**Feedback analysis**

Some of the feedback can be more lengthily than needed, has spelling mistakes or aim at experimental procedures (not part of support feedback but experiment). Therefore, the following changes have been:

1. Spelling/grammar: mistakes were corrected, and sentence structure improved, without changing the intend of the sentence.
2. Adjustments: some of the comments were written in a hurry and sometimes unclear or even difficult to understand at all. Based on the end-interviews (also used in the next section) the answered were made slightly more comprehendible.
3. Disregarded: the feedback on the design, execution of any other procedural aspects of the experiment (not the support).

**Coding**

To keep track of the author of the feedback a coding is used:

The student coding starts with and S followed by a dot and finished with the Initials, for example: S.PR.

The architect coding starts with an ‘A’ followed by a dot and also finished with the initials, for example: A.AK

As the main objective is to improve the support based on the feedback, numbered bullets are used for a more effective overview (the number can later be used to keep track of suggested changes). Below each bullet a short reflection is given to justify if the feedback should be used to adjust the support (A), if an adjustment is not required (R) or if the usability is confirmed (C). As the support tool is divided in three sections (introduction, actor and observer) the feedback is divided accordingly. Every chapter starts by indicating who gave chapter feedback (Y) and who did not (N). That users did not state a chapter feedback does not mean they had recommendations for the chapter, however, that they were minor textual adjustments.

#### Introduction Section (five chapters)

**Chapter III, Introduction (feedback page 14, support tool)**

**A.AK: Y**

**A.JK: N**

**A.CN: N**

**S.PR: Y**

**S.DV: N**

**S.MD: N**

1. A.AK: For the users some uncertainties remain in applying the roles (actor/observer) in the field (if it’s better to swop roles during lunch or should the roles remain for the whole day).
   1. A.AK: The benefit of switching roles is that both members stay focused during the day, although the overall process might take longer.
   2. A.AK: The benefit of not swopping roles is the clarity of the person being in charge for that day (preparations and responsibility).
   3. S.PR: With the actor in charge all day this requires a lot of energy and focus.

(R): Changing the roles daily would make the preparation and communication to the family clearer. However, as stated by the architect as well as the student there will be more focus and energy when the roles are divided per half day.

1. A.AK: Right now, the support prescribes the weekly feedback session (observer to actor) on Sunday, however, as the teams work 6 days in the field, they need the resting day.

(A): The architect is absolutely right. With the participants already working 6 days a week, the reflection on Sunday would require too much of their time.

**Adjustment chapter: daily sessions should either be prolonged, or the weekly session should be held on Saturday.**

1. S.PR: After explaining the actor/observer roles to the family it does not seem necessary to wear something identifying (observer). The family knows after stating who the observer of that day/part of the day is and therefore they will remember.

(A): Although the student makes a fair point this might not apply to every family, moreover, not to visiting people that are unaware what is going on. However, an addition could be made for the families that do understand.

**Adjustment chapter: add a short section that a clear indication of the observer role is only necessary when you notice that the family has difficulties to remember.**

**Chapter IV Explanation Key Topics & Chapter V Pilot Projects & Travel Preparations (feedback page 29 & 32, support tool):**

**A.AK: Y**

**A.JK: N**

**A.CN: N**

**S.PR: Y**

**S.DV: N**

**S.MD: N**

1. A.AK: The chapter states that reaching unsustainable solutions like iron sheets roof is not good. Based on our research, iron sheet can be used and still be sustainable in many points.

(A): Not all characteristics of the iron sheets are bad (for example: durability).

(R): However, the fact that ending resources are being used in its production, the material is non-local and expensive, remain important factors why the iron sheets are an unsustainable material.

**Adjustment chapter: the statements made in the key topic text should be nuanced.**

1. A.CN: One team stated that the support should elaborate more on a proper preparation.

(A): This comment was made at Chapter II of the actor section, however applies to the preparation section of the support. The user felt that more could have been read and studied of the support prior to departure, which is indeed true.

**Adjustment chapter: therefore, the Introduction chapter should inform which parts of the support could be read in preparation to the project.**

1. A.CN: it could be really useful to have a lecture or training before using the support (specifically on how to use the book).

(A): In addition to the previous point a lecture on the support tool (possibly online) could help preparing and understanding the application of the support.

**Adjustment chapter: An online lecture should be provided on how the support works and how you can prepare for an upcoming project.**

1. S.PR: The described equipment (GoPro) lacked sufficient battery capacity (two batteries used during pilot project) and with uncertainties of electricity in the field the prescribed battery capacity needs to be enlarged.

(A): The batteries and chargers of all the equipment were indeed insufficient to work with in the field.

**Adjustment experiment: additional batteries and chargers were bought for all the equipment.** Although, these are part of the experiment design and not the support.

1. S.PR S.DV: it would be very helpful if every chapter starts with the expected outcomes.

(A): the chapters at the moment introduce what the chapter will describe however does not elaborate what is expected as the outcome. It would be helpful if the users know what the expected outcomes is and how this connects to the other chapters.

**Adjustment all chapters: add to the introduction of every chapter a short description what is the expected outcome.**

#### Actor Section (ten chapters)

**Chapter I, Introduction to the family** **(feedback page 46, support tool):**

**A.AK: Y**

**A.JK: Y**

**A.CN: Y**

**S.PR: Y**

**S.DV: Y**

**S.MD: N**

1. A.AK: It would be helpful to let the family introduce themselves after the team does.
2. Indeed right now the support at the moment does not describe a section where the family introduces themselves. If the users of the support start this could give the family to calm down a little and give ideas what they would to say themselves.

**Adjustment chapter: Change section to include introduction of the family to the team.**

1. A.AK: The GoPro observation should not be outside in this phase but inside (observes the observer in this way and is safer).

(A): Although outside the house the observation gives valuable insight in everyday activities, however limited insight on what is happening in the house. In this part of the research most activities take place inside and therefore to have the macro observation inside the house would give more insight.

**Adjustment chapter: Change in the observer section that the macro observation can be more flexible (does not have to be on the same point all the time). The importance of the macro observation from a fixed point is mainly in the building process.**

1. A.JK: One of the teams stated that the support seems specifically for foreigners and students. To what extent does is apply to locals (introducing yourself as a local is completely different)?
   1. However, stated that: interaction criteria apply to everyone in a new environment (even within the same country).

(A): The support could have stated more clearly that the support Is developed for any engineer or designer operating outside their own country. However, that some sections might be useful for local operation.

**Adjustment chapter: In the foreword and introduction the support should state more explicitly that it was developed for engineers and architects operating in a foreign country. However, that some sections might be useful for locals.**

1. A.CN: Additionally, that a diagram in the beginning of the book would increase understanding of the overall framework of the support tool.

(A): Indeed, at the moment the multitude of chapters, steps within the chapter and mixed methods can become unclear while using it. Adding an overview that shows the reader where they are could help increase the comprehension of the support.

**Adjustment chapter: A general diagram indicating the various chapters, steps and outcomes needs to be added at the beginning of the support. A flowchart per chapter would help understanding the logic of the chapter itself and therefore should be added.**

1. S.PR: It’s strange to start introducing without filming and then repeat the process with filming (also causes unnatural behaviour).
2. Although this was done to protect vulnerable families by not immediately start filming, it does however practically not make any sense.

**Adjustment chapter: remove the initial introduction to the family and just start immediately with the section in which the teams introduces themselves to the family.**

1. S.PR: The users advise to start swopping actor and observer role after making the introductions (in this way everyone is more comfortable).
2. The original idea was to let the team practice for the first time and make sure observation setup and execution are in order. For the introduction this indeed does not seem to work and makes the situation more awkward than nesecarry.

**Adjustment chapter: change the actor section where they have to swap roles and remove the observer section.**

1. S.DV: Some notions are briefly introduced and lack explanation why something is advised not to do (for example: not wearing t-shirts and shorts).

(A): For students this is understandable, however, for the architects would not need to be required. However, it could not hurt to explain a little more extensively on why this is not desirable.

**Adjustment chapter: extend the explanation in this chapter on appropriate clothing, check the description in the introduction chapter and make an overall check if notions are described extensively enough throughout the support.**

1. S.DV: Feels that any tips that would help the family to be more comfortable and open up would really help in the introducing phase.

(A&R): Some precautions were made to protect the family, however, due to the chosen methods and roles, the family can become very uncomfortable. Although in these first meetings with the families there is little you can do about the discomfort.

**Adjustment chapter: check if games, playing or other activities could be added to the introduction with the family. For example: a dice game in which every number reveals something about the team and the family.**

**Actor Section, Chapter II Interview Daily Routine (feedback page 54, support tool):**

**AK: Y**

**JK: Y**

**CN: Y**

**PR: Y**

**DV: Y**

**MD: N**

1. A.AK: As a you female asking questions to the father might antagonize him.

(A): differences in age and sex are indeed factors that can complicate the cooperation between the team and the family. This is a very difficult factor to prevent. The only way to prevent these sort of difference is to make the families aware before they apply who will be participating and if they willingly accept the differences.

**Adjustment experiment: Add a section in the project contracts which states that there might be age and sex differences, that the family accepts the teams’ expertise and opinion (this is also an important topic for other comments in relation to the families disregarding the opinion of the teams as they are not local experts)**

1. A.AK: restructure the part where suggestions for questions are made. Here a general conversation about their daily activities would help them to write down questions in preparation to the interview.
   1. The interviews are quite universal, what is it that we would like to know? There should be more relation between the daily routine and their way of using the house and space in general. You easily and often get lost in information you are not really interested in.

(A): the presented interview is quite universal and is there some doubt how much useful data is being collected. For example: more specific questions on daily routine and house usage, could create more directly applicable data.

**Adjustment chapter: the interview guide and chapter should be adjusted to a more freely interpretable format. Here the users are requested to formulate all questions by themselves and only examples are given.**

1. A.AK: Also the interview instructions are being repeated, showing them once is sufficient.

(A): the instructions were only repeated to make sure that they were used. This should be optional and not physically repeated in the chapter.

**Adjustment chapter: remove the repetition of the interview instruction in the chapter.**

1. A.JK: To gain a more in-depth understanding the teams stated that more time is needed, the family needs time to start feeling comfortable (also seen in what is said off the record: outside the planned activities).

(A): it really takes time for the families to get to an acceptable level of comfort around the team. When the interview comes to early it can actually scare the family a little.

**Adjustment chapter: suggest making this chapter interchangeable with the next chapter. The dreamhouse chapter is a playful way of getting to know the family and could make them more comfortable.**

1. A.JK: Moreover, some of the family members struggle to communicate in English which obstructs the progress of the research phase.

(A): selecting families on their ability to speak English is a nonpreferable criterium for family selection. However, when the families do not speak English well this can have substantial consequences for the progress of the teams.

**Adjustment experiment: the language criterium in family selection should have a heavier weight in relation to the other criteria. This criterium should not only apply to one family member but for the entire family.**

1. A.CN: The teams found that the children seem to give untrue answers during the, which is understandable as they are nervous. Moreover, that they struggle to comprehend if the family members are answering truthfully.

(R): the support describes mixed methods to analyse the family’s situation. This design lets the differences submerge. This can be experienced as confusing but is actually the idea behind the design.

**Adjustment chapter: add in the section that differences in findings are actually positive. The chapter should explain how different findings can be weighed to pinpoint the actual fact.**

1. A.CN: The teams felt that without a proper explanation how the support should be used a lot of time is wasted.

(A): As stated earlier an online lecture which introduces the support would help understanding the overall framework. A flowchart at the beginning of the support which is repeated each chapter with the expected outcomes in the chapter introductions would help increase the effectiveness for applying the support by the user.

**Adjustment chapter: make an online lecture(s) available on the application of the support. Make a flowchart on the layout of the chapters and the expected outcomes. Clearly explaining the overlap between the chapters and the overall application.**

1. A.CN: With so many things at play it was difficult for the teams to evaluate the effectiveness of the support.
   1. S.DV: Generally, the users felt that the time available in the experiment was very constrained and therefore they should be allowed to make compromises.
   2. S.DV: Make outcomes known/visible earlier (collecting of data) so users know what they are working towards. In this way users don’t have to go back to their data afterwards but can use it directly in the future.

(A): due to the complexity of the support and the amount of times applying the support takes it is difficult for users to keep track of usability/applicability of the support. Feedback on the support therefore is limited and should the results be perceived from this limitation.

**Adjustment chapter: clearly state in the result chapter of the dissertation that the feedback is limited to the time constraints and should state that further research is required to get more fundamental understanding of the application of the support. Reducing the overall support (combining chapters) would increase available time and level of detail of the feedback.**

**Actor Section, Chapter III Family’s hopes and dreams, (feedback page 64, support tool):**

**AK: N**

**JK: Y**

**CN: Y**

**PR: Y**

**DV: Y**

**MD: Y**

1. A.JK: The family’s understanding of 3d is not fully developed/used.
   1. A.CN: some of the users found that drawing and modelling can be too difficult due to a lack of experience and spatial insight of the family.
   2. S.DV: clay is more intuitive and could help the family members in expressing their preferences, although they often tend to stick to aesthetics.

(A): both drawing and modelling with the family had their challenges, CN&DV used clay in their workshop which helped the family to address their wishes and desires in a three-dimensional way.

**Adjustment chapter: the chapter should give more alternatives in types of approaches to collect the wishes and demands (extend state of the art analysis), materials and tools. Offering the users the option when one type does not work or makes the family uncomfortable, with alternative approaches. This would also mean that the framework should become more ‘optional’**

1. A.JK: Culture affects how the different family members use space.
   1. A. JK: There is a huge adherence to culture with Cleophas, that is not evident with the rest of the family.

(A): Due to the traditional roles within the families, the parents (especially father) often have a more conservative perspective on spatial usage and division. The children are often unaware of these ‘restrctions’ and might their answers cause spatial insensitivities.

**Adjustment chapter: The support should separate the observations of the children and parents and weigh them according to their priority. Although the children’s desires and dreams are very important, they should be fitted according to the preferences of their parents.**

1. A.JK: In general, the chapter is perceived as valuable and helps the teams to engage the families and increase understanding of their desired housing.
   1. A.JK: Very important chapter
   2. A.JK: The drawing workshops are very crucial to understanding what the family wants. A very fun method to engage the individuals dreaming up their new house.
   3. A.JK: A very important step to introducing the community to architecture as a discipline
   4. A.JK: The modelling workshops were more beneficial since the participants are able to articulate their ideas more effectively in 3 dimensions as compared to 2d drawings.
   5. A.CN: the time spent together working on the model made a lot of progress and led to nice interaction (team with family). Moreover, was useful to set the families information.

(C): Identifies that this chapter should remain.

1. A.CN: dreaming of a house can be an odd concept for people that don’t dream or do not understand the notion of dreaming. Moreover, is dreaming something very fragile and personal. Therefore, the users advise to remove the word dreamhouse and replace it for something more suitable.

(A): Indeed, the title seems insensitive towards the current situation of the family and should be adjusted.

**Adjustment chapter: change the title of the chapter and adjust all words in the chapter (dreamhouse) for desired housing.**

1. A.CN: They also suggest adding a step before the drawing and modelling on zoning planning (here the family looks at the type of rooms and sizes).
2. S.DV: Next to drawing and modelling you could also let the user do a sector plan workshop to focus on functions because the families tend to stick to aesthetics.

(A): although a program of demands is made available through the support (offering amount, type and size of rooms) the step towards a floorplan is too complicated. Adding a section on in this chapter to try to make a zoning plan would help the family substantially in sketching the desired house. The remark of S.DV addresses the same matter.

**Adjustment chapter: Add a section in the chapter in which a zoning plan is made based on the program of demands.**

1. A.CN: the exposition worked very well in going through the thoughts of the family. (C): confirms the exposition to be useful and in
2. S.PR: The teams advise that sometimes the last step of drawing & modelling together was not necessary.

(R&A): bringing the dreams and desires of all the family members together in once session is crucial. Parents often have a dominant role in decision-making processes and tend to disregard those of their children. Confronting them with the ideas of their own children might open the discussion within the family. This however is not clearly explained in the support. Moreover, might this approach not work for every family and should therefore be optional.

**Adjustment chapter: make the final step of the session optional & add a description why this session is of importance for the family to negotiate desired and preferences.**

1. S.DV: the assignments are very similar and led to confusion with the family.

(A): The individual and groups sessions are indeed comparable and could build more on what was found in the individual session and have different options executing the workshop.

**Adjustment chapter: create different options, also addressed feedback number 25**

1. S.DV: For students it would be useful to explain slightly more on what a program of wishes is and what should be on it.

(R&A): Setting up a program of demands is taught in the majority of built environment schools (BSc & MSc) and is it quite surprising that students would require more elaboration on the matter. However, if this is an observation, information can be added.

**Adjustment chapter: elaborate more on what a program of demands is, how it can be used and show examples.**

1. S.MD: the family really knows what they want, unfortunately the father makes the final decisions. They can have a dominant role in drawing and sketching, it is advised to separate the sessions, so the individual family members can express themselves. However, in the situation of our family unfortunately only the father would need to be involved (depends on the conservative nature of the family).

(A): This is indeed a complicated issue, this is the current role division of the family and will take time to change. The support could describe clearer that the separated sessions should be held individually and in privacy. Maybe in the shared session at the end the children could start by presenting their ideas finishing by what is perceived as usable, followed by the mother and closed by the father.

**Adjustment chapter: add description that the workshops should be held individually in privacy. Here children can be combined, but parents should not be present. In the final session at a section where the children present their ideas and the parents reflect on what they seem valuable/usable. The team can then list these findings and use them into the solution articulation.**

**Actor Section, Chapter IV Mapping, Measuring and Drawing (feedback page 65, support tool):**

**AK: N**

**JK: N**

**CN: Y**

**PR: Y**

**DV: Y**

**MD: N**

1. A.CN & S.DV: A lot of layers (maps) seem useless and due to the scale are difficult to work with.
2. explain what radius is needed for what purpose, the user should then be able to set a radius.

(A): At this point in time it is understandable that the analysis is too elaborate and the application vague. More explanation could be given on why this analysis is important and how certain results only submerge when a detailed analysis is performed.

**Adjustment chapter: explain the importance of small shrubs in identifying borders how this relates to building orientation and an effect cause small private and semi-private outdoor space for a wide range of functions. Add an explanation why a specific radius is needed in this type of context (immediate social/cultural dimensions).**

1. A.CN: the writing style of this chapter poor and is much of the text abundant. As a result, its messy, unclear and time consuming.

(A): Agree, this is one of the chapters that requires substantial rewriting.

**Adjustment all chapters: rewrite the entire chapter and remove all abundant information. This should chapter should be a lot easier/faster ot execute.**

1. A.CN: It is not clear to what extend to proceed with this chapter as it has many similarities with the context depth analysis chapter.

(R&A): This chapter is the smaller version of the context depth analysis. These were separated in order for the teams to identify proximal capacities and not drawn in a vast areal analysis. However, in a reduced form the chapters should be combined to save time and frustration with the teams (the perceive the in-depth analysis as repetitive).

**Adjustment chapter: try to combine this chapter with chapter VI.**

1. A.CN: The majority of the teams stated that the maps are too many, it is not clear what they are used for.

(R&A): the found proximal capacities (layers) are meant to be used in the solution articulation. However, the chapter insufficiently addresses how/when these can be used (now mainly addressed in chapter VIII)

**Adjustment chapter: explain how the different capacities (layers) can be used in the solution articulation and why a broad inventory is essential not to miss anything.**

1. S.PR: The quality of available online maps for Mt. Elgon is so low that it is difficult to use effectively.

(R): Although this is true, the maps allow sufficient understanding of the terrain and are sufficient to conduct the analysis upon.

1. S.PR:I prefer to measure the area without the presence of the family. After showing the borders of the plot the team could measure the area (also excluding the division of roles).

(R&A): this might be convenient however is important in knowledge transfer (measuring) to the family. However, this is now insufficiently addressed I the chapter.

**Adjustment all chapters: add explanation why the presence of the family is important in relation to chapter X (knowledge transfer). Here small activities train the families for the required skills later on in the building process.**

1. S.DV: Adding the terrain to the 3d model makes it hard to operate, the users advise to use the map as underlayer.

(A): Terrain characteristics are a easily forgotten factor in building orientation and therefore this step was described in the support. However, this could be made optional, the teams could also use sections to identify the same things.

**Adjustment chapter: make terrain addition in the 3D-file optional and suggest possible alternatives such as making sections on a larger scale.**

1. S.DV: It could be beneficial to use examples not pictures of buildings.
2. When the support was developed these examples were not yet available. With the teams applying the support in the field these examples are now made available and should be used as much as possible.

**Adjustment all chapters: use as many of the teams outcomes in making the support more specific in its applications**

**Actor Section, Chapter V Observe Daily Routine (feedback page 82, support tool):**

**AK: N**

**JK: Y**

**CN: Y**

**PR: Y**

**DV: Y**

**MD: Y**

1. A.JK: Some of the users have doubts to what extend the observations are useful and if there is not a way so spread them over a longer period of time. However, they proved that observations did confirm that some things the family stated are not true and therefore provide new insights.

(R): the majority of teams stated that the observations are uncomfortable for the family, which is very understandable. However, they are of vital importance to understand and interpret contemporary family life. Without this knowledge it becomes very challenging to articulate solutions for the family.

1. A.JK: Interview phase covers most of the issues in the observation phase.
2. S. PR: most of the things covered are already found in the interviews.

(R&A): This is done on purpose to compare outcomes and confirm observations. However, the support insufficiently covers this fact.

**Adjustment chapter: add explanation why observation is similar to the interview and how it helps to confirm or reject statements made by the family.**

1. A.CN: this type of observation is a little bias as there is already a relation with the family and therefore difficult not to be involved too much.
2. A.CN: The observation method should have a more participative nature. This would also help to prevent confusion with the family (what is required of them in this phase).
3. A.CN: In some cases, the users had to join breakfast, lunch and dinner with the family (they insisted).
4. S.DV: the type of observing is problematic: you are not helping enough to get an idea of what their life is like and you are not far enough not to influence them.

(R&A): this is a positive result, the fact that the user doubts the level of involvement might identify a lack of understanding what is required of them. Participating in meals or chores is preferred, as long as the observer remember that he is observing behaviour and does not forget to make notes.

**Adjustment chapter: add a clear description that a personal relation and involvement is positive. However, that the observer should try to remain participant and not leader/activator of activities.**

1. S.PR: the extra observer is unnecessary.
2. S.PR: two observes cover the entire family in one go.
3. S.PR:I personally think to split this chapter in observing more family members at the same time with two actors and only the morning, evening and a little of their work.
4. S.PR: Therefore, with minor differences between the days all the family members routines could be observed in one day.
5. S.PR: The users found the activities in, around and close to the house are the most useful. Following family members to school or work often seemed unnecessary.
6. S.DV: a lot of time is wasted on observing
7. S.MD: I noticed the things the family stated are not always true and the days can be a lot different from what they say is going on.

(A): The extra observer was meant as an extra safety, in participant observation you easily forget your tasks. However, might the extra observer indeed be too much.

**Adjustment chapter: change the observer role for this chapter in a second observer following a different family member. The observation could be reduced to one day to reduce the time needed to understand the individual activities. Questions should be added to understand the differences between the days (especially the weekend).**

1. A.JK: We can have the observation in parts (only house activities)
2. A. JK: In the morning and evening
3. A. JK: Or observe during the whole project
4. S.PR: The planning reserved two days for the observation, which is not enough.

(C): this confirms the importance of an observer throughout the project. Therefore, this chapter could be changed and added to the observer section of the support. This would also spread the workload.

**Adjustment all chapters (observer): this chapter should be moved to the observer section of the support and divided over the entire project.**

1. S.PR: Some of the users stated that this chapter only added few new tools, skills and materials in comparison to the already found.

(R&A): the main aim of the chapter is to understand everyday life, found capacities are of added value.

**Adjustment chapter: emphasize in the introduction of the chapter that the goal is to understand everyday life with a little more focus. Finding additional capacities is of secondary importance.**

1. S.PR: the observation was a little awkward and observations generally make the family uncomfortable.

(A): this is inherent to the methodology, with the adjustments to the chapter addressed in feedback number: 46 & 47, this should be reduced.

**Adjustment chapter: see adjustment in point 46 & 47**

**Actor Section, Chapter VI Context Depth Analysis** **(feedback page 106, support tool):**

**AK: N**

**JK: Y**

**CN: Y**

**PR: Y**

**DV: Y**

**MD: Y**

1. A.JK: The area has changed rapidly into a modern lifestyle and therefore had to prove some of the concepts.
2. This also makes it unreliable for a change in region.

(A): the support was meant to target traditional homesteads in rural Sub-Sahara African countries. The support however describes the current conditions more traditional that they are actually the case. Moreover, for broader application the support should be rewritten in a less specific context and should more appropriately address ongoing development.

**Adjustment all chapters: the depiction of the community as a very traditional community/lifestyle should be removed in all chapters. This includes the: average typology, willingness to ex-change capacities and the actual willingness to help each other (very low). The community is an economy (capital based) society where money has become the sole form of exchange.**

1. A.CN: Without first having a house design the search of materials is unlimited, with a design a more focused search could be performed.

(R&A): the frustration is very understandable, however, without knowing the available inhabitant capacities, making a design is futile. However, this chapter could emphasize more on why these steps have are essential to cover first.

**Adjustment chapter: add explanation why analysing capacities before design is important.**

**Adjustment all chapters: the users experience the support design as a very rigid model. The chapters should be used more fluidly to generate an overlap between analysis and design. They are now to clearly separated.**

1. A.CN: because the father does not want to yse thatch he doesn’t say where we can find it, or he really does not know
2. The family members have such a strong preference for certain materials that they won’t explain where some local natural resources could be found. Sometimes they would even explain that they are not available even though they are.

(A): this is a fundamental issue in the support failure, the preferences of the family are so strong that they refuse to even support the analysis of alternative natural solutions. The ‘right example’ is available and the solution for desired housing is known. Diverting from this example is very difficult and often has a lot to do with the willingness to develop and increase status within the community.

**Adjustment all chapters/support/experiment: the support will need to emphasize more on the difference between affordable and desirable housing. In the current support design this issue is not solved and therefore the teams struggle to get honest answer.**

1. A.CN: For a proper overview of everything we should have all maps in one file (illustrator) layers you can then turn on and off to make the necessary maps for specific relations.
2. S.PR: Also mapping farmland could be left out if you just ask them.

(R): strange that this is mentioned as the support explains exactly doing this.

1. S.PR: A lot of the things mentioned in this chapter are similar to chapter IV and are not really necessary to redo.

(A): as suggested in chapter IV changes will need to be made to combine and condense the chapters.

**Adjustment chapter IV&VI: combine and condense the chapters.**

1. S.PR: The soil tests didn’t work and salt should be added to the bottle test.
2. S.PR: Also, some advises should be added, for example: use straight bottles (readability) and add salt to speed the process.

(A): the readability of the outcomes was in some cases very problematic due to the high clay concentration. This problem was further increased by not stating the importance of using straight bottles and adding salt (faster readability). Moreover, by using different types of soil test this could have also been prevented.

**Adjustment chapter: adjust and improve the soil test by: adding salt, use straight bottles and apply different types of soil tests.**

1. S.DV: The teams stated that the identified local available know-how was really useful and significantly speeded up the process.

(A): the chapter currently really focusses on the team, where indeed the available knowledge of the family/community is very useful. The chapter could be rewritten where the family/community joins the analysis and helps explain/pinpoint the different aspects.

**Adjustment chapter: make the chapter more participative for family and community member to explain the various aspects to the team.**

1. S.DV: You can’t just start digging holes in the community, the lands are owned by people and therefore need approval.
2. S.DV: Most of the information was collected by talking to random community members during the entire experiment and got to know a lot about them.

(A): indeed, the chapter should state that the teams should first request approval before they start digging.

**Adjustment chapter: add an approval section from the families who own the land where the team wants to take the soil tests.**

1. S.MD: It would be good if the soil test explains the types of outcomes
2. S.DV: could be more detailed (how can you interpret results).

(A): the soil test was meant to get a basic understanding of soil composition. The reason why the interpretation information was so limited was not to point too strongly towards using earth technology. The support is not meant to give ready solutions but to stimulate possible solution directions. However, slightly more information could be given on what type of soil compositions can be used in which earth technologies and why this could be of importance for the project.

**Adjustment chapter: add information on soil interpretation and how this relates to various earth techniques. Moreover, where additional information can be found.**

**Actor Section, Chapter VII Interview Capacity Analysis** **(feedback page 124, support tool):**

**AK: N**

**JK: Y**

**CN: Y**

**PR: Y**

**DV: Y**

**MD: Y**

1. A.JK: Very relevant chapter to identify capacities
2. S.PR: useful to get specific information (identify capacities)
3. S.MD: the interviews identify which community members would help during construction.
4. S.MD: However, during the construction they would not show up and therefore the method does not apply to real life.

(B): Confirmation of the usability of the chapter.

(A): although there are community members with the best interest to help the family it proves difficult to get their actual involvement during the building phase. This can partially be explained by the fact that the improvement only targets the family and only has little future for the participants willing to help/invest.

**Adjustment all chapters/support/experiment: same as mentioned in feedback 50**

1. A.JK: the support does not address what should be done if the family has the financial capacities to realise a ‘commercial’ house (build for the family not by the family).

(A): the support aims at low income inhabitants in rural areas, however to test the support families with varying levels of income were chosen (within an acceptable range). During the experiment it became clear that families had different types of savings/investments they didn’t state during the application. Moreover, did they ask family and friends to loan money. As an effect some of the teams were confronted with higher financial capacities then planned. This does however, not mean that the capacity analysis and subsequent solution articulation wouldn’t work. It does however demand that in the case of higher financial capacities the support should still advise how to way these capacities.

**Adjustment all chapters: all chapters should be rewritten to also fit families with higher financial capacities.**

1. A.JK: If the families keep to themselves and do not engage community life; how does the support operate then?

(A): the support demanded heavily on community members helping the family to build new housing. As explained before this was not a viable option in this community anymore. Therefore, the support should be rewritten that some of the labour will have to be hired or compensated (pay through food, etc.).

**Adjustment all chapters: all chapter will have to be checked that they consider low community involvement and paid labour in the construction phase.**

1. A.JK: The support insufficiently helps prevent envy in the community, now the targeted families nurture jealousy amongst their community members.

(A): in the current experiment design (community size) and targeted families, indeed nurture envy. The design of both the experiment and the targeted community members by the support have to be reconsidered.

**Adjustment all chapters/support/experiment: to help individual families has seem to have a negative effect on the outcomes of the project, involvement of community and have gravely disturbed inner community relations. The support should be adjusted to either realize a community project (also see testcase, church kitchen, 2014, Smits) or to train fundi’s (informal builders).**

1. A.CN: It should be stated clearly if the appendix should be used literally or in an abstract way.

(A): to test the support in situ the support had to be taken strictly to make the outcomes comparable. As suggested earlier on, the entire support should be largely optional, depending on the requirements of the team and family to adapt accordingly.

**Adjustment all chapters: explain throughout the support that it is advised to use the chapters in the presented order, but that certain parts can be disregarded if needed.**

1. A.CN: more important questions arose during the design and planning, it might have been helpful/more useful to have the interview later.

(R&A): the main aim of the chapter is to approach the overall capacities of the family. This to integrate as many of them in the design solution. Therefore, the interview should remain before the design process, however, could parts of the questions/topics be repeated during the design meeting to see If any capacity readjustments should be made.

**Adjustment chapter: add a feedback loop in chapter IX where the capacities are reavaluated in the design meeting with the family. Some materials/tools might not be available during this project and therefore changes should be made accordingly.**

1. A.CN: Some of the fathers stated that there was nothing to get out of the community which created a threshold interviewing the community members about their capacities.

(A): As explained before due to the design of the experiment some of the families refused community involvement.

**Adjustment all chapters/support/experiment: also see feedback point 62**

1. S.PR: the families struggled to state the actual amounts.

(R): with fluctuating prices, income, daily needs and many other factors this is understandable. However, even making a general estimation can already help the team to better understand the capacities. The team will have to be patient and try to help the family as much as possible.

1. S.PR: it was unclear to the family that it was about capacities and therefore often answered on desired housing.

(R&A): the confusion is understandable and align with the remarks made in chapter III. However, making any estimations about materials (available or bought) helps the team to estimate available capacities. Although the family will only be able to afford few bought materials (desired solutions) these are just as valuable. However, asking after every listed material if they have to buy it or can trade and for which amount will help them to realize they can’t buy all desired materials.

**Adjustment chapter: add sections in the interview questions addressing materials and tools if and for how much they will need to be acquired.**

1. S.DV: Some of the statements about the community are outdated and need to be changed to the actual situation, for example: sharing of materials and tools is not common anymore.

(A): This is already mentioned in previous chapters: specifically feedback number: 50

**Adjustment all chapters: same as in feedback point 50**

1. S.DV: the answer sheet could have been easily missed, it would help if at the beginning of the chapter the outcomes are listed.

**Adjustment all chapters: provide at the beginning of all chapter a list of products, outcomes and documents to be used in the chapter.**

1. S.DV: It is very difficult for local people to explain what they are capable off (skills).
2. S.DV: for example it is very difficult for inhabitants to state what skills they have.

(A): from the previous chapter (observation and analysis) many skills should already be known with the team and can these be used in the interview to ask specifics. However, because the high level of detail it’s understandable that the teams to keep overview. Therefore, a checklist should be added with possible skill sets for different types of building to get an idea of the skill levels in different building activities.

**Adjustment chapter: add an overview/checklist of possible skills which can be exanimated.**

1. S.DV: It is advisable to make a personal list of questions which makes it easier for someone to organise the interview.
2. S.DV: Now most of the question were either already answered in previous chapters or the interviewees didn’t answer the question.

(A): again, to retrieve comparable outcomes the interviews were very strict, in future application the users should be able to setup their own interview. The current provided interview guide could be used as a framework.

**Adjustment chapter: adjust the chapter in order for the users to articulate their own questions.**

**Actor Section, Chapter VIII Capacity Impact Analysis** **(feedback page 133, support tool):**

**AK: N**

**JK: Y**

**CN: Y**

**PR: Y**

**DV: N**

**MD: Y**

1. A. JK: it is extremely difficult to make estimations in an unknown context. Because the exchange of labour, tools and materials did not work, the costs are much higher than originally estimated.
2. S. PR: understanding building costs is very important
3. S. MD: the father often does not want to state the cost, where tools can be borrowed or whom will help during the construction process.

(A): this is an extremely problematic finding of the experiment. With limited knowledge and building experience it is extremely difficult for the users to estimate quantities and costs. An extremely important factor is the participation of a local builder or fundi (unskilled builder) to make accurate estimations.

**Adjustment all chapters/support/experiment: the support should advise the users to involve a local builder in the project, try as much as possible to seek the feedback of a trusted local builder throughout the project and in future experiments demands a substantial change in the experiment design (combining local students/builders into the team).**

1. A. JK: savings and income are very sensitive topics, however it does give the family and team the opportunity to weigh alternatives at the beginning of the process.

(R): this will remain a difficult topic however is essential to address and estimate as accurate as possible (financial capacity: harvest versus expenses).

1. A. CN: making an overview of all capacities is impossible, the families are able to get anything anywhere. As long as you stay within known techniques there is a high probability that the tools are available.

(R&A): the capacity analyses intend to gather as many capacities as possible and when integrated in the solution should have most tools, skills and materials available. The chapter could however be slightly less strict and leave some things open for interpretation.

**Adjustment chapter: make the chapter less forceful and advise the users to get as many of the capacities as possible.**

1. A. CN: if the involved families do not want to live in Busia, share tools and skills traditionally, this support tool creates friction between builder and client.

(A): some of the families refused to involve the community or exchange capacities, with the emphasis of this free exchange it creates a tremendous difference between what the team intends to do and what the family actually would want. As mentioned in earlier chapter the emphasis should be changed towards a capitalist society living in minor improved houses.

**Adjustment all chapters: adjust chapter to the actual housing situation in the area.**

1. S. MD: the offered model (excel sheet) is specific to the presented building method and not/limited suitable for other building solutions.
2. S. MD: Only one of the articulated solutions was similar to the example, consequently the example should be broader.
3. S. MD: we made a new excel sheet that might be more applicable/useful.

(R): the excel sheet was setup as an example and the teams were requested to fill in alternative solutions by themselves.

1. S. MD: the process of talking about the family’s capacities and weigh them against options is very difficult.

(R): due to the amount of capacities available and needed this is a complex and time-consuming effort. However, essential in articulating effective housing solutions.

1. S. MD: by starting by presenting the desired house and required funds, this works as a shock and is useful in considering other solutions.

(C): confirming that this approach works.

1. S. MD: making the three design solutions is useful as they challenge the users to think about different solutions, materials and sizes.
2. However, afterwards some of the families wanted combinations of solutions, which further extended the required time.

(C): confirming that this approach works.

1. S. MD: it is very difficult to maintain a final calculation because the design keeps on changing.
2. Therefore, it would be helpful to add to the chapter how you can keep track of spending and with it the viability of the project. After the project this can also be used for other community members to take a look at the spending.

(R&A): This is the case I any project. The support does describe how to keep track of the spendings in a book, however, this could be elaborated more.

**Adjustment chapter: add a more detailed description how the budget can be monitored and adjusted along the project.**

1. S. MD: the families do not understand the goal of integrating community members in the project.
2. Therefore, it would be good if the support describes a meeting with the community where their involvement is deliberated with the family (this could also provide a bridge for the next chapter: planning).

(R&A): Part of the experiment design included community meetings which explained the project and the importance of their involvement. However, this had insufficient effect on the level of participation. Chapter IX also described a presentation to the community, which also did not have the desired effect.

**Adjustment support: the increase community involvement, the support should aim at realizing a public building support by local builders. The gathered knowledge can then as a result be shared and replicated afterwards.**

**Actor Section, Chapter IX User/community participation planning (feedback page 159, support tool):**

**AK: N**

**JK: Y**

**CN: Y**

**PR: Y**

**DV: N**

**MD: Y**

1. A. JK: combine the planning with earlier chapters to keep the family motivated, look for better methods to involve community in the building process and involve existing target groups (church, work, etc.).
2. A. JK: are the right selection criteria used to set for selecting the families and suggested that the support should focus only on highly motivated families.

(R) Understandable comment, however, ethically very difficult to defend. The experiment targeted whoever needed our help with whatever capacities they had.

1. A. JK: very important chapter

(C): confirms the usability of the chapter

1. A. JK: Moreover, with a focus on introducing an industry-based solution for the community might be a more effective approach.

(A): If the support would focus on a building solution that applies to the entire community (available capacities for everyone) and training the community how to produce this specific ‘mass’ solution, it could easily increase participation.

**Adjust support: the focus of the support should not focus on articulating a housing solution for one family, but should introduce a building solutions widely applicable.**

1. A. CN: the budget should be controlled by the teams (not the family) and should be available when starting the project.

(R&A): understandable however this would imply that the team artificially constitute to a capacity. It is of vital importance that the family understands why certain decisions need to be made in that way, if not they will not understand why certain decisions were made. This is however a very difficult process with a lot of misunderstanding, the family understands their limited capacities but want to force their desires in any possible way.

**Adjust chapter: this chapter will need to change work form and decisionmaking processes. In such a way that the family understands the challenges and that compromises have to be. Moreover, that they accept them and are willing to let desired solutions go.**

1. A. CN: A more thorough understanding of materials and construction time is needed to plan the project for non-locals.
2. A.CN: making a proper planning is impossible with a limited control of knowledge on local materials and craft.

(A): in line with feedback 72, involvement of a local builder is essential in understanding the particularities for the team and increase project success.

**Adjust support: change support to include local builders in process.**

1. S. PR: We already delayed in the first week and struggled to involve the community in the planning activities.
2. S. PR: It was impossible to arrange a community meeting

(A): as explained earlier overall the teams struggled to involve the community and will measures/adjustments need to be made to the support.

**Adjust Support: also see feedback 81**

1. S. MD: Suggested additions to the chapter are: adding extra time per phase (10%), add a string which can be hung over the planning to show the family the progress made and that the families not always know the facts and should always be checked.

(A): useful additions that can be changed directly in the support.

**Adjust chapter: advise teams to plan 10-20% extra time and use a string to keep track of the project progress.**

1. S. MD: The planning gives some level of control and understanding of the tasks ahead.

(C): confirms the usability of the chapter.

1. S. MD: We are really dependent on the materials that need to be delivered

(R): this is a common problem working in remote areas. The support could however suggest in an earlier stage that ordering materials and tools might take more time than estimated.

**Adjust chapter: advise teams to start as early as possible with getting tools and materials in, when they solution is identified.**

1. S. MD: it is important to know that you can’t trust all the answers and therefore have to calculate extra time.

(A): With many teams this was a huge cultural misunderstanding. People often state that something is close or easy to get, when its actually quite the contrary. It would be important to point this out so at least they can inquire further or estimate more time.

**Adjust chapter: advise teams that there can be a substantial difference in cultural understanding (by giving examples) and that they should estimate more time then normally required.**

**Actor Section, Chapter X Start of Activities (feedback page 168 & 311, support tool):**

**AK: N**

**JK: Y**

**CN: Y**

**PR: Y**

**DV: N**

**MD: Y**

1. S. PR: this chapter was written during the experiment and published in the 9th week. Therefore, we struggled with the preparation required for this additional chapter (also due to the additional theory presented).

(R): A crucial mistake in the development of the support was the lack of knowledge exchange attribution. Therefore, in a late stadium the chapter was developed and communicated to the teams. Although this is regrettable, changes can’t be made based on this feedback.

1. S. PR: the methodology will need to be simplified so only little time is required, when constructing the house, a lot of side jobs for the support is too much.
2. S. PR: We were running behind schedule and just wanted to focus on finishing the project, therefore this chapter was almost not applied.
3. A. CN: everything was too difficult and could have been a separate book.

(A): the chapter is very detailed and rather complicated. Many things have to be planned, monitored and evaluated. This was mainly because due to the design of the experiment. The knowledge impact could have been used to prove capacity improvements with the inhabitants. However, was simply too much to apply. In this form these tasks consume too much time. The methodology will have to be improved and majorly reduced in required application time.

**Adjust chapter: simplify the methodology and let the teams per day decide who they trained, what they taught and how this contributes to the understanding of the introduced building solution.**