Translation Techniques in the English-Kiswahili Translation of Agro-Pesticide Texts in Tanzania: Relevance to the Farmers

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Abstract

This qualitative study investigated the translation techniques used in the English-Kiswahili translation of agro-texts in Maswa District of Simiyu Region-Tanzania. The subjects for this study were translators, cotton farmers, farm input vendors, and agricultural extension officers. Through text analysis and interviews, the study revealed that transference, naturalization, descriptive equivalence and reduction are used as translation techniques. Other techniques include expansion, compensation, modulation, paraphrase, transposition and calques. The information translated through transference, calques, reduction and expansion could not easily be understood by the farmers. The rest of the techniques convey information in a manner that suits the farmers' common understanding. The Kiswahili equivalent formation processes such as compounding and borrowing produced words that could easily be understood by the farmers. However, the equivalents formed through compression and coinage did not satisfy the needs of the farmers. To some extent, the translation techniques used in the sampled texts seemed relevant to the farmers. It is recommended that the impact of loan words or transferred words from the source language to the message in the target language and the way the readership perceives them should be examined.

Keywords: *source language, target language, source text (ST), target text (TT), readership*

Introduction

In Tanzania, the information regarding the proper use of farm inputs, including pesticides, is translated mostly from English into Kiswahili. The user-guide labels on the pesticide's containers have English-Kiswahili translated information regarding their proper administration. The need for translation is rooted in two factors: the importation of farm inputs and the need to familiarize farmers with the English inscribed information. The imported farm inputs including pesticides have their user-guide labels and manuals inscribed in English, a foreign language in Tanzania that is not familiar to most farmers and other sections of the Tanzanian population.

English in Tanzania is learned in schools. The ability to comprehend a text written in English is, therefore, dependent on the amount of education that one has achieved. The literature shows that the educational attainment of rural farmers in Tanzania ranges from primary to secondary education, most of them with primary one (Daniel, 2013; Matalu, 2013; Matalu, 2018; Ronald, Dulle & Honesta, 2014). The farmers' ability to comprehend the written English-Kiswahili translated agro-information on pesticide labels is, then, dependent on their educational attainment. The main objective of the study was to explore the techniques used in the English-Kiswahili translation of agro-pesticide texts in Tanzania and their relevance to the farmers.

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The Translation Techniques

Languages differ genealogically and typologically. Genealogically, English is an Indo-European language while Kiswahili is a Bantu one. According to the typological classification of languages proposed by August Von Schlegel (1818), which is still influential today, English is an inflectional language while Kiswahili is an agglutinating. These differences make each language label the world distinctively. In order to cross the structural, morphological and semantic differences between languages, especially of different typologies and genealogy, translators adopt different techniques basing themselves on the nature of the languages involved. Newmark (1988) argues that translators need to assess the diverse characteristics of the readership before translating in a bid to make the translation product suitable to them. That is, the techniques used need to produce the translation product that is relevant to the readership in terms of intelligibility.

The common translation techniques as proposed by Newmark (1988) include the following:

- Transference: it involves transferring the source language word to a target language text as a translation procedure (Newmark, 1988:81). In this technique, the source language word is used as it is in the target language. For example, the French word c*oup d. etat* can be transferred as *coup* in English (Newmark, 1988).
- Componential analysis: It is a process in which a lexical unit is split into meaningful parts (components) (Newmark, 1988). In this case, a word *man* can be delineated as [+male], [+mature] and boy as [+male], [-mature] (Newmark, 1988).
- Compensation: It occurs when a text meaning segment is lost in a sentence or paragraph and then compensated elsewhere in the ensuing sentences or paragraphs (Newmark, 1988).
- Modulation: In modulation, the information in the source text is expressed in the target text through a change in perspectives or viewpoints (Newmark, 1988). Modulation can be accomplished by making a negative expression in the source language affirmative in the target language and making generic terms in the source language-specific in the target language, etc. (Malangwa, 2010).
- Reduction and expansion: In reduction, less information is presented in the target text than it is in the source text, and in expansion, more information is presented in the target text than it is in the source text (Newmark, 1988).
- Paraphrase: It involves restating the meaning of a text segment in the words of the translator. It is done when the source text is poorly done or has remarkable implications and omissions (Newmark, 1988).
- Naturalization: In this case, the source language word is adapted to the morphological and phonological features of the target language. For example, the English word *computer* has its equivalent *kompyuta* in Kiswahili.
- Descriptive equivalence. It is the process whereby the source language word is rendered as a description in the target language. According to Malangwa, (2010), in descriptive equivalence, the translator explains the behaviour or function of the idea or concept in the source text using target language words. Malangwa argues that in descriptive equivalence, the computer terms *shuffle* and *rest button* may be translated as *chezesha tena kiholela* and *kibonye cha kutegesha upya* respectively in Kiswahili.
- Shift or transposition: In this case, the translator obeys the grammar of the target language at the expense of the source language. That is, the source language grammatical structures are changed so that they conform to the grammatical structures of the target language without affecting the content (Malangwa, 2010). For example, the singular item in the source language may be presented as plural in the target language; the active construction in the source language may be expressed as passive in the target language and a simple sentence in a source language may be translated as a coordinate one in the target language.
- Synonymy: It means that a near target language equivalent is equated to source language word (Newmark, 1988). Synonymy is adopted when a target language precise

equivalent may not be available. The Kiswahili word *bokoboko* may be rendered as *rice* in English.

- Functional equivalence: Newmark (1988) argues that functional equivalence is used to overcome cultural non-equivalence between the languages involved in translation. The culture free, a new specific term or descriptions are used to deculturize the source language term.
- Recognized translation: Malangwa (2010) observes that in recognized translation, equivalents that exist in the target language for foreign words are used. They may be obtained from dictionaries, reference books, lists of vocabularies and glossaries. For example, the computer terms *driver, page break* and *cancel* may be translated through this technique as *kiendeshi, kikatiza ukurasa,* and *tangua* in Kiswahili respectively.
- Cultural equivalence. It involves an approximate translation where a source language cultural word is translated by a target language cultural word (Newmark, 1988). For example, the English term *House of Commons* as used in the United Kingdom, can be translated as *Bunge* in Kiswahili, especially in Tanzania.

Equivalent Term Formation Processes
The translators used different strategies to create word equivalents in the target language. The common Kiswahili equivalent formation processes include compounding. Compounding involves the process of combining two or more lexical categories to form a new term. In the translation of forestry terminologies, Nshubemuki (1999) exemplifies *kimelea tegemezi* as a compound equivalent for *hyperparasite* and *amsha kikemikali* for *chemical stimulation.* In the translation of tourist texts, Jilala (2014) noted that the English equivalents for Kiswahili words are created through this strategy too as in *ngata-head rest* and *sebule-sitting room.*

The other strategy of creating equivalents is compression. It involves reducing the existing long terms to provide the shorter ones. In the translation of forestry terminologies, Nshubemuki (1999) provides the following examples: *constant-kibaki* (from kima kisichobadilika), *population-dadiwakazi* (from idadi ya wakazi) and *irregular stocking-dadimiti silinganifu* (from idadi ya miti inayobadilika kufuatana na sehemu ya msitu). Furthermore, derivation is also used as a strategy to create target language equivalents. It involves creation of new terms by adding affixes to the roots. In the translation of forestry terminologies, Nshubemuki (1999) noted the following examples: *asidisha* (acidify), *asidimetria* (acidimetry), *asidolisis* (acidolysis) and *uasidi* (acidity). Borrowing is also used to invent terminologies in the target language. It involves importing terms from other language(s). In the translation of computer terms, Malangwa (2010) found that some Kiswahili equivalents were borrowed from Arabic, other Bantu languages, non-standard Kiswahili varieties, and English.

Lastly, but for the sake of the present discussion, is loan translation or calque. In this case, terms from a source language are translated literally or element by element into the target language (Munday, 2009:171). In the translation of computer terms, Malangwa, (2010) noted some calques as in *save as-akibisha kama* and *scrowbar-mwambabiringizo.* Likewise, Nshubemuki (1999), in the translation of forestry terminologies noted some calques including *pH scale-Kipimo pH* and *pH value-thamani ya pH.*

The Consideration of the Dynamic Equivalence Theory
The Dynamic Equivalence Theory was proposed by Nida & Taber (1969) and modified by Nida and Taber (1969). The central proposition of the theory lies in the need to tailor the translated message to the requirements of the target language and readership. The translation product should be adapted in terms of grammar, lexicon and cultural indices so that it is intelligible to the readership. The equivalence should produce the same impact in the target language as it is in the source language (Anderman, 2007). This paper was, then, meant to investigate the extent to which the English-Kiswahili translators of agro-texts tailor the message, in terms of techniques

they employ to translate and form Kiswahili equivalents, their relevance to the cotton farmers in terms of intelligibility.

The Methodological Considerations
The study was conducted in Maswa District-Tanzania, adopting a qualitative approach with a case study design. The qualitative approach is grounded on the data that are mostly in the forms of words, descriptions, accounts, feelings and other forms of this kind (Dawson, 2002, Neuman, 2007 & Walliman, 2011). This study considered words, phrases, sentences, descriptions and accounts on the agro-pesticide containers describing the proper way to administer them. The sample size was determined through saturation. It included farmers and farm input vendors who were sampled through snowball and convenience techniques respectively for interview. The study, further, included freelance translators and agricultural extension officers who were sampled through snowball and purposive techniques respectively. They participated in the study by answering questions in a text analysis guide. The English-Kiswahili translated agro-pesticide texts were sampled purposively and analyzed under a text analysis guide established by the researchers.

The data from the interview were analyzed thematically. The themes emerged from the data and were not imposed by the researcher as Dawson (2002) proposes. The thematic analysis was adapted to the steps proposed by Braun & Clarke (2006); familiarizing with data, generating initial codes, searching for themes, revising themes, defining and naming themes and producing the report. The data from the text analysis guide were analyzed through content analysis adapted to the steps proposed by Brenner *et al* (1985) as quoted in Cohen, Manion, & Morrison (2007): briefing, sampling, association, and immersing in data collected to pick up all the clues. The other steps were categorizing (creating categories and labels to reflect the purpose of research), incubating (developing interpretations and meanings), synthesizing, writing and rethinking.

Findings and Discussions
This part presents the findings and discussion, first, on the translation techniques and their relevance to the farmers; then, the Kiswahili equivalent term formation processes.

Translation Techniques and their Relevance to the Farmers
   Naturalization
Naturalization involves borrowing a word and making it conform to the morphological and phonological features of the target language (Newmark, 1988)). In the English-Kiswahili translations of agro-pesticide texts some Kiswahili equivalents were found to be a product of naturalization as in the following examples:

English Term	Kiswahili Equivalent	Source Texts
Thrips	vithripi	Twigathoate 40 EC
Gloves	glovu	Volar Mz 690 WP, Snowcron, Twiga Gamma 20
Boots	Buti/gambuti	Twiga Gamma 20 and Volar Mz 690
Litre	lita	Paranex®100 EC

Source: Field Data (2016)

Naturalization produces intelligible equivalents to the farmers. Since many farmers in the study area are familiar with Kiswahili, it is easy to comprehend the equivalents that are adapted to the morphological and phonological structures of the language that they are familiar with. This technique conforms to the assumptions of the Dynamic Equivalence Theory used in this study

which requires tailoring of the source language message to the needs of the target language and readership.

Compensation
Compensation involves an instance when one meaning segment is dropped from one sentence so that it occurs in the next sentence or segments of the text. The following sample text extract revealed compensation technique being used in translation:

ST: *dilute Paranex with at least 500 times the volume of clean water and mix well to produce a stable milky emulsion*

TT: *Tumia maji safi katika uwiano wa 500:1. Changanya vizuri ili kupata myeyuko wenye rangi ya maziwa*
Source: Paranex®100 EC Text (2016)

In this sample text extract, the source language (English) expresses the information in a single sentence but the target language (Kiswahili) does so in two sentences. The information *mix well to produce a stable milky emulsion* is incorporated in the single sentence but in the target language, such information is presented in the second sentence *changanya vizuri ili kupata myeyuko wenye rangi ya maziwa.* It, however, appears that, in this text, compensation did not occur because some facets of the information in the source language could not fit in one sentence as (Munday, 2009) proposes, but simply was meant to avoid long sentences. The translator could, yet, maintain one sentence *(tumia maji safi katika uwiano wa 500:1 na changanya vizuri ili kupata myeyuko wa maziwa)* as it is in the source language. This technique is relevant to the readership because it is determined by the nature of the target language. Ya'qoub (2013) notes that sometimes it is impossible to avoid compensation if the linguistic features are unique to the source language. A need would arise to break the source language information into different chunks of information in the target language. This technique is relevant to the propositions of the Dynamic Equivalence Theory which requires tailoring of the source language information to suit the needs of the target language and readership.

Paraphrase
Paraphrase involves rewording of the source text segment in the translator's words without altering the meaning (Munday, 2009). It is adopted in order to convey necessary information in a manner that can be understood by the readership. Consider the following sample text extract:

ST: *Not to exceed the stated dose in calves when not receiving a whole milk diet*
TT: *Usizidishe kipimo kilichotajwa hapo juu kama ndama hanyonyi (yaani anakula chakula kingine kisichokuwa maziwa*
Source: Skazon Powder text (2016)

The information in the brackets *(yaani anakula chakula kingine kisichokuwa maziwa)* is the paraphrase of the source text information *in calves when not receiving a whole milk diet.* The bracketed information in the target text elaborates the source text information in a way that the translator thinks could be understood by the farmers. The need to paraphrase appears to be grounded in semantic ambiguity underlying the source text information. It makes two senses. The first sense is that the chemicals should be applied to the breastfeeding calf at the moment it is breastfeeding. The second sense is that the chemical should be applied to the weaned calf. The translator's paraphrase in brackets disambiguates this paradox. Of the same opinion, Newmark (1988) argues that paraphrase is used when the source text has significant implications to the target language readership. This technique is in line with the Dynamic Equivalence Theory as it situates the message in the understanding of the readership.

Calque

Calque imports the source language expression into the target language literally, that is, each element is translated literally (Munday, 2009). Consider the following sample cases:

English Term	Kiswahili Equivalent	Source Texts
Square meter	Mita mraba	Twiga Gamma 20
Cubic meter	Mita ujazo	Twiga Gamma 20
Mls/20 Ltrs knapsack	Mls/20 lita bomba la mgongoni	Twigathoate 40EC
Safety instruction	Maelekezo usalama	Snowcron 50%EC

Source: Field Data (2016)

Calque imports into the target language strange structures that may not be easily comprehended by the readership. The English expression *Mls/20 Ltrs knapsack* which is rendered as *Mls/20 lita bomba la mgongoni* implies that the chemicals should be mixed in a 20 litres knapsack. Further, it implies that it is not always that 20 litres of water are needed to mix with chemicals. The device that is calibrated to 20 litres may be used to mix chemicals to other volumes of water that are equal to or less than 20 litres. Malangwa (2010) found the same technique in the English-Kiswahili translation of computer terms as in *save as-akibisha kama* and *scrowbar-mwamba biringizo.* This technique does not suit the readership and the Dynamic Equivalence Theory as it fails to adapt the message to the needs of the target language and readership.

Expansion

Expansion provides more information in the target language than it is in the source language. It is adopted in order to add information that is deemed relevant to the readership. Consider the following sample text extract:

ST: *In cattle and domestic animals*
TT: *ng'ombe na wanyama wengine*
Source: Skazon Powder Text (2016)

The English information *in cattle and domestic animals* is translated as *ng'ombe na wanyama wengine* in Kiswahili. In English, the information is specific to cattle and other domestic animals. The target text expands it to include *wanyama wengine* ('other animals') which are not necessarily domestic. Expansion needs to be done by a translator who is not only competent in translating but also in the subject matter from which translation is done, short of which, it may lead to distortion of the translated information which in turn may have significant impact to the readership (Hervey & Higgins, 1999). This kind of expansion has distorted the information since the users of the pesticide may extend its application to other animals than the domestic ones. In view of the Dynamic Equivalence Theory, the translator has failed to adapt the message to the real contexts.

Reduction

Reduction presents less information in the target language than it is in the source language. It is adopted primarily to exclude unnecessary and repetitive information in the target text. Reduction may be intentional (if it is meant to avoid repetitions) or unintentional (if it is a translator's oversight) (Munday, 2009). Consider the following sample text extract:

ST: *Do not eat, drink or smoke while mixing, applying or before washing hands and face or change of clothing*
TT: *Usile, kunywa au kuvuta sigara wakati unachanganya kiuatilifu hiki*
Source: Ninja 5EC Text (2016)

In this text extract, the source text information *while applying or before washing hands and face or change of clothing* is not included in the Kiswahili text. Thus, reduction is inappropriate especially when translating agro-pesticide information because the non-inclusion of some facets

of the source text information in the target text may lead to the mishandling or misuse of the chemicals. Hervey and Hervey & Higgins (1999) argue that no matter how minute an error may be in translation, its impact to the readership may be significant.

Transposition

Transposition involves grammatical shift without affecting the semantic content of the source text information. The source language meaning is expressed in a target language with a different grammatical outlook (Munday, 2009). In transposition, the source language adverb may be expressed as a verb in the target language; the plural form in the source language may be expressed as singular in the target language and so forth. Consider the following sample text extract obtained from the field:

> ST: *Not to exceed the stated dose in calves when not receiving a whole milk diet*
> TT: *Usizidishe kipimo kilichotajwa hapo juu kama ndama hanyonyi (yaani anakula chakula kingine kisichokuwa maziwa*
> Source: Skazon Powder text (2016)

In this sample text extract, the source language plural form *calves* is translated as a singular form *ndama* in Kiswahili. Although the Kiswahili equivalent *ndama* exists in the same form for both singular and plural forms, in this text it is used as a singular form.

The evidence comes from the verb *hanyonyi* which is in singular form too. If the noun *ndama* was in plural form, the verb form would be *hawanyonyi* which is in plural form too. In the English-Kiswahili translations of computer terms, Malangwa (2010) revealed some cases of transpositions as in *bold-herufi koza* and *rename-ita jina upya*. This technique is relevant to the readership and Dynamic Equivalence Theory as it is aimed at producing a message that suits the context of the target language.

Modulation

In modulation, a translator shifts the source language message in some perspectives with minor alterations while maintaining the basic meaning (Munday, 2009). Always a grammatical shift is determined by the nature of the target language. The study revealed some modulation techniques being employed in the English-Kiswahili translation of agro-pesticide texts as in the following case:

> ST: *In Africa where multihost ticks are present, treatment every 2 weeks is recommended but if there is a heavy tick and disease challenge present and during periods of prolonged rainfall, treatment every week may be necessary*
> TT: *Katika nchi za kusini mwa Afrika ambako jamii ya kupe wanaishi kwa kutegemea zaidi ya mnyama mmoja inashauriwa zoezi la kuthibiti kupe lifanyike kila wiki 2…..*
> Source: Cybadip Cypermethrin 15%MLV

In this sample text, the scope of applying the said chemical in the source text is in *Africa* but in the target text is in *Kusini mwa Afrika* (sub-Saharan Africa). There is semantic alteration from *Africa* (Afrika) in the source text to *Kusini mwa Afrika* (Sub-saharan Africa) in the target text. The alteration in the target text does not deviate far from the source text because *Kusini mwa Afrika* (Sub-saharan Africa) is part of Africa and it is where the mentioned chemicals are supposed to be used. However, modulation may not be an appropriate technique because it may distort the information in the target text leading to misunderstanding by the readership.

Descriptive Equivalence

In descriptive equivalence, the translator describes the function and/or behaviour of the source language word (Malangwa, 2010). It is adopted especially when the source language word lacks an equivalent word in the target language. The word in the source language is translated in terms of descriptions in the target language. Consider the following sample text extract:

ST: *It can be mixed with other commonly used fungicides, herbicides and fertilizers in the respective crops*
TT: *Inaweza kuchanganywa na viua kuvu, madawa ya kuulia magugu, madawa mengine ambayo yanatumika kuulia wadudu na mbolea katika mazao husika*
Source: Snowcron 50%EC Text (2016)

As one can note from the sample text extract, the English word *herbicides* is translated as *madawa ya kuulia wadudu* in Kiswahili. Although too wordy, this technique is relevant to the readership as it provides elaborate information which can be easily understood by the readership. It is in line with the Dynamic Equivalence Theory as it is meant to adapt the source language message into the requirements of the target language and readership.

Transference

In transference, the source language word is reproduced in the target language. Transference is grounded on the absence of equivalents in the target language and that other means to translate the source language word are not possible. In the English-Kiswahili translation of agro-pesticide texts, transference involved the translation of the names of diseases and vectors as in the following example:

ST: *Volar Mz fungicide has both penetrant and contact action against early blight (caused by altemari solani) and late blight (caused by phtophthora infestans) of potatoes and tomatoes when used in a protective spray program.*
TT: *Volar Mz hupenya na huzuia magonjwa ya early blight (altemari solani) na late blight (phytophthora infestans) katika viazi na nyanya ikitumiwa kwa njia ya kuzuia magonjwa*
Source: Volar Mz 690 WP text (2016)

The disease names (*early blight* and *late blight)* and the causative agent *(phytophthora infestans)* have been transferred into Kiswahili. The transferred words are difficult to understand by the readership because they still exist in the morphological and phonological structure of the source language. This technique is, then, inappropriate to the readership because, as observed by Pym (2007), they may fail to comprehend or create meaning of the transferred words.

The Kiswahili Equivalent Term Formation Processes
Compression
Compression joins some parts of different words or long phrases, creating a single relatively shorter word. It is used to avoid the use of long target language equivalent phrases or words. The resulting words seem to be technical such that they cannot be easily comprehended by the lay public like farmers. The compressed words need the knowledge of the word formation processes to be comprehended properly. Consider the following compressed Kiswahili words:

English Term	Kiswahili Term (Before Compression)	Kiswahili Term (After Compression)	Source Texts
insecticide	Kiua wadudu	Kiuadudu	MO-DURS 48 EC
insecticide	Kiua viatilifu	Kiatilifu/kiuatilifu	Snowcron 50% EC Ninja EC
Herbicide	Kiua magugu	kiuagugu	Snowcron 50% EC
Fungicide	Kiua ukuvi	kiuakuvu	Snowcron 50% EC

Source: Field Data (2016)

In the study area, some farmers could comprehend the Kiswahili equivalent terms before compression but fail to so after compression. In the English-kiswahili translation of forestry terminologies in (Nshubemuki, 1999), the compressed forms such as *dadiwakazi* (population) a compressed form of *idadi ya wakazi* and *manimapana* (broad-leaved) which is a compressed form of *majani mapani* are not easily comprehensible to the lay public readership.

Compounding

In translation, compounding involves a case when a source language single word is rendered as a compound in the target language. Due to the lexical difference between the source language and the target language, a single word in the source language may necessarily be equated to a compound, phrase or even a sentence. The very interesting example for this case is a Brazilian simplex word *arrução* which translates into the English sentence *'clearing the ground under coffee trees of rubbish and piling it in the middle of the row in order to aid in the recovery of beans dropped during harvesting'* (ITI News (1988:57 quoted in Baker (1992). That is to say, English has no simplex word which would directly be equated to the Brazilian one. The only way to render it is through a sentence. In the English-Kiswahili translation of agro-pesticide texts, some English single words are translated as compounds in Kiswahili as in the following sample text extract:

> ST: *MO-DURS 48 EC kills pests by contact, ingestion, vapour action and ovicidal action*
> TT: *Wadudu huangamizwa na MO-DURS kwa njia zifuatazo: kiuadudu mguso, sumutumbo, amali fukizi, angamizi mayai*
> Source: MO-DURS 48 EC Text (2016)

In this sample text extract, the source language words *contact, ingestion, vapor and ovicidal action* are translated as *kiuadudu mguso* (the constituent elements being *kiuadudu* and *mguso)*, *sumu tumbo* (the constituent elements being *sumu* and *tumbo*)*, amali fukizi* (the constituent elements being *amali* and *fukizi*) and *angamizi mayai* (the constituent elements being *angamizi* and *mayai)* respectively in Kiswahili. The meaning of compounds is so transparent that it can easily be understood even by the lay public such as farmers. This strategy is relevant to the Dynamic Equivalence Theory which requires manoeuvring of the target language words so that they are intelligible to the readership.

Borrowing

Borrowing involves taking a word or expression from one language and making it part of the lexicon of the receiving language. Some Kiswahili equivalents appear to be borrowed from English. Borrowing occurs when the target language has no already established equivalents of some source language words or concepts. Consider the following Kiswahili equivalents:

English Term	Kiswahili Loan Word	Source Text
Overrals	ovaroli	Volara Mz 690 WP, Paranex®100 EC
Gloves	glovu	Volar Mz 690 WP, Snowcron, Twiga Gamma 20
Thrips	vithripi	Twigathoate 40 EC

Source: Field Data (2016)

If not made to conform to the morphological and phonological standards of the receiving language, the loan words may look odd and may not be easily understood by the readership. The Kiswahili equivalents in the reviewed texts seem to be well adapted to the lexical, morphological and phonological standards of Kiswahili. They are, therefore, familiar to the farmers. The familiarity of these words is fostered by the fact that farmers who always apply pesticides have a long-standing interaction with them. Nshubemuki (1999) noted the same case in the English-Kiswahili translation of forestry terminologies in which terms such as *ekolojia* were borrowed from English. Borrowing involves the adaptation of the loanwords into the lexical, morphological and phonological features of the target language and better reflects the needs of the Dynamic Equivalence Theory.

Coinage

Coinage is the invention of new terms as equivalents of the source language. It is used when that target language does not have lexicalized equivalents of the source language. The

Kiswahili terms such as *kiuatilifu* (as in Ninja 5 EC text) and *kiuavisumbufu vya mimea* appear to be Kiswahili coinages of the English word *pesticide.* Also, the word *kipulizi* (as in Ninja 5E text) is a coined equivalent of the English word *sprayer pump.* Theses coined terms, however, are not standardized in Kiswahili.

Conclusion and Recommendations
The main goal of the study was to explore the techniques used in the English-Kiswahili translation of Agro-pesticide texts in Tanzania. The translation of Agro-pesticide texts plays a significant role in the agriculture-dependent economy. Agricultural production is dependent on the proper utilisation of farm inputs, including pesticides. In order for the farmers to apply the farm inputs properly, the user-guide labels need to be inscribed in a language that is familiar to them. For the imported farm inputs whose labels are inscribed in a foreign language, a proper translation is needed to familiarize farmers with the directives on how to apply the farm inputs properly. That is to say, translators should use translation techniques that will produce equivalents in the target language that well suits the farmers. There is a need to explore, further, the impact of loan words or transferred words from the source language to the message in the target language and the way the readership perceives them.

References
Anderman, G. (2007). Linguistics and translation. In P. Kuhiwczak, & K. Littau, *Topics in translation: A companion to translation studies* (pp. 45-62). Clevedon, Bufallo and Toronto: Multilingual Matters.

Baker, M. (1992). *In other words: A coursebook on translation.* London and Newyork: Routledge.

Braun, V., & Clarke, V. (2006). Thematic analysis in psychology. *Qualitative Research in Psychology*, 77-101.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education.* Routledge: Taylor and Francis.

Daniel, E. (2013). *Assesment of agricultural extension services in Tanzania: A case study of Kyela, Songea rural and Morogoro districts.* Retrieved from http://www.parasite-project.org.

Dawson, C. (2002). *Practical research methods: A user-friendly guide to mastering research techniques and projects.* Trowbridge Wiltshire: Commonwell Press.

Hervey, S., & Higgins, I. (1999). *Thinking translation: A course in translation method, French-English.* London and Newyork: Taylor and Francis.

Jilala, H. (2014). *Athari za kiutamaduni katika tafsiri: mifano kutoka matini za kitalii katika makumbusho ya Tanzania.* Dar es Salaam: Chuo Kikuu cha Dar es Salaam.

Malangwa, P. S. (2010). *Handling technical translations: The case of computer programmes from English into Kiswahili.* Dar es Salaam: The University of Dar es Salaam.

Matalu, K. (2013). *The challenges of using English language in the Tanzanian agricultural sector.* Dodoma: The University of Dodoma.

Matalu, K. (2018). *An analysis of the English-Kiswahili translation fs agricultural texts in Tanzania: Language use and relevance to the farmers.* Dodoma: The University of Dodoma.

Munday, J. (2009). *The Routledge companion to translation studies.* London and Newyork: Taylor and Francis.

Neuman, W. I. (2007). *Basics of social research: Qualitative and quantitative approaches.* Boston: Pearson Education Inc.

Newmark, P. (1988). *A textbook of translation.* Newyork: Prentice Hall.

Nida, E. A., & Taber, R. C. (1969). *The theory and practice of translation.* Leiden: E.J Brill.

Nshubemuki, L. (1999). Advances in the compilation of Istilahi za Elimumisitu: A glossary of English-Kiswahili terminology. *For. Snow Landsc Res.*, 189-194.

Pym, A. (2007). philosophy and translation. In P. Kuhiwczak, & K. Littau, *Topics in translation: A companion to translation studies* (pp. 24-44). Clevedon, Buffalo and Toronto: Multilingual Matters.

Ronald, B., Dulle, F., & Honesta, N. (2014, January 11). *Assessment of the information needs of rice farmers in Tanzania: A case study of Kilombero district, Morogoro.* Retrieved from Library Philosophy and practice: http://www.digitalcommons.unl.edu/libphilprac.

Walliman, N. (2011). *Research methods: the basics.* London and Newyork: Taylor and Francis.

Ya'qoub, S. H. (2013). *Audience types in translating humour in TV shows from English into Arabic.* Retrieved from An-Najah Education site: http//www.scholar.najah.edu/site/default/files/siham Abu Ya'qoub_0.pdf.