

Supplementary file 1. Ethical approvals, information sheets, and farmers' consent form in English, Amharic, Afaan Oromoo and Tigrigna for the Ethiopian GeoNutrition data collection.

Appendix A: Information Sheet for Participants (የጥናት ፈቃድ ፎርም)

የፕሮጀክቱስም: ጂኦኒትሪቭን

ርዕስ: የአፈር እና እህል ማዕድን ይዘት በኢትዮጵያ

Invitation: Good morning/ good afternoon. My name is.....I am a member of the Geonutrition study team by Addis Ababa University and the University of Notthigham, UK. You are being invited to be involved in a research study; before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please read the following information carefully and discuss it with other people if you wish. Please contact me if anything is unclear or if you would like more information. Take time to decide whether or not you wish to take part.

እንደምን አደሩ /ዋሉ? ስሜ _____ ይባላል። የአዲስ አበባ ዩኒቨርሲቲ የምግብ ሳይንስና ኒውትሪሽን ማዕከል እንግሊዝ ሀገር ከሚገኛው ኖቲንግሃም ዩኒቨርሲቲ ጋር በመተባበር ከሚሰራው የጂኦኒትሪቭን ፕሮጀክት የጥናት ቡድን አባል ነኝ። የእርሻ መሬት ስላሉት ወይንም እህል ስለሚያመርቱ በዚህ ጥናት እንዲሳተፉ ተጋብዘዋል። በጥናቱ ለመሳተፍ ከመወሰኖ እና ፈቃድን ከመስጠቶ በፊት ስለጥናቱ ዓላማ እና ከእርሶ ተሳትፎ የምንጠብቀውን ልግለፅሎት። እዚህ የጥናት ፈቃድ ቅፅ ውስጥ ያሉትን መረጃዎች አንብቡታለሁ። ግልፅ ያልሆኑ ነገሮች ያልኩ እንደሆነ ያለ ምንም ማመንታ ሊጠይቁኝ ይችላሉ። እኔም መልስ እሰጣለሁ። እዚህ የጥናት ፈቃድ ቅፅ ውስጥ ያሉትን መረጃዎች ከሌሎች ሰዎች ጋር ሊወያዩባቸው ይችላሉ። ተሳትፎት ሙሉ በሙሉ በእርሶ ፈቃደኝነት ላይ የተመሰረተ ነው። ለመሳተፍ ካልተስማሙ ምንም አይነት ቅጣት አይደርስበትም።

What is the purpose of this study? The aim of this study is to understand how soil quality affects the nutritional value of cereal grains growing in those fields.

የጥናቱ ዓላማ ምንድን ነው?

የዚህ ጥናት ዓላማ የእህል የማዕድን ይዘታ በአፈሩ አይነት /ፀባይ እንዴት እንደሚወሰን ለመረዳት ነው።

Why I have been chosen? You are randomly selected because you grow cereal grain within Malawi/Ethiopia. There is no specific reason other than this.

እኔ ለምን ተመረጥኩ?

የእርሻ መሬት ስላሉት ወይንም እህል ስለሚያመርቱ በዚህ ጥናት እንዲሳተፉ ተመርጠዋል። ነገር ግን ከሌሎች አርሶ አደሮች በተለየ የተመረጡት ታቅዶ እና በተለየ ምክንያት ሳይሆን በአጋጣሚ ነው።

What will participation involve? You will be asked questions about your field, soils, crops, and how you manage these. Your responses will be written down on a tablet (please show the tablet for the participant). We will then ask to take a small sample of soil and cereal grain from your field (or crop store).

በጥናቱ ብሳተፍ ከእኔ ምን ይጠበቃል?

በጥናቱ ቢሳተፉ ስለ እርሻ መሬቶ የአፈር አይነት ወይም ፀባይ እና ስለሚያመርቱት የእህል አይነት እጠይቁታለሁ። መልሶ በያዝኩት ታብሌት (ታብሌቱን ለተሳታፊው አሳይ) ላይ እመዘግባለሁ። በተጨማሪም ከእርሻ መሬቶ ወይንም ከተሳታፊው ትንሽ የአፈር እና የእህል ናሙና እወስዳለሁ።

What if I decide that I don't want to take part? You are free to decide that you don't want to take part in the study and can:

1. Refuse to answer any questions that you don't want to
2. Decide to stop the interview at any time
3. Remove your consent for the data collected to be used.

Reference number: Ethical Approval Number BIO-1819-001

በጥናቱ ለመሳተፍ ፈቃደኛ ባልሆንህ?

ተሳትፎት ሙሉ በሙሉ በእርስዎ ፈቃደኝነት ላይ የተመሰረተ ነው። ስለሆነም

1. መመለስ ያልፈለጉትን ጥያቄ መተው ይችላሉ
2. ቃለ መጠይቁን በማንኛውም ጊዜ ሊያቋርጡ ይችላሉ
3. ለመሳተፍ ፈቃደኛ ከሆኑ እና ቃለ መጠይቁን ካደረግን በኋላ እንኳን ፈቃደኝነቱን ማጠፍ ይችላሉ

Will I be paid for my time? There is no payment for taking part in this questionnaire.

በጥናቱ ብሳተፍ ይከፈላል?

በጥናቱ በመሳተፍ ምንም አይነት የገንዘብ ክፍያ አያገኙም።

Will I be anonymous, and who will know my identity? If you agree to take part in an interview, a Participant Number will be generated for you, and that's the only thing that will be used to identify you. Your identity will only be known by the interviewer, and will not be found in any record. Hard copy and electronic data will be stored on the University of Nottingham's computer network: this will be deleted after 7 years, or if you withdraw your consent (whichever is sooner).

በጥናቱ ብሳተፍ የሰጠሁትን መረጃ ማን ሊያውቅ ይችላል?

በጥናቱ ለመሳተፍ ከተስማሙ የሰጡት ቃለ መጠይቅም ሆነ የአፈር እና የእህል ናሙና በስም ሳይሆን በቁጥሮች ይወከላል። እርስዎ የሰጡትን መረጃ የሚያውቀው ቃለ መጠይቁን ያደረገው ሰው ብቻ ነው። ነገር ግን በማንኛውም ሰነድ ላይ አይገኝም። የወረቀት ሰነዶችም ሆኑ የኤሌክትሮኒክስ ቅጂዎች በአዲስ አበባ ዩኒቨርሲቲ እና እንግሊዝ ሀገር በሚገኘው ኖቲንግሃም ዩኒቨርሲቲ ብቻ ይቆያሉ። ጥናቱ ከተጠናቀቀ በኋላ ወይም በጥናቱ እንዲሳተፉ ፈቃደኝነቱን ካጠፉ ቅጂዎቹ ሙሉ በሙሉ እንዲጠፉ ወይም እንዲወድሙ ይደረጋል።

Who shall I contact with any questions? Please contact the Principal Investigators, Redacted (Addis Ababa University, Center for Food Science and Nutrition; Redacted ስልክ Redacted); Redacted (University of Nottingham, UK; Redacted , Redacted . If you wish to ask questions or make a complaint you may also contact either Research Ethics Officer: Redacted (Office of the Associate Dean, Addis Ababa University; Redacted ; Redacted) or Redacted (University of Nottingham, UK; or Redacted).

ጥያቄ ካለኝ የጥናቱ ተጠሪዎች እነማን ናቸው?

ምንም አይነት ጥያቄ ካለዎት በማንኛውም ስዓት መጠየቅ ይችላሉ። ስለዚህ ጥናት ተጨማሪ ጥያቄዎች ካለዎት ዶ/ር ዳውድ ጋሹ፤ አዲስ አበባ ዩኒቨርሲቲ የምግብ ሳይንስና ኒውትሪሽን ማዕከል (Redacted ; ስልክ Redacted) መጠየቅ ይችላሉ። ወይም Redacted ፤ ኖቲንግሃም ዩኒቨርሲቲ Redacted ስልክ Redacted) መጠየቅ ይችላሉ። በተጨማሪም ስለ ምርምሩ ጥያቄ ወይም ቅሬታ ካለዎት የአዲስ አበባ ዩኒቨርሲቲ ተፈጥሮ ሳይንስ ኮሌጅ የምርምር ዳይሬክተር የሆኑትን Redacted (ስልክ Redacted) ወይም Redacted (ኖቲንግሃም ዩኒቨርሲቲ ፣ እንግሊዝ Redacted) መጠየቅ ይችላሉ።

Reference number: Ethical Approval Number BIO-1819-001

Appendix B: Consent Form / Fomuyachilolezo

You have been invited to take part in a research project. If you like to participate, please sign or give your left thumb impression at the space indicated below.

በዚህ ጥናት እንዲሳተፉ ተጋብዘዋል። በጥናቱ ለመሳተፍ ከተሰማሙ ከታች ባለው ክፍት ቦታ ፊርማዎን ወይን የግራ አውራ ጣቶን አሻራ ያስቀምጡ።

By completing this form you are consenting to take part in this research project; you can withdraw your consent at any point. To withdraw your consent, please either mention that to the Interviewer during the interview or contact Redacted (Addis Ababa University Center for Food Science and Nutrition; Redacted and/or (University of Nottingham, UK; Redacted Redacted). If you wish to ask questions or make a complaint you may also contact either Research Ethics Officer: Redacted (Office of the Associate Dean, Addis Ababa University; Redacted) or Redacted (University of Nottingham, UK; or Redacted).

ይህንን የጥናት ፈቃድ ቅፅ ስለፈረሙ በጥናቱ ለመሳተፍ እንደተሰማሙ እንወስደዋለን። ነገርግን በማንኛውም ሰዓት ተሳትፎዎን ማቋረጥ ይችላሉ። ተሳትፎዎን ማቆም ሲሹ ቃለመተየቅ አድራጊውን ወይም Redacted (አዲስ አበባ ዩኒቨርሲቲ፣ የምግብ ሳይንስና ኒውትሪሽን ማዕከል Redacted) ወይም Redacted (ኖቲንግሃም ዩኒቨርሲቲ (Redacted) ማሳወቅ ይችላሉ። በተጨማሪም ስለ ምርምሩ ጥያቄ ወይም ቅሬታ ካለዎት የአዲስ አበባ ዩኒቨርሲቲ ተፈጥሮ ሳይንስ ኮሌጅ የምርምር ዳይሬክተር የሆኑትን Redacted (ስልክ Redacted ; e-mail: Redacted) ወይም Redacted (ኖቲንግሃም ዩኒቨርሲቲ ፣ እንግሊዝ; Redacted መጠየቅ ይችላሉ።

Before signing this form, please read the following statements and indicate that you agree with them by initialling “√” next to them.

ጥናት ፈቃድ ቅፅ ላይ ከመፈረም በፊት የሚከተሉትን ነጥቦች በመገንዘብ መስማማቶን ለመግለፅ ከእያንዳንዱ ነጥብ ጎንዩ “√” ምልክት ያድርጉ።

GID#	Tick here እዚህ ምልክት ያድርጉ(✓)
I have been issued with a Participant Information Sheet ስለ ጥናት ፈቃድ ቅፁ ገለፃ ተደርጎልኛል።	
I have been informed what the purpose of this research is, and the nature of the study ስለ ጥናቱ ዓላማ እና አጠቃላይ ሁኔታ ገለፃ ተደርጎልኛል።	
I have been informed how the data that are collected within the research will be handled and stored.	

Reference number: Ethical Approval Number BIO-1819-001

<p>በጥናቱ የሚሰበሰቡት መረጃዎች እንዴት እንደሚያዙ እና እንደሚቀመጡ ገለጻ ተደርጎልኛል።</p>	
<p>I have been informed that I can remove my consent at any time either during, or after the interview, and that withdrawal of consent will not harm me in any way.</p> <p>ቃለ መጠይቁ እየተካሄደ ባለበት ጊዜም ሆነ መረጃውን ከተሰበሰበ በኋላ የሰጠሁትን በጥናቱ የመሳተፍ ፈቃድ ማጠፍ እንደምችል ያንን ተከትሎ ምንም አይነት ነገር እንደማይደርስብኝ በግልፅ ተነግሮኛል።</p>	
<p>I have been informed that the interview will be written down on tablet</p> <p>ለቃለ መጠይቁ የሰጠኋቸው መልሶች በታብሌቱ ተፅፈው እንደሚቀመጡ ተነግሮኛል።</p>	
<p>I have been informed that my anonymised quotes may be used within the reporting of this research.</p> <p>ለቃለ መጠይቁ የሰጠኋቸው መልሶች ስሜ ሳይጠቀስ በጥናቱ ሪፖርት ላይ ሊጠቀሱ እንደሚችሉ ተነግሮኛል።</p>	
<p>I agree to take part in this study</p> <p>በዚህ ጥናት ለመሳተፍ ተስማምቻለሁ።</p>	

Signed by _____ Date _____

ፊርማ _____ ቀን _____

Consent received by _____ Date _____

የቃለ መጠይቁ አድራጊ ፊርማ _____ ቀን _____

Appendix A: Information Sheet for Participants (Guca Eeyyama qorannoo

Maqaa projektii: Gi’O Qor nyaata

Mata dureen: Qabiyyee biyyeetiifii albuudootaa midhaan Itiyoophiyaati

Invitation: Good morning/ good afternoon. My name is.....I am a member of the Geonutrition study team by Addis Ababa University and the University of Nottingham, UK. You are being invited to be involved in a research study; before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please read the following information carefully and discuss it with other people if you wish. Please contact me if anything is unclear or if you would like more information. Take time to decide whether or not you wish to take part.

Akkam bultan/Ooltan? Maqaankoo.....jedhama. An Yunivarsiitii Addis Ababaatti, biyya Ingiliziitti kan argamu Yuunivarsiitii Notinghami wajjin walii galuun kan hojjatu miseensa garee qorannoo projektii Qor nyaataati.

Waan Lafa qonnaa qabdaniif yookan midhaan omishtaniif qorannoo kanaratti afferamtanii jirtu. Osoo qorannoo kanaratti hirmaachuuf hin mirkaneesin fi eeyyama hin kennin duratti waa’ee kaayyoo qorannootiifi hirmaannaa isinirraa eegamu isiniif haa ibsu. Odeeffanoowwan Uunkaa keessatti argaman dubbisaa namoota biroo wajjinis mari’achuu ni dandeessu. Waan isiniif ifa hin taane yoon dubbadhe shakkii tokko malee nagaafachuu dandeechu. Anis deebii isiniifan kenna. Yeroo fudhachuudhaan hirmaachuudhaaf fedhii qabaachuu fi dhabuu keessan murteessaa.

What is the purpose of this study? The aim of this study is to understand how soil quality affects the nutritional value of cereal grains growing in the fields.

Kaayyoon Qorannoo maalidha? Kaayyoon qorannoo kanaa qulqullinni biyyee midhaanni irratti guddatu dhiibbaa hammamii akka qabiyyee dhangaa midhaan callaa sanaarratti fidu hubachuufi.

Why I have been chosen? You are randomly selected because you grow cereal grain within Malawi/Ethiopia. There is no specific reason other than this.

Ani maalifan filatamee?

Sababa midhaan oomishtaniif qorannoo kanarratti akka hirmaattaniif filatamtanii jirtu. Isin qonnaan bulootaa biraatirraa waanti adda taatanii filatamtaniif itti yaadamee yookan sababa biratin osoo hin taane akkuma carraati.

What will participation involve? You will be asked questions about your field, soils, crops,

Reference number: Ethical Approval Number BIO-1819-001

and how you manage these. Your responses will be written down on a tablet. We will then ask to take a small sample of soil and cereal grain from your field (or crop store).

Qu'anooratti yoon hirmaadhee anaraa maaltu eegama?

Qu'anoo kana irrati yoo hirmaattan waa'ee lafa qonnaa keessanii, biyyee fi midhaanii isin gaafadha, deebii keessan, tabileetii irratti isiniif galmeessa, dabalatanis biyyee lafa qonnaa irraa fi midhaan irraa samuuda xiqqoo nan fudhadha.

What if I decide that I don't want to take part? You are free to decide that you don't want to take part in the study and can:

1. Refuse to answer any questions that you don't want to
2. Decide to stop the interview at any time
3. Remove your consent for the data collected to be used.

Qorannoo irratti hirmaachuuf eeyyamamaa yoon ta'uu badheehoo?

Hirmaannan guutummaan guututi heeyyama keessanirratti kan hundaa'ee dha, kanaafuu

1. Gaaffii deebisuu hin barbaane dhiisuu ni dandeessu.
2. Gaaffii afaani yeroo barbaaddan addaan kutuu ni dandeessu.
3. Hirmaachuuf eeyyamamaa taataaniifi gaaffii afaani erga raawwannee booda eeyyama keessan jijjiiruu ni dandeessu.

Will I be paid for my time? There is no payment for taking part in this questionnaire.

Qorannoorrati yoon hirmaadhe naaf kafalamaa?

Qu'anooratti yoo hirmaattan kaffaltiin qarshii homaatu isiniif hin kaffalamu.

Will I be anonymous, and who will know my identity? If you agree to take part in an interview, a participant number will be generated for you, and that's the only thing that will be used to identify you. Your identity will only be known by the interviewer, and will not be found in any record. Hard copy and electronic data will be stored on the University of Nottingham's computer network: this will be deleted after 7 years, or if you withdraw your consent (whichever is sooner).

Eenyuun akkan ta'e akka hinbaramne hintasifamaa? Eenyuumaakoo eenyutuu gara fulduraatti beekuu danda'aa?

Reference number: Ethical Approval Number BIO-1819-001

Qu'anooratti hirmaachuuf erga waliigalamee fi gaaffi afaanii erga kennitanii samuuda biyyee fi midhaanii kennitan maqaa keessaniin osoo hin ta'in lakkoofsaan bakka bu'a. Odeeffannoo isin kennitan kan beeku danda'u nama gaaffii afaanii isiniif godhe duwwaadha. Garuu uunkaa kamirrattuu hin argamu. Uunka waraqatootas haata'u waraabbiin elektrooniksii kan taa'u biyya Ingiliziitti kanargamu Yunivarsiiti Notighaam duwwaatti. Qorannoon erga raawwatee booda yookan qu'anoorratti hirmaachuuf eeyama keesan yoo jijjirtan warraabbiwan guutumaan guutuutti akka baduufi barbadaa'u ni godhama.

Who shall I contact with any questions? Please contact the Principal Investigators, Dr. Dawd Gashu (Addis Ababa University, Center for Food Science and Nutrition; Redacted ; ስልክ Redacted); Redacted (University of Nottingham, UK; Redacted , Redacted . If you wish to ask questions or make a complaint you may also contact either Research Ethics Officer: (Office of the Associate Dean, Addis Ababa University; Redacted) or Redacted (University of Nottingham, UK; or Redacted

Gaafi yoon qabaadhe itigaafatamtoonni qu'anoo enyufa'a?

Gaafi barbaadan yoo qabatan yeroo barbaadan gafachuu nidandeesu. Kanaafu waa'ee qorannoo kana gaafi dabalataa yoo qabatan YKN hojjetaa Univarsitii Addis Ababaa kan ta'an

Redacted quunnam (Redacted ; Lak. Bil. Redacted) gafachuu dandeesu.

Yookan hojjetaa Univarsitii Nottingham (Biya Inglizii) kan ta'an Redacted

(Redacted ; Lak. Bil. Redacted) gafachuu dandeesu. Yoo

gaaffii yookaan komee qabaattan ogeessa naamusa qorannoo kan ta'an Redacted

(Biiroo deggeraa diinii yuunivarsitii Addis Ababaa ; Redacted)

Yookaan Redacted (yuunivarsitii Notiingam , Inglizii; or Redacted ;

Redacted) quunnamuu dandeessu.

Appendix B: Consent Form / Fomuyachilolezo

You have been invited to take part in a research project. If you like to participate, please sign or give your left thumb impression at the space indicated below.

Lafa qonnaa wan qabdaniif yookan midhaan waan omishtaniif qu'anoo kanarrat aka hirmaatan afeeramtaniirtu. Qu'anno kanarrat hirmaachuf yoo waliigalu baka du'waa armaan gadiit jiruurrat malatoo keesan yoo kan ashaara quba abuduu harkaa bitaa keesan kaa'a.

By completing this form you are consenting to take part in this research project; you can withdraw your consent at any point. To withdraw your consent, please either mention that to the Interviewer during the interview or contact Redacted, Addis Ababa University, Center Fof Food Science and Nutrition, tel: 911745153 and/or Redacted (University of Nottingham, UK). If you wish to ask questions or make a complaint you may also contact either Research Ethics Officer: Redacted (Office of the Associate Dean, Addis Ababa University; Redacted) or Redacted (University of Nottingham, UK); or Redacted

Uunkaa Eeyama qorannoo kanaa waan malateesitaniif hirmaachuuf akka waliigaleti fudhana. Garuu yerroo barbaadan hirmaana adaan kutuu nidandeesu. Yoo addan kutu barbaadde, nama gaaffii waa'ee qorannoo sigaafatu YKN hojjetaa Univarsittii Finfinnee kan ta'an Redacted

quunnam (Lak. Bil. Redacted) YKN hojjetaa Univarsitii Nottingham (Biya Inglizii) kan ta'an Redacted quunnamaa. Yoo gaaffii yookaan komee qabaattan ogeessa naamusa qorannoo kan ta'an Redacted (Biiroo Diinii yuunivarsitii Addis Ababaa ; Redacted) Yookaan Redacted (yuunivarsitii Nottingham, UK; or Redacted) quunnamuu dandeessu.

Before signing this form, please read the following statements and indicate that you agree with them by initialling next to them.

Eeyyama Uunkaa qorannoo kanarratti mallatteessuun duratti qabxiiwwaan armaan gadiirratti waliigaluu ibsuuf qabxiiwwan hunda cinatti fakkii ka'aa.

GID#	Tick here (x)
<p>I have been issued with a Participant Information Sheet</p> <p>Waa'ee eyyama Uunkaa qorannoo ibsi naaf godhameera.</p>	
<p>I have been informed what the purpose of this research is, and the nature of the study</p> <p>Waa'ee kaayyoo qorannoo kanaafi haalli isaa bal'inaan naaf ibsamee jira.</p>	
<p>I have been informed how the data that are collected within the research will be handled and stored.</p> <p>Odeefannoowwan qorannoo kanaaf funaanaman akamitti akka qabamaniifi ta'aan ibsi naaf godhameera.</p>	
<p>I have been informed that I can remove my consent at any time either during, or after the interview, and that withdrawal of consent will not harm me in any way.</p> <p>Gaaffiin afaanii bakka rawwatetti erga odeefannoon guurameen boodas heeyyama hirmaanaa jijjiiruu akka danda'uuf hoomtuu akka narra hin geenye ifaan natti himamee jira.</p>	
<p>I have been informed that the interview will be written down on tablet</p> <p>Deebiiwwan gaaffi afaanii itti kenne Tabileetirratti bareeffamee akka taa'u natti himameera.</p>	
<p>I have been informed that my anonymised quotes may be used within the reporting of this research.</p> <p>Deebiiwwan gaaffii afaaniif kenne maqaakoo osoo hin ibsin unkaa qorannoo rippoortaraa irratti akka ibsamu nati himaameera.</p>	
<p>I agree to take part in this study</p> <p>Qorannoo kanaratti hirmaachuf walii galeen jira.</p>	

Reference number: Ethical Approval Number BIO-1819-001

Signed by.....Date.....

Mallatoo.....Guyyaa.....

Consent received by_____Date_____

Mallatoo gaafi afaani kangodhee_____Guyyaa_____

Appendix A: Information Sheet for Participants/ Tsamba la unthengawachidziwitsokwaotenganawombali: “GeoNutrition (Work Package 1): Sampling soils and crops in Malawi / Kutenga ma sampulo a dothindimbewuku Malawi”

Invitation: Good morning/ good afternoon. My name is.....I am a member of the Geonutrition study team by Addis Ababa University and the University of Notthigham, UK. You are being invited to be involved in a research study; before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please read the following information carefully and discuss it with other people if you wish. Please contact me if anything is unclear or if you would like more information. Take time to decide whether or not you wish to take part.

ከመይ ወዲሎም/ሐዲሮም? ሸመይ.....ይብሃል። ናይ ኣዲስአበባ ዩኒቨርሲቲ ናይ ምግብና ሳይንስን ኒውትሪሽን ማእከል ኣብ እንግሊዝ ሃገር ምስ ዝርከብ ኖቲንግሃም ዩኒቨርሲቲ ብምትሕብባር ካብ ዝሰራሕ ናይ ጂኦኒውትሪሽን ፕሮጀክት ጽንዓት ጉጅለ ኣባል እየ።ናይ ሕርሻ መሬት ስለዘለዎም ወይ እክሊ ስለዘምርቱ ኣብዚ ጽንዓት ንክሳተፉ ተዲዓምም ኣለዉ። ኣብ ጽንዓት ንምስታፍ ቅድሚ ምውሳኖምን ፍቓድ ምሃብምን ስለጽንትዓ ላዕማን ካብኣም ትሳትፎ ንጽብዮ ክገልጸሎም። ኣብዚ ናይ ጽንዓት ፍቓድ ቅጥዒ ዉሽጢ ዘሎ ሓበሬታ ከንበሎም እየ። ግልጺ ዘይኮኑ ነግራት እንተተዛሪብ በይዘኣም ብዘይ ስጋኣት ይሕትቱኒ። ኣነ እውን እውን መልሲ ክህቦም እይ። ኣብዚ ናይ ጽንዓት ፍቓድ ቅጥዒ ዉሽጢ ዘለዉ ሓበሬታታት ምስ ካልኣት ሰባት ክምያየጥሎም ይከእሉ ጽእዮም። ተሳትፎኣም ሙሉእ ብሙሉእ ብዓርስ ፍቓድም ዝተመስረተ ኣዩ። ንምስታፍ እንተዘይ ተስማዕሚዎም ምንም ዓይነት ቅጽትዓ ኣይበጽሖምን።

What is the purpose of this study?The aim of this study is to understand how soil quality affects the nutritional value of cereal grains growing in those fields.

ናይቲ ጽንዓት ዓላማ እንታይእየ?

ናይዚ ጽንዓት እዙይ ላዕማ ናይ እኽሊ ምዓድን ትሕዝቶ ብናይ ሓምድ ዓይነት ወይ ጸባይ ከመይ ከምዝውሰን ንምርዳእ እየ።

Why I have been chosen?You are randomly selected because you grow cereal grain within Malawi/Ethiopia. There is no specific reason other than this.

ኣነ ንምንታይ ተመሪጹ?

ናይ ሕርሻ መሬት ስለዘለዎም ወይ እኽሊ ስለዘምርቱ ኣብዚ ጽንዓትን ክሳተፉ ትምሪጻም። ነገር ግን ካብካልኣት ሓርስቶት ብዝተፈልየ ዝትምረጹ ኮነ ተባሂሉን ብዝተፈለየ ምኽንያትን ዘይኮነስ ብኣጋጣሚ እይ።

What will participation involve?You will be asked questions about your field, soils, crops, and how you manage these. Your responses will be written down on a tablet. We will then ask to take a small sample of soil and cereal grain from your field (or crop store).

ኣብዚ ጽንዓት እንተተሳተፈ ካባይ እንታይ ይጽብ?

ኣብዚ ጽንዓት እንተተሳተፎም ብዛዕባ ሕርሻ መሬት ናይ ሓምድ ዓይነት ወይ ጸባይን ብዛዕባ ዘምርትዎ ዓይነት እኽሊ ክጥይቑም እየ። መልሶም ኣብዛ ዝሓዝክ ዋታብሌት ክምዝግቦ እይ። ብተወሳኺ ካብሕርሻ ምሬቶም ወይ ቆፎኣም ንእሽተይ ናይ እኽልን ሓምድን ናሙና ክወስድ እይ።

What if I decide that I don't want to take part?You are free to decide that you don't want to take part in the study and can:

- 1. Refuse to answer any questions that you don't want to
- 2. Decide to stop the interview at any time
- 3. Remove your consent for the data collected to be used.

አብጽግዓትን ምስታፍ ፍቃድኛ እንተዘይ ኮይነሰ?

ተሳተፎአም ሙሉእ ብሙሉእ ኣብ ዓርሰ ፍቃድም ዝተመሰረተ እዩ። ስለዝኮነ

1. ክምልስዎ ዘይደለዩ ሕቶ ዘይክምልሱዎ ይካሉ እዮም
2. ቃለ መሕታቱ ኣብዝደለይዎ ግዜ ክቐርጹዎ ይክእሉ እዮም
3. ንምስታፍ ፍቃድኛ እንተኸይዮም ቃለ ምሕታት ድሕሪ ምግባርም ፍቃድኛንዮም ክገጹፉ ይክእሉ እዮም

Will I be paid for my time? There is no payment for taking part in this questionnaire.

አብጽግዓት እንትተሳተፍ ክኸፈለኒ ድዩ? ኣብ ጽግዓት ብምስታፍም ምንም ዓይነት ክፍያ ኣይረከቡን።

Will I be anonymous, and who will know my identity? If you agree to take part in an interview, a Participant Number will be generated for you, and that's the only thing that will be used to identify you. Your identity will only be known by the interviewer, and will not be found in any record. Hard copy and electronic data will be stored on the University of Nottingham's computer network: this will be deleted after 7 years, or if you withdraw your consent (whichever is sooner).

አብ ጽግዓት እንተተሳተፈ ዝሃብዎም ሓብሬታ መን ክፈልጥ ይኽእል?

አብዚ ጽግዓት ንብስታፍ እንተተሰማዕቲዎም ዝሃብዎም ቃለም ጠይቅ ኮነ ናይ ሓምድን እኽልን ናሙና ብሽምም ዘይኮነስ ብቁጽሪ ይውከል። ዝሃብዎም ሓብሬታ ቃለመጠይቅ ዝገበረሎም ሰብ ጥራሕ እዩ ዘይፈልጦ። ነገር ግን ኣብ ማንም ሰነድ ኣይርከብን። ናይ ወረቐት ሰነዳት ኮኑ ናይ ኤሌክትሮኒክስ ቅዳሕ ብ ኣዲስ ኣበባ ዩኒቨርሲቲ እና ኣብ እንግሊዝ ሃገር ዝርከብ ኖቲንግሃም ዩኒቨርሲቲ ጥራሕ ይቐምጥ። እቲ ጽግዓት ምስተወደአ ወይ ኣብጽግዓት ንክሳተፉ ፍቃድኛንዮም እንተ ኣጸፎም ኮሎም ቅዳሓት ክጠፍኡ ይግበር።

Who shall I contact with any questions? Please contact the Principal Investigators, Redacted (Addis Ababa University, Center for Food Science and Nutrition; Redacted ; ስልክ Redacted); Redacted (University of Nottingham, UK; Redacted If you wish to ask questions or make a complaint you may also contact either Research Ethics Officer: Redacted (Office of the Associate Dean, Addis Ababa University; Redacted) or Redacted (University of Nottingham, UK; or Redacted

ሕቶ እንተሃለኒ ናይ ቲጽግዓት ተጻዋዕቲ እንመን እዮም?

ምንም ዓይነት ሕቶ እንተሃለዎም ኣብ ዝኾነ ሰዓት ክጥይቑ ይክእሉ እዮም። ብዛዕባ እዚ ጽግዓት ሕቶ እንተሃለዎም Redacted ፣ ኣዲስ ኣበባ ዩኒቨርሲቲ ናይ ምግብና ስይንሰን ኒውትሪሽንን ማእከል (Redacted ; ስልክ Redacted) ክሓቱ ይክእሉ እዮም። ወይ ከኣ Redacted ፣ ኖቲንግሃም ዩኒቨርሲቲ (Redacted ; ስልኪ Redacted) ይሕተቱ።

ሕቶ ወይከዓ ቅሬታ እንተሃለዎም/ወን Redacted (ናይ ምርምር ስነ-ምግባር ኤፌሰር፤ ተሓባባሪ ዲን ኣዲስ ኣበባ ዩኒቨርሲቲ/ Redacted) ወይከዓ Redacted ፣ ኖቲንግሃም ዩኒቨርሲቲ፤ Redacted) ይሕተቱ።

Appendix B: Consent Form / Fomuyachilolezo

You have been invited to take part in a research project. If you like to participate, please sign or give your left thumb impression at the space indicated below.

ናይ ሕርሻ ምሬት ስለዘለዎም ወይ እኽሊ ስለዘምርቱ ኣብዚ ጽንዓት ንክሳተፈ ትዓዲሞም ኣልዉ። ኣብዚ ጽንዓት ንምስታፍ እንተተስሚዎም ኣብታሕቲ ዘሎ ክፍቲ ቦታ ፊርሞኦም ወይ ናይ ጽጋማይ ዓባይ ኢዶም ዓሽራ የቐምጡ።

By completing this form you are consenting to take part in this research project; you can withdraw your consent at any point. To withdraw your consent, please either mention that to the Interviewer during the interview or contact Redacted (Addis Ababa University; Redacted) and/or Redacted (University of Nottingham, UK). If you wish to ask questions or make a complaint you may also contact either Research Ethics Officer: Redacted (Office of the Associate Dean, Addis Ababa University; Redacted) or Redacted (University of Nottingham, UK; or Redacted

ኣብዚ ናይ ጽንዓት ፍቓድ ቅጥዒ ስለዝፈረሙ ኣብዚ ጽንዓትን ምስታፍ ከምዝተስማዕዎ-ጌርና ንወስድ። ነገር ግን ተሳትፎኡም ኣብ ዝኮነ ሰዓት ከቃርጽዎ ይኸእሉ እዮም። ተሳትፎኡም ከቃርጹ እንተደልዮም Redacted (ሓጋዚ፣ፕሮፌሰር፣ ኣዲስ አባባ ዩኒቨርሲቲ) ወይ ከኣ Redacted ፣ ኖቲንግሃም ዩኒቨርሲቲ የፍልጡ።

ሕቶ ወይከዓ ቅሬታ እንተሃለዎም/ወን Redacted (ናይ ምርምር ስነ-ምግባር ኦፊሰር፣ ተሓባባሪ ዲን ኣዲስ አባባ ዩኒቨርሲቲ/ Redacted) ወይከዓ Redacted ሞር፣ ኖቲንግሃም ዩኒቨርሲቲ፣ Redacted) ይሕተቱ። Redacted

Before signing this form, please read the following statements and indicate that you agree with them by initialling next to them.

ኣብዚ ቅጥዒ ቅድሚ ምፍራሞም ስዒብም ዘለዉ ስጥቢታት ብምግንዛብ ምስምዕሞም ንምግላጽ ኣብ ጎኒ ሕድሕድ ነጥቢ ናይ ‘X’ ይግብሩ።

GID#	Tick here ኣብዚ ምልክት ኣቅምጡ (X)
I have been issued with a Participant Information Sheet ብዛዕባ ጽንዓት ፍቓድ ቅጥዒ ገለጻ ተገይሩለይ	
I have been informed what the purpose of this research is, and the nature of the study ናይቲ ጽንዓት ዓላማን ጠቅላላ ኩነታትን ገለጻ ተገይሩለይ	
I have been informed how the data that are collected within the research will be handled and stored. ኣፍቲ ጽንዓት ዝእከቡ ሓበሬታታት ከመይ ከም ዝተሓጹን ከምዝቅመጡን ገለጻ ተገይሩለይ	

Reference number: Ethical Approval Number BIO-1819-001

<p>I have been informed that I can remove my consent at any time either during, or after the interview, and that withdrawal of consent will not harm me in any way.</p> <p>ቃለመጠይቅ አብዝገበረሉ ሰዓት ኮነ ሓበሬታ ድሕሪ ምእካቡ ኣብ ጽንዓት ንምስታፍ ዝሃብኩዎ ፍቓድ ምዕጻፍ ከም ጽኽእልን ምንም ዓይነተ ሽግር ከምጽይ በጽሓኒን ተገሊጹላይ</p>	
<p>I have been informed that the interview will be written down on tablet</p> <p>ንቃለመሕትት ዝሃብኩዎም መልሲታት ኣብ ታብሌት ተጻሂፉ ከምዝቅመጥ ተነገሩኒ</p>	
<p>I have been informed that my anonymised quotes may be used within the reporting of this research.</p> <p>ንቃለመሕትት ዝሃብኩዎም መልሲታት ኣብ ታብሌት ተጻሂፉ ከምዝቅመጥ ተነገሩኒ</p>	
<p>I agree to take part in this study</p> <p>ኣብጺ ጽንዓት ንምስታፍ ተሰማዕሚዐ ኣለኩ</p>	

Signed by.....Date.....

ፊርማ.....ዕለት.....

Consent received by _____ Date _____

ቃለመሕትት ኣካያዲ _____ ዕለት _____