

RCUK Indigenous Methods Case Study: Nubian traditional knowledge and agricultural resilience (Ryan, Saad, Hassan)

Topic Area: Reflection from different perspectives on the demands and methods of engagement which vary according to place and a particular indigenous community including the problems and benefits of communicating across cultures and engaging in different ways.

Project: *Learning from the past: Nubian traditional knowledge and agricultural resilience, crop choices and endangered cultural heritage. AHRC-GCRF AH/R004536/1*

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And with contributions by Mohammed Hassan, Director of the Kerma Museum

SUMMARY

This case study provides an overview and critical appraisal of the process of writing and disseminating a community-oriented book '*Nubia past and present, agriculture, crops and food*'. This was created during an AHRC and GCRF funded project '*Learning from the past: Nubian traditional knowledge and agricultural resilience, crop choices and endangered cultural heritage*'. The book aimed to document local 'oral agricultural histories' to preserve this information for future generations, to provide a direct means to distribute research findings to local communities, and to help maintain local knowledge of agrobiodiversity and food crops. The content of this case study report was discussed with my Sudanese project partners who worked with me in 2018 to produce and distribute the book; Mohammed Saad, who is head of bioarchaeology at the National Corporation of Museums and Antiquities in Khartoum, and Mohammed Hassan who is director of the Kerma Museum.

Writing this report provided an opportunity to reflect on the process of creating the book, the sorts of changes we made, and what can be learnt from the process. Some content was based upon interviews undertaken as part of an earlier AHRC funded project '*Sustainability and subsistence systems in a changing Sudan*'. During the book production in 2018, we added new content, images and illustrations. It was very useful to work on both the design and the content in the field to check the flow and narrative with the community. Images and illustrations were very important to help explain the text, and many new photographs were taken during fieldwork. The book was aimed at school and adult audiences and was created in a cross-generational format. Working with schoolteachers was very beneficial to the final text editing for both the English and Arabic, and for making sure that the content was suitable to both adults and younger audiences. This case study provides an opportunity to also discuss some of the issues addressed. For example (i) Language – Nubian is spoken as well as Arabic but is no longer written. Very careful attention was needed to check the meaning and transliteration of certain local words, and especially for names of foods and crops where many Nubian words do not have direct equivalents in Arabic (ii) Representedness - We needed to take care the book was relevant across different local villages, for example through the inclusion of recognisable photographs from different locations. The text also had to include multiple viewpoints to consider variabilities in practices amongst families and villages.

INTRODUCTION

A key output of the '*Nubian traditional knowledge and agricultural resilience, crop choices and endangered cultural heritage*' project was a community orientated book '*Nubia past and present, agriculture crops and food*'. The book aims to preserve traditional agricultural knowledge that can be considered as endangered cultural heritage and simultaneously as practical knowledge relevant to future agricultural resilience. This case study provides an overview and reflection on the process of writing and disseminating the book. During the book writing process in 2018, the content was discussed with a range of informants, who provided different perspectives, corrections and information during the process of writing, editing and distribution. The content of this case study report was discussed with my Sudanese project partners who worked with me in 2018 to produce and distribute the book; Mohamed Saad, who is head of Bioarchaeology at the National Corporation of Museums and Antiquities in Khartoum, and Mohammed Hassan who is director of the Kerma Museum. As part of this case study, I invited them to add further comment on their experiences of creating the book, the value of the process and any advice on how the process might have been improved. Mohamed Saad also attended the workshop in Rio de Janeiro.

This report overviews (i) the project background, (ii) the process of creating the book, and (iii) reflections from Mohamed Saad and Mohammed Hassan about the book creation process.

PROJECT BACKGROUND

Nubian traditional knowledge and agricultural resilience, crop choices and endangered cultural heritage.

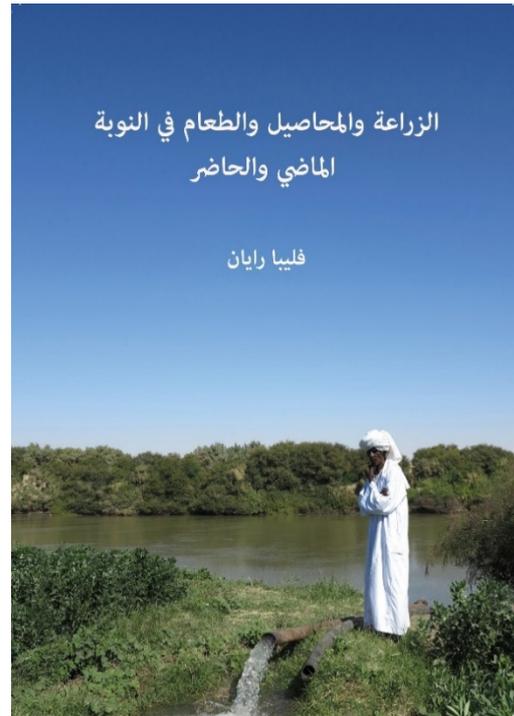
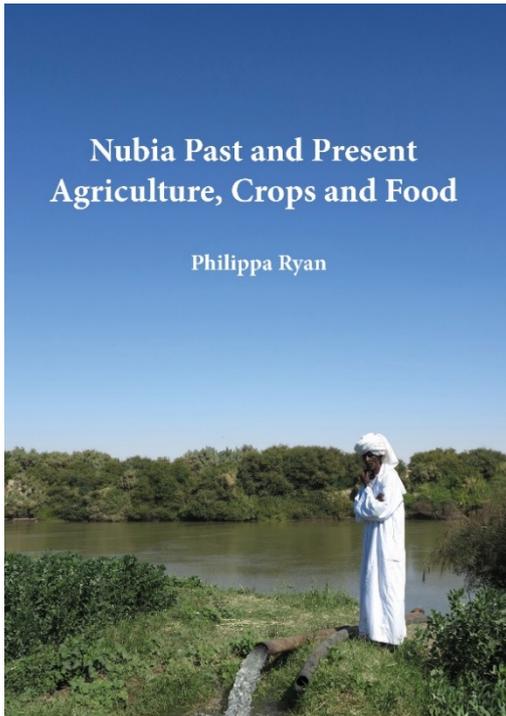
PI - Philippa Ryan, 2017 - 2018 (this grant was held at the Department of Scientific Research, The British Museum). This was a 10-month project funded by the Arts and Humanities Research Council and Global Challenges Research Fund [AHRC GCRF AH/R004536/1]. The grant was funded through the 'Follow-on Funding for Impact and Engagement scheme' for research generated by the earlier 'Sustainability and subsistence systems in a changing Sudan' project. Both of these projects were also funded as part of the AHRC research theme Care for the Future: thinking forward through the past.

The project aims were to:

- Advocate the importance of using traditional agricultural knowledge to help create strategies for agricultural resilience.
- Highlight the potential future role of increasingly little-used cereals and pulses.
- Promote the way ethnobotanical and archaeobotanical approaches can contribute to agricultural research.
- Preserve traditional agricultural knowledge that can be considered as endangered cultural heritage and simultaneously as practical knowledge relevant to future agricultural resilience.
- Illustrate relevance of the past, and archaeological research, to local communities.

The main outputs of this project were:

(I) the creation of a community orientated book, '*Nubia past and present, agriculture crops and food*'. This built on research previously undertaken as part of the '*Sustainability and subsistence systems in a changing Sudan*' project. The book was co-produced with local informants and provided a direct means to distribute research findings to local Nubian communities.



The book can be downloaded using these links

https://www.britishmuseum.org/pdf/nubia_past_and_present_english.pdf

https://www.britishmuseum.org/pdf/nubia_past_and_present_arabic.pdf

https://www.britishmuseum.org/research/research_projects/all_current_projects/sudan/amar_a_west_research_project/nubia_past_and_present.aspx

(II) Organising a conference Lessons From The Past: Archaeology, Anthropology And The Future Of Food which explored how archaeological, historical and anthropological studies can contribute to cross-sector debates about agricultural sustainability. This was organised in collaboration with Dr Kelly Reed, the Oxford Martin School, University of Oxford.

<http://www.futureoffood.ox.ac.uk/events/lessons-past-archaeology-anthropology-and-future-food-oxford>

Sustainability and subsistence systems in a changing Sudan

PI - Philippa Ryan, Department of Scientific Research, The British Museum; CI - Professor Katherine Homewood, Department of Anthropology, UCL. This was a 33-month project that began in November 2013 and was funded by the Arts and Humanities Research Council [AH/K006193/1], through the *Care for the Future: environment and sustainability* theme.

This project explored how comparisons of past and present crop choices can inform on risk management within agricultural strategies of small-scale riparian Nile village settlements. Today and in the past, islands have been important locations of settlement as there are fewer areas of wide floodplain suited to traditional agriculture (in comparison with Egypt). The main components within the project structure were: i. Ethnographic study of 'traditional' farming and foodstuffs. ii. Archaeobotanical research at late 2nd millennium BC Amara West, an ancient island town. iii. Situating the subsistence information from Amara West and farmer interviews within the context of existing archaeobotanical and 20th century AD information to create a long temporal view of crop choices. We interviewed farmers about crops, cultivation and changes over time. The archaeological site of Amara West, near

Ernetta, provided an in-depth archaeological case study for exploring how subsistence systems in an ancient town were impacted by aridity in the late 2nd millennium – early 1st millennium BC.

https://www.britishmuseum.org/research/research_projects/all_current_projects/sudan/amar_a_west_research_project/sustainability_and_subsistence.aspx

Key research findings:

Interviews with farmers revealed that several of today's increasingly minor crops were key food crops until recent decades. These crops are comparatively arid tolerant compared to more recent cash crops and also have a long history in the archaeological record – further suggesting their suitability to the environment. The use of diverse crops with differing environmental tolerances can provide the flexibility to cope with today's challenging environmental conditions and future climate change. For further details see:

https://www.britishmuseum.org/pdf/project_report_ryan_and_homewood.pdf



The broader context of community engagement at the Amara West project:

The idea to write the book built upon a broader body of community engagement initiatives within the Amara West project. The Amara West project produced and distributed a book locally on the archaeological project, created a variety of digital resources, for example on YouTube and initiated several community engagement projects. The first of these initiatives was the publication of a guide to the archaeological site of Amara West, its origins, about daily life at the settlement, and also about the practice of archaeology at the site during the early 20th century and how archaeologists work today (Spencer et al 2015). The project also recently created a podcast about the community engagement work and the archaeological site from a Nubian perspective (Fushiya and Spencer 2018).

<https://britishmuseumamarawestblog.wordpress.com/>

<https://www.britishmuseum.org/pdf/Amara West Living in Egyptian Nubia.pdf>

NUBIA PAST AND PRESENT, AGRICULTURE CROPS AND FOOD – THE PROCESS OF CREATING THE BOOK

Nubia past and present is focused on Ernetta Island and the Abri area, which are in the Sikoot region of northern Sudan. The book discusses present-day crops, agricultural practices and foodstuffs, and how these have all been changing since the middle of the twentieth century. A summary of the ancient crops grown in the middle Nile valley, including at the ancient town of Amara West, is also included and provides a long-term context to crops grown today and in the recent past.

The initial idea to write the book occurred during the *Subsistence and Sustainability* project. During a visit to the local school on Ernetta Island in 2015, in which we were discussing our research findings and had with us photos that we had printed and laminated, teachers suggested that it would be good if we could come back and write a book to share the results of the interviews in more detail. This became the initial idea for the follow-on research project. We realised that this information is important to document locally as it is otherwise not written down, and – from preliminary meetings at the school it was also apparent that this information is in danger of being lost within a generation or two.

The objectives of writing the book included – providing a way of recording the cultural memory of older farming practices; to make this information accessible to small scale farming communities; and to co-produce the book with farmers and their families so the information is considered meaningful by local communities.

Prior to fieldwork, an initial draft was produced in English and preliminarily translated into Arabic. This draft was based on the information gathered during earlier interviews during the ‘*Sustainability and subsistence systems*’ project. I also commissioned a wide range of illustrations and worked with two illustrators. Most of these illustrations were intended to depict activities that were not possible or easy to photograph. These included an illustration of a saqia (waterwheel), a shaduf (lever and pole water lifting device) and cereal threshing (using donkeys tethered together). The saqia and shaduf were replaced by diesel pumps by the 1970s whilst a threshing machine was introduced in the 2000s.

The book content was discussed with a range of informants, who provided different perspectives, corrections and information. This case study provides an opportunity to document this process and some of the issues addressed. For example (i) language – Nubian is spoken as well as Arabic but is no longer written. A glossary was carefully compiled that transliterated agricultural, crop and food terms. (ii) Representedness - We needed to take care the book was relevant across different local villages, for example through the inclusion of recognisable photographs from different locations. The text also had to include multiple viewpoints to consider variabilities in practices amongst families. The book was aimed at school and adult audiences and was created in a cross-generational

format. To ensure this was successful there were several stages of editing with school headmasters.

Considering Language

Arabic and Nubian are commonly spoken in the study area today. Interviews were conducted in a combination of Arabic and Nubian, varying depending upon the family or farmer we were speaking to. Nubian is an oral language today and is therefore this was problematic when thinking about producing a book. The book is therefore written in Arabic. However, it was important to include specific words in Nubian because the actual meaning of some words did not have a perfect equivalent in Arabic. This is particularly the case for some botanical terms, the names for foodstuffs and agricultural words for tools, soils and cultivation methods. To have only used the Arabic terms would in many cases have not been precise enough. Nubian languages are classified as Eastern Sudanic languages which are a branch of the Nilo-Saharan Group, and there are different Nubian dialects. Abri and Ernetta are in the Sikoot region. The dialect is Nobiin and in the Sikoot is also known by the geographic area – as Sikoot Nubian, which is very close to/almost the same as Mahas, which is the geographic area immediately below the Sikoot. The Nobiin dialect (Sikoot and Mahas) is different from Dongolawi, which is spoken in the Dongola and Kerma area. During the interviews in the Dongola-Kerma region, several crops and foods had different Nubian terms than in the Sikoot and further future research would be necessary in this region to clarify differences further. This is one reason why the content of the book was focused locally on the Sikoot region, rather than more broadly. The other being, that a far greater proportion of interviews were undertaken in the Abri region, whereas the Dongola-Kerma interviews were more scattered to investigate variations in agricultural strategies and their histories.

The existence of different dialects highlights the difficulty in preserving language, and especially at the level of technical information. There are a few glossaries for Nubian – Arabic words, but these are not comprehensive, so a great deal of attention was needed to transliterate words into both Arabic and Latin letters as closely as possible. The relevance to this study is the extent to which language encodes meaning and that some Nubian words do not directly translate into Arabic. This is particularly relevant to this study as it very much affects the accuracy of recording both intangible heritage, such as food, but also more technical information concerning soils and crops. It was also the case that some conflicting accounts amongst interviewees sometimes turned out to be specifically related to the precise meaning of certain words – and perceptions about the use of Arabic terms for certain Nubian words, rather than actual differences. The net result of this experience was the decision to produce an English-Arabic-Nubian glossary. This glossary provides a list of botanical and agricultural words in English-Arabic in Arabic script – Nubian in Latin script – Nubian in Arabic script.

Nubian languages are considered endangered (Rowan 2017, Sabbar 2018). However, making the decision to transliterate any Nubian words into Arabic is difficult. One problem with transliterating Nubian is accurately translating the sounds, when some letters do not have exact equivalents in Arabic script. Old Nubian script was based on Greek and Meroitic and many also promote a revival of this original writing system. Recording language digitally is another solution, such as the Amara West Nubian podcast (discussed above). Filming and video could be an additional avenue for further research and documentation on agricultural information and heritage. There was often more than one way of pronouncing crop names, with opinions varying, and it would be useful to capture this diversity as it is part of the living heritage.

There were several examples, during the process of working on the content in the field, that illustrated that using only Arabic words could lose information or create confusion within interpretations. For example, the word 'lubias' (Arabic) is used to refer to several types of

beans but lubia also can just refer to cowpea (*Vigna unguiculata* L.). The word lubia is often used with a second word that is essentially descriptive, but not everyone uses these second words and they can also differ. For example, lubia hilu means 'sweet bean' and refers to cowpea, whereas lubia afen means 'stinking bean' (the flowers have a distinct aroma). But these two terms are more often used in the Dongola region than around Ernetta – in Dongola the pulse crop lablab (*Lablab purpureus* L.) is more often grown for animal fodder whereas it is still remembered as a food and fodder crop around Ernetta. In Ernetta, the word lubia is sometimes used in a general way, whilst more specific Nubian words are used for particular crops – deginte (cowpea) and kashrengei (lablab). Durrah, meaning sorghum in Arabic, is also used in the word for maize (durrah shami), and sometimes durrahs is used to refer to both crops growing together. Again, therefore, Nubian words were more helpful for recording more accurate and specific information about plants grown and their uses.

The same issue exists for recording the names of foods. For example, ettir dessi (meaning green meal in Nubian, and comprising of several possible leafy greens) does not translate into one meaning within Arabic. Whilst trying to determine how to write this in the book, many people told us it means warreg and others molokheya. Warreg (Arabic), for some people is the word for small peas, and others the young leaves of pea plants. Molokheya is the name of a common green leafy vegetable in Egypt and Sudan. A dish made from cowpea leaves was by some called warreg deginteh and by others molokheya deginteh (a mix of Arabic using Nubian words as descriptors). Essentially, in trying to establish the 'right' answer, it became apparent that a number of options had become established and were used in varying ways by different families. In fact, warreg is also used in older literature sources as a reference to 'grass pea' (*Lathyrus sativus* L.), which used to grow in the area and now has almost entirely disappeared and is a different species entirely from common pea (*Pisum sativum* L.). Therefore, language is shifting, and Arabic words used for Nubian terms can be a bit variable. There are also a broader range of names used for slightly different types of flatbreads and foods made from cereals in Nubian than in Arabic. Also with porridges - many people told us they eat asida (a porridge dish common in other areas of Sudan) and others that no one eats it. The answer we eventually reached was that a different type of porridge dish is eaten – and it is not asida, but asida is the closest word in Arabic to describe it. From the point of view of cuisine, the local dish and asida are very different. One of the aspects of the book contents that took the most effort and time was clarifying, and elaborating on, the words used for foods, crops and other agricultural terms (see glossary in Ryan 2018 pgs 36,47,48).

Representedness

The highest proportion of interviews were undertaken on Ernetta Island, with a smaller number in the nearby town of Abri and the neighbouring village of Amara East. Initial feedback from one interviewee in Amara East was that there wasn't a photo from their village and that the book was perhaps too focused on Ernetta. As a solution, I went back on a separate day to take additional photographs in the area and chose to use a photograph in the book of a type of well that is common in Amara East but less so in the other villages. We also added a section to the book on 'differences between villages' and explored some of the reasons why – for example, when new technologies were introduced and types of agricultural land. In general throughout the book, we had to make an effort to explain when there different narratives about crops, food and agricultural histories. We also explained during visits to farmers and their families about the reasons why Ernetta Island was a particular area of focus. This was partly due to the project design and for practical reasons. Ernetta is car- and electricity-free which has resulted in some traditional practices persisting for longer. Islands were also a particular focus of the original research because they have a long history of importance in the Middle Nile valley for environmental reasons – large tracts of the Nile in the region have high banks and are not well suited to agriculture.

Illustrations

Everyone interviewed was happy with the illustrations I had commissioned prior to fieldwork. Only one correction was necessary. This was for an image of a saluka stick (a digging stick used for planting seeds in fresh Nile alluvial soils after the flood waters receded). I had used a picture from a Sudanese agricultural book from the 1950s. Some informants said that it was wrong as they remembered that this stick had a foot rest to push it into the soils, whereas the original example I had used did not. However, others remembered that there were three varieties of saluka stick. We edited this picture, and in the text mentioned the existence of several types.

The value of the illustrations was highlighted when we showed a book mock-up to a family I was frequently working with. Their 22-year-old daughter asked what the shaduf was. When I said it was a shaduf she did not recognise the word. Up until this point, I thought it was mainly the knowledge of crops, their cultivation, past uses and importance that was immediately endangered. It was surprising that more prominent aspects of material heritage were already being forgotten and not recognised. The shaduf is very well known outside of Sudan to all those with an interest in Egyptian archaeology and is taught to schoolchildren in the UK. However, in Sudan the saqia is much better known than the shaduf, with the terminology still used to describe areas of people's farmland (that used to be irrigated using the saqia). The saqia is an iconic part of Nubian cultural heritage as well as agricultural history.

I had previously been circumspect about the use of illustrations but had felt they were needed to illustrate many of the activities explained by the older generations. Without them, the book would have appeared a little dryer, based around more familiar modern images and picture of crops. Equally, it is quite difficult to put clearly into words descriptions of agricultural processes, and then especially for this sort of text to be translated. The presence of illustrations makes the text more understandable, and particularly for younger readers. Images were also important since they are not readily available locally. Anyone young enough to have not seen a particular object or activity, may not have encountered an image of them either.

Editing and design in the field

It can become difficult to add in extra images in later stages of book editing because it can disrupt the layout. However, one benefit of working on the book editing and layout in the field is the opportunity to take better images, to add ones that help improve the narrative or that fit with changes to the text, and to be able to check what people think of the layout and design at several stages. It is really useful to consult on illustrations and photographs immediately to have as many images decided at an early stage as possible - however, in reality, adding new content to the text during the book production often meant an additional image was useful or preferred.

Sometimes we were able to take photographs for certain aspects of the book for the first time by chance. For example, we found examples of traditional storage bins within two houses whilst meeting with villagers to discuss the book. Previously there were none in houses we had visited, and we had only seen abandoned ones – we were told there were none left on the island. We also learnt about the difference between larger and smaller sized storage bins for the first time.

Ultimately one constraint was book length. The initial draft was 24 pages, and the final version 52. This was the maximum size possible due to my preference of using saddle stitch binding. This type of binding was appropriate because it survives well in the heat (the books are bound by staples, whereas glue-based binding alternatives can melt in the heat).

It was useful to work on the design in the field because it made it possible to consult on this aspect of the book throughout its creation, and especially about final image choices. Ultimately the placement of images with the text affects narrative and visa-versa and being able to try different layouts was important for evaluating which were best received. This was from the point of view of appearance as well as the flow of the information and therefore how understandable it was for readers.

Working on these elements in the field is complicated, because I had to be fully trained in InDesign and Photoshop, however it allowed a flexibility with how design related to content and therefore to be able to consult more effectively with the local community than if the design had been fully achieved remotely. The process in the field allowed for the creation of multiple versions and stages of editing. It was also necessary since I had to print the initial run of books in Khartoum because it takes too long to print and ship from the UK. The main period of fieldwork and book distribution needed to be achieved by April. It becomes too hot after this timeframe for working in local villages on food carrying books to be feasible. This year was already unusually hot early in the year; for my time in Khartoum in March it was between 43-45 degrees for around two weeks and around 38 when delivering books to villages in the Abri region.



A traditional oven used for baking bread, which are no longer commonly used today



Crops growing along the riverbank of Ernetta Island

Distribution

My interpreters and collaborators Mohammed Hassan and Mohammed Saad helped to present the book within local schools in Ernetta, Abri and Amara East. We visited 8 local schools (junior and secondary). We gave classes of around one to two hours in each school, and these were attended by several teachers so that they would be able to explain the books in future classes. Further away, in Dongola and Khartoum, we met with and gave books to agricultural research and cultural institutions, museums and universities.

The printed materials and books that we saw in schools were usually in black and white, so the presentation of our book was seen as attractive and special. The English versions of the books were also well-received, and the language teachers said they would also be useful for the English lessons. We revisited two of the schools to deliver additional English books for this purpose.

I presented the book in Dongola to a joint meeting of the Agricultural faculty at Dongola University and the Agricultural Research Corporation. I had previously consulted with the ARC during my interviews with farmers in the Dongola area. They were very interested in the local information that the book provided about changes to crops in recent decades and about some of the problems with present-day wheat cultivation. Also, they found the archaeological component useful - as this provided new information to them on the longer-term histories of crops in the region.

Distribution Summary:

The Sikoot region

The Abri area (Ernetta Island, Abri town, Amara East):

Informants and local community: 200 Arabic, 20 English

Schools :225 Arabic, 55 English

Dal and Murfraka (villages in the broader Sikoot area)

Schools: 35 Arabic, 10 English

The Northern Dongola Reach: 40 Arabic, 25 English - Kerma Museum, Agricultural Research Centre (ARC), Dongola University

Khartoum: 130 English, 230 Arabic– Included to the National Corporation of Museums and Antiquities, Faisal Cultural Centre, British Counsel, FAO, Khartoum University (departments – archaeology, African and Asian studies, Botany, Faculty of Agriculture).

Total numbers of books distributed in Sudan– 730 Arabic, 230 English

Further books were printed afterwards in the UK, including for distribution at the conference organised as part of the project, for distribution to UK libraries, for the British Museum which has regular visitors from Egypt and Sudan, and for distribution in France (at the Nubian studies conference, which was well attended by Sudanese scholars). Mohammed Saad also took additional copies to Khartoum.

REFLECTIONS ON THE BOOK CREATION AND PRODUCTION; DISCUSSIONS WITH MOHAMED SAAD AND MOHAMMED HASSAN

Consultation with Mohammed Saad

It was possible to meet with Mohamed Saad in September 2018 during this case study project in the UK and we discussed the structure and contents of this report in its initial

stages of writing and as it progressed. I also asked him to comment on his thoughts concerning (i) the process of writing the book its final form and distribution (ii) the value of the book (iii) advice as to how to improve any similar endeavours. We also checked through the details of my observations and thoughts as expressed in this report. The following information is a summary of our conversation.

What sort of details do you remember needed correcting or adding? Were there any specific requests?

There were some specific details that differed in accounts of past agricultural processes between villages. In particular, disagreement over the numbers of donkeys used for traditional threshing. For example, the numbers of donkeys that people used for threshing on Ernetta Island was between 3-5, and in Amara East was 10-15. On reflection, both answers are correct, but the difference was because of the amount of space. Amara East is on the riverbank and has more space. Also, the ancient wheat (emmer wheat) was only recognised in the villages of Amara East, but they explained that this might be that the village had a longer history of occupation than neighbouring Ernetta Island.

Some of the things that people corrected were because of differences between the people we interviewed, and especially between villages - rather than because of mistakes. The contents therefore have to explain that the information comes from different places and not all places do things the same way.

Adding new information about food and correcting some of the words used for foods was very important and took a lot of our time. Especially the names for different breads and food made from cereals.

I had aimed for the book to be relevant to adults and children. Did this work? What did people think of content?

Old people like the book as a reminder of past times. People below 40 and children are interested as they have never seen many of the things we spoke about. Also, people have not seen drawings of old types of irrigation or threshing before.

What did the school head teachers think that helped with the book editing?

Kamel Jundi, one of the head teachers who helped with the editing thought the book was very good for older generations. And also good in the schools for the English teachers. He had no critique, just small language edits.

Hassan Sorta, the other head teacher who helped with the editing, had similar comments. He also added the perspectives from Amara East - about the recent use of the ancient type of wheat, the numbers of donkeys used for threshing, and that it would be good to have more photographs included from their village. For this point, we needed to explain that this was because we had visited this area less frequently.

Other than this, comments from people were mainly concerning edits to the text and about spellings. There were some mistakes in the preliminary translation. These issues were within the actual Arabic phrasing, and also in general within the meaning for the English.

What did the other teachers in the schools think?

They were very happy to have the English versions as well as the Arabic versions, and we went back to deliver more.

What could improve the book? or the distribution

It would have been good to add more about the diet in the town being different today. People in Abri are close to the market and it is easier to buy cooked food like ful (broad beans).

People in Ernetta have wide areas of jerf land (good quality riverbank land), and can grow many gara (squash), lubias (beans) and vegetables. They therefore maintain a bit more of a traditional diet on Ernetta. For example, termis (*Lupinus albus*), is grown more on Ernetta than Abri. There are also differences as Ernetta has more riverbank land – sometimes if people have no money, it is easier to eat a wider range of foods that they grow themselves, and many types of crops can be more easily grown in these riverbank soils compared to soils further inland.

Most old people live on Ernetta, so they remember the saqia. So this is another reason we focused on Ernetta. There were no longer as many old people living in the other villages. So Ernetta was very important to study for this reason.

What could improve the distribution?

Although we printed 1000 books, it would have been possible to distribute more. For example, it would have been useful to have given more books with Abri town. It would be good to write a book with a bigger scope. It would be good to visit other places in Sudan as this is a very specific sort of area. It would be useful to do more work on traditional food as this is a complicated area. This book included foods, but it was more about crops and cultivation.

Comments from Mohammed Hassan

Teachers and old people in Ernetta were very glad that the book was written because the book contains information and the names of traditional things, and especially about foods and types of cereals. They said that the book saves this knowledge and in a beautiful way transfers this to new generations. School children, both primary and secondary, enjoy the book and I am sure they are now keeping it and from time to time reading it. People were very happy to have been given the book - in the schools, the book was probably the first book that many of them had owned other than school books.

It was useful to transliterate some of the Nubian words because the target was to record information for new generations as well as specialists in agriculture. Most people cannot read old Nubian letters because this is very specialist and if you only use English letters most people cannot read it. Although many researchers want to use old Nubian letters, and this is also important, for many people this is difficult. It is not unusual to use Arabic letters; some people write Nubian words into Arabic letters in their cars and shops.

In the future, it would be useful to write a questionnaire to make a study to know exactly how the community has responded to this. Also, it would be good to add more details to the book to achieve the target of saving traditional things that are nearly or about to disappear from community knowledge.

Further reflection on these comments and conclusions

The wheat identified in Amara East is the first-time emmer wheat has been identified in the twentieth century. There is very little recorded about this crop over the last 1000 years, so its uses in historic to modern times is completely unknown. Amara East is an older village than Ernetta (which was founded in the mid-1800). Extremely localised practices may persist at the level of individual families or villages. Many of these sorts of details were clarified during the very close editing of the book which provides a different sort of interaction than during the original interviews.

Writing the book in consultation with the local community refined information from the original interviews, which is relevant to whichever format this sort of interview information is written up. The required edits also revealed the extent to which it is important to check

content multiple times. It would be useful to check all types of publication formats with local communities when the contents is based upon information provided by them. It is difficult when pulling material together into a book to find a balance between summarising but not generalising. It is important to consider how different practices can be within very small distances, or between families.

Books we saw in the schools were mostly in black and white and so distributing books in colour was unusual. The *Nubia past and present* book also documented things that no longer exist. Much of the information on cereals, foods and agricultural processes - that was well-known to older generations - was new to younger generations. Having illustrations and images was useful for engaging with these varied audiences, as well as helping to explain agricultural processes in an understandable way.

As well as the book, another idea would be to additionally make podcasts and videos that are accessible via mobile phones. This would be supplementary because the level of detail in the book would be too dense for a video or audio format. The book was successful in being relevant to a wide range of audiences and age-ranges. The school children in Sudan are living in an agricultural environment and also with the older generations that have provided the information. It is therefore possible to present relatively detailed information on the environment, agriculture and cuisine to them. The books are also intended to be kept within families to preserve information for the future, so it needed to be sufficiently detailed. The illustrations helped to make the content accessible and understandable to younger audiences whilst older generations were happy to have a reminder about the past. The book was well received by universities and institutions in Dongola and Khartoum, as there was information about local agricultural practices in the Abri area that are less well known further away, and the glossary and crop timelines also provide useful detailed reference information. Working on the text and design in the field allowed an ongoing flexibility in terms of how layout related to content, multiple phases of editing and checking, and therefore to be able to consult and co-produce more effectively with the local community.

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