- Research permits need to be established;
- Need to establish with UCT whether an ethics clearance is needed.

Session 8: Project logistics and finishing up

Communications & Platforms
Chris Jack gave a presentation on the sharing of information and on potential mediums for communication.

Points raised in response to the presentation:
- Concerns around the practicality of using google docs, and the fact that some institutions block access to gmail,
- Some institutions are barred from using a number of websites, including Skype,
- Need to engage with cities and stakeholders around what the best tool for conferencing setup would be (video conferencing, Skype etc),
- Need FRACTAL info on WeAdapt on the website
- It may be worth setting up coms@fracta.com
- May need a Q&A section on the website

Official closure of plenary sessions
Bruce Hewitson thanked everyone for their participation and engagement in the workshop.

The rest of the day was open to self-organised bilateral meetings and ad-hoc working groups.

Appendix

Appendix A: Workshop Programme

(note that this was the pre-planned programme, which evolved somewhat during the course of the workshop)

Wednesday 12th August 2015 : Intro and focus on city partnerships (Chair: Bruce) *Day 1 is focused on the city partners; getting to know them and their context, and exploring how this frames the whole project.*			
Time	**Agenda item**	**Facilitator**	**Rapporteurs** *(KW chair of rapporteur team)*
8:30-9:00	Registration	Ruwani	*TBD*
	Session 1: setting the stage (plenary) *Session deals with the obvious get to know each other, meeting objectives and outcomes, etc. Equally, the session is to establish an awareness that we are multi-disciplinary with all the challenges that entails, and that we need to work around our competing language sets and differing priorities.*		
9:00-9:15	Welcome and opening remarks ● Expectations / Language sets / Terminology ● Objectives and outcomes ● Assumptions and presumptions	*BH*	*TBD*
9:15-9:45	Exercise on working in a 3rd space	*DS/AT/KW/CJ*	*TBD*
9:45-10:00	Overview to ensure we have a common understanding (plenary) ● Principles to set the stage - Articulation of science questions that require multi-institutional collaboration	*BH*	*KW*

	- Equal partner co-exploration founded on fundamental research ● Very quick overview of project elements to address immediate concerns, and these topics will be picked up further in closing session: Finances, Logistics, Project Management, Communications, Points of contact and key responsibility roles, Website, Document management, etc. ● Brief Q&A		
10:00-10:30	Overview of theory of Change ● What is theory of change ● The FCFA program ToC FRACTALs ToC	*CJ + AT*	*SB*
10:30-11:00	Tea		
	Session 2: Cities Partners (plenary) (Chair: Chris Jack) *This session focuses on developing a common understanding of the relational collaboration that is fundamental to the project.*		
11:00-11:40	Presentations a) Relationship principles – working in a 3rd space - How these can / should evolve - Building an organizational web of links - Evolving a network and growing a community of city people b) Developing relationships - Within the cities (differentiating roles) - Between the cities (Tier 1, 2 and self-funded) - Between city partners and research consortium partners - Cities<>work package overlay	*AT + DS + BK*	*TD*
11:40-12:30	Narratives of city policy-making plenary: 1 hour: One government person from each 4 Tier 1/self-funded cities: 10 minutes to tell a story of an experience in policy-making or strategic planning in their city that reveals key challenges / needs / opportunities	*CJ*	*KW*

12:30- 13:30	Lunch		
	Session 3: Breakout groups – structural questions (Lead off: Bruce) *This session uses breakout groups to address the context of the cities, exploring the functional issues of importance to how the project could best engage and co-produce new and useful knowledge.*		
13:30 -15:00	Cities breakout A (1.5 hours): focused on mapping out the people, activities, linkages, and opportunities in relation to the Tier 1 and 2 cities. ● Break out into 4 groups with facilitators: 2 x city groups, 1x Work package 1&2 group , 1 x WP3 group. ● Use a provided set of points as a starting point for – use powerpoint / doc reporting template to capture discussions. Relevant issues to address include: - Grounding the purpose of the project (main practical impact we aspire to) - Roles and responsibilities of city partners relating to embedded researchers, city learning labs and other project activities (who will be involved centrally, and as additional collaborators) - Key contacts / networks / organizations to be reached out to - Other ongoing activities / initiatives of relevance - City twinning – key relational linkage opportunities - Ideas for facilitating researcher-city partner twinning - Important regional dependencies - Giving the project visibility among the broader city structures - Mapping city interests onto work packages objectives / hypotheses - Considering research topics and themes of priority	*AT / BK / Di / GN*	Nominate group rapporteurs
15:00-15:15	Tea available from 15:00 …. Groups can continue discussions as needed to 15:15		
15:15-16:00	Plenary Report back (45 minutes, i.e. 10 minutes per group based on the provided template) – emphasis on hot spots, overlaps, priority challenges, issues`	*JD*	*CJ*
	Session 4: Short breakout groups followed by assessment of initial emerging issues		

	The session is to seed the thinking for day 2.		
16:00-16:30	Breakout B: 3 x mixed groups for preliminary brainstorming about the relevant information content needed for building an effective science-policy relationship – begins the thinking for day two on science plans	*MT, AS, TD*	
16:30-17:00	Plenary report back from groups	*BK*	*AS*
17:00-17:30	End of day analysis	*Gina + Sukaina*	

Thursday 13th August 2015 : Year 1 Workplan development (Plenary + breakouts) *This day is substantially set aside to work in an intensive manner on the science work plans.*			
Time	**Agenda item**	**Facilitator**	**Rapporteurs**
	Session 5: Working in collaboration (Chair: KW) *Framing the thinking for developing the work plans*		
9:00-9:30	Marshmallow challenge about collaboration	*KW*	
9:30-10:15	African Centre for Cities city lab experience	Pippin Anderson	
	Session 6: Building work plans *Development of work plan that establishes the high-level science questions and actions (recognizing that these can/will evolve), along with explicit science questions that will steer the 1st year outcomes and put in place the necessary knowledge foundations for subsequent years.*		
10:15-10:30	Intro to work plans: guidance on objectives and outcomes.	*BH*	
10:30-10:45	Tea – take tea into groups		

10:45-12:30	World Café on high level articulation of project hypotheses and questions through a trans-disciplinary lens, building on proposal content and recognizing review comments that hypotheses are too broad. 5 stations. ● The first 3 stations are based on the hypothesis table with 2 hypotheses per station - refine and expand hypotheses into multi-year and 1st year science questions. ● The 4th station will consider the development of the city engagement structures and activities which include o Embedded researchers – proposed structures and plans o City lab implementation modalities o Visits and internships o Ideas of regional small opportunity grant proposals	*WP1: SB* *WP2: DS* *WP3: RJ* *Stn #4: AT/BK*	
12:30 -13:30	Lunch		
13:30-15:00	Three breakout groups by work package: Develop specific science questions appropriate to the project objectives, and for framing the multi-year directions and the 1st year goals. ● Project wide targets ● Work-package specific targets ● Deliverables ● Points of inter-connection / synergy ● Assumptions and (presumptions) ● Primary cross-institutional dependencies and collaborations Outcome: A work package specific set of scientific objectives and associated dependencies and collaborative interactions. *Groups to note any outstanding questions that can benefit from more thinking/discussion on Friday afternoon.*	*WP1:AS/T+SS* *WP2: PW + DS* *WP3: DAS + RJ*	In group rapporteurs to be chosen
15:00 -15:30	Working Tea – get your teas as appropriate and continue in groups		
15:00-16:30	Breakout groups continue: Shifting focus to work package activities and work plan.		

	Outcome: a detailed year 1 work plan + gantt chart, identifying sequencing, roles and responsibilities, inter-institutional collaboration, and specific action items. *Groups to note any outstanding questions that can benefit from more thinking/discussion on Friday afternoon.*		
	Homework: delegation of task teams to prepare a work plan document for presentation the following morning		
7:30pm-10pm	Group Dinner		

Friday 14th August 2015 : Review of work plans, discussion of logistics *This half day is intended to bring the prior todays discussions together into a cohesive whole.*			
Time	**Agenda item**	**Facilitator**	**Rapporteurs**
	Session 7: Reviewing workplans		
9:00 -10:15	● Presentation of work package work plans from previous day (Plenary) with discussion	*CL*	*KW*
10:15-10:30	Tea		
10:30-11:00	Three breakout groups mixing work package participants ● Identification of critical action items and responsibilities ● Critical dependencies (of sequence and knowledge) ● Identifying cross-cutting issues in need of further attention One breakout group to distil discussions so far in relation to the FCFA ToC. *Groups to note any outstanding questions that can benefit from more thinking/discussion on Friday afternoon.*	*BK, FC, GM*	
11:00-11:45	Plenary report back	*BH*	*TJ+AT*

	● Discussion of key elements for developing the integrated work plan ● Review of action items		
11:45-12:30	**Session 8: Project logistics and finishing up**		
11:45-12:30	Presentations with Q&A around ● TOR / Log Frame ● Finances ● Logistics ● Project Management ● Communications ● Points of contact and key responsibility roles ● Website ● Document management ● Synergies	*BH*	*JK*
12:30-13:00	Final comments and discussion	*BH*	
13:00-14:00	Lunch		
14:00 till as needed	**Session 9: Follow through discussions for those available**		
Afternoon	Ad-hoc working groups to initiate progress or define any unresolved next steps, and drawing on identified issues that need follow-up which emerge from the breakout groups.		

Appendix B: Workshop Participants

Last Name	First Name	Institution/ City	Email
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Appendix C: Preliminary Task Teams

(Preliminary, based on flipchart sign-ups at workshop)

City-learning

Co-chairs	Anna	Taylor
	Bettina	Koelle
	Anna	Steynor
	Dianne	Scott
	Goabamang	Lethugile
	Mzime	Ndebele-Murisa
	Kenneth	Gondwe
	Friedrich	Koujo
	Olavi	Makuti
	Sukaina	Bharwani
	Monica	Coll Besa
	Katinka Lund	Waagsaether
	Niki	West
	Tamara	Janes
	Richard	Jones
	Jonathan	Mwanza
	Jess	Kavonic
	Meggan	Spires
	Gilbert	Siame
	Tahia	Devisscher

Climate-information

Co-chairs	Chris	Jack
	Richard	Jones
Implementers	Rutt	Butterfield
	Genito	Maure
	Piotr	Wolski
	Daithi	Stone
	Mark	Tadross
	Alessandro	Dosio
	Goabamang	Lethugile
	Olavi	Makuti
	Izidine	Pinto

Water & Energy baseline

Co-chairs	Piotr	Wolski
	Simon	Dadson
	Genito	Maure
	Daithi	Stone
	Mark	Tadross
	Mzime	Ndebele-Murisa
	Kenneth	Gondwe
	Friedrich	Koujo
	Grigory	Nikulin

Decision-making

Co-chairs	Sukaina	Bharwani
	Sarah	Schweizer
	Anna	Steynor
	Anna	Taylor
	Fernando	Tavares
	Izidine	Pinto
	Katinka Lund	Waagsaether
	Monica	Coll Besa
	Richard	
	Tahia	Devisscher
	Joseph	Daron
	Chris	Lennard
	Jess	Kavonic
	Dianne	Scott
	Chris	Jack
	Bettina	Koelle

Cross-cutting

Co-chairs	Anna	Steynor
	Tahia	Devisscher
	Niki	West
	Mark	Tadross
	Sukaina	Bharwani
	Monica	Coll Besa
	Katinka Lund	Waagsaether

Appendix D: Draft Actions & Milestones

Actions & Milestones	2015	2016			
	4th quarter	1st quarter	2nd quarter	3rd quarter	4th quarter
The Cross-cutting integration Cluster					
Co-chairs: Tahia Devisscher and Anna Steynor [Katinka Waagsaether]					
Map clusters to proposal (ToC and log-frame)	■				
Initial summary/overview of similar initiatives taking place in the cities, regions and globally	■				
Emailing list	■				
Google sheet that tracks all FRACTAL meetings	■				
Forum space on project website	■				
Set up Joint Working Group (JWG)	■				
Steering committee for small opportunity grants establised	■	■			
Criteria and focus for accessing Small opportunities grant defined and circulated for comment to partners		■			
Call for small opportunity grants published			■		
Projects are funded through the grant and learning is documented				■	■
Monthly Leadership group Skype meeting	■	■	■	■	■
Quarterly Skype meeting for JWG		■	■	■	■
Quarterly bulletins		■	■	■	■
Bi-annual meetings with Tier 2 city representatives		■		■	
Annual project meeting					■
Annual newsletter					
Project reporting to donors					
The City-learning Cluster					

Co-chairs: Bettina Koelle and Anna Taylor					
Contract between university partners and UCT					
Template for learning exchanges					
Job description and advertising embedded researchers					
MOU between city, university and UCT					
Meetings on city level learning labs and next steps					
Employ and brief embedded researchers					
Short report on briefing meetings in cities and plan for Learning lab					
Tier 1 & 2 city baseline reports					
Hold learning labs (links to decision-making cluster)					
Formulate research questions Learning Lab process report					
The Decision-making Cluster					
Co-chairs: Sukaina Bharwani and Sarah Schweizer					
Create TOR for task 2.2					
Finalise city profiles					
Climate baseline report (where we are – IMPALA)					
Interim city report (burning issues)					
Targeted/focused report on task 2.2 (1 city)					
Baseline reports for climate & non-climate information					
Water-energy city profiles					
1st Learning Lab					
Full task 2.2 report (3 cities)					
The Climate-information Cluster					
Co-chairs: Chris Jack and Richard Jones					
Lit review on state of knowledge of Southern African climate					
Inputting on baseline					
Draw from initial city meetings to start to understand where climate information could be used. For input into learning labs					
Water & Energy Baseline Cluster					

Co-chairs: Piotr Wolski and Simon Dadson					
Identification of focal issues and their adoption for the purpose of the project					
Workshops/meetings in tier1 cities					
Engagement with relevant stakeholders					
Collation of and report on baseline physical information relevant to the identified issues					
Identification of non-climate information and research gaps					