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The significance of documenting culture in the Kamasau [kms] language documentation project

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During the planning phase of the Kamasau [kms][1] language documentation project in 2014, it became clear that focus on culture documentation would support the vitality of both the language and the culture. This paper describes that 2014 effort by a team to document the endangered traditional cultural and ecological knowledge of speakers of the Kamasau language of Papua New Guinea (PNG). After a brief outline of the scope of language and culture documentation (LCD), the 2014 project is described in the context of what is conventionally involved in best practices for such an effort. Background regarding Kamasau data previously collected contributes to the rationale for obtaining digital recordings to complement that legacy data. Leo Amu's videos were chosen to illustrate the significance of culture documentation in the context of a language documentation project.

Key words: TEK, Papua New Guinea (PNG), culture transmission, basket crafts, crayfish trap artefact, ethnobotany, language vitality, culture documentation

1. Introduction

In this paper, the author first outlines what is usually included in a language and culture documentation project. Then she gives the background for what had already been done in the Kamasau language prior to the current project. After that background, she describes how this culture documentation project was carried out in 2014. Following that background, an exemplar of the 25 culture videos, Leo's videos about making a crayfish trap, is examined to highlight the significance of culture documentation. Next, the results and implications for future culture documentation efforts are explored, followed by a review of the findings of the paper.

2. Language and Culture Documentation (LCD) in brief[2]

The 2014 Kamasau LCD project differs from a standard, conventional LCD project. The author describes what has become the standard and then discusses ways in which this Kamasau project differs in what was collected but conforms to best practice in its implementation.

In 1998, Himmelmann promoted a shift away from the exclusive analysis of data in descriptive linguistics to a focus on best practices for collecting the digital data itself.

> The concept of language documentation as a field of linguistic research and activity in its own right proceeds based on the assumption that the linguistic practices and traditions in a given speech community are worthy of documentation in the same way as material aspects of its culture (arts and crafts) are generally deemed worthy of documentation. (Himmelmann 1998:166)

[1] [kms] is the three letter language identifier used by the Ethnologue to identify the Kamasau language. Prior to the publication of the 15th edition in 2005, *Ethnologue* worked in cooperation with the International Organization for Standardization (ISO) to create a new international standard for language codes. This was fully adopted in 2007 as ISO 639-3 (Eberhard, Simons & Fennig 2025).

[2] I am thankful to two reviewers at LLM whose input widened the scope and applicability of the article to include more theoretical information about language and culture documentation.

A traditional project where little or no work has been done previously generally involves collecting the following:[3]

- wordlists targeting a minimum of 200 words and relevant grammatical paradigms;
- three natural texts per genre targeted, such as conversation, traditional story, personal narrative, hortatory, procedural, descriptive, drama, poetry/song, formulaic, and language play;
- several analytical discussions in which speakers discuss aspects of their language in a language of wider communication (Woodbury 2007:134); and
- targeted culture documentation recordings involving cultural identity markers selected with community input, such as arts, music, dance, traditional ecological knowledge (TEK), and knowledge and skills for producing crafts (Boerger et al. 2016:54). This is in line with the UNESCO stated purpose to safeguard the intangible cultural heritage of communities.[4]

Of these, written wordlists, paradigms, and texts have been historically collected in linguistic fieldwork without the preservation of recordings, whereas currently digital recording makes data preservation possible. The focus on analytical discussions and culture documentation is more recent and involves preserving community insights and data chosen by them.

A set of best practices has been developed for collecting, recording, and annotating both audio and video data to make it more useful and accessible for the long term. This involves the inclusion of various kinds of rich metadata about the recordings, as well as what equipment is recommended for obtaining the desired results (Boerger et al. 2016).

Ultimately, the annotated data must be archived at a repository which will store it, migrate it to new data formats, and make it available to the public. Best practices for preservation are demonstrated by the Dublin Core Metadata Initiative (DCMI).[5] The scholars at the Open Language Archives Community (OLAC) concur with these best practices and propagate high standards for data storage, cataloguing, and retrieval as delineated in Simons, Bird & Spanne (2008), with a 20 year update evaluating the success of various archives in following the standard (Bird & Simons 2022).

As the field of language (and culture) documentation has evolved, the focus has been primarily on endangered or under-documented languages (Krauss 1992) and ways of evaluating levels of endangerment, primarily by means of the EGIDS levels proposed by Lewis & Simons (2010), where EGIDS stands for 'Extended Graded Intergenerational Disruption Scale'. In contrast to the placement of the Kamasau language at EGIDS level 5 in 2014 (Simons, Lewis & Fennig 2014), the 2025 *Ethnologue* placed it at EGIDS level 6b. Level 5 is "Developing with literature in a standardized form being used by some." EGIDS 6b, "Threatened", indicates that "inter-generational transmission is in the process of being broken, but the child-bearing generation can still use the language so it is possible that revitalization efforts could restore transmission of the

[3] More detail on each of the aspects of documentation introduced here can be found in, *Language and Culture Documentation Manual*, referenced throughout the paper (Boerger et al. 2016). Among its 21 appendices are topics such as informed consent, what to collect with limited time, suggested file naming protocols, selecting an archive, and a flexible 14-18 week schedule for producing a basic language and culture documentation corpus.

[4] In Article 2 of the Text of the Convention for the Safeguarding of Intangible Cultural Heritage, UNESCO defined "intangible cultural heritage" as knowledge and skills including artefacts and practices transmitted from generation to generation, including "the following domains:(a) oral traditions and expressions, including language as a vehicle of the intangible cultural heritage; (b) performing arts; (c) social practices, rituals and festive events; (d) knowledge and practices concerning nature and the universe; (e) traditional craftsmanship" (UNESCO 32nd Session 2003).

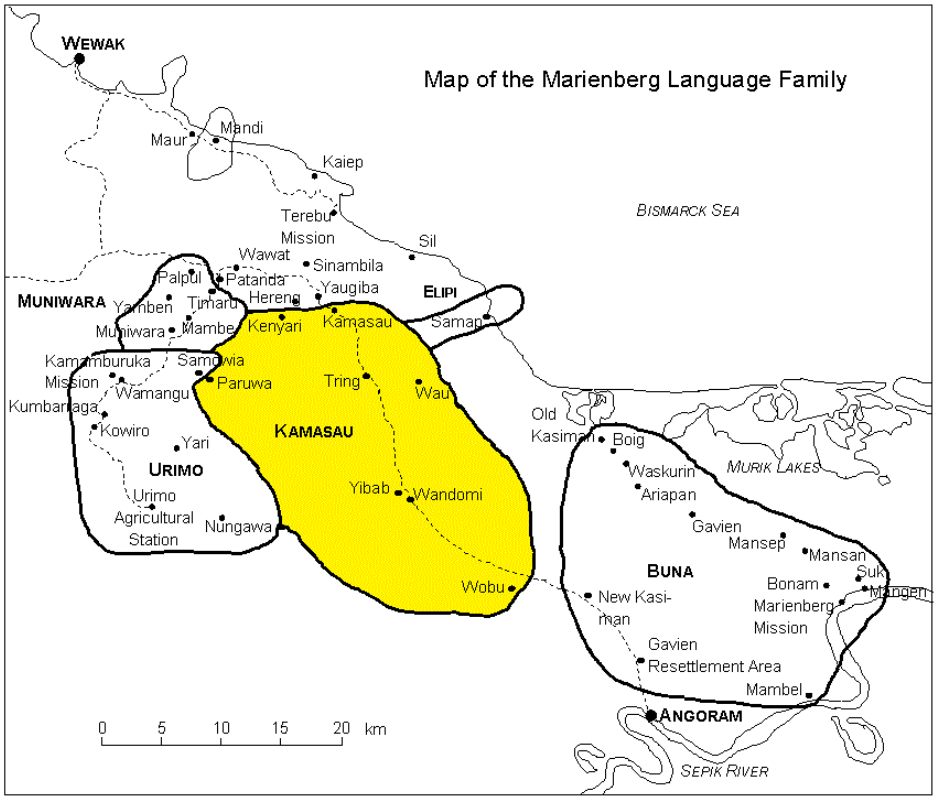
[5] dublincore.org

language in the home" (Eberhard, Simons & Fennig 2025). Throughout the researcher's involvement with the Kamasau language from 1977-2025, there has been an observable decline in the vitality of the language as explained further in Section 3. A similar decline has been documented in other languages of PNG (Kik et al. 2021; Eberhard, Simons & Fennig 2025[6]). The need for further language and culture documentation in PNG is critical.

The Kamasau project described here departs from the targeted recordings of a standard new documentation project because significant written work had already been done in the language. Therefore, the scope was primarily new documentation of the culture. Another focus was collecting a digital record of previously elicited data, involving the collection of wordlists and verb paradigms. The scope of this project conforms with best practices in recording, annotating, and archiving such digital data as described throughout this paper.

3. Background to the Kamasau [kms] language

The Kamasau [kms] language[7] is a member of the Marienberg Family in the Torricelli Phylum of Papuan languages, about which Laycock stated, "Obviously much more work needs to be carried out on this group of languages that we call the Torricelli Phylum, not least because it appears to be unique in the New Guinea area" (Laycock 1975:776). William Foley has done some work on the languages in the Marienberg Hills family, comparing the pronouns. He noted,



Map 1: Marienberg Language Family, E. Sepik Province, Papua New Guinea

[6] The Ethnologue Global Language Vitality for PNG can be found at https://www.ethnologue.com/country/PG/.
[7] The Kamasau language was first classified to be in the Torricelli Phylum by Laycock (1973:16). It was named after one of the villages, Kamasau village, where the language is spoken. However, the speakers of the language refer to it as Wand Tuan which means 'right (correct) talk'. The *Ethnologue* lists it as: Kamasau (Wand Tuan) [kms].

however, that, "Only one language in this family has good descriptive material available on it, Kamasau (Sanders and Sanders 1980a, b, 1994), but I have done some brief work on five others: Buna, Blabla[8], Bungain[9], Muniwara and Mandi" (Foley 2018: 304). See *Map 1* for the relevant portion of the East Sepik Province (ESP) of PNG.[10]

PNG had a recent census in 2021[11], but this data is listed only by district and not by village. The closest data would be for the Marienberg Rural area in the Angoram District. This population was estimated to be 37,330, but it probably includes all of the Marienberg language family and other languages as well. For this reason, the 2011 census data is being quoted here. This census shows about 950 people living at the time in the six main villages of the Kamasau language area (Simons, Lewis & Fennig 2014:215). The author estimates there were around 800 speakers of the Kamasau language in 1999.

The author and her husband[12] worked in the Kamasau language from 1977-1999, living primarily in Tring village, East Sepik Province, PNG, where the Segi dialect was spoken. While there, they wrote papers about phonology (Sanders & Sanders 1980a), orthography (Sanders & Sanders 1987), grammar (Sanders & Sanders 1994), anthropology (Sanders & Sanders 1988) and the four Kamasau dialects, which are Hagi, Ghini, Segi, and Soigi (Sanders & Sanders 1980b). In 1996, they published a triglot dictionary which included variations in four dialects of Kamasau, along with English and Tok Pisin [tpi] (Sanders & Sanders 1996). All these were documenting the language and culture, but that was not the researcher's focus. During this period the documentation was primarily written data, based on cassette recordings of 28 interlinearized texts. These were used in grammatical analysis and language learning. These recordings are not currently available for processing.

Even as early as 1979, when the researcher first lived in Tring village, the village children were not speaking the language. As the researcher's two sons were growing up there in the 1980s, they were encouraged to learn the Segi dialect from their village friends. But the researcher's sons told her the kids only spoke Tok Pisin to each other.[13] This is consistent with broader decline in language vitality in the East Sepik Province as reported by Dobrin. She did field work from 1998-1999 in Wautogik village in the Coastal Arapesh [aon] language on the coast north of Wewak. This language is also in the Torricelli Phylum. In 2011, she found, "their children no longer speak the language (Arapesh) and their grandchildren have almost no knowledge of their ancestral tongue" (Dobrin 2012).

In 1991, Tring parents came and asked the researcher and her husband to help them start Tok Ples Prep Schools so that their children could learn the vernacular and do better in primary school. The researcher explained that the purpose of prep schools[14] was to teach children to read and write in the language they know best before they go to school. The purpose of prep school was not to teach them the language. So, if they wanted prep school in the language, they would need

[8] Foley (2018) includes Samap and Elepi shown on the map under the name Blabla.
[9] Bungain is not labeled on the map, but the villagers from Wawat, Sinambila, and Yaugiba speak that language.
[10] This map was created in 2014 by Jen Woodrome, adapted from a map in (Sanders & Joy Sanders 1980:178).
[11] https://www.nso.gov.pg/statistics/population/#118-118-population-estimates-2021-p2
[12] I am grateful to Arden Sanders for his editorial assistance to birth this paper. Along with being my husband, he is also co-author of many articles cited in this paper.
[13] Iatmal language on the Sepik River is also endangered. Almost all adults speak the language, but children could be labeled semi-speakers. In 2008 all generations were fluent in Tok Pisin, and it is the first language of children" (Jendraschek 2012:9).
[14] These were called prep schools instead of preschools because 'pre' sounds too much like the English loan word 'free'. The school, in fact, had a small fee.

to ensure the children spoke the language when they entered the prep school. The parents began teaching their children Kamasau informally, so that they could have a prep school in that language. The researcher developed a two-year prep school curriculum, and in 1993 held a teacher training course. The first prep schools in 1994–1995 were held in three villages by six teachers with a total of 18 boys and 15 girls. The students did so well, that when they began first grade in English, the government teachers were amazed and said that these students should be in the second grade. When that first class of students completed sixth grade, most of the students passed the government exam, allowing them to go on to seventh grade, an improvement from one or two passing the exam per year.

The prep schools continued in different villages through 2006, when the government began Elementary Education in the area. Between 1994 and 1999, there were at least 119 children who completed prep school and were speaking and writing one of the three dialects of the vernacular. Since the Tok Ples Prep Schools ended, children are no longer learning to read and write the language formally.

4. The 2014 Kamasau documentation trip

In 2013, the primary researcher was archiving Kamasau legacy data for submission to the SIL REAP archive and compiling entries in Fieldworks Language Explorer (FLEx)[15], in order to include them in the Kamasau Webonary dictionary[16]. In the process of entering 15 texts into FLEx, she realized there were very limited audio recordings: one audio recording of a natural text in digital format from a young speaker and 50 songs originally recorded on magnetic tape and then digitized. These songs were written and sung primarily by young people at two song contests in the 1990s.

4.1 Planning for a documentation trip

Since the researcher knew the language was endangered and the data was inadequate for documentation, she began seeking a way to get new recordings of the language while there were still fluent speakers available.[17] In the process, she wrote two grant proposals, which provided an invaluable structure for the fieldwork eventually carried out.[18]

When the researcher contacted Kamasau speakers, asking them to help with planning and implementing the project, many of them said they were concerned about their language because the children were not learning it. They welcomed the opportunity to record their language and culture. This is similar to the situation in Coastal Arapesh, which is in an advanced state of shift to Tok Pisin (Dobrin 2021:40). The Coastal Arapesh people embraced the chance to record their language and culture for future generations.

[15] For information about FLEx go to: https://software.sil.org/fieldworks/

[16] The website for Webonary is https://www.webonary.org/kamasau/

[17] To that end, the researcher took a language documentation course at Dallas International University (DIU) where the instructors used a pre-publication version of their textbook (Boerger et al. 2016:107), which included material on grant-writing and possible funding agencies. That course on Language and Culture Documentation started the researcher on her journey to do such documentation. The author is indebted to Brenda Boerger for feedback on this paper which helped refine its scope and depth. As always, any remaining errors are the sole responsibility of the author.

[18] Suggestions from the NSF and ELF grant reviewers improved the fieldwork which had been focused on audio recordings. Several reviewers asked why the researcher was not going to use video. Their input changed the focus of the project to video recordings, supplemented by audio, which provides more useful access. No grants were awarded, so the author used a small inheritance and personal gifts to fund the research trip.

The researcher recruited three colleagues to serve under the IRB permission from Dallas International University to fulfill the project goals, recognizing she could not handle the equipment, data, and logistics alone. (See Boerger et al. 2016:116-118). As principle investigator and Segi speaker, she arranged for team accommodations, did recordings, annotations, and translations. Kelsey Daniels (MA in Linguistics, DIU, at the time) had some prior experience with language documentation. Her focus was on AV recordings and data management. Gillian Scoble (PhDs in Education and Anthropology), who had previously done fieldwork with the researcher in Tring, conducted the sociolinguistic survey to assess vitality of the language. Sonya Paoli, then a college intern, served as still photographer.

4.2 Research goals and procedures

The primary goals were to assess the vitality of the Kamasau language, and to collect and transcribe audio and video recordings of wordlists, cultural events, and botanical knowledge, using best practices and procedures. The author had seen how affirmation of the Kamasau language during earlier years had reinforced the value they placed on their language (Boerger 2015:169), and was hopeful that having access to recordings of their language might have a lasting effect.

4.2.1 Assess Vitality of the Kamasau language

The primary researcher and team undertook two activities to assess the vitality of the Kamasau language. The first of these was the Sociolinguistic Survey (Scoble 2014), to clarify how members of the community including their children use Kamasau, Tok Pisin, and English.

The second activity involved discussions with leaders from several villages regarding Kamasau usage. The purpose was to confirm if the language was still at EGIDS level 6b, "Threatened" (Eberhard, Simons & Fennig 2025), or if it had changed.

4.2.2 Record wordlists in the four dialects

In order to confirm or revise data previously collected, and to provide a basis for future research by others, digital wordlist recordings were made in each of the four Kamasau dialects: Ghini, Hagi, Segi, and Soigi. These were archived in REAP to preserve the lists for scholars as well as being put on the Wand Tuan YouTube channel for easier access for everyone. Each wordlist included 191 words and 57 verb phrases.

The recordings of the wordlists included a double-pass method as outlined in the BOLD (Basic Oral Language Documentation) protocols (Boerger et al. 2016:214). During the first pass an audio recording was made while words and phrases were elicited and transcribed. On the second pass, video and simultaneous audio recordings were made with a Zoom H2n Handy Recorder using a Condenser Headset MM-PSM pro microphone, for higher quality relevant for phonetic detail. Although this is not a large data set, the phonetic detail was later used to make some new discoveries when the data were analyzed acoustically. Previously analyzed fricatives turned out to be approximants (Holt & Sanders 2023:4). The detailed data for four dialects are a valuable resource for future phonetic analysis. The depth and breadth of data is in the previously published dictionary along with new recordings of verb conjugations and all the audio and video recordings as shown in Appendices B and C.

4.2.3 Record cultural events

Documenting cultural events is critical, not just for the linguistic terms identified, but also for the knowledge they impart. Specific cultural events were targeted by Ignas Amu, the Kamasau coordinator for the cultural documentation. He had spoken with people from the four dialect areas,

and they decided which events they wanted to record. These were the priority recordings scheduled during the research team's time in the community. These planned events included: a) pounding, washing, and cooking sago; b) making a sago mallet; and c) bringing a slit gong drum from the jungle to Kamasau village. There were also unplanned, spontaneous events that we recorded, including: d) a village meeting with oil palm company representatives; e) the mourning and burial of a child; f) welcome and farewells for our team; and g) various church services, prayers, and stories people asked us to record. By recording these spontaneous events, we hoped to discover patterns of language use. For example, we wanted to clarify how Kamasau, Tok Pisin, or English were being used in various contexts. The video recordings were made with a Canon VIXIA HF G20 video recorder, sometimes with a hotshot mic. Concurrent audio recordings with Zoom H2n Handy Recorders were also made for most events.[19]

During the planned events, several community members were recorded as they explained specific skills. One of those older community members[20], Leo Amu, is the focus of this paper; specifically, his demonstration on how to make a crayfish trap. After making the trap, he used it to tell a traditional story about how coconuts came to be. He stated repeatedly that he did not want to see these items of the culture get lost. This is the focus of Section 5.

4.2.4 Update botanical information in the dictionary

The researcher's original plan was to follow best practices in ethnobotany to document the uses and names of plants in the Kamasau area (McClatchey 2012:294) by collecting physical samples of the plants already included in the dictionary (Sanders & Sanders 1996). This included vernacular names and uses of 54 *nyumo* 'trees', in addition to 18 species of *wane* 'bananas', and 12 different palms. Plant names are also in the Kamasau Webonary[21] online dictionary and in the Kamasau Dictionary app.[22]

The researcher had envisioned including a botanist on the team for this purpose, with plans to collect duplicate samples to send to the Lae Botanical Garden and to the Botanical Research Institute of Texas (BRIT), similar to what Boerger et al. (2019:129) report for their 2015 fieldwork. Since the researcher did not receive grant funding for a PNG botanist, it was decided to take still photos of plants that the people recognized as being important and make audio recordings of information about them. Given the lack of a botanist and the time constraints for the project, botanical samples could not be collected.

The Kamasau traditional botanical knowledge was documented using an informal environmental transect. An environmental transect can be either "formal" or "informal" (McClatchey 2012:291). It is informal when the participant gives the researcher botanical and ethnobotanical information about plants encountered during a walk.

The researcher documented comments by several men while walking in the forest. Photos were taken of the total plant, its bark, leaves, fruit, and flowers (when possible). The audio recordings and pictorial records were paired, making it possible to produce 21 ethnobotanical videos.

[19] Appendices B & C include the audio & video equipment used for each event.
[20] The current life expectancy in PNG is 65.6 years of age, up from 55.5 years of age in 1976. https://www.macrotrends.net/datasets/global-metrics/countries/png/papua-new-guinea/life-expectancy Leo, in his late 50's in 2025, is one of the older living men in Tring and Wau villages.
[21] https://www.webonary.org/kamasau/browse/categories/?semdomain=Plant&semnumber=1.5
[22] This app can be downloaded at: https://play.google.com/store/apps/details?id=org.sil.webonary.kamasau&hl=en_US&pli=1

In summary, the findings correlate with what Round (2021:172) is attributed as saying. She asserts that collecting traditional ecological knowledge, through methods such as these, provides an opportunity to help prevent both the loss of ecological knowledge and the loss of linguistic knowledge (Schreyer, Longenecker & Wagner 2025:124).

4.2.5 Transcribe and gloss the recordings

While still in the village area, the primary investigator used Saymore, a data management program for language documentation, to transcribe and translate most of the Ghini and Hagi dialect recordings.[23] Since she was less familiar with these dialects more speaker interaction was needed to gloss them accurately.

For the majority Segi-dialect cultural and botanical recordings, a group of men and women from Tring village joined the four-woman documentation team at the SIL Center at Wewak for a week to assist in transcribing and glossing. At Wewak the team members and Kamasau speakers divided into groups to transcribe most of the Segi-dialect audio recordings into composition notebooks or directly into Saymore. Following an adaptation of Basic Oral Language Documentation (BOLD) procedures, (Reiman 2010:257), some of the English and Tok Pisin translations of the recordings were also recorded while other translations were transcribed. The slow and careful speech phase of BOLD was omitted, because Kamasau speakers who were skilled in writing their own language helped with the transcriptions. The annotations provided by the speakers gave depth to the data.

4.2.6 Document the Metadata

Metadata was meticulously written in notebooks, such as the event, the session, the equipment and equipment settings used, the speakers involved, their informed consents, and other relevant details. At the end of each day, Kelsey Daniels entered the digital recordings into Saymore along with the metadata from the notebooks. This and two Passport external hard drives acted as backups for the original data on SD cards.

4.2.7 Archive data for documentation to be complete

Appendix B presents a list of the recordings collected and archived in the SIL Language and Culture archive, REAP. The RAMP package used to enter data in the archive requires extensive metadata about each item being archived. Archiving the legacy materials in REAP was a focus prior to 2014. Archiving materials from the 2014 recordings has continued with 25 cultural videos, 5 dialect word lists, 6 Ghini dialect cultural recordings, and 21 botanical videos having been archived to date. Additional recordings are annotated in Saymore with archiving of those planned as well. (Appendix C.) The videos are also on the Wand Tuan YouTube channel[24].

5. Culture documentation of Leo Amu's crayfish trap knowledge

The Amu family, along with many other Kamasau speakers over the years, contributed significantly to the documentation of the Kamasau language and culture. The father, Andrew Amu (deceased), taught his sons Leo, Ignas, and Simon the Kamasau language and cultural skills they command to this day.

[23] https://software.sil.org/saymore/

[24] The Wand Tuan (aka Kamasau) channel has four playlists, accessed at: https://www.youtube.com/@wandtuan6606/playlists.

All three sons were involved in this project. His son, Ignas,[25]organized the cultural events which were video recorded on this trip. He and researcher K. Daniels recorded verb paradigms. Another son, Simon, demonstrated how to make a traditional sago pounding mallet, including modern adaptations. Before the filming, he had prepared sago mallet handles at various stages of the production process. During the filming, he began with the most basic process, then explained how the first part began. He then picked up with the next stage and demonstrated the process from there. By doing it in segments, he used the time effectively during the sago mallet event filming. See Appendix B for the link to his demonstration.

Leo is the eldest of the three brothers. He is the last remaining Kamasau person who commands the endangered skills of making the crayfish trap. Leo is also one of the few Kamasau speakers who knows how to shape a *garamut* 'slit gong drum.'[26] He dedicated himself to making both items for us to film, with the motivation that the videos could teach the younger generation these endangered crafts, preserving them so they will not be forgotten. The researcher focuses on the archived video demonstrating his knowledge about making crayfish traps, in order to illustrate the significance of culture documentation. This and the slit gong drum are endangered skills, but videos were also made of crafts which people still command, such as making a *bilum* 'string bag', making a bamboo comb, processing sago, and making grass skirts. Those related to processing sago are essential for their survival and were the first they had us record.

5.1 Importance of Artefacts in Kamasau culture

This section outlines an example of one of the cultural events that was videoed as an exemplar of the documentation process and data. One means of data collection (McClatchey 2012:292) is an artefact interview to focus on the components, history, uses and meaning of the artefact. Because the crayfish trap is so important to Leo Amu, he crafted his own interview explaining the materials he used, the process, and the history. He was also eager to tell a traditional story associated with this artefact. This was a "special form of artefact interview which is a production or reproduction interview" (McClatchey 2012:293) in which the participant produces the artefact and the researcher either assists or observes. In this case, the researcher was able to observe and interact with the participant while a coworker video recorded the interaction. This was consistent with the recommendation by Margetts and Margetts that it is helpful to have one researcher concentrating on the content while another concentrates on the audio-visual recording (Margetts & Margetts 2012:15).

Lemonnier related that what he calls 'technology' involves understanding how production "techniques are just as responsible for producing social ties and types of information as they are for transforming the material world" (Lemonnier 2012:298). That is, the process of making something involves interpersonal relations, as much as the creation of a new product adds material to the world. He has a set of "operational sequences" which designate a process that results in a specific object being transformed or created. He conveys three levels of interaction which are important in these techniques: 1) components that interact with each other, 2) techniques that are linked with each other, and 3) how this technical system is linked to the whole sociocultural setting (Lemonnier 2012:299–301).

[25] Ignas helped translate the Kamasau New Testament and then trained as an elementary school teacher.

[26] A speaker from Kamasau village had completed making a slit gong drum before we arrived. The research team was invited to video record the traditional ceremony which involved moving the new slit gong drum from the place it was shaped in the bush to Kamasau village, about one mile. Allowing women to view this ceremony was a first. See Appendix B for video link.

At Level 1, the components include not only the tools and actors who are acting on the object, but also the skills required for doing the actions. "These skills are part of what anthropologists call 'implicit' or 'tacit knowledge' " (Lemonnier 2012:300). This is knowledge of how to do something, rather than just knowing about something.

Leo, as the actor, gained this "know how" by trial and error as he reconstructed his grandfather's fish trap. The components he utilized were *sare numbru* 'vine.type', *eny* 'bamboo.type', and *singe* 'strips of sago palm frond bark'. The tools he used included *mame bidi* 'a machete, bush knife' and *mame gebich* ' a small knife'.

At Level 2, techniques are linked with each other. For example, before starting the process one must go to the jungle, collect the materials and take them to a particular location. Machetes and small knives are some of the tools used to process plant materials in PNG. The strong *sare numbru* 'vine.type' is used for building houses, tying its parts together. *Simiqu* are strips made from the outer bark of the sago frond. They can be used to weave a variety of carefully designed walls, shelves, and tables. The same procedure can be applied to other products, using the identical steps (Lemonnier 2012:301). For example, Leo demonstrated with a small knife how to remove the pithy back part of the sago stem strips in order to make them more flexible for use in weaving the crayfish trap. This same technique is used to produce other woven items. Once the required sago stem strips, bamboo, and vines are in place, the actual process of crayfish trap construction can begin.

5.2 Leo demonstrates making crayfish traps

In this section, the researcher summarizes Leo's demonstration of the process of making crayfish traps. This was documented in four videos, each describing one of the four basic stages of their construction. The fourth video includes a description of how the traps are used. That portion is included as an interlinearized text in Appendix A. Section 5.4 discusses how this documentation relates to Lemonnier's Level 3, how a technical system fits into the sociocultural setting.

5.2.1 Crayfish trap video, Part 1

In the initial step, Leo explained why and how he was making the crayfish trap. First, he made 'the father', or frame, of the house *baj kiyi*, also called the 'head' *ngawu*. This part is where the crayfish enter the trap. Then he introduced the materials he used: narrow strips of sago palm frond stems, and 'the vine' called *sare numbru* to fasten the strips together. He began with five short 'vertical strips from the sago stems' *simiqu* and attached them to a circular band at the top. He inserted a piece of 'large bamboo' *eny* to stabilize them while weaving until the pieces were firmly in place.

Figure 1: Making the frame

5.2.2 Crayfish video, Part 2

Figure 2: Weaving the main framework

In the second step, Leo demonstrated building onto the initial framework of five short vertical pieces, by adding more vertical pieces outside that inner framework. Then he began weaving the vine to attach these firmly at the top. He had difficulty getting the weaving to come out correctly until he realized that he had used ten vertical pieces, rather than nine, which were needed. After undoing the weaving he had already done, he resumed weaving with just nine vertical pieces.

Leo himself pointed out his mistake during the demonstration and rectified it. The fact that he described the whole process of making the crayfish trap, including the problems he encountered, demonstrates best practice as described by Lemonnier:

> To have people describe in their own words what they are doing is of utmost importance because on the one hand they show their personal organization strategies for an operational sequence, and on the other, they may both emphasize or refrain from commenting on particular aspects of the technique (or object) in question (Lemonnier 2012:315-6).

5.2.3 Crayfish video, Part 3

Figure 3:Shaping the belly of the trap

For the third phase, Leo continued shaping the larger part of the fish trap at the opposite end from the opening. First, four long sago stem pieces were folded over towards the inside of the trap, making it look like a heart. Once these were bent over, he attached them. Next, he folded over the other five to make the 'belly', that is, the larger collecting part of the trap.

Then he began weaving another piece of supple sago stem around the framework of the nine upright pieces to fill in the structure of the belly. After he had woven up about 12 inches, he pulled the long sago pieces from the center, straightened them out, and tied them at the top. At this point the final shape of the trap became more evident.

5.2.4 Crayfish video, Part 4

Figure 4: Finishing the crayfish trap

Before recording the completed crayfish trap for video Part 4, Leo independently worked on it further, filling in the weaving, and strengthening the trap by weaving about 12 more inches on the belly. In Part 4, he demonstrated the completion of the trap. He finished the mouth of the trap by weaving around the opening. After the weaving was complete, he fastened the loose ends of the sago stem and secured them by tying them with a vine in several places.

Figure 5: Finishing touches on the mouth of the trap

His final step was to trim the long sago stem ends at the base of the belly. He firmly tied two sets of vines about six inches apart. Then he scored the sago stem edges with a sharp knife and bent them over to break them off. After trimming the edges at the bottom to make them even, he explained how the trap is used to catch crayfish.

> "In the evening, they take the trap and weigh it down so that it lies in the bottom of the river. The next morning, they go back to see if it rises to the top when the weight is removed, or if it stays at the bottom. If it stays down, they know they have caught many crayfish. They remove the trap, pull open the rings at the bottom to allow the crayfish to fall out, collect them, then go home and eat them. The following evening, they repeat the process."

See Appendix A for the complete interlinear text of this story.

5.2.5 Importance of video and storytelling for future generations

At the end of the video, Leo told about his journey of learning how to make crayfish traps. It is significant that the craft was already endangered when he was a young man and that he had to reconstruct how to build the traps by examining at an old one made by his grandfather.

Figure 6: Significance of preserving the craft

> "Long ago when my grandfather was living, they made this thing. I saw it with my own eyes, but I didn't know how to make it.
>
> I wanted to make this thing, so I took it to him. He stared at it, then he said, "Now my eyes are bad, so I am not able to teach you. This craft that I have worked with my hands, now when I die, I will take the knowledge with me. You are not able to learn it."
>
> When I heard those words, I was very sad. I thought, "I don't want to leave this very good craft of my ancestors." And I took an old one and put it in my house.
>
> After my grandfather died, I laid it out and looked at it; I figured out how I could make it. I kept making it until it was right, then I waited.
>
> My uncle came and saw it and said, "You can to do it. You are able to make it like my father did. You did it."

> I carried the thing, I put it in the water, then we got many crayfish and ate them. We ate by means of this; I provided for my children.
>
> But now I have left hunting for crayfish. I left it (crayfish trap) in Wau village and came (to Tring). After I came here to live, I did not make these. But I wanted to teach this craft, so this (video) will be left so later my children will see it. They will see it; they will say, 'O, our father knew how to make this thing, so we can just imitate him.'
>
> For that reason, I wanted to teach this craft. Now my speech is completed. Thank you."

5.3 Traditional ancestor story about the crayfish trap and how coconuts came to be

After he completed the crayfish trap, Leo brought it to us and told the traditional ancestor story of how coconuts came to be. That story connects with the crayfish traps. At his request, we video recorded him telling the ancestor story. The resulting video has subtitles in Kamasau and in English. An English translation of the story follows.

> Two brothers went hunting for crayfish. One came home with just a few crayfish, and one came home with an abundance of them. The brother who caught lots of crayfish got to the river, then took off his head and lay down in the river. After the crayfish filled up his body, he dumped them all out, put his head back on and carried the crayfish back to the village. This happened several days in a row.
>
> Then one day the brother who didn't get many crayfish tricked his brother and followed him to watch how he got so many crayfish. He saw him lay down in the water and then begin to dump out the crayfish. After he lay down in the water the second time, before his brother could put his head back on, he told him, "Oh, you are doing this and that's how you are getting so many crayfish." And he killed his body. His head got up, it bumped as it hit the ground and came and stuck to the older brother. He couldn't remove it, so he ran back to the village crying, and his parents took a cassowary knife and removed the head. The jaw broke and the head fell down.
>
> The next morning the head had new shoots coming out of it, so they planted it. It grew into a coconut tree and grew many coconuts. But the people were afraid to eat them because they were afraid if they did, they would get sick, so they didn't eat them.
>
> But one day an old woman told them, 'I am an old woman, if I eat a coconut and die, then you will know not to eat them. But if I live, then you will be able to eat them too.'
>
> So, the young men knocked down some young coconuts and she drank the water and ate the coconut flesh. She kept eating coconuts for one year and she was still living and strong. Then she told them all, 'I am fine, so you can eat the coconuts too', and they did.

Then Leo showed how the coconut is like a head with eyes and a mouth; the crayfish trap is like a body, with the expanded belly to hold the crayfish. Leo told this story with his school-aged sons, Nehemiah and Valentine, listening, (see Figure 7). The link to the video is given in Appendix B.

5.4 Cultural significance of crayfish traps

Level 1 of Lemonnier's 3 levels of operational sequences includes tools and actors. Level 2 involves the techniques used to make things. At his interactional Level 3, "the ways in which a technique or object is manufactured, used, or exchanged is linked to practices and thought systems

Figure 7: Explaining how a coconut resembles a head

that go well beyond simple material effectiveness" (Lemonnier 2012:301). For example, the making of crayfish traps and the use of them to catch crayfish is not only a survival skill but also involves cultural significance.

That is, years ago, in a stream where crayfish were prevalent, it was useful to make *singe* 'crayfish traps' to provide food in the village of Wau, East Sepik Province. The researcher posits that after moving to a new location where there were fewer crayfish, these traps were no longer useful for obtaining food, but possibly became valued as works of art or cultural history. The crayfish traps were originally neither used for rituals nor art in his system (Lemonnier 2012:311). But because the *singe* 'crayfish trap' was part of the traditional story, it appears that it has now acquired a ritual use in demonstrating the story of how coconuts came to be. The desire to preserve the knowledge of how to make it may therefore be tied to illustrating their traditional story, which Leo first heard from his father. They seek to hold onto the cultural knowledge of the ancestors, so it can be passed on to future generations. Furthermore, the beauty of the carefully crafted crayfish trap may now also be viewed as a rejuvenated art form.

5.5 Linguistic significance of documenting cultural practices

Another aspect of Lemonnier's Level 3 is that in the process of video recording events, linguistic data is being collected. He points out that, "The collection and analysis of the vocabulary is of crucial importance here: its signification and connotations may reveal links between the technical domain and other domains" (Lemonnier 2012:314). The researcher confirmed this while processing the crayfish trap videos, documenting several new lexical terms. The tools, vine, and sago frond stem were already familiar, since these had been observed over the years in a variety of contexts and had already been entered in the dictionary. However, how Leo referred to the parts of the *singe* as he worked, revealed new relationships between parts of the *singe* 'crayfish trap'. New senses of words included *ngawu* 'head' and *singe kiyi* 'father of the fish trap', which is the initial framework upon which the rest of the trap is designed. The researcher had heard the term *baj kiyi* 'father of the house' used for the main supporting pole in a house, so these two usages are

parallel to their being the main structures which support other parts. A second new sense was in the word *singe wo* 'crayfish trap child' for the second part of the weaving that was added onto the 'father' of the trap. Here the framework of the 'father' is needed before the 'child' can be added. Together they make up the completed crayfish trap.

In summary, documenting the endangered crayfish trap knowledge had two impacts. First it captured its significance to the community and second it enriched the documentation of Kamasau culturally and linguistically.

6. Results and implications for future culture documentation efforts

The team collected texts of various genres. Many of the new texts collected were in conjunction with culture documentation, as were the analytical discussions regarding plants and trees. Further texts involved recording unplanned events as they occurred. These were annotated and are in the process of being archived as described in Appendices B and C.

Four results stand out as having implications for future culture documentation efforts. These relate to: a) EGIDS level confirmed for Kamasau language b) how children learn in their culture; c) evaluation of culture documentation videos; and d) distribution of the linguistic and cultural knowledge preserved in the project.

6.1 EGIDS level for Kamasau confirmed

In the brief sociolinguistic survey that was conducted to assess the vitality of the Kamasau language (Scoble 2014), people in all four dialects said that children most commonly spoke to each other in Tok Pisin both inside their homes and when playing outside and on the school grounds. This confirmed that not all children under the age of 20 still speak the language but many have only a passive knowledge of common greetings and terms. Kamasau is spoken in six villages in Papua New Guinea (PNG)[27] and this survey confirmed its rating at EGIDS level 6b, "threatened".

The most effective way for the shift in vitality to be reversed is for the members of any community to teach their mother tongue to the children. This is important because speaking their own vernacular, in addition to English and Tok Pisin or another language of wider communication, will have the long term effect of enriching their lives, as well as the lives of the future generations. One parent said that they thought that knowing Tok Pisin would better prepare their children to go to school in English than would the vernacular. That perspective may be one reason why parents are now choosing to teach Tok Pisin to their children rather than the vernacular.

6.2 Children learn by seeing and doing

Through the events surrounding the recording of these culture documentation videos, children learned about the Kamasau culture through listening, seeing, and doing, the normal way of learning in the culture. Leo's sons, Nehemiah and Valentine, were present as he told the stories about the crayfish trap and the coconut, as seen in Figure 7. The researcher estimates that Leo's oldest son, Nehemiah, was then in his early 20's. As Leo made the crayfish trap, he and his wife reminisced about how happy the researcher and her husband were when they saw Leo and his wife teaching their young son, Nehemiah, the vernacular in the 1990's. At that time, he was one of the few toddlers able to speak the language. In 2014, Leo and his wife said they regretted the fact that, although he could still understand the language, he now only responded in Tok Pisin.

[27] The village of Wandomi, which is about a mile from Yibab across a stream, had few participants taking the sociolinguistic survey. Henry Bongeri, from Wandomi, did participate in the Word List preview recording along with Gabriel Minamo from Yibab. The following day Gabriel came to do the video recording of the Ghini Word list.

On the same trip, we recorded another event during which a sago palm was split and pounded, which illustrated this 'listen, see, do' learning style. As the primary demonstrator was pounding sago, there were two children around aged five and seven in the background who were sitting and pounding sago at the same time. This learning style is prevalent throughout Papua New Guinea.[28] For example, Arden Sanders observed regarding the Kamasau culture:

> The most commonly used Kamasau expression to talk about training is *be geg* 'show'. After the trainee observes the correct behavior, the person imitates under supervision. This imitation is called *sonyi nand* 'he is practicing' (Sanders 1988:124).

The fact that children learn by watching and imitating adults pound sago was captured in that video (see Figure 8). As other events were being filmed, children were always present, watching and listening. Sometimes we could hear them in the background, as in the Sago Cooking video where the sago that was cooked was offered to children on banana leaves for them to eat. See Appendix B.

Figure 8: Learning to pound sago

Several of the older men and women had been chosen to explain specific skills, which they did in Kamasau. They had young people as assistants who did the demonstrations, for example, of pounding and washing sago. These young people from the community spoke only the trade language, Tok Pisin, or had limited Kamasau. However, they were very skilled in their tasks. The hope is that at some time in the future they will desire to reclaim a knowledge of their language along with their cultural knowledge. At that point they could watch and listen to these videos that they themselves helped make.

[28] Schieffelin states that the Kaluli [bco] speakers of the Southern Highland Province of PNG who live at the base of Mt. Bosavi say "Once children begin to use words, Kaluli mothers say they must "show language" to children if they are to learn to speak" (Schieffelin 1990:7).

The videos collected in this project could facilitate such revitalization in the future, because not only do the videos document the cultural practices, but they also document the specialized vocabulary that is part of each particular skill or craft. In conclusion, the intended result continues to be that the videos of their own culture and language may motivate them to enrich their lives through language and culture revitalization.

6.3 Evaluating the effectiveness of culture documentation videos

It has been a challenge to evaluate the effectiveness of the videos. But, the researcher has received some feedback regarding the ethnobotany videos. Because of the way they were annotated, the vernacular audio was cut into short segments to fit the subtitles. Unfortunately, this eliminated the natural cadence of the language. A very helpful comment from a 45-year-old village friend pointed this out, after all the videos had already been produced. These videos are now in the process of being revised to keep the soundtrack intact.

Another younger person, in his 30s, gave the feedback that he would like all the videos to be done with subtitles in Kamasau and English, not in Tok Pisin. That was also helpful input. Several people have given feedback that they really like the dictionary app. During the pandemic communication was limited. Letters sent to PNG were returned. It has been difficult to get feedback from the community about the wider effectiveness of this documentation project in helping preserve the Kamasau language and culture.[29]

6.4 Disseminating linguistic and cultural knowledge to stakeholders

As mentioned earlier in the paper, there are three groups to consider in sharing the linguistic and cultural knowledge gained from this project: the academic community, the Papua New Guinean public, and the Kamasau stakeholders. A future project which would contribute towards all three of these groups would be to produce a collection guide for the Kamasau documentation, following the format of Salffner (2015). This would be well-aligned with the overarching aim of supporting future Kamasau stakeholders in accessing the archived materials, which is a major goal of this endeavor. This would include best practices for archival and detailed metadata (including recording procedures).

Currently the data collected and mentioned here is available in three places:

1) Through the SIL Language and Culture Archives, also known as Repository for Electronic Archiving & Publishing (REAP). https://www.sil.org/resources/language-culture-archives ;
2) A website by SIL about language resources in Papua New Guinea: https://pnglanguages.sil.org/resources ;
3) The WandTuan YouTube channel, with links given throughout the paper and also available in Appendix B for all the videos that have been archived: https://www.youtube.com/@wandtuan6606 .

Since it is important that the linguistic and cultural resources of this project be accessible to all the stakeholders, the author is exploring how to improve contact with and access by the Kamasau community. Before the research team left the village in 2014, they gave copies of the original unprocessed videos to members of the community in MP4 format. In 2017 mini-SD cards were sent to 10 community members so they could share them with others by Bluetooth. These

[29] It is interesting that the *torbing* 'mouth harp' YouTube video had 1,500 hits as compared to most of the other videos with 30-50 hits. It is not clear what accounts for the interest in that specific video, but perhaps it is due to its being music as noted by (Boerger 1998:9). Recent videos about making fire without matches had 86-99 hits.

SD cards included materials from this project that were already produced and other vernacular materials that had been previously produced.[30] Speakers have been notified by email about additional videos put up on YouTube. Additional possibilities might be establishing a WandTuan Facebook page to have better communication with Kamasau speakers and developing apps to give them access to verb conjugations, legacy story books, and other resources in the language.

7. Conclusion

The activities reported in this paper: recording the wordlists, documenting the knowledge and skills to produce traditional crafts, recording traditional ecological knowledge, and the sociolinguistic survey were all designed to contribute to preventing further loss of linguistic and traditional knowledge, as well as assessing the vitality of the language. As shown, this project fulfilled standard criteria regarding best practices in LCD. These experiences demonstrate that it is critical to document language and culture, including the crafting of cultural artefacts, while there are still fluent language speakers who are able to create them. The significance was illustrated by Leo Amu's description of the endangered skill of crayfish trap building, in that he is the last member of the community to retain this knowledge. It also demonstrated the intersection of language and culture documentation by revealing new terminology and uses of previously known vocabulary. Given these results, culture documentation should be considered an integral part of all language documentation projects.

[30] This included the Ghini and Hagi recordings, all 5 word lists, the sago videos, and other cultural videos that had been subtitled. Those cards also had the Kamasau Dictionary app, Kamasau Bible app, 77 songs written by the people in 1994 and 1997, and some footage from the Kamasau New Testament Dedication in 1999.

Appendix A.

How we fish with the crayfish trap

This interlinear text follows the segmentation of phrases in part of the video 4 subtitles. Numbering is from the interlinearized FLEx files and is based on intonation. Thus, several numbered phrases or clauses can make up a single grammatical sentence. Note: in the verbs and some demonstratives the subject markers are prefixed with number and gender/class while the objects of transitive verbs are suffixed, also with number and gender. Two or three verbs can combine to make a compound verb having a single English gloss.

For IPA correspondences of the orthography, go to section 11, the Pronunciation Guide to the Kamasau Language Alphabet: https://www.webonary.org/kamasau/overview/entries-explained/ .

List of Abbreviations

The following abbreviations used in this paper generally follow the Leipzig Glossing Rules.

1	first person	LING	linguistic class
2	second person	M	masculine class
3	third person	N	neuter class
DEM	demonstrative	NEG	negation
F	feminine class	PL	plural
IRR	irrealis	REL	relativizer
LIM	limiter	SG	singular

86-87	Muqdi	otiwo	p-ar-e	p-o	p-o	wuye	pe	p-aw-o	r-ighe,
	then	later	1.PL-carry-3.PL	1.PL-go	1.PL-go	water	in	1.PL-put-3.PL	3.F.PL-go.down

‘Then later, when we keep on carrying them and put them down into the river,’

88	burpoq	p-aw-o	r-ighe	r-ise.
	night	1.PL-put-3.PL	3.F.PL-go.down	3.F.PL-stay

‘we put them in at night and leave them.’

89	Yambgriq	bur=ne,
	next day	night, darkness=LIM

‘The next day, when it is still dark,’

90	burpoq=ne	nyinge	p-ar-e	p-o	p-o
	night, darkness=LIM	leg	1.PL-carry-3.PL	1.PL-go	1.PL-go

‘when it is still dark we keep on walking,’

91	di	r-uso.
	dawn	3.F.PL-go

‘(until) it is near dawn.’

92	Pend	r-uso,	beghi	wuye	pe	ye<mb>u (stem=*yeu*),	di
	dawn	3.F.PL-go	1.PL	water	in	stand<1PL>	then

‘At the first light of dawn, we stand in the river, then’

93	puate	yumbo	w-en	p-at-e	m-ow-i.
	base	thing	3F.SG-DEM	1.PL-take-3.PL	3.M.PL-go.up-3.M.SG

‘we will pick up the base of this thing.’

94 P-at-e m-ow-i,
1.PL-take-3.PL 3.M.PL-go.up-3.M.SG
'We pick it up,'

95 wuye wabe n-ar-e n-ase kin te sare bure b-ad
water inside 3.M.SG-carry-3.PL 3.M.SG-lie.down REL that vine loosen 1.PL-do
'we untie the vine that holds it down in the water,'

96 ni mai n-ewo n-ewo n-o,
3.M.SG heavy 3.M.SG-go.up 3.M.SG-go.up 3.M.SG-go
'if it (trap) weight goes up,'

97 tedi beghi nei b-ab ni qat m-ar m-o segi,
then 1.PL think 1.PL-do 3.M.SG crayfish 3.M.PL-enter 3.M.PL-go NEG
'then we know, crayfish did not go inside it (the trap).'

98 ni umo m-ase segi pugri,
3.M.SG fish 3.M.PL-lie NEG like.that
bu ni pri n-o n-es n-ewo.
therefore 3.M.SG light.weight 3.M.SG-go 3.M.SG-stand.up 3.M.SG-go.up
'The crayfish are not lying in the trap, so it is light weight and floats up.'

99 Sare bure b-ad pre ni wuye pe n-ar opu=ne
vine loosen 1.PL-do done 3.M.SG water to 3.M.SG-go.inside area=LIM
te n-ase,
that 3.M.SG-lie
'If after we release the vine, it lies in the water,'

100 te beghi nei b-ab,
then 1.PL thought 1.PL- do
'then we know (logical conclusion),'

101 umo quan buagi m-ar m-o mai r-indi r-iwo,
fish many all 3.M.PL-enter 3.M.PL-go heavy 3.F.PL-come 3.F.PL-go.up
'many crayfish have gone inside and it is heavy,'

102 di umbo ni n-es n-ewo koruso,
then stomach 3.M.SG 3.M.SG-get.up 3.M.SG-go.up impossible
'then the belly (part of the trap) isn't able to float.'

103 Ni ruqo pu=ne n-ase.
3.M.SG sleeping thus=LIM 3.M.SG-lie.down
'And it just lies there.'

104 Di p-ow-i chumbuai b-ad.
then 1.PL-pick up s.-3.M.SG happiness 1.PL-do
'Then we are happy to get it.'

105 Ni ruqo pu n-ase, beghi chumbuai b-ad di p-o,
3.M.SG sleeping thus 3.M.SG-lie.down 1.PL happiness 1.PL-do then 1.PL-go
'When it lies there, we rejoice and then we go,'

106 p-et-i n-ow-i pugri di nyong b-ad
1.PL-take-3.M.SG 3.M.SG-put-3.M.SG like.that and shake 1.pl-do
'we pick it up (the trap) like this and shake it downward,'

107 di qat nganye buagi m-ari tumo m-amb bi v-iso
then crayfish very many 3.M.PL-say nearby 3.M.PL-to do open 3.LING.SG-go
'There are many crayfish closely packed making noise it comes open,' (meaning uncertain)

108 te puk puk puk te beghi nei b-ab
that sound then 1.PL thought 1.PL-do
qat nganye buagi ye<m>u (stem=*yeu*)
crayfish very many stand<3.M.PL>
'(We hear) that sound of crayfish, then we know very many are there.'

109 muqdi qat p-at-e m-ow-i ningg
now crayfish 1.PL-take-3.PL 3.M.PL-put-3.M.SG want
'Now if we want to get crayfish,'

110 mim w-en pugri kin puq w-ughe w-uso
mouth 3.F.SG-DEM like.that REL thus 3.F.SG-go.down 3.F.SG-go
'we slide the mouth (of the trap) down like this',

111 puq w-ughe w-uso muqdi b-odo,
this 3.F.SG-go.down 3.F.SG-go now 1.PL-go.towards.speaker
si pugri p-eq w-uso.
hand like that 1.PL-rub 3.F.SG-go
'(if) it goes down now we go towards it, do this with our hand (move the sago frond stems to make an opening).'

112 Si pugri p-eq w-uso di pugri gib b-ad
hand like.that 1.PL-rub 3.F.SG-go and like.that look.alike 1.PL-do
di nyong b-ad
then shake 1.PL-do
'We do this with (our) hand and just like that then we shake it downward,'

113 di qat buagi bure m-i,
then crayfish all open 3.M.PL-fall
'then all the crayfish fall out,

114 di p-at-e m-ow-i m-ow-i pre,
and 1.PL-take-3.PL 3.M.PL-put-3.M.SG 3.M.PL-put-3.M.SG finished
'and after we finish getting them,'

115 muqdi pugri=ne sare w-en=ne
then like.that=LIM vine F.SG.-DEM=LIM
mune k-iring w-ipi w-undi w-uso,
again 1.SG-push 3. F.SG-do 3.F.SG-come 3.F.SG-go
'then the vine is moved down like this again.'

116 ni ngim p-ira-q w-ughe pre,
3.M.PL road, way, path 1.pl-carry-3.F.SG 3.F.SG-go.down finished
'After we close their way,'

117 p-ua-q w-use
1.PL-put-3. F.SG 3. F.SG-lie down
'we lay it (trap) down.'

118 yuram mune p-o p-eq w-ughe,
Evening again 1.PL-go 1.PL-put in 3.F.SG-go.down
'In the evening, we go again and put the trap down in (the water),'

119 di pugri p-at-e -ruwi p-ar-e b-adi p-e.
then like that 1.PL-get- 3.PL 3.F.PL-GO.UP 1.PL-carry-3.PL 1.PL-come 1.PL-eat
'then like that we get them, we bring them back to eat.'

Appendix B. Recordings already archived in the SIL archive, REAP.[31]

Event	Spkrs	min	Dia-lect	Equip[32]	YouTube link
Kamasau Wordlists					https://www.youtube.com/playlist?list=PLp3n4ha5v0p5UIga6jE97TipBuEPgXNiQ
Segi Speaker 1	Leo Amu	17, 24	Segi	VX; ZM+ PSM	https://www.youtube.com/watch?v=v8Na64LBsLw&list=PLp3n4ha5v0p5UIga6jE97TipBuEPgXNiQ&index=16&t=44s
Segi Speaker 2:	Rex Yanok	8, 7 15, 15,	Segi	same	https://www.youtube.com/watch?v=Qe4j3FpdKKY&list=PLp3n4ha5v0p5UIga6jE97TipBuEPgXNiQ&index=1
Soigi Speaker	Rapha-el Bare-woi	15, 14, 9	Soigi	VX+HS ZM+ PSM	https://www.youtube.com/watch?v=SBt63pQZlxI&list=PLp3n4ha5v0p5UIga6jE97TipBuEPgXNiQ&index=5&t=2s
Ghini Speaker	Gabriel Mina-mo	3, 5 20, 12	Ghini	VX+HS ZM+ PSM	https://www.youtube.com/watch?v=9-nkR9ZLSFw&list=PLp3n4ha5v0p5UIga6jE97TipBuEPgXNiQ&index=10&t=11s
Hagi Speaker	James Yaman	16, 10,1 4	Hagi	VX+HS ZM+ PSM	https://www.youtube.com/watch?v=b09nkBEm95I&list=PLp3n4ha5v0p5UIga6jE97TipBuEPgXNiQ&index=12
Cultural videos					https://www.youtube.com/playlist?list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd
Mouth Harp	John August	3	Segi	VX; ZM	https://www.youtube.com/watch?v=Xelx-uA7Vrw&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=1
Bamboo flute	Norbet	5	Segi	VX; ZM	https://www.youtube.com/watch?v=hnWsyHwSKFM&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=2
Sago mallet Prts 1-2	Simon Amu	13, 10	Segi	VX+HS ZM	https://www.youtube.com/watch?v=IOVXkfiekT4&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=3
Sago Pound	Ignas Amu/ Tex	14	Segi	VX+HS ZM	https://www.youtube.com/watch?v=3qOi1nCAQBA&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=5
Sago wash	Asari, Ruth Gobi	26	Segi	VX+HS ZM	https://www.youtube.com/watch?v=OaBxWGH0JBI&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=6
Sago cook	Emelda Arowis	21	Segi	VX+HS ZM	https://www.youtube.com/watch?v=A6b_adEWE1U&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=7&t=2s

[31] For Kamasau language materials currently available, see: https://www.sil.org/resources/search?query=kms .

[32] Abbreviations for equipment in Appendices B & C: Zoom H2n recorder= ZM (if no mic indicated, internal mic was used)
MM-PSM pro series earset microphone= PSM
Canon VIXIA HF G20 video recorder = VX (if no mic indicated, internal mic was used)
Polaroid Shotgun microphone used with VIXIA = HS
Canon G10 Still Camera = CG

Making crayfish trap: 1-4	Leo Amu	16 16 16 12	Segi	VX+HS ZM	https://www.youtube.com/watch?v=Uztoslg6r6M&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=19&t=29s
Fish trap and Coconut	Leo Amu	8	Segi	VX+HS ZM	https://www.youtube.com/watch?v=StL_Xo4QDGw&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=8&t=168s
Grass skirts: 1-3	Ger-trude Amu	13 16 8	Segi	VX+HS ZM	https://www.youtube.com/watch?v=x74L-mwwp4I&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=11&t=2s
Slit gong drum:1-3	Ignas Tumu	18 11 13	Soigi	VX ZM	https://www.youtube.com/watch?v=GJVXPppKDg0&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=12&t=2s
Tring Welcome	Whole village	3	Segi	VX	https://www.youtube.com/watch?v=fdUNJO350GY&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=17&t=140s
Kamasau Welcome	Whole village	13	Soigi	VX ZM-4ch	https://www.youtube.com/watch?v=ER_HJsvG8vw&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=17&t=13s
Oil Palm story	Francis-ca Ajiwing	8	Hagi	ZM	https://www.youtube.com/watch?v=IM6NoJdJqdM&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=15
Tring Worship Service	Rex Yanok	3	Segi	VX+HS	https://www.youtube.com/watch?v=dp_i5FI4VnU&list=PLp3n4ha5v0p4N4BbPuMgcXBm6IYPJp2gd&index=18
Making slit gong drum.	Leo Amu	10	Segi	VX; ZM	https://www.youtube.com/watch?v=efWoA9B3lTA&t=7s
Making fire without matches	Markus Asari	16 6	Segi	VX+HS ZM CG	Part1:https://www.youtube.com/watch?v=tqa7qcBNGl4&t=88s Part2: https://www.youtube.com/watch?v=oVcgo2sCNnw
6 Ghini dialect videos	Keti D, Robert, Sarah, Keti M, Julie, Yakabus	1-5	Ghini	VX+HS ZM+ PSM	https://www.youtube.com/playlist?list=PLp3n4ha5v0p7TC_9O0tkLRF-NHwBXo5dI
21 Plant videos		1-2	Segi	ZM CG	https://www.youtube.com/playlist?list=PLp3n4ha5v0p6kp-8MaC6Gt790XMoXc4du
Verb paradigm for "go"	Ignas A/ Kelsey	2	Segi	ZM	Audio recording transcribed, translated, archived. https://www.sil.org/resources/archives/92045 Produce an app if possible.

Appendix C. Recordings yet to be processed Listed in order of priority			
Cultural Event	**Dialect**	**Recording Equipment**	**Plan for this recording**
Verb paradigms: By Ignas Amu & Kelsey Daniels	Segi	ZM CG	Archive recordings of verbs: carry, come, give, go, go.down, help, sit, and stand. Make into an app.
Wordlist preview recordings	4 dialects	ZM	Transcribe & archive these first pass audio recordings of wordlists later videoed.
String Tricks like Cat's cradle	Segi	VX; ZM	Produce several short videos. Archive.
Making bamboo comb Norbet Mina	Segi	VX; ZM	Complete transcribing; produce video. Archive.
Women making string bags: many	Segi	VX+ HS ZM; CG	Transcribe; produce video, archive.
Bird sap story: Leo Amu.	Segi	VX; ZM	Already transcribed & translated. Produce video; Archive.
Kamasau village singing worship song	Soigi	VX; ZM	Produce video; archive.
Grass Skirt- Cecilia Yakour; Parts 1-3	Soigi	VX; ZM	Heavy rainstorm while video being filmed so lighting is poor and rain loud. Try to salvage.
Initiation rites: by Ewa and Simon	Soigi	ZM	Transcribe in Saymore and gloss using recorded English translation. Archive.
Female witch legend by Michael Mondu	Soigi	ZM	Transcribe in Saymore and gloss using recorded English translation. Archive
Male witch legend by Michael Mondu	Soigi	ZM	Transcribe in Saymore and gloss using recorded English translation. Archive
Origin of the Kamasau people by M. Mondu	Soigi	ZM	Transcribe in Saymore and gloss using recorded English translation. Archive
Kamasau closing speeches and song	Soigi	ZM	Transcribe emotional goodbyes. Archive.
2 testimonies retold by Gisla Michael	Segi	ZM	Transcribe, translate, archive.
4 stories retold by G Michael.	Segi	ZM- PSM	Transcribe, translate, archive.
Going to Sago: G Michael	Segi	ZM-PSM	Transcribe, translate, archive.
Praying for our family: G. Michael	Segi	ZM	Transcribe, translate, archive.
Retell-Origin Story by Norbet Mina	Segi	ZM	Transcribe, translate, archive
Story of how God changed Jack's life.	Segi	ZM-PSM	Transcribe, translate, archive
God's power in healing by Badi Robi	Segi	ZM-PSM	Transcribe, translate, archive
Having a baby: B Robi	Segi	ZM-PSM	Transcribe, translate, archive
Story of sickness & healing by Julie Sak	Segi	ZM-PSM	Transcribe, translate, archive
Story about healing by Emelda Mund	Segi	ZM	Transcribed, translate, archive

Story about mourning bracelets by E. Mund	Segi	ZM CG	Transcribed; take photos and make video.
Ancestor story: coming from flutes by E. Mund	Segi	ZM	Transcribe, translate, archive
Making a clay pot- 3 attempts but wrong clay so it didn't work.	Segi	VX-HS ZM	Produce video, but don't post. Analyze discourse. Archive.
Tok Ples church service:	Segi/ TP	ZM: XY	Mostly in Tok Pisin; Scripture and 1 song in KMS. Transcribe. Archive.
Death and burial of a child	Segi/ TP	VX; ZM	No informed consent from family. Produce for family only.
Prayer for Guide to planning the Future of your language (GPFL) Ignas Amu	Segi	ZM	Already transcribed & translated. Archive.
Meal prayer at GPFL meeting-Joe Singi	Segi	ZM	Already transcribed & translated. Archive.
GPFL Event	Segi/ TP	ZM	Transcribe/translate in Saymore. Archive.
Mother/Daughter disagreement	Segi	ZM	No informed consent. Not to be made public. For discourse analysis.
Prayer after reading Book of Ruth.	Segi	ZM	Permission to use without using name. Transcribe and archive.
Older woman listening to Audio Bible in kms.	Segi	ZM	Natural conversation. Archive.
Discussion about magic during a ceremony.	Segi	ZM	Transcribe. Not to be made public.
Conversation: Rex, Joe Singi, Joy	Segi	ZM	Already transcribed. Archive.
Tring welcome: Parts 2-6	TP/ English	VX	Mostly in Tok Pisin because 3 visitors only knew TP. Produce. Put on YouTube for the community.
Speeches from closing potluck	TP/ Segi	ZM	Transcribe for discourse features. Archive
Oil palm meeting in Tring with outsiders.	TP	ZM	Transcribe. Note any kms usage. Mostly Tok Pisin. Archive findings.
Worship songs in TP	TP	VX	Transcribe. Note any use of Kamasau.

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