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DISCOURSE OF INDIGENOUS KNOWLEDGE OF CROP CULTIVATION IN SOUTH WOLO: A CRITICAL DISCOURSE ANALYSIS OF FARMERS' VOICES AND PRACTICES

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DISCOURSE OF INDIGENOUS KNOWLEDGE OF CROP CULTIVATION IN SOUTH WOLO: A CRITICAL DISCOURSE ANALYSIS OF FARMERS' VOICES AND PRACTICES

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Approval Page

This is to certify that the thesis prepared by Tamrat Negussie, entitled: *Discourse of Indigenous Knowledge of Crop Cultivation in South Wolo: A Critical Discourse Analysis of Farmers' Voices and Practices* and submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy in Applied Linguistics and Development complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Declaration

I declare that the thesis *Discourse of Indigenous Knowledge of Crop Cultivation in South Wolo: A Critical Discourse Analysis of Farmers' Voices and Practices* is and presents my own original work, that it has not been submitted for any other degree or diploma in any university, and that all sources I have used for the thesis have been appropriately acknowledged and indicated in the reference.

Signed_____

Name: Tamrat Negussie Walelu

March, 2015

Abstract

For crop cultivation development in Ethiopia, recontextualizing the discourse of indigenous farming knowledge is needed. Thus, the central purpose of this thesis is,

through recontextualization process, to explore the discourse of indigenous crop cultivation knowledge in South Wolo, and to analyze it critically. As its point of departure,the study poses four problems:what discourse farmers use to construct and recontextualize their crop cultivation activities; how the farmers use discourse to construct, to make use of and to preserve their indigenous farming knowledge; whether farmers' use of the discourse of indigenous knowledge of crop cultivation enhances or retards crop cultivation practices; and the status of the discourse of indigenous knowledge of farming in the discourse used by modern agricultural technology.

In order to find answers to these four major questions,it is indispensable to situate the study within the qualitative methodology of ethnographic fieldwork and use qualitative methods of data collection, namely interviews (personal and group), two types of focus groups, non-participant observation and collecting relevant documents.Relevant social theories such as the Appraisal Theory (AT),Symbolic Interactionism (SI),Structuration Theory (ST) are utilized to guide both data collection and for the analyses process.

Fifty-eight(58) purposively sampled farmers participated in the interviews, focus group discussions, and were observed on-farm activities about the way they carry out two specific activities –ploughing and seed acquisition–and some general topics around crop cultivation.The assumption is that it is possible to reconstruct indigenous knowledge of crop cultivation from farmers' recontextualizations of the ways they carry out the two specific crop cultivation activities, and some topics around crop cultivation. The study also uses these different research instruments to triangulate the data gathered in order to verify the data and ensure plausability and dependability.

The farmers' texts and discourses obtained from the research instruments are analysed thoroughly and qualitatively using Fairclough's (1992) model of critical discourse analysis (CDA) in combination with Systemic Functional Linguistics (SFL) and Appraisal Theory in the aspects of the experiential, interpersonal, textual and attitudinal meanings of language as practiced in the two specific crop cultivation activities and some general topics around crop cultivation. Moreover, some dimensions from the theory of Symbolic Interactinism and the Structuaration Theory are used to back up the analysis of discourse practice and social practice of indigenous knowledge of crop cultivation.

The analysis on textual level reveals that transitivity, modality, theme and rheme construct the farmers as agents of various activities of crop cultivation by dominantly drawing upon the discourse of indigenous knowledge. On the level of discourse practice, the analysis of force of utterance, intertextuality, interdiscursivity, and participants' text production strategies show high level of indigenous knowledge, but low level of the discourse of modern farming knowledge/technology. The analysis on the level of discourse as social practice reveals the existence of a gap between the discourse of indigenous knowledge of crop cultivation and the discourse of modern agricultural technology. The discourse of indigenous knowledge of farming is found to exist being dominated, but it is found to be the major farming knowledge farmers draw upon to cultivate crops. Finally, the study suggests a framework that positions indigenous farming knowledge at the centre,and its integration with modern agricultural technology in developing modern farming knowledge to enhance the practice of crop cultivation development.

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I would never have been able to finish my thesis without the guidance of my supervisor, Dr. Getahun Amare. Dr. Getahun has always provided me constructive comments and feedback patiently in all my drafts starting from the pilot study and this one-the thesis. Apart from his professional guidance and advice, I will also not forget his beaming smile and friendly approach to me.

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List of Acronyms

AEA	Agro-Ecosystem Analysis
AEZ	Agricultural Ecological Zone
ADLI	Agricultural Development Led Industrialization
ARD	Agriculture and Rural Development
ARDS	Agriculture and Rural Development Strategy
AT	Appraisal Theory
CDA	Critical Discourse Analysis
CDR	Complex Diverse and Risk-prone
DA	Discourse Analysis
EIAR	Ethiopian Institute of Agricultural Research
EPRDF	Ethiopian People Revolutionary Democratic Front
FAO	Food and Agricultural Organization
FGD	Focus Group Discussion
FPR	Farmer Participatory Research
FSR	Farming Systems Research
ICIKARD	International Center for Indigenous Knowledge for Agriculture and Rural Development
IK	Indigenous Knowledge
IKS	Indigenous Knowledge System
IPA	International Phonetic Alphabet
MOA	Ministry of Agriculture
MOARD	Ministry of Agriculture and Rural Development
MDGs	Millennium Development Goals
OTOI	One-to-One Interview(or Individual Interview)

PAR	Participatory Agricultural Research
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PGI	Participatory Group Interview
PRA	Participatory Rural Appraisal
PTD	Participatory Technology Development
RPK	Rural People's Knowledge
RRA	Rapid Rural Appraisal
SDPRP	Sustainable Development and Poverty Reduction Programme
SFL	Systemic Functional Linguistic
SI	Symbolic Interactionism
ST	Structuration Theory
TOT	Transfer of Technology
TGE	Transitional Government of Ethiopia
TK	Technical Knowledge
UNEP	United Nations Environment Programme
UNESCO	United Nations Education, Scientific and Cultural Organization
WCED	World Conference on Environment and Development
WIPO	World Intellectual Property Organization

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Chapter One: Introduction

1.1 Introduction to What the Thesis Is About

In order to understand how and why discourses are produced, it is important to understand the context in which they arise. First of all, a social practice such as crop cultivation is shaped and come up to what it is because of the activities and networks surrounding the activities. Here, activities and networks surrounding the activities are conceptualized as significant and discursive, and can determine the existential reality of those who undertake the social practice. Moreover, they are the context or "matrix" on which discourses arise.

In this study,it follows, then that indigenous knowledge of crop cultivation discourses can arise from crop cultivation activities such as ploughing, processing seed, planting, etc.,and discursive networks (topics or issues) surrounding these activities such as the type of farming knowledge used, current source of farming knowledge, comparing past farming practices with the present,counseling people on how they should cultivate crops, and so on.Consequently, by using the actual participants (the farmers) and through a dialogical process like interviews and focus group discussions, it is possible to get them talk about, construct or recontextualize how they carry out crop cultivation activities. Logically, as the actors/ participants talk about, construct or recontextualize how they do their activities, the process involves language/discourse.Hence, this can reveal the types of farming knowledge they use one of which may be indigenous farming knowledge. Put differently, the study deals with how crop cultivation activities are done as referred to, constructed, or recontextualized in discourse and text (see Chapter 3, section 3.6.1).The thesis, then, is informed by a constructionist epistemology, which is concerned with understanding the ways in which accounts of reality (social practices) are constructed through language and discourse (the concept of constructionism is further discussed in Chapter 3).

The main aim of the thesis is, then, to get indigenous knowledge of crop cultivation "externalized". However, indigenous knowledge of crop cultivation can be complex, and can not be known directly, hence it requires interdisciplinary approach. According to

scholars, interdisciplinary means the use of approaches, perspectives or theories from two or more disciplines (fields of study) together to study a complex topic (issue).Thus, situated in the context of Applied Linguistics and Development, my thesis is an interdisciplinary qualitative exploratory study of the discourse of indigenous knowledge of crop cultivation. As will be elaborated on in Chapter 2, for the purpose of this study, the theories of Symbolic Interactionism, Structuration Theory and the methodology of Ethnography (with concepts such as “emic” and “etic”) from social theory; SFL(including Appraisal Theory) from linguistic theory; CDA as perspective and discourse theory; and recontextualization as a conceptual framework, all of which are situated in the paradigm of constructionism (seeChapter2) were used to “provide an overall orienting lens”(Creswell,2009:62) to this study(both in data collection and in the analysis process).

In this chapter, the focus is on building up the context by presenting: the background, the statement of the problem, the objective: the general and the specific objectives, the assumptions, the significance, the scope and limitation of the study. The structure of the thesis is also outlined.

1.2 Background of the Study

The issue of indigenous knowledge, especially in health (medicine), agriculture and conflict resolution, has been on the agenda of current development discourse. According to Odora Hoppers (2002:8), the word "indigenous" refers to the root, local, something natural or innate (to), which is an integral part of culture. As to World Intellectual Property Organization (WIPO, 2001: 215) indigenous knowledge refers to the content or substance of knowledge resulting from intellectual activity in an indigenous context, and includes the know- how, skills, innovations, sayings (genres) in the form of oral tradition such as proverbs, poems,chants and so on, and learning that form part of indigenous knowledge systems.According to Chambers (1983), “rural people’s knowledge” (RPK) should be used because “knowledge” in “indigenous knowledge” may be influenced, and destroyed by knowledge from outside the area. As to the terminology, some writers use the single expression “indigenous knowledge” or “local knowledge”; others use the combined form “indigenous/local knowledge”; still others (e.g.Chambers) use “rural

people's knowledge". In this thesis, some terms are used interchangeably to refer to the concept of indigenous knowledge (IK), including local knowledge (LK), rural people's knowledge (RPK), traditional knowledge (TK), and indigenous knowledge systems (IKS).

In the contemporary development discourse, there are two strong voices regarding indigenous knowledge.One of the voices argues for the value of indigenous knowledge in diverse dimensions of development practice.Twarog and Kappoor (2004), for example,state that one-third of the world people survive on food provided through indigenous knowledge, and over 90% of food in Sub-Saharan Africa is produced using indigenous knowledge.In addition, Mwaura (2008:76) presents UNEP documents which describe:"Indigenous knowledge is a tool, actual or potential, in enhancing food production and alleviating poverty."

The other voice expounds on the marginalization of indigenous knowledge.The three writing presented below contain explosive expressions such as "hidden transcript", "… indigenous knowledge is marginalized" and "… these alternative sources… have no voice." These expressions reveal the fact that the actual development participants'-the farmers-knowledge and experience remain overlooked. Thus, the concerns in these writing are the strongest motivation for me to conduct the present study.

Scott (1990:83) has used the term "hidden transcript" to describe how the exercise of power in nearly all public encounters between resource rich and resource poor, authority and subordinate almost always drives a portion of the full social transcript, that is, people's opinion, beliefs, knowledge and so on, underground. According to him, the normal tendency will be for the subordinates, for example, farmers, to reveal only that part of their full transcript to those who hold power, for example, development agents that is both safe and appropriate to reveal.

According to Kloppenburg (1991: 533), in the realm of agriculture, the contemporary world urgently *needs alternative sources of knowledge production that encompasses knowledge generated by farmers. But these alternative sources for agricultural*

development have no voice or simply are not heard in contemporary agro-scientific discourse (Emphasis added).

Hountondji (2002:23) argues that indigenous knowledge has not or not entirely disappeared from collective memory. It has not lost any parcel of its age-old efficiency either. Besides, it should not be considered a problem that it co-exists today with the so-called modern science. The real problem is elsewhere*: about the very form of this existence* (Emphasis added). Houintondji later adds: "… what we witness today is a situation where *indigenous knowledge is marginalized*" (Emphasis added).

When Kloppenburg (1991: 533) remarks that the "alternative sources of knowledge for agricultural development have no voice or simply are not heard in contemporary agro-scientific discourse", what he implies is that the farmers' knowledge systems are not paid attention to and thus, "are not heard." Kloppenburg (1991:520) has further remarked that "local knowledge is the knowledge contained in the heads of farmers.Thus, this knowledge is not externalized, is not studied systematically: how it is constructed, sustained, transformed and communicated in the discourses of the farming community.

Having noted the limitations of the knowledge in agricultural technology, Kloppenburg (1991:520) argues for alternative sources of knowledge production that encompasses knowledge generated by farmers.Because the discourse (knowledge) of scientific agriculture is fragmented (Kloppenburg,1991:531), for the contemporary world, knowledge of crop cultivation that brings solutions to problems at the "whole farm level" is needed. In Ethiopia, for example, the technology package focuses on "soft technologies", that is, agro-chemicals (in the form of chemical fertilizers Urea, DAP and pesticides) and only the so-called "improved seeds (Dessalegn, 2008: 131), which can be used only for limited activities of crop cultivation. Even if the limited technology packages are disseminated to farmers, as my pilot study findings indicate, the discourse of the farmers reveal lack of sustainability and the side effect in using these technologies. On the contrary, discourse of crop cultivation activities occur at different phases of the practice, for example, ploughing and preparing a field, selecting seed crops (seed practice), managing soil, sowing, and protecting crops, and so on. Logically, each of these activities requires different, but relevant knowledge.

Here, some significant questions arise: How can we access to the discourse of indigenous farming knowledge in Ethiopia? What type of methodology and methods arising from our chosen methodology better guide us to have the famers "voice" or recontextualize the way(s) they do crop cultivation activities?

For Hailliday and Hasan (1985:17), function of language, which equals use, is a fundamental property of language. Moreover, according to systemic functional linguistic (SFL) theory, which was developed by Halliday (1978, 1985, 2004) and other scholars, the primary purpose of language is functional. According to this theory, language has three major functions ("meta functions").The first function is termed as "ideational" or "experiential", that is, the function of language to represent experience (both realities and inner experience); the second is "interpersonal", that is, the function of language as a means of “acting on things”; and the third is “textual”, which enables the two functions to be realized, by creating connected and coherent discourse.

Johnstone (2008:33) also expounds that people bring the world of their experience-work, reality and so on, into being by talking, writing and signing.Needless to say, Hicks (2004:176) brings forth the postmodern thinking regarding language that the subject uses language to express her/his beliefs and interests and further those beliefs and interests; language is thus functional.

Related to the significance of language in the lives of people is discourse analysis.First of all, what is discourse? Discourse in Fairclough (2001:27) means "representation", "social activity/practice itself, and "ways of doing and being", which exist as a result of the role (function) of language in the process.In Johnstone (2008:33), discourse is both people's knowledge of language and their "world views”, that is, their ideas, beliefs, knowledge system, concepts, and so on. Gee (1999:7), first of all, makes a distinction between "discourse" (with small "d") to mean language in use in a given context and "Discourses” (with capital "D" and as a count noun) to mean language in use plus non-language situation. Thus, discourses, according to Gee (1999:13f), are ways in which humans integrate language with non-language "stuff”,including thinking, acting, interacting, feeling, valuing, using tools and so on, to enact and recognize different identities and activities.Van Leeuwen (1993) views discourse as “recontextualized social practice.”

Discourse analysis is an evolving technique for examining social reality and practice, for example, the social practice of crop cultivation in the farming community. In examining social reality and practice, discourse analysis focuses upon how that social reality and practice is produced, constructed or recontextualized.In order to do this, it focuses upon language. As Gee (1999:12) has noted, language and discourse are "tools of inquiry", that is, they are ways of looking at the world of talk and interaction. Or, they (language and discourse) are tools which help us to understand people, events in people's lives, the world of activities, people's (farmers') knowledge systems, and so on.

Indeed, discourses exist embedded to all aspects of development practices as work/activities, as action, as thinking, as knowledge, as interactions, as negotiation, and so on. Crop cultivation is not different. As it is a facet of livelihood and social practice, discourses exist embedded to it: as activities/work; as local knowledge, and so on.Having the notion of discourse after Van Leeuwen (1993), in this thesis, discourse is used to refer to language use together with the social practice of crop cultivation, and thus, as a way of representing, constructing or recontextualising how crop cultivation is done.Furthermore, discourse in the context of the social practice of crop farming designates what famers say about their crop cultivation practices such as their "know how", the form(s) of knowledge they use to do the activities, and their existing farming problems.Apparently,the ways different activities of crop cultivation, for example, ploughing, seed acquisition, planting and so on, can be performed can be in the discourse the farmers create. In the same way, discourses exist as indigenous knowledge that the framers can draw upon to carry out different activities of crop cultivation.

Thus, in this thesis, language and its function in discourse as a tool to study the discourse of indigenous knowledge of crop cultivation practices is a central one. It advocates firmly the view that farmers' discourses about the farming knowledge they use to accomplish their activities are known through language used in interviews and focus group discussions about the way they do the activities, because within the social practice of crop cultivation, knowledge and meaning construction is constituted in language and texts.Then, by analyzing their texts and discourses, the researcher can identify the type of farming knowledge at work.

Researching the discourse of indigenous farming knowledge necessitates that a researcher use (as I have usefully exploited them in this project) appropriate research design which must include: relevant theories (for example, language theory, discourse theory, social theory), ethnography and fieldwork, sampling procedure (both the study setting and study participants), qualitative data collection instruments, research ethics and relevant data analytic procedures.All these research procedures are in this thesis.

1.3 Statement of the problem

The social practice of crop cultivation has a number of key functions such as food security, alleviation of poverty, generation of trade, rural employment and so on, in the process of the socioeconomic development of a country (Elliot, 2006:17). In Ethiopia, crop cultivation is the backbone of economy, and fulfils the "key functions" Elliot has mentioned. But, two problems stand out: the first is that we do not know how the farmers cultivate crops.When Chambers (1983:98; 152) states:"---outsiders do not know what rural people know and do not know that not knowing matters; and so ways of thinking about agricultural development are rarely thought about, but they are taken for granted," he reflects outsiders' (policy makers, development agents, etc) lack of attention to farmers' indigenous knowledge. Levine (1965:92) has also a similar view when he writes:"----the modern-educated Ethiopians assume that peasant culture has nothing of substance to contribute to an Ethiopia in transition."

This kind of thinking leads us to the second problem, that is, in Ethiopia, to the problems of crop cultivation development, policy makers and agricultural development planners assume that development in crop cultivation results from the application of "rational science", termed as discourses of transfer-of-technology (TOT) model of agricultural development through development agents (Chambers,1993,1998; Scoones &Thompson, 2000:18). The empirical verification for this is the development practices and strategies included in the Agricultural Development led-Industrialization (ADLI).

In the (ADLI) (MOARD, 1993:1), there are two strategies for increasing productivity: the first strategy, known as "allocative efficiency", where input would be through improved agronomic practices. The second strategy, known as "technical efficiency" input would concentrate on the introduction of improved technology, that is, biological, chemical and

mechanical. In addition, the strategy has aimed to achieve the following: "Commercialization of smallholder agriculture through product diversification", "… a shift to higher-valued crops", "Promotion of niche high value export crops", "support for the development of large-scale commercial agriculture". Moreover, "the main task of Development Agents (Extension Workers) is to transfer improved agricultural technologies to farmers", "… farmers choose from technology menus", and "Ethiopian Institute of Agricultural Research (EIAR) focuses on technologies like tissue culture, mass propagation, market assisted breeding of crops." This illustrates the priority given to knowledge of modern agricultural technology over indigenous farming knowledge. In short, the strategy represents crop cultivation development as "object oriented", mediated by merely modern agricultural technology.

In Ethiopia, despite the high priority given to the discourse of modern agricultural technology as panacea to trigger off the process of crop cultivation development, in terms of productivity improvements, it has performed "poorly with little or no productivity growth" (Dessalegn, 2008: 147). World Bank (2007a) also describes the picture in this way:

> … the rates of growth remain below those needed to reach Ethiopia's development goals, and below potential. There is no evidence of an overall economic take off since the early 1990s. The evidence of a broad based and sustained agricultural productivity take off is weak… indeed it is possible to construct gloomy scenarios for peasant agricultural output per captia evidences long-run decline (World Bank, 2007a:33).

Crop cultivation and productivity needs to be sustainable, but as described in the World Bank, the expressions: "the evidence of a broad based and sustained agricultural productivity take off is weak" and "…. Is possible to construct gloomy scenarios for peasant agriculture…" show the limitation of sustainable crop cultivation development in Ethiopia. So, although the design of policies to develop agriculture production, there is a need to further problematize crop cultivation practices in Ethiopia.

Another related point is that before applying modern agricultural technology one assumes to tackle the problem of agricultural development, it is necessary to be aware of the context or system of crop cultivation processes. According to the Burntalnd Commission

(WCED, 1987:19) categorization, there are three systems of agriculture: Green Revolution Agriculture, Industrial Agriculture and Resource poor or undervalued resource agriculture. Of these, the third system is characterized as complex, diverse and risk -prone (CDR).Ethiopian crop cultivation is grouped in the third category. This means that crop cultivation practice in Ethiopia is characterstically complex, diverse and risk-prone. This entails that crop cultivation practice in Ethiopia is subject to a highly interactive set of variables rapidly changing and subject to a high degree of uncertainty (Drinkwater, 1994:33), which requires different interfaces of discourses of farming knowledge.

Besides, according to Elliot(2006:170), the third system of agriculture “has generally not been the focus of research and development”, yet farmers’ and the government’s priorities may differ in a number of core respects. Admitedly, in Ethiopia, research on the discourse of indigenous knowledge of crop cultivation is very limited which might be the result of overlooking or undermining this knowledge system. Again, in many cases, external inputs from modern agricultural technology may not be viable. In connection to this, Long (2002:175) has noted that the usual thinking for performance of crop cultivation is that the so-called experts of scientific agriculture "create/produce knowledge". This knowledge is disseminated by "knowledge disseminators", those who are agents of development (extension workers). And there are those who are "knowledge users", the actual participants-the farmers. It is unlikely, thus, that the problem of development of crop cultivation coincides with the distinctions between knowledge "producers/ creators", "disseminators" and "users".Thus, there is a need to get farmers to voice the problems they face regarding the input from modern agricultural technology.

Related problems are that in the present context of Ethiopia, there are a number of challenges and mitigating variables in the aspects of crop cultivation practices which can be categorized into three: natural and biophysical, socio-cultural and economical (being cost effectiveness). Again, these challenges can be tackled using the discourse of indigenous farming knowledge rather than inputs/knowledge from modern agricultural technology (Ayele, 2006:132).

Currently, researchers and organizations have brought attention regarding the importance of indigenous farming knowledge to development practices. Semali (2009:43), for instance, argues that indigenous knowledge is beneficial as "cultural capital" and for "sustainable development." Brokensha et al (1980:13) and WIPO (2001:214) emphasize the economic value of the discourse of farmers' indigenous knowledge. According to them, indigenous knowledge of farming practices conserve biodiversity, generates income, reduces insect and disease incidence, facilitates efficient use of labour, helps the farmers and the farming community use low external input cultivation systems and maximizes returns.

The next problem is related to crop cultivation genres. According to Chambers (1983), RPK exists in different forms. Oral genres, in the form of sayings such as proverbs, poems and plough chants can be taken as one of the forms of indigenous knowledge. It is for pragmatic reason that in recent years organizations such as WIPO (2001) and UNESCO (2006) have brought attention to and recognition of the development value of indigenous farming knowledge included in sayings (proverbs, wise sayings, poems and other similar oral genres). Concerning oral genres such as proverbs and poems, Le Gall (2009:10) has argued that the distinction between these genres and indigenous knowledge narrows down in the actual context of the community where material resources, different practice as well as cognitive process (knowledge) are integrated with and related to these oral genres (traditional/ cultural expressions).

Collecting and studying oral genres related to crop cultivation practices, of course, in context of use, is a way of investigating the discourse of indigenous farming knowledge.In this respect, Le Gall (2009:8) states that oral traditions (genres) are the mode whereby indigenous knowledge is expressed. Thus, oral traditions are the medium (mechanism) through which the elder farmers transmit their knowledge to the younger ones (young farmers).However, they seem to lack attention, and thus, are not systematically collected (recorded), translated or analyzed.

Indeed, in contemporary Ethiopia agricultural development dialogue, the discourse of modern agricultural technology (the discourse of technology transfer (TOT) privileges over the discourse of indigenous farming knowledge. Consequently, more and more

discourses of indigenous farming knowledge systems are being lost, forgotten or they are on the verge of extinction as a result of lack of attention to them. What is at issue here is knowledge is at stake! In general, significant as the contribution of discourse of indigenous knowledge to enhance crop cultivation development at Hitecha (my study area), it is not systematically studied, identified and documented.

1.4 Objective of the Study

The general objective (purpose) of this ethnographic fieldwork is, first of all, to collect texts and/or discourses about indigenous farming knowledge constructed on two specific farming activities and on some, general issues/topics around crop cultivation in South Wolo, at Hitecha, and then to make these discourses explicit or to externalize the discourses, which are characteristically opaque to outsiders (e.g. crop cultivation development policy makers), by analyzing them critically.

In order to acieve the broad objective, the following four major research problems/questions (and two sub-questions) are addressed to be solved (answered) in the process of this research:

1. What discourses do farmers use to construct and recontextualize specific farming activities (e.g. ploughing their fields) and general, discursive practices (e.g.giving advice to people on how they produce crops) surrounding crop farming?

1.1What are these discourses of crop farming practices in tangible terms?

1.2 Are there any reasons for farmers to use these farming discourses more than others to construct their farming activities?

2. How do the farmers use discourse to construct, to make use of and to preserve their indigenous farming knowledge?
3. How does the farmers' use of the discourse of indigenous farming knowledge enhance or retard their crop farming practices?
4. What is the status of the discourse of indigenous farming knowledge in the discourse used in modern agricultural technology?

As its specific objectives, the study primarily focuses on identifying and analyzing the discourse type farmers use to construct or recontextualize ploughing, seed acquisition practice, and some general topics around crop farming practices. Again, through analysis, the study attempts to identify the reasons farmers divert to using their indigenous knowledge, and figures out the ways farmers use discourse: to construct the activities of ploughing,seed and seed acquisition practice, and some topics related to crop cultivation, to make use of, and preserve their indigenous knowledge. The study also aims at explaining/ describing the status of discourse of indigenous knowledge in the discourse of agricultural technology and its contribution to or influence of crop cultivation development in the study setting (Hitecha).Besides, the study aims at collecting sayings (proverbs, poems and plough chants) related to crop cultivation practices from the study setting in order to arrive at a better understanding of the discourse of indigenous farming knowledge. Also, the study attempts to explore the power relationship between the discourse of indigenous knowledge and the discourse of agricultural technology.

1.5 Assumptions

This study is anchored on (premised on) the following core assumptions:

1. That language plays an important role in constructing and disclosing farmers' discourses about the way they embark on crop farming.

2. When farmers (the agents or actors of crop farming) are given adequate opportunity and motivation, they have the capacity to articulate how and why they do the practice.

3. To study the indigenous knowledge of farming discourse, it is required to transform farming activities into discursive practice through interviews and focus group discussions. In the process, the practice of crop cultivation can be recontextualized, because, in the interviews and discussions, the farmers can talk about how they carry out the activities (see Chapter 3).

4. When farmers recontextualize the ways they do crop cultivation activities, they also bring with them the type of farming knowledge they apply to undertake the activities, one of which can be their own indigenous knowledge of crop farming.

1.6 Significance of the study

This study is useful for the following parties and concerned sector:

1. Field of Applied Linguistics and Development

In order to conduct his studies about farmers' local knowledge practices, the researcher has heavily relied on data elicitation instruments such as interviews, focus groups or group discussions, and field observation. The data obtained through these instruments can be viewed as the product of the researchers' quest to know and the farmers' text and talk (responses) constructed on their experiences about the aspect of farming practice in question. So, it is easy enough to imagine the dialogical nature of the process, and its realization in language.This point holds sway with the postmodern thought that the world is mediated by language and discourse, and more specifically, a social practice such as crop farming is mediated by language and discourse.

The current study makes indigenous crop cultivation knowledge as practised in ploughing and seed acquisition practice explicit using SFL and CDA as theoretical underpinnings. Moreover, the gap between the local level practice of crop cultivation and policies or strategies planned at the macro-level of the social structure as to how to achieve crop cultivation development can only be bridged using critical discourse analysis (CDA). The study, thus, appreciates the importance of using language and discourse analysis as a method of studying indigenous knowledge of crop cultivation for sustainable development. So, it is a strong case for the re-focusing on the role of language and discourse as tools of inquiry to understand the social practice of crop cultivation.Also, in the sense of adding to knowledge, the study provides some compilation of sayings (poems, proverbs, plough chants) about crop cultivation which will enable us to gain a better understanding of the discourse of indigenous crop cultivation knowledge.

2. Crop Cultivation Development Policy Designers

According to WIPO (2001: 214), concern of indigenous knowledge is showing equity and respect to the knowledge, as well as parity with other forms of knowledge. In Ethiopia, the lack of attention seem to be the outcome of lack of clear understanding of

what exactly indigenous knowledge systems of crop cultivation are. The findings of this study, thus, will serve as empirical evidence for indigenous farming knowledge as practiced in the study area, and is expected to give policy designers a new perspective in understanding this knowledge system in order not to take it easily and as traditionally backward. Further, the documentation (collection) and analysis of farmers' discourse about their indigenous farming knowledge can also help to establish policy guideline that would contribute to the integration of indigenous and modern farming technology to enhance the development of crop farming.

3. Materials Development for Sustainable Agricultural Development Training Programme

Williams & Muchena (1996), as quoted in Mkosi (2005:107) insist that indigenous knowledge could contribute to sustainable agricultural education. Thus, this study will contribute to the design of curriculum (materials) for sustainable agricultural development training programme in Ethiopia.

4. Farming Community of the Study Village

To the farming community of the study area, this study has two main contributions.The first is that the topic of the study is discourse of indigenous knowledge of crop cultivation. So, participants come to realize more that their knowledge is valuable and meaningful.Thus, the study is motivational to the farming community of the study village. Secondly, the study has contributed to knowledge exchange among the research participants.

5. The Researcher

This study is useful for the researcher since it is concerned with applied linguistics, the discipline within linguistics, which the writer is specializing in. Furthermore, through language and discourse, the writer is expected to learn indigenous knowledge as practised

in ploughing, gaining seed, and related topics about crop cultivation, and in analyzing this knowledge as the instance of text and discourse by applying critical discourse analysis.

1.7 Scope of the Study

In the context of this study, without considering the activities farmers do (because topics for the discourse can be the activities themselves), it was difficult to study the discourse of indigenous knowledge of crop cultivation. But, there are different types and process of farming activities. So, to delimit the discourse, it was necessary to focus on some activities and discursive topics of crop cultivation only. Accordingly, the study focused on two activities: ploughing and seed acquisition practice (farmers'seed experience) and some discursive topics around crop cultivation activities. Furthermore, the focus was on the discourse of indigenous knowledge produced on the two activities and the discursive topics around farming activities, and not on other discourse types (such as the discourse of modern agricultural technology).

In the study area, there can be different forms of sayings-proverbs, poems, songs, chants, etc., associated with crop cultivation. However, in this study, to augment the corpus (the discourse data), only three types: proverbs, poems and ploughing chants were collected.It was interesting to collect as many proverbs, wise sayings and poems as possible associated with the discourse of indigenous farming knowledge instead of collecting a few larger genres such as folketales and songs.

Owing to the nature of qualitative research, the focus of the study was restricted to a single site (one setting), in the village of Hitecha. Hitecha, a medium village, is found in Tehuledere Woreda, South Wolo, in Amhara Regional State. The participants of the study were dominantly male and female farmers sampled from the village of Hitecha from all types of age categories and level of education.

In terms of time, the study was carried out during the actual work of crop cultivation activities in spring, summer and autumn seasons in 2012.

Indeed, for the problem of crop cultivation development in Ethiopia, there can be long-standing and many interlinked factors. This study, however, has focused on two possible factors: the lack of consideration to the contribution of the discourse of indigenous

farming knowledge, and the high assumption given to modern agricultural technology that it alone induces agricultural development have lowered the development of crop cultivation.

1.8 The Limitation of the Study

There are some limitations to this study.First,one can imagine the complexity of conducting a study on a chosen topic in the field of Applied Linguistics, which is an interdisciplinary field of study, drawing theories and paradigms from diverse disciplines:language, discourse theories, sociology, psychology, anthropology,philosophy and education.When "Development" is tagged to it("Applied Linguistics and Development") it combines two fields together, making it multidisciplinary, even transdisciplinary field of study and more complex.A study on such interdisciplinary field, in particular in the case of the present study, requires ample knowledge and experience of a multidisciplinary approach in areas such as sociology, development theories, agricultural development theories, philosophy,anthropology and theories of epistemology.Actually, the researcher has taken some courses related to language and society (sociolinguistics), literacy and development, discourse study(including CDA), translation and pragmatics to bridge the knowledge gap. However, having TEFL background alone may limit the description, analysis and interpretation of the textual (discourse) data.

Second, in this chapter, I have discussed the co-existence of indigenous knowledge of farming with knowledge of modern agricultural technology. While this is true, it is, however, difficult to demonstrate the boundry between the two knowledge systems. Indeed, this is the challenge across indigenous knowledge researches. However I used"the characterstics of indigenous knowledge" discussed in Chapter 2 as criteria, at least to minimize the problem of distinguishing the two knowledge systems.

The third limitation is, as I discussed earlier, the study was organized around farming activities, but I used only two specific activities: ploughing and seed practice, when there are a lot of crop cultivation activities. If I included other activities, the consequence of bulky discourse data threatened me. Indeed, I included some general, discursive topics

related to crop cultivation practice such as sources of farming knowledge, how farmers transform skills to action (decisions to do farming activities), giving advice to children and other people about crop cultivation to augument the corpus of data.

1.9 The Structure of the Thesis

The thesis is structured in nine chapters. Chapter 1 sets out the introductory section: the background of the study, the statement of the problem (the problems of the study), the general and specific objectives, the significance, the scope and limitation of the study. The review of related literature is discussed in Chapter 2. In this chapter, the theoretical approaches used and the conceptual framework developed to research into the discourse of indigenous knowledge of crop cultivation are also presented. Chapter 3 deals with the research design and methodology of the study which includes: selection of setting (study area), sampling procedure (of participants of the study), data collection instruments, research ethics and methods of data analysis. Chapters 4, 5, 6, 7 and 8 focus on the analysis of the discourse data and texts obtained from the research instruments. Each of these five chapters is meant to answer the research questions and present the major findings. Finally, Chapter 9 presents conclusions and recommendation.

Chapter Two: Literature Review, Theoretical Approaches and Conceptual Framework

2.1 Introduction

The focus of this chapter is on reviewing literature related to the study. It mainly reviews what scholars wrote about the function of language in society, the concept and significance of discourse, discourses about development and agricultural development theories, critical discourse analysis (CDA) and its relevace to the study, types of development knowledge, indigenous knowledge and the link among language, discourse, knowledge and power in the context of crop cultivation practice. In particular, to be able to analyse the discourse of indigenous knowledge of crop cultivation exhaustively and elaborately in the study area, the study applies four theoretical approaches and one perspective. Further, a possible conceptual framework to research into the discourse of indigenous knowledge of crop cultivation is developed. Then, the theories, the perspective (CDA), and the conceptual framework are used in combination both in the collection and analysis of data.

2.2 Language and Crop Cultivation Practice

In order to examine a social practice such as crop farming, discourse analysis is significant.In examining the social practice in question, discourse analysis focuses upon how that social practice is constructed or produced.So, to do this, it focuses upon the function of language.Thus, one approach to understand the type of farming knowledge discourse farmers use is through the study of their language use and discourse.

Scholars of language and linguistics, sociolinguists, and discourse analysts have never skipped expounding on the role of language in human life, that one cannot imagine society without language. Johon Lock (1690), as quoted in Aitchison (1996:16), for example, reflects: “language is the great conduit, whereby men convey their discoveries, reasoning, and knowledge to one another.” Cook (2002:3) also explicitly states that language is at the heart of human life, without which many of human's most important

activities are inconceivable. The role of language is further elaborated on by Vygotsky (1978:29), when he writes that language could influence the way humans think and interact with the world, by structuring their mental activity, mediating between thought and action and interaction. The key terms described here include "interact with the world," "mediate between thought and action and "interaction."

Evans and Green (2006:6-10) have described two functions of language: the "symbolic" and the "interactive" functions of language.By the symbolic function of language they meant the fact that to express thoughts and ideas, people use signs to represent things and ideas and connect to a concept that is formed in their consciousness. The sign, however, corresponds to a convential meaning, rather than directly to a physical object or thing in the external world.

Using the sign (symbol) and simply pairing "forms and meanings" is not the end of it: people should practically use language.So; this takes us to the second: the "interactive function of language" which means to communicate or to "get our ideas across." Thus, people draw on the resources of language- sounds, words, expressions, grammatical forms, genres such as proverbs, and so on, to construct or to build "versions of reality" or dimensions of social activity; in the descriptions of Gee and Green (1998:138), "world building", "activity building," "identity building", and "connection building" (the function of language is further described in the Theoretical Approaches section below).

To sum up, people interact with each other and with objects in their environment by means of the language available to them to achieve or gain some purposes. Thus, during the interaction, they construct meaning, which in turn is applied,may give birth to development; be it economic (for example, crop cultivation development), social, cultural, or political development.Generally, language realizes talk and texts which are significant tools to study discourses about a social practice. By the same token,language can construct talk and texts about the practice of crop cultivation and enables us to understand how the practice goes on. In this respect, development of any sort cannot be imagined without language.

2 .3 Discourse and Crop Cultivation Practice

In the preceding section, the significance of language and discourse analysis to know about a social practice was illuminated.In general; discourses are produced by participants (agents) of a social practice in their acts of observing, constructing, and managing the practice. Consequently, the logic behind discourse analysis is that it is through discourse analysis that we can be accessed to the discourses surrounding the social practice such as the practice of crop farming. Before establishing how discourse is related to crop cultivation practice, let us review how different writers conceptualize about it.

2.3.1 The Conceptions of Discourse

As there are innumerable discourse scholars and writers, the following are sample reviews and discussions. Foucault (1972, 1980) is one of the pioneers of discourse and discourse theory of poststructuralism. According to him (1972: 48-49):"Discourses (used it in the concrete and countable sense) are practices that systematically form the objects of which they speak. Discourses constitute objects." A discourse is understood as defined in terms of statements of "things said". Thus, statement is conceptualized as the basic elements of discourse analysis.Statements are events of certain kinds, which are both tied to historical context and capable of repetition. In addition, there can be many ways to formulate statements about events, actions, situations or knowledge, but that there are also limitless statements that are never uttered, and would never be accepted as meaningful. This is so because, for him, "the historical rules of the particular discourse delimit what is possible to say."

Further, discourses are composed of signs but what they do is more than use these signs to designate things. "It is this move that renders them irreducible to the language and to speech. It is this move that we must reveal and describe." From these explanations, it is explicit that discourses are not mere language use, but they embody meaning, knowledge and thinking.

Again, according to Foucault, discourses cannot simply be equated with language analysis. He rhetorically reflects:

> The question posed by language analysis of some discursive fact or other is always: according to what rules has a particular statement been made and consequently according to what rules could other similar statements be made? The description of the events of discourse poses a quite different question: how is it that one particular statement appeared rather than another?(Foucault,1972:27).

In the above quote, Foucault illuminates that mere analysis of linguistic discursive practices is not a productive enterprise, rather analysis should focus on the material and other practices-discourses, because, meaning is constructed within discourses, and discourse analysis.

According to Gee (1999:7), there is a distinction between "discourse" (with small "d") to mean language in use in a given context, and "Discourse" (with capital "D" and as a count noun) to mean language in use plus non-language (material, things) situation. Thus, discourses, according to Gee (1999:13), “are ways in which humans integrate language with non-language "stuff," such as different ways of thinking, acting, interacting, valuing, feeling, believing, and using symbols, tools, and objects in the right places and at the right times so as to enact and recognize different identities and activities.”

For Gee (1999:12), then, when people speak or write, they simultaneously construct discourses. Specifically, they build six things or areas of "reality": 1) The meaning and value of aspects of the material world, 2) Activities, 3) identities and relationships, 4) politics (and/or ideology), 5) connections, and 6) semiotics. Thus, discourses are social practices, mental entities, as well as material realities. They (Discourses) are always embedded in human practices, because "we humans engage, inside and outside interactions, in recognition work, Discourses exist in the world” (Gee, 1999:20).

Johnstone (2008:3) has reflected that discourse is both the source of knowledge of language (people's generalizations about language are made on the basis of the discourse

they participate in) and the result of it (people apply what they already know in creating and interpreting new discourse). When used in the plural sense, discourses are conventional ways of talking that both create and are created by conventional ways of thinking. Discourses are understood to involve patterns of belief and habitual action as well as patterns of language. Furthermore, discourses are linked ways of talking and thinking which constitute ideologies (sets of interrelated ideas) that influence and are influenced by the ideas. Johnstone (2008:33) also points out that people bring worlds into being by talking, writing, and signing. Thus, discourse is both shaped by and helps to shape the human life world or the world as we experience it.

Van Leeuwen (2008:3-6) conceptualizes discourse as recontextualized social practice. He uses discourses as used by Foucault (1972) in the sense of social cognition, of a "socially constructed knowledge of some social practice developed in specific social contexts, and in ways appropriate to these contexts." The difference between "doing" a social practice and "talking about it" is well recognised.Thus, for him, discourses are the many different possible ways that the same social practice can be represented. The social practice of crop cultivation, for example, can be represented differently by the participants in it (the farmers) and by development agents.

Van Leeuwen (2008:6) uses the concept of recontextualization and connects it with the term discourse in the sense of "social cognition". As discourses are social cognitions, socially specific ways of knowing social practices, "they can be, and are used as resources for representing social practices in text." This means, according to him, that it is possible to reconstruct discourses from the the texts that draw upon them.Thus, "recontextualization" and "the plurality of discourses" can minimize the gap between "doing" and "talking" about a social practice. He further points out that "discourses not only represent what is going on, they also evaluate it,ascribe purposes to it,justify it, and so on, and in many texts these aspects of representation become far more important than the representation of the social practice itself."

Fairclough (1992:3-5; 2003:2-3; 214-215) conceptualizes the term "discourse" in three different ways. First, in the abstract sense, discourse refers to language use as social practice. In this sense, discourse is concerned with designating the broadly semiotic and

non-semiotic elements of social life. Second, discourse is understood as the kind of language used within a specific field, such as political or scientific discourse. Third, in the concrete sense, discourse is used as a count noun-a discourse, the discourse, the discourses, discourses-referring to a way of speaking which gives meaning to experiences from a particular perspective, or particular ways of representing particular aspects of social life. In this sense, discourse refers to any discourse that can be distinguished from other discourses such as consumer discourse, environmentalist discourse, modern agricultural discourse, and indigenous farming discourse. Within one discourse type, for example, political, there could be different types of discourses producing political discourses. These different political discourses might represent problems of "inequality", "disadvantage", "poverty", "social exclusion", "absence of democracy" and so on in different ways. Representing a problem or any other issue in a different way entails using different forms of linguistic expressions (different 'genres' and 'styles').

Fairclough (2003) suggests three ways in which discourse features in social practices. First, it figures as part of the social activity within a practice.Second, discourse figures in representations of social practices. And third, discourse figures in the constitution of identities, or ways of being.

At this point, stating the distinction between text and discourse is pertenent. Fairclough (1992:4) regards text as a dimension of discourse: the spoken or written product of the process of text production representing reality, enacting social relations, and establishing identities. Thus, according to Fairclough (2001:20), a text is a product rather than a process: a product of the process of text production. Whereas discourse is the whole process of social interaction of which a text is just a part.More explicitly, Fairclough (1995b:4) states that within discourse analysis, a text is conceived broadly, which may be either written or spoken discourse.

To sum up, what is common to the above explanations of discourse is that discourses are practices and that they have some kind of consequences/effect such as representation of something; enact power and so forth.In addition, from the descriptions of discourse(s) presented so far, these points can be gleaned: that language and discourse are more than words and sentences. They are ways in which people construct meaning of their lived

experiences and present themselves and discourses, that is, conventions, ideologies, hegemonic practices, activities, views, belief systems, and knowledge systems. As Gee (1999:20) has put it, discourses exist in the world: embedded in our activities, experiences, interactions, and relationships with others.

As it was discussed in Chapter 1, crop cultivation is a social practice; it is "recognition work" (Gee, 1999).Hence, it would be that discourses exist embedded in crop cultivation practices as activities, as ways of doing the various cultivation activities, as indigenous knowledge, as knowledge of agricultural technology, as various metaphors, descriptors or sayings about crop cultivation, and so on. Thus, the way to examine and understand the farmers' indigenous knowledge is through studying and analyzing their discourses constructed on how they carry out crop cultivation practices. This argument is in line with poststructuralist writers and thinking who firmly believe that social practices are mediated by discourse and language, and that reality is known through by placing discourse and language at the centre (Foucault, 1972, 1980; Lyotard, 1979).Moreover, the postmodern discourse theory holds on the application of critical thought to social, political, cultural, and economic practices (for instance, crop cultivation practice), and the unveiling of hidden discourses(Jonstone, 2008).The next section deals with the meaning of discourse analysis.

2.3.2 The Meaning of Discourse Analysis

According to Potter and Wetherell (1994:48), there are three features of discourse analysis: first, it is concerned with "talk and texts as social practices," where analysts attend both to the linguistic content and form; second, its concern with action, construction and variability; and third, its concern with "rhetorical analysis," that is, how talk and texts construct the versions of reality. On the other hand, Johnstone (2008: 4-5) likens discourse analysis to chemical analysis, which involves using a variety of mechanical techniques for separating compounds into their elemental parts.In the same manner, according to her, discourse analysis involves a process of taking apart, dividing longer stretches of discourse into parts,by breaking down the language into functions, according to participants,settings or processes.In both descriptions of discourse analysis,

the writers place language at the centre and as one of the key elements in constructing discourse, and as the starting point of discourse analysis.In sum, DA focuses on talk, texts and discourses, all of which are realized in language, as social practices.

In connection with discourse analysis, Johnstone (2008:5-7) has identified some important points about its uses, which have relevance to this study. First, discourse analysis can shed light on how meaning can be created via language. Second, discourse analysis sheds light on how language users indicate their cognitive abilities. In the context of this study, the analysis of farmers' texts and discourses is a way of examining how they carry out their practices (including knowledge use), the meanings they ascribe to their practices, and their hidden motivations. Moreover, analyzing their discourses shades light not only on how and why they do various farming activities, but it also reveals the problems they have or encounter with crop farming.

2.3.3 Three Approaches to Discourse Analysis

Jorgensen and Philips (2002:1) describe discourse as "a particular way of talking about and understanding the world". They, then, identify three different approaches to social construction discourse analysis: "discourse theory", "discursive psychology" and "critical discourse analysis" (CDA).These three approaches conceptualize discourse slightly differently. However, as Jorgensen and Philips (2002:1) reflect, the three approaches share the following ideas: people access to reality always through language and that physical objects gain meaning through discourse, that our ways of talking do not neutrally reflect our world, identities and social relations but, rather, play an active role in creating and changing them.In particular, CDA, developed within the linguistic tradition of discourse analysis, understands discourse to be represented in text and talk.

As CDA is relevant for this study, it is discussed in some detail here. At the outset, reflecting on the origin of CDA is indispensable. In the foregoing discussion, language is found to be an indispensable tool for the proper functioning of human beings. Human beings access to knowledge, to various social practices, to the environment and to other fellow beings through language. But, there were some views about the ways language should be studied and/or analysed. The first was the view of formal linguists who stated

that language should be studied in its own right. The contrary notion was that the study of language isolated from the social or the context would not give insights into social practices. At this point Wodak (2004:185) argues that the interpretation of isolated utterances is usually vague and ambiguous.

Secondly, the "critical linguists" of the 1970s (the University of East Anglia) have argued that linguistic analysis should focus on the use of language in social institutions and relations between language, power and ideology, and that it should be critical and emanicipatory (Blommaert, 2005:22). Having a similar view, Downes (1998:412) reflects that "the sociolinguistic phenomena enact the interests and conflicts of power in society by means of mechanism of which participants are generally unconscious or deny." Wodak (2004:186) also suggests that the common interests in CDA have been unraveling ideologies and power through the systematic investigation of "semiotic data", be they written, spoken, or visual.Critical discourse analysts also construe the view that discourse plays an active role to construct the social world as well as to transform it.

2. 3.4 Fairclough's Framework of Critical Discourse Analysis (CDA)

The power of discourse to change social structures and practices is at the heart of CDA. Specifically, Fairclough (1992: 73) constructs a social theory of discourse. Accordingly, he views discourse having three dimensions: discourse as text, discourse as discursive practice, and discourse as a social practice. These three dimensions of discourse, according to him, help produce a framework for CDA.

The first dimension, *discourse as text*, is concerned with the linguistic apparatuses/features and organization of concrete instances of discourse. These include choices and patterns in vocabulary (wording, metaphor), grammar (modality, transitivity), cohesion (various forms of conjunctions, schemata), and text structure, (episode marking, turn taking system, etc).

Discursive practice constitutes the second dimension which includes how discourse is produced, circulated, distributed, and consumed in society. Fairclongh sees these processes largely in terms of the circulation of concrete linguistic objects-specific texts or

text-types-that are produced, circulated and consumed. Discourse as discursive practice entails that other than the linguistic aspects (vocabulary, grammar, cohesion, and text structure) there are other forms-speech acts, coherence, and intertextuality that link a text to its wider social context. Regarding "intertextuality", Fairclough (1992:85) distinguishes between "manifest intertextuality" (i.e. overt drawing upon other texts) and "constitutive", "intertextaulity" or "interdiscursivity" (i.e. texts are made up of heterogeneous elements: generic conventions, discourse types, register, style).According to him, an important aspect of manifest intertextuality is discourse representation: how quoted utterances are selected, changed, and contextualized.

The third dimension is *discourse as social practice*. To explain the dimension of discourse as a social practice, Fairclough approaches using two important terms: hegemony and ideology.According to him, discursive practice can be seen as an aspect of a hegemonic struggle that contributes to the reproduction and transformation of the order of discourse of which it is part. In a society, ruling system is exercised in an explicit or in an implicit way. In an explicit way, there is the system of power and domination. In fact, domination can put a system in power, but it alone will not keep it in power for long-term stability. Hence, rulers employ an implicit way, that is, they use persuasive means to win the support of their subjects. Fairclough (1992) used the concept of *hegemony* as used by Gramsci (1972) to describe the system of control achieved by such persuasive means.

Fairclough (1992:87) understands ideology as embedded in discursive practice. For him ideologies are significations of constructions of reality (the physical world, social relations, social identities), which are built into various dimensions of the forms/ meanings of discursive practices to sustain the system.In addition, Fairclough believes that people can be positioned within different and competing ideologies. Thus, ideology constructs reality and institutional systems by "investing" language and thereby discourses. For example, the social practices of the discourse of modern agricultural technology, and the discourse of indigenous farming knowledge are not homogenous ideologically.So, discourse as social practice refers to the ideological effects and hegemonic processes in which discourse is seen to operate (Fairclough, 1992:86-95).

The idea of ideology is not limited to politics and domination. According to Billing et al (1988:16-17), there are two kinds of ideologies :"intellectual" ideologies, which is used in the sense of Marxist definition ,that is, a coherent sets of ideas that serve to represent the domination of the ruling sections of society, and "lived" ideologies, which are composed of the beliefs, values and practices of a society. In this study, the concept of "ideology" is used in the sense of "people's worldviews" and lived practices, as in Billing et al (1988) "lived" ideologies. In this sense, indigenous knowledge of crop cultivation is "lived" ideology of the farming community.It is most likely that power holders diffuse their ideologies all around social practices and to all members of the society. Thus, the ideologies of the dominators can undermine "lived" ideologies that exist in various social practices (economic, cultural, social, etc,). To sum up, the relation of discourse to power, ideology and hegemonic practice is the central idea of discourse as social practice (Fairclough, 1992).

Based on the three dimensions of discourse, Fairclough (1995a:188; 1995b:66) presents a range of different concepts that help us to research into problematic social issues and also for the analysis of the emerging discourses as a social practice. Among others, in any analysis, two dimensions of discourse are important focal points.First, the communicative event [or the context of interaction], which means an instance of language use such as an interview, a political speech, a focus group discussion, and so on.An instance of language use is a communicative event [context] consisting of three dimensions: it is a text; it is a discursive practice; and, it is a social practice.The analysis, thus, should focus on all these three dimensions. Second, the order of discourse, which designates the concept of the configuration of all the discourse types (discourse types consist of discourses and genres) used within a social instituition or a social field.

2. 3.5 The Relevance of Critical Discourse Analysis (CDA) to the Study

According to Fairclough (2001:229), Critical Discourse Analysis (CDA) primarily addresses social problems by analyzing linguistic and semantic aspects of social processes and problems.He further reflects that the analysis is based on a critical theory of language which sees language as a social practice.When addressing a social problem

and in its attempts to solve it(to critically analyze it), "the focus of CDA", according to Fairclough and Wodak (1997:271), "is not upon language or the use of language in and for themselves, but upon the partially linguistic character of social and cultural practices, processes and structures." Moreover, Fairclough and Wodak (1997:258) reflect that "CDA aims to make more visible [the] opaque aspects of discourse." In a nutshell, CDA is primarily interested and motivated by pressing social issues, which it hopes to better understand through discourse analysis (Van Dijik, 1993:252).

Regarding the idea of "critical", Somekh and Lewin (2005:344) define "critical theory" as "……looking beyond the surface of what people say, write, or do……." Similarly, regarding the term "critical", Wodak and Meyer (2008) suggest that "any social phenomenon [problem] lends itself to critical investigation, to be challenged and not taken for granted."They further elaborate on:"Critical theories seek not only to describe and explain, but also to root out a particular kind of delusion."

In general terms, a social system operates within social order having micro and macro levels (Van Dijk, 2001:354). Language use, discourse, communication and verbal interaction were understood to be grouped in the micro level, while power, dominance, and inequality between social groups to be in the macro level of social order. According to Van Dijk (2001:355), then, the main theoretical concern of CDA is to bridge the gap between micro and macro levels of social order.

When applied to this study, as elaborated on in Chapter 1, indigenous knowledge is not given equal weight as in the discourse of modern agricultural technology. In general, in the literature, indigenous knowledge is constructed as inferior and traditional (see the review in section 2.4 below). Not giving equal credit to knowledge systems entails surpassing knowledge systems, and implicitly or explicitly, it manifests power. Thus, unfair view of the contribution of indigenous knowledge to crop cultivation development is a social problem. So, I am interested to study if these conceptions of indigenous knowledge are resisted or reproduced in the farming community at the micro level of language use and discourse in interviews and focus group discussions. To put differently, my choice of CDA is to address questions such as how do farmers (participants) construct indigenous farming knowledge at the micro level? Have they resisted or reproduced the

construction of IK as in the literature? Thus, CDA is a useful tool to address my research concerns.

Needless to say, it is useful and necessary to analyze the farmers' discourses on how they perform crop cultivation by clarifying /explaining or "demystifying" the reasons for their practices and actions. The analysis should also be from the "emic" perspective, that is, the analysis must place the cognitive dimension of the agency (the farmers) at the centre. Thus, this kind of analytic approach can shade light on their indigenous knowledge and/ or their "hidden transcripts".

Throughout the analysis of data, in this study, a "critical" stance (perspective) is taken.Approaching critical analysis of the farmers' discourses about their indigenous crop cultivation knowledge can help us avoid "take-it-for granted" type of thinking. What does this mean? The contribution of indigenous farming knowledge to crop cultivation development is unarguable, but, as discussed in Chapter 1, this knowledge remains overlooked for the most part.Hence,Fairclough's (1992) critical discourse analysis (CDA) model is applicable to my research because it incorporates critical perspective and also focuses in depth on the critical analysis of social problems and ideological issues such as the discourse of indigenous knowledge of crop cultivation.Moreover, CDA allows me to demonstrate which type of discourse (knowledge of modern agricultural technology or their own indigenous knowledge) the farmers dominantly draw upon in their crop farming practice.

2.4 Discourses about Development and Agricultural Development Practice

Focusing on discourse about agricultural development, for a long time, the knowledge farmers possess and use practically to carry out crop cultivation practices has been the subject of arguments, debates and contestations. Farmers, for example, have their own knowledge, skills and know-how and thus engage in various activities of farming. But, as Scoones and Thomposon (1994:17-32) critically reflect, farmers' knowledge systems have been represented in three contrasting ways by observers. The first represents farmers' knowledge systems as part of the problem of development being "primitive", "non-scientific", and "wrong". Thus, formal research and extension must "educate",

"direct" and "transform" farmers' farming practices and livelihood strategies in order to develop them and to bring about agricultural development practice.The second represents RPK as “valuable, but under-utilized”. Thus, the proponent of this view took the position that RPK needed to be intensively and extensively studied, and "incorporated" into formal research and extension practice in order to make agriculture more "sustainable". The third view argues against the integration of scientific and farmers’ knowledge as represented by the second view. It argued that neither farmers' knowledge nor western science, that is to mean scientific knowledge of agriculture, can be regarded as unitary "bodies" or "stocks" of knowledge. Instead, they represent counteracting multiple epistemologies produced within particular agro-ecological, socio-cultural and political-economic settings. Hence, the interaction of farmers' knowledge with current research and extension practice must address fundamental issues of power and need in development.

These contrasting representations of RPK led to the resurgence of different theories (approaches) and discourses about the problem of agricultural development. According to Long (2001:1), the waxing and waning of development paradigms since the second world war have been the modernization theory of the mid-1950s to 1960s; dependency theory of the mid-1960s to 1970s; the political economy theory of the mid-1970s, and some fragmented theories of postmodernism (the “participatory” approaches to development) since the mid-1980s. Elliot (2006: 15-43) also discusses all these approaches (theories) to development. In addition, Elliot (2006) examines the following: the “Sustainable Development” approach which emerged through the 1980s, the "neo-liberal theories” of the 1990s, which considers the “free market” to initiate and sustain economic development, and the "post-development school", which has started since 1995, attempting to break the "holds of westernization" in development thinking.

It is obvious that the representation of farmers' knowledge as "primitive" and "unscientific" favours the "modernization" theory for the development of agricultural practice. In order to transform traditional practices of agriculture, research findings of scientific agriculture are transmitted to the farmers, and the farmers are seen as "adopters" or "users" of technologies (Scoones &Thompson, 1994:18). It was assumed

that agricultural practice should be modernized through extension progammes and intervention practices with “packages of development menus” (Long, 2001: 30). This is generally referred to as the transfer-of-technology (TOT) model or approach to agricultural development (Scoones &Thompson, 1994:18; Long, 2001:10).

According to Scoones and Thompson (1994:19), since the late 1970s, the transfer-of-technology (TOT) view has been challenged by another perspective termed as "farmer-first or populist" paradigm in agricultural development thinking. This perspective saw the starting point of development in agriculture as an active and equitable partnership between farmers, researchers and extensionists. The proponents of this perspective argue that farmers' knowledge is unitary, systematized, and available, and it can be captured by research. Then, it is possible for assimilation and incorporation with western scientific knowledge of agriculture. The styles of investigating farmers' indigenous knowledge include: farming systems research (FSR), agro-ecosystem analysis (AEA) and rapid rural appraisal (RRA).

This approach to develop agricultural practice was challenged by another school of thought: the “neo-populist approach” which has argued that for agricultural development practice, "we should move beyond farmer-first" approach. First of all, they argue that the attempt to blend or assimilate farmers' indigenous knowledge into existing scientific knowledge is challenging. Farmers' knowledge systems are not easily definable body or stock of knowledge ready for extraction and incorporation. They point out that farmers' knowledge systems like scientific knowledge is always "manifold", "discontinuous" and "dispersed", "not singular," "cohesive" and "systematized." In addition, it is never fully unified or integrated in terms of a logical system of classification or categorization.

Again, these multiple, diffuse knowledge systems require a multidimensional analysis of rural livelihoods and political or ecological change. So, the view that holds that farmers' knowledge is constructed as "a unified whole" is questionable. Thus, we should interpret indigenous knowledge as being constructed through farmers' practices as situated agents: as agents, because they are actively engaged in the generation, acquisition and classification of knowledge; and as situated agents because this engagement occurs in

cultural, economic, and agro-ecological and socio-political contents that are products of local and non-local processes (Bebbington, 1994: 89).

In terms of their styles of investigating farmers' knowledge systems, the third perspective concentrates on the actor. It involves participatory action research (PAR), farmer participatory research (FPR), participatory technology development (PTD) and participatory rural appraisal (PRA).

The proponents of the third view claim that to bring about a more radical programme of agricultural development, alternative research and extension approaches must be adopted. According to them, there should be frameworks situated with the socio-cultural settings for local understandings; agricultural experimentation should be based on a performance rather than a rational plan; and facilitation must be free from power, politics and influence and encourage the expression and application of indigenous knowledge.

As Elliot (2006) points out, through the 1980s, it started to be understood that development needed to be sustainable.Sustainable development was defined as "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). This approach to development seems to be the dominating one in the contemporary development discourses about diverse social practices. Despite profound differences in philosophy, all the theories and approaches regard development as the solution to agricultural problem.But the question remains what could constitute agricultural development.

At this point, the concept of development needs to be contextualized also. Although development has so many meanings in the context it is used, in this thesis, it is perceieved and interpreted as crop cultivation development which involves a process of change and trasformation in which 1) the development in crop cultivation is sustainable,2) technology is the component of the processes, and so the farmers use or apply this technology, because in producing the technology,the farmers have participated in it by contributing their indigenous knowledge(thus, it is congenial to their context of farming).

2.5 Discourses about Agricultural Development Practice in Ethiopia

In Ethiopia, when the subject matter of a discussion is about how to tackle the problem of agricultural development, it necessitates situating the discourses within historical, political and economic circumstances. So far, Ethiopia has experienced three government types: imperial, Marxist Military Regime and Federal Democratic System.As Habtemariam (2008:153-172) and McCann (1995:239-261) have exhaustively discussed, these three government systems attempted to tackle the problem of agricultural development in Ethiopia, each in its own way.

When the agricultural development practices in Ethiopia in the three governments were examined, it can be clearly observed that they were based on discourses of modernization theory: the transfer-of-technology (TOT) model of agricultural development.Or, as Leeuwis (2004:49) notes: "During roughly the 1950 to 1990 period, it was quite common in development circles to think of change and innovation as something that could be planned using outside resources." This reflects the knowledge gap between micro and macro levels of social order with reference to the practice of crop cultivation in Ethiopia.

2.6 Knowledge and Crop Cultivation Practice

Defining knowledge is challenging, but it is a powerful weapon for development. In fact, knowledge is essential for development, if it fits into the objects that it attempts to transform to development. In this section, types of development knowledge, how knowledge is constructed and two ways of understanding knowledge will be discussed.

2.6.1 Knowledge Construction

In the contemporary world (postmodernism in philosophical thought, and poststructuralism in the aspect of linguistics) constructivism is the dominant philosophical thought.Regarding the postmodern world views of the essence of knowledge, Grbich (2004:25) reflectively writes that “social constructions and discourses are increasingly seen to dominate knowledge, and meanings are seen as individual creations, which require interpretation and negotiation.” From this view, it can be observed that one of the concerns of constructivism is how knowledge is constructed.

Knowledge construction involves both perceptual and conceptual process (Barsalou 1999), as quoted in (Evans &Green, 2006: 240). Thus, within the constructivism paradigm, cognitive linguists have persuasively argued that linguistic elements such as words, grammar, and so on, do not "carry" meaning or knowledge in themselves. Instead, knowledge construction is the ability of our brain; it is mental construct.

Anchored on constructivism, Flick (2004) notes that

> Our access to the world of experience-the natural and social environment and the experiences and activities it contains- operates through the concepts constructed by the perceiving subject and the knowledge deriving from these.These are then used to interpret experiences, or to understand and attribute meanings(Flick,2004:90).

Accordingly, the process of using one's concepts, perceptions or brain to construct knowledge-equally applies to all types of knowledge. Schutz (1962) has stated this notion vivdly when he writes:

> All our knowledge of the world, in commonsense as well as in scientific thinking, involves constructs, i.e. a set of abstractions, generalizations, formalizations and idealizations, specific to the relevant level of thought organization (Schutz(1962),as quoted in Flick (2004:89).

Despite variation in the level of abstraction, every form of knowledge: local/indigenous or scientific knowledge is constructed through the agents' thoughts, concept formation or perception.

Furthermore, Long and Villareal (1994:43) have observed that knowledge emerges as a product of the interaction and dialogue between specific actors. This generated knowledge can also be "multi-layered" (having possible frames of meaning), "fragmentary" and "diffuse", rather than unitary and systematized. Moreover, different knowledge types are created because, in social practices, there are "multiple realities",and "multiple actors", who may have many ways of experiencing, perceiving, understanding and defining reality, hence there are "multiple knowledge" (Marsden, 1994:55).

Knowledge emerges out of processes of social interaction, maneuver and discourse that already exist and is essentially a joint product of the encounter of horizons (Long &Villareal, 1994:49).Similarly, Van Djik (2003:9) argues that knowledge need not "represent any outside things, reality or world at all, but may be limited to mere mental constructs"; for example, as acquired, used or expressed by discourse or other forms of semiotic communication. Two basic points emerge from the discussion: knowledge is the outcome of interaction (people, environment) and it is mentally constructed.

2. 6.2 Types of Development Knowledge

In general, knowledge is viewed as two major types: scientific and indigenous (Fatnowna & Pickett, 2002: 217; Das Gupta, 2012:373). These two types of knowledge have also various terminologies. While scientific knowledge can also be termed as explicit (that can be written down), theoretical, formal, and modern; indigenous knowledge is also termed as tacit (oral), practical or empirical, informal, and traditional (Ellerman, 2006).

Regarding knowledge, Giddens (1984:374-5) also writes about discursive consciousness to refer to what actors (social agents) are able to say about social conditions including their own action; practical consciousness to mean what actors know or believe about social conditions including their own action, but cannot express discursively; and unconsciousness to mean perceptions and motives that people are not aware of. However, his position that "practical knowledge cannot be expressed discursively" seems to be a contentious point, as there are a lot of eliciting methods in linguistics and social sciences.

Tacit or personal knowledge is knowledge that is uncodified, but people understood conventionally. Actually a lot of knowledge is embedded in practical routines, contextual experience, skills and physical memory (Leeuwis, 2004:97). Put differently, knowledge is internalized relating to facts, concepts, ideas and observations.Indigenous knowledge, as an example of tacit knowledge, is generally stored in people's minds and passed on through generations by word-of-mouth rather than in written form (Chambers, 1983;Mkosi,2005;Semali,2009).For Leeuwis(2004:97),the two kinds of knowledge (that is,explicit/codified/discursive and tacit/ personal/ practical) can be seen as the

“reservoirs” or “repertoires” of interpretative schemes that actors can draw upon in assigning meaning to their environment.

In essence, knowledge has both social and cognitive dimension. It is also the case that all members of a community of practice may not be homogenous cognitively. This entails that knowledge can be personal (“private”) or social (“shared”). Personal knowledge can be acquired by personal experiences, while social knowledge is “shared” and “discursively presupposed” by all competent members of a community or culture (Van Djik, 2003:90). Moreover, some members may have personal knowledge about specific activities (e.g. ploughing, preparing farming implements, etc), they have “mental models”, but they have also shared knowledge about these activities. On the contrary, the majority of the members may have just socially or culturally shared, general knowledge about specific activities, where we have knowledge as social representation.

Chambers (1983:5-6) discusses the underestimation of the tacit/practical knowledge domain in favor of the explicit/formal knowledge by setting a context of “cores” and “peripheries” of knowledge. According to him, at one end, there exist rich, urban, industrialized, high status, high technology and capital-incentive cores, and at the other, poor, rural, agricultural, low status, low technology and labor-intensive peripheries. The gap should have been bridged through development agents and professionals. However,” normally, professional training is conducted at the cores, and it accords with where superior knowledge and superior status are assumed.”

The central idea that can be gleaned from the foregoing discussion is that there are two basic types of valuable knowledge surrounding human beings. The existence of these two types of knowledge entails the existence of "multiple realities" (Long &Villareal, 1994: 49). However, development policy makers focused on a unitary form of knowledge that dominated human existence like “scientifically-based” knowledge, ignoring and marginalizing indigenous knowledge (Semali, 2009). Now, in what follows, indigenous knowledge and crop cultivation practice are discussed.

2.7 Indigenous Knowledge and Crop Cultivation Practice

According to Mkosi (2005), indigenous knowledge (IK) has become the focal issue in many countries since 1990. Evidences that show that it has been given credit and focus include: the formation of the organization, such as the International Center for Indigenous Knowledge for Agriculture and Rural Development (ICIKARD) and the commencement of its own publication: *The Indigenous Knowledge Development Monitor.*

2.7. 1 Notions of Indigenous Knowledge

There is no commonly accepted (standard) definition of indigenous knowledge, but the following definitions/conceptions of indigenous knowledge by experts (in different fields of study) can be samples. They are useful points of departure for comparing ideas about the role of indigenous knowledge in crop cultivation development practices.

According to Robert Chambers (1983:82-83), the terms "indigenous knowledge", "local knowledge", and "indigenous technical knowledge" have long been in the discourses of development. Chambers (1983) argues that there are some problems with these terms. Of course, "indigenous" implies originating from and naturally produced in the area. His views here is similar to Odora Hopper's (2002:8) description of the word "indigenous" which refers to the root, something natural or innate (to), which is an integral part of culture. But, Chambers (1983) insists that 'rural people's knowledge need to be added, because "knowledge" in "indigenous knowledge" may be influenced, and destroyed by knowledge from outside the area.

Similarly, the concept of indigenous technical knowledge (ITK) emphasizes the practical nature of much of this knowledge. This is its strength. But, the 'technical' in ITK makes it narrow because it excludes non-technical knowledge (culture…) also, substituting the expression 'local knowledge' or 'indigenous knowledge' is tempting for its simplicity. So, for Chambers (1983), the most inclusive term to use is 'rural people's knowledge' (RPK). The "people's" part of the term emphasizes that much of the knowledge is located in people, and only rarely written down. 'Knowledge' refers to the whole system of knowledge, including concepts, beliefs and perceptions, the stock of knowledge, and the processes whereby it is acquired, augmented, stored, and transmitted.In the context of crop cultivation, Chambers et al. (1998), conceptualize indigenous knowledge as the

beliefs, practices and technologies developed without direct inputs from the modern formal, scientific establishment; in this sense, towards the management of farms.

Warren (1991:1) states that indigenous knowledge (IK) is local knowledge-knowledge that is unique to a given culture or society, and he contrasts it with the international knowledge system generated by universities, research institutions, and private firms.Also, Warren and Rajasekaran (1993:2) conceptualize indigenous knowledge as local knowledge, unique and systematic body of knowledge acquired by local people through the accumulation of experiences, informal experiments, and intimate understanding of the environment in a given culture. According to them, it is the information base for a society which facilitates communication and decision making. Similarly, Hart (2010:3) reviews the notions of some researchers who explain indigenous knowledge as the people's cognitive and wise legacy as a result of their interaction with nature in a common territory, and as the established knowledge of indigenous nations, their world views, and the customs and traditions that direct them.

On the other hand, some writers do not favour defining indigenous knowledge. Battiste and Henderson(2000), as quoted in Hart(2010:4), for example, argue against defining indigenous knowledge, because such efforts are about comparing knowledges and that there are no methodologies existing to make such comparisons.For them, the process of understanding would be more important.

Almost all of the notions of indigenous knowledge presented thus far have more of shared and common views than differences. These notions of indigenous knowledge are appropriate for the purposes of the present study. However, the concept of indigenous farming knowledge adapted to this study is that it is a (one) type of farming knowledge as recontextualized in the texts that refer to ways of performing ploughing, seed acquisition and some discursive topics around crop cultivation practice.

2.7.2 Characteristics of Indigenous Knowledge

As it is widely known, there are diversities/differences within knowledge systems. Whether it is indigenous, western, scientific, practical, or theoretical knowledge, each

type of knowledge system has its own qualities that distinguish it from the others. Thus, understanding the characteristics of indigenous knowledge shapes our notions about the nature of this (indigenous) knowledge.Now, the discussion below focuses on some characteristics of indigenous knowledge as identified by different scholars.

Warren and Rajasekaran (1993:2) describe the characteristics of indigenous knowledge as that which is communicated through “oral traditions” and learned through family members and generations. Mkosi (2005: 18, 88) uses the ideas of some writers who state that "indigenous knowledge is not produced by following certain prescriptive rules or procedures (as in school knowledge), but is generated by people when attempting to find solutions for day-to-day problematic scenarios.” Another defining features of indigenous knowledge is its being "idiographic" that is, it is knowledge of substantive content, while western knowledge is "nomothetic" constituted by generalized kinds of knowledge.Furthermore,Hart (2010:3)reviews the conceptions of people who describe the characteristics of indigenous knowledge as personal, oral, experiential, holistic,local and conveyed in narrative or metaphorical language.

According to Grenier (1998:3) indigenous knowledge is stored in people's memories and activities and is expressed in stories, songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals, community laws, local language and taxonomy, agricultural practices, equipment, materials, plant species, and animal breeds. Indigenous knowledge is, thus, shared and communicated orally.

Crossman and Devisch (2002:109-110) reveal the epistemological dimension of indigenous knowledge and the important characteristics that this knowledge (IK) possesses from anthropological perspective. First, it (IK) is holistic and organic in that it is concerned primarily with the way things relate and fit together. Indigenous knowledge has relational aspect which means that” the knowing is not separated from the relation of the knower to the known."Secondly, IK is non-dominating and non-manipulative, but nurturing. Indigenous knowledge has vision of earth as a source of life, if not life itself, and therefore to be nurtured. Third, it (IK) is non-mechanical, but social and people centered. It is mediated through a people's particular understandings of shared, context-or group-specific experience, and through their strong links to their particular sources of

knowledge's such as ancestral words, ritual speech or stylished dialogues. Fourth, it is "cumulative", which means that it represents generations of experiences, careful observations, and trial-and-error experiments, and "dynamic", which means new knowledge is continuously added, and hence adapt external knowledge to suit the local situation. Further, indigenous knowledge is stored in people's memories and activities and is expressed in stories, songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals, community law, and so on.

From the descriptions of the characteristics of indigenous knowledge, the following important issues/themes emerge. First, indigenous knowledge is orally transmitted from preceding generations. This point is central for the purpose of this study because it implies the significance of studying sayings (proverbs, stories, songs, farming chants) related to crop cultivation as these constitute indigenous knowledge of farming. Second, indigenous knowledge is "empirical knowledge", which is the result of people's careful observations of their surrounding environments (nature, culture, and society), and where they have intimate connection with their day-to-day existence. Third, indigenous knowledge is embedded in actions.In this aspect, Leeuwis (2004:97) has similar ideas that"… lot of [farmers'] knowledge is embedded in practical routines, contextual experience, skills and physical memory". This theme is crucial for the purpose of this study as to what and how to access to this kind of knowledge.For example, I employed the methods of observations, interviewing and close listening to farmers' narratives to capture their indigenous knowledge. Lastly, indigenous knowledge is "dynamic". This means, as the context demands, new knowledge is continuously added. This knowledge innovates from within and also will internalize, use, and adapt external knowledge to suit the local situation (Grenier, 1998:3).

2.7.3 The Plea for Indigenous Knowledge

In many settings of agricultural practice, the superiority of "rational science" (Scoones and Thompson, 1994:18) or knowledge of scientific agriculture is held with high status, and thus, it has always been used with the assumption that it results in high development of agriculture. Dissanayake's (1986) "transformational paradigm", as quoted in Long and

Villareal(1994:42),which assumes that the process of knowledge dissemination/utilization involves the transfer of a body of knowledge from one individual or social unit to another; and the transfer-of-technology (TOT) models can be evidences. However, as Ellerman (2006) has reflected, this kind of model has retarded self-direction and capacity building efforts of the local people (farmers) and resulted in unsustainable development.

Nevertheless, currently, many authors (Grenier, 1998; Warburton &Martin, 1999; Odora Hoppers, 2002; Warren, 1991; Warren &Rajasekaran, 1993; Chambers, 1983; 1998) among others argue that there is well-grounded rationale in using the local/ indigenous knowledge in development practices. Their arguments foreground the following core points:it helps to empower the local people; it increases capacity to experiment and innovate;it is an essential first step for any development project;it assists the processes of adaptation of technologies to local condition;it adds to scientific knowledge;it increases dialogue/understanding between researchers and local people;it helps achieve sustainable development in agriculture;it fosters the farmers' sense of equity in their interaction with governments and external development partners; and it is an alternative collective wisdom relevant to crop cultivation. Grenier (1998:5) takes his argument further for the application of indigenous knowledge for agricultural development practices, thus, "Western techno scientific approaches are in themselves an insufficient response to today's complex web of social, economic, political, and environmental challenges."

2.7.4 The Contribution of Indigenous Knowledge to Crop Cultivation Practice

Development of crop cultivation is one aspect of economic development of a country. But, crop cultivation may not develop adequately using a single (e.g. scientific knowledge of agriculture) knowledge approach. Several experts (Ascher &Healy, 1990; Jodha, 1990; Warren, 1991a, 1991b; Warren &Cashman, 1988),as quoted in Warren (1991:10) point out that indigenous knowledge is a vital element of the social capital (their knowledge base, as well) of the poor and constitutes their main asset in their efforts to achieve control of their own lives. These experts/researchers, thus, have addressed the

potential role of indigenous knowledge in sustainable development of agricultural practices.

Moreover, the World Bank has recently recognized the value of indigenous knowledge in development endeavors by issuing a programme: a “Framework for action” (World Bank, 1998). In this framework, one strategy is aimed at improving the quality of development programme and empowering local communities through activities in three key areas: rising awareness of the importance of indigenous knowledge; enhancing local capacity to document and exchange indigenous knowledge; and applying indigenous knowledge in development programmes (Gorjestoni, 2004:46-47).One of the visions of the World Bank's indigenous knowledge programme is to scale up successful indigenous knowledge practices to help achieve the millennium development goals (MDGs).

The discussion has so far centered on the value of indigenous knowledge. Accordingly, there is a growing concern about it, and that it has become less controversial, and so governments and institutions (organization) have understood the important role it can play in sustainable development process such as agriculture.

2.8 Power, Knowledge and Agricultural Development Practice

According to Thornborrow (2002:5) power means different things to different people; it is multifaceted, and can take many different forms.The conception of power in terms of domination, and coercive practice can be one facet of it. There are also other types of power. Skutnaab-Kangas (2000), for instance, identifies three kinds of power*: innate power,* which may include the intellectual, physical and psychological resources one inherits from one’s parents (in fact, it has to be negotiated as relevant in a social context*); resource power,* which may include the material and non-material resources available to an individual or to a society at large, e.g. knowledge, economic capital, language, natural resources, etc.; *and structural power,* a kind of power one possesses by virtue of his/her position in the society.From these, for the purpose of the present study, resource power is relevant and is discussed in some detail.

According to Giddens (1976:111), there are two different forms of power: power as domination and power as transformative capacity (“human agency”). By the former

concept of power, Giddens (1976:111) describes: "… the capability to secure outcomes where the realization of these outcomes depends upon the agency of others. It is in this sense that men have 'power over' others: this is power as domination." Certain advertising corporations, for example, may use words and expressions in which they try to describe and make links to a certain kind of fertilizer by creating emotions and images to make farmers buy their products. This is power using language/linguistic form in the sense of domination.By the latter concept of power, Giddens means "the capability of the actor to intervene in series of events so as to alter their course."

As discussed in the above, according to Skutnaab-Kangas (2000), *"resource power"* includes the material and non-material resources such as language, local knowledge, and so on. This is similar to Giddens (1976: 111) latter concept of power, which explains that every human being has the capacity to act and get certain things accomplished or the "capability of the actor to intervene in a series of events so as to alter their course".This means that people, in one way or another, have "resource power" to embark on their daily practices. Let us consider knowledge. As there are many types of knowledge in a society, let us focus on indigenous knowledge of crop cultivation in the context of the farming community. A farmer, for example, may prepare compost or any other kind of fertilizer using his/her own knowledge so as to use money in other investments. So, indigenous knowledge of crop cultivation can be viewed as "resource power" or "power as human agency" for the farmers.

However, Escobar (1988:430) has remarked that "….the production and circulation of development discourses is an integral component of the exercise of power… and development itself….." This implies that development policies or strategies can never be "neutral" or objectively free from power structure. In other words, development practices of any sort are created, planned and implemented around the ideologies and the existing power relations and structures, and can influence resource power.

The powerful and dominant, as Chambers (1983:76) states, determine what new knowledge shall be created, and control overflows of information from the centre to the rural periphery.According to him, "the association of outsiders" modern scientific knowledge with wealth, power and prestige generates and sustains beliefs in its universal

superiority, indeed beliefs that it is the only knowledge of any significance." In this sense, structural power can dominate and conceal resource power, for example, local farming knowledge, which is available at an individual, group or societal level.

In the foregoing discussion, power was understood as a phenomena that can create dominating and dominated/subordinate relationships.In a social system, this kind of practice can dominate and hide resource power (like local knowledge) of the majority.The review that follows presents the theoretical approaches and the conceptual framework assumed to guide the study.

2.9 Theoretical Framework

The theoretical models used in this study include: systemic functional linguistics (SFL), appraisal theory (AT) (which is developed within SFL), symbolic interactionism (SI), structuration theory (ST) (Giddens 1984) and the perspective/approach of critical discourse analysis (CDA).

2.9.1 Symbolic Interactionism

Potter (1996:3-4) has noted that symbolic interactionism is a constructionist epistemology which emphasizes how meaning is created in the process of interaction. According to the theoretical underpinnings of symbolic interactionism, central to human behavior is the notion of meaning: meaning making through symbols. Social life is expressed through symbols, and that language is the most important symbolic system that enhances the creation of meaning and discourses from objects.Summarizing the ideas of Blumer (1969), Mead (1934),Dewey(1934), Goffman,(1959,1974) and Cohen and Manion (1994:33), Denzin (2004:81-86) identifies some root assumptions of symbolic interactionism:

1) Humans inhabit two different worlds: the "natural" world wherein they are organisms of drives and instincts and where the external world exists independently of them, and the social world where the existence of symbols, like language, [and other nonverbal forms] enables them to give meaning to objects.
2) Human beings create [construct] the worlds of experience in which they live.
3) Human beings act toward things on the basis of the meanings that the things have for them.

4) Attribution of meaning to objects through symbols, for example, by means of language, is a continuous process.

In addition, as Denzin(2004:82) has pointed out, ”action ”and “agency” are central to the theories of symbolic interactionism.Whereas “action” refers to experiences that are reflexively meaningful to the person(actor),”agency” describes the “locus of action”, whether in the person, in language ,or in some other structure or process.

According to Denzin (2004:85), recent developments in the thinking of symbolic interactionists include the “narrative turn”.Consequently, two significant points are emphasized: first they (symbolic interactionists) argue for texts that remain close to the actual experiences of the people being written about or studied. Secondly, they study narratives connected to systems of discourse (interviews, poems, sayings, stories, so forth) and argue that these structures give coherence and meaning to everyday life, and represent experience.

2.9.2 Systemic Functional Linguistics (SFL) Theory

The theory of language assumed to shape this study is systemic functional linguistics (SFL). The primary reason to use systemic functional linguistics (SFL) theory is that it views language in terms of function. Halliday and Matthiessen (2004:31) have stated that functionality is intrinsic to language that “language is as it is because of the functions in which it has evolved in the human species”. More elaborately, there are three reasons for choosing SFL as a research tool. First, this theory of language argues that all languages accomplish three major metafunctions: "ideational," “interpersonal,” and “textual” (Christie &Unsworth, 2000:2) (as the three metafunctions are very significant for this study, they are discussed in detail below).

Second, SFL describes language in terms of sets of choices of meaning or by providing a set of options termed as a "system."Accordingly, it is construed that every language has different forms and levels, for example: past/present/ future- tense; positive/negative-

polarity; singular/plural- number. Thus, a system represents the meaning potential of language related to content, attitude, and so forth.This means that speakers or writers have options to make from the resources of the “lexicogrammar” and can express a process, an event, or an action in different ways.

Third, SFL theory proposes that the object of language study should be a whole text (meaningful passage of language), not a decontextualized sentence or utterance.Furthermore, SFL focuses on the significance of social contexts: the "context of situation;"and the “context of culture," (Christie &Unsworth, 2000: 3) for meaning construction. Thus, these three aspects of SFL focus on the significance of language through which meaning is constructed.

Turning to the metafunctions of language, according to Halliday &Matthiessen (2004:29-31), when language is utilized to represent experience, it has”ideational” or “experiential” function.It was also stated that the ideational metafunctions has two components: the “experiential” representing experience (“language as reflection"), and the “logical” concerned with building connections between clauses. According to them, the ideational meaning of a text is realized in the transitivity system, which most often comprises the structure: process, participant and circumstance.Accordingly,they (Halliday &Matthiessen (2004) make a distinction between six types of processes:

(1)Material processes which refer to doing, happening, creating and changing.The participants in the structures that contain material processes are actors (those who do) or goals(those to whom things are done).

(2)Mental processes which refer to feeling, thinking or seeing.Participants who perform these are said to be “sensers” while that which is perceived or felt is termed as “phenomenon”.

(3)Relational processes which refer to being and having an attribute or identity, with participants as the “carriers” or “identified”, and attributes as the “identifiers”.

(4)Behavioural processes which refer to behaving, laughing, smiling, signing.Those who perform such processes are called “behavers”.

(5)Verbal processes are those referring to all those actions that are about saying something (promising, talking, warning).Those who say things are “sayers”; those who are addressed are “targets”.

(6)Existential processes concern existing and being there, realized mostly by “be” forms: is, are, was, and were, such as in the statement:”There are feeble farmers.”

Fairclough (1992:178) also distinguishes two kinds of processes in the system of transitivity: transitive (“action” processes or “directed” action) and intransitive (“relational” processes or “non-directed” action).While transitive or action clauses show that an agent acts upon a goal, intransitive or relational clauses (being, having, becoming, etc) represent a relationship between participants.

The second metafunction of language is related to the idea of relationship and interaction between people.This is termed as the “interpersonal” metafunction of language. It was suggested that in its interpersonal metafunction, language has “two-fold roles”. First, the interpersonal metafunction of language sets up and maintains social relationships between people. Secondly, it relates to the fact that text producers can bring in some kind of attitude or evaluation towards their propositions or utterances expressed in the discourse.So, we can understand whether they commit or distance themselves from what they assert/say about the world of their lives, their environment, and so on.

In SFL theory, the interpersonal meaning is realized by the system of mood or modality. Mood can be defined as the attitude of a speaker or writer often shown by the form of the verb, which may be in the declarative, interrogative and imperative mood. Modality in grammar is realized by modal auxiliary verbs such as ‘must’,’may’,’can’,’should’;tense forms,for example, the simple present tense can realize categorical modality; set of modal adverbs such as ‘possibly’,’probably’,’obviously’,’definitely’;and their equivalent adjectives like ‘likely’,’probable’,and ‘possible’(Fairclough, 1992:158-159). These forms construe the text producer’s position/attitude toward the content of the text and his/her social relationships in the communicative process. A high degree of affinity with one’s

proposition, according to Fairclough (1992:159-160), constitutes categorical modality, which can be either objective, when no individual consciousness assuming the proposition is mentioned, or subjective, when the attitude is explicitly attributed to the text producer. In addition, Fairclough (2003:220) distinguishes two main types of modality: epistemic modality (modality of probabilities, truth or certainity) which can be realized by such forms as: “might”, “may”, “could”,or “unmodalised” forms such as the present tense; and deontic modality (modality of necessity and obligation) which can be realized in by such forms as: “must” or “should”.

The interpersonal metafunction of language is also realized by “force of utterance” (Fairclough, 1992, 2003).By force of utterance is meant the speech function such as statement, offer, command/demand or question which is used in the production of the discourse.Moreover,the speech functions are realized in grammar by the grammatical mood(declarative, imperative, interrogative) of the clause. Statements, for example, are realized in the grammatical mood of declarative forms. Regarding statements, Fairclough (2003) identifies statements of facts or “realis” statements, which express what is, was, has been the case, and “Irrealis” statements which express predictions, and hypothetical statements. Offers are realized in modulated interrogative (e.g.”Would you---?” ”Could you---?” etc); commands/demands in imperative forms (e.g.”have knowledge of seasons…, plough in season,” etc); and questions in interrogative forms (e.g.”Can you name the parts of the farming implement?” etc).

The third metafunction of language is the “textual” function, which is related to the construction of text by making the two functions of language-the ideational and interpersonal-into a coherent whole.The textual metafunction builds coherence and connectedness in the clauses so as to build up sequences of the discourse; it organises the discursive flow. The textual meaning of language is realized by deixes, various types of conjunctives/cohesive devices such as paratactic, hypotactic, ellipsis, reference, theme and rheme.Through the textual function, language creates links within (inside) the text as well as outside of the text conditions.

To sum up, when applied to this study, SFL provides a good analytical tool to explain the metafunctions of language as used in the construction of farming activities within the study area.

2.9.3 Appraisal Theory

According to Young (2011:629), Appraisal Theory belongs to the system of interpersonal meanings in SFL (systemic functional linguistics). As outlined in Martin (2000:155-9), the categories of appraisal system include Attitude which, broadly, refers to people's stance/position towards other people, objects and events, and their opinion of these. Attitude includes the evaluative sub-systems of Affect, Appreciation and Judgement. Affective appraisals are concerned with resources that describe people's emotional responses or their feelings, which can be either positive or negative, as in security/insecurity, happiness/unhappiness, satisfaction/dissatisfaction that have to do with phenomena, cognitive systems (e.g. knowledge),events,person or objects.Appreciation model resources, on the other hand, are concerned with evaluating, assessing or valuing cognitive or cultural products, objects, performances, and naturally occurring phenomena.Further, there are three sub-categories within appreciation: Reaction (the assessment of the emotional impact of a phenomenon), Composition (the assessment of the form or composition of a phenomenon), and Valuation (the assessment of the worth or significance of the phenomenon). Judgment covers resources for assessing self, people and their actions in terms of societal beliefs and accepted moral principles. According to Martin (2000), there are two kinds of judgements: personal judgement and moral judgement (Van Leeuwen, 2008) terms this "moral evaluation").Personal judgement includes judgement of personal characters such as: normality (usuality), capacity (ability, efficacy) and tenacity (inclination).Moral judgement is concerned with morality related to veracity (probability/truth) and propriety (obligation/ethics).

As to its realization, appraisal can be realized explicitly ("inscribed") by "attitudinally laden lexis", for example,"problem", "the worst thing" or implicitly ("can be evoked") through "whole clause" (ideational or interpersonal meaning). According to Martin (2000:143), a major benefit of the theory is its use of discourse semantics rather than

grammar as the way into the analysis.In this study, only relevant appraisal resources are used selectively to the analysis of textual features of data related to appraisals.

2.9.4 Structuration Theory

Structuration Theory was developed by Giddens (1984).Human beings, according to Giddens (1984: 1-16,279), can creatively use their agency, and that their actions are the result of their interpretations of their social reality. However, their choice of actions to engage in social practices can be constrained or enabled in various ways by "structural properties" [structural conditions].These "structural properties" can be related to natural and social (institutional) circumstances, that is, structural conditions.According to Giddens; there is mutual "dependency" of structure and agency.

Extending the Structuration Theory, Leeuwis (2004:108) writes that structural properties may relate to natural conditions, for example, in the context of farming practice weather conditions, soil characterstics, or material configurations such as the physical lay-out of a farm, the dominant technology used, etc.Again, structure can relate to institutional practices such as the function of agricultural institutions. Thus, by translating the Structuration Theory into discourse analytical framework, it is relevant to apply in this study, particularly, for the analysis of structural factors that impede farmers' use of indigenous farming knowledge for their crop cultivation practices.

2.9.5 Critical Discourse Analysis (CDA)

According to Young and Harrison (2004:2), critical discourse analysis (CDA) is an approach towards or a perspective on the examination of social problems manifested discursively. …it is neither a methodology nor a theory of language. This study, thus, applies the approach of CDA in analyzing the texts and the discourses obtained from the interviews, focus group discussions, observations, and documents about crop cultivation practice.

2.10 Conceptual Framework

The conceptual framework presented below is meant to thread the theories discussed above onto one another so that in combination, they can help achieve the objectives of the

study. As we have tried to show, the central concern of symbolic interactionism is people's meaning making of their lives by means of linguistic symbols (language), and through interaction. Incontrovertibly, meaning is created within a discourse about the specific issue of social practice.For example, in order to understand farmers' meaning-making of their crop cultivation practice, and to have indigenous knowledge "talked into being", a researcher is expected to situate it within language and discourse. Structuration theory, on the other hand, highlights structural constraints (both institutional and natural) against the proper operation of agency.Moreover, discourse theory explicates that discourses are located embedded to social practices. Thus,it is assumed that indigenous farming knowledge, meaning-making in crop cultivation, and constraints or enabling situations for meaning-making can be reproduced, constructed and transformed in and through language and discourse (see Chapter 1, the section on: Assumptions). So, farmers' meaning-making of their farming practices, their constraints or enabling conditions for meaning–making, the farming knowledge type they draw upon for meaning-making can be apparent (transparent) to us when they are enabled to recontextualize their practices.

2.10.1 Recontextualization

Let us contextualize the concept of recontextualization. The social practices (activities) that people engage in to make a living can be discursive or non-discursive or as Van Leeuwen (1993:51) has noted, "a sequence in which linguistic and nonlinguistic activities alternate." It is obvious that crop cultivation involves different activities, but it is uncontentious that almost all crop cultivation activities are non-linguistic (except, of course, different oral sayings: poems, songs, proverbs and plough chants about crop cultivation). Building a pair of oxen to plough the field can be a good example. This activity can be contrasted, for example, to "the practice of giving counsel" (Van Leeuwen, 1993:37) which is a linguistic activity.

Externalizing practical, tacit or implicit knowledge requires inserting the activity/activities into another activity, for example, having farmers participate in research interviews and focus groups about the activities they do. This process of inserting one activity into another, that is, inserting nonlinguistic activity, "ploughing"

into a linguistic activity, "participating in research interviews", according to Van Leeuwen (1993:51), is termed as "recontextualizing" (Van Leeuwen, 1993:59). He further adds (1993:81) that recontextualizing a social practice is a way of doing, as well as a way of knowing about the practice, and these two aspects of recontextualization are realized in language. This means that for the participant of the practice, it is a way of talking about the practice (that is, how s/he does the practice, her/his beliefs about the practice, etc). On the other hand, for the "outsider"-the researcher- it is a way of knowing about the practice.Recontextualization, thus, involves the transformation of social practices (e.g., crop cultivation) into discourses about social practices (Van Leeuwen, 2008:106).

2.10.2 The Process of Recontextualization

In the foregoing discussion, it was stated that the discourse of indigenous knowledge of crop cultivation can be formed by transformation of crop cultivation activities to discursive practice that involve recontextualization.In this thesis, following Fairclough (1992, 2003) and Van Leeuwen (1993, 2008), recontextualization is used to mean the process by which farmers draw upon linguistic resources and discourses when talking about how they carry out ploughing their fields, acquire seed crops , and some discursive topics (for example, counseling others about crop cultivation) surrounding crop farming activities. Van Leeuwen (1993:52), however, views that recontextualization does not completely represent and transform the recontextualized activity, but it "lets the recontextualized activity pass through the filter of the activity in which it is inserted".

Van Leeuwen (1993:61-75) further explicates that recontextuliztions not only reconstruct what was going on, or how was the social practice done, but they also involve substitutions, deletions, rearrangements and additions. In this study, the process of "additions" in connection to the recontextualization of crop cultivation activities is relevant and useful. Thus, ploughing, acquiring seed, and some discursive topics surrounding crop cultivation can be recontextualized through the process of "additions" which can take different forms as discussed below.

i) Repetitions. Different expressions can be used to refer to the same activity.The first level of ploughing, for example, is recontextualized using the

expressions:"breaking/tearing/cutting the soil". In Amharic, we have the following forms for the first level of ploughing: "g□m□a" or "s□nt□ak□o".

ii) Reactions. Positive and/or negative feelings can be recontextualized together with the activity.

iii) Goals or purposes. The goals of the activity, that is, the "what for", may be recontextualized.

iv) Legitimation (Justifying). Recontextualizations can also add the "why", the reasons or the justification to their representations of activities.For Van Leeuwen (2008:105-117), the concept of "legitimation" is broad.He identifies four categories of legitimation, of which "rationalization" is one. "Rationalization", according to him, is legitimation by reference to the goals and uses of one's action. He also distinguishes two types of rationality: instrumental rationality, which legitimizes practices by reference to their goals, uses and effects; and theoretical rationality, which legitimizes practices by reference to a natural order of things, on "the way things are".

In addtition,Berger and Luckmann(1966:87-88) have pointed out that legitimations can be realized on different levels :(a)"explanations built into vocabulary", (b) "rudimentary theoretical propositions", for example, (wise) sayings such as proverbs, and so on,(c) "explicit theories by which an institutional sector is legitimated in terms of a differentiated body of knowledge", and (d) "symbolic universes"-processes of signification that refer to realities other than those of everyday experience.

v) Evaluation**.** Recontextualizations may add evaluations to elements of the recontextualized activity. Evaluations are always connected with legitimations (Van Leeuwen, 1993). Evaluations can use expressions such as "morally good" (good or bad),"functionally good (useful),"emotionally good" (exciting), and so on.In this study,"reactions" and "evaluation" were analyzed using "appraisal theory" developed in section 2.9.3.

Thus, when farmers recontextualize the activities they do, it is very likely assumed that they also bring to their recontextualizations "performance modes or indicators"(that is,

how the activities are to be performed); the type of farming knowledge used to perform the activity; the knowledge required for doing the activity; the seasons (performance time) on which they do the activities; the technology they use to do the activities; their feelings about the activities; outside influences made on their activities; spatial and geographical conditions (for example, the physical appearance of their farm land, the type of soil); legitmations, that is, the grounds for doing some activities the way they do; and genres (sayings) related to the various farming activities.For Van Leeuwen (2008:6), in many texts, these aspects of reconstruction/representation become far more important than the representation of the social practice [the activity] itself.

To conclude the discussion on the notion of recontextualization, recontextualizing an activity or a practice means explaining, describing or talking about the activity; realizing a nonlinguistic activity in language or reconstructing the activity in discourse. Recontextualization, thus, produces discourse(s). To quote Van Leeuwen (1993:51) again: "Discourse about an activity always takes place *outside the context* of that activity, and *within the context of another* activity" (emphasis added). Recontextualization is significant to study the discourse of indigenous knowledge of crop cultivation activities, because it "makes the recontextualized activity/ practice or topic explicit to a greater or lesser degree and lets it pass through the filter of the activity in which it is inserted" (Van Leeuwen, 1993:52).

To sum up the discussion on the theoretical approaches and the conceptual framework used in the study, the assumption in using symbolic interactionism (SI) and systemic functional linguistics (SFL) in this study is that the theory of SFL sees language as a resource for making meaning. This idea is also in the theory of symbolic interactionism which states that people make meanings of their lives and activities by means of language. In addition, the central concerns of critical discourse analysis (CDA), according to Weiss and Wodak (2003:15),is in analyzing opaque (hidden) as well as transparent structural relationships of dominance, discrimination, power, knowledge, belief, and control as manifested in language.

To reiterate, the vested interest of this study is in examining how two crop cultivation activities (ploughing and seed practice), and some discursive topics around crop

cultivation practices are constructed and recontextualized in texts produced at interviews and focus group interactions.As it was discussed above, recontextualization can be seen as one of the most significant ways of text production and discourse construction.So, the theories of SFL, SI, ST,AT, the approach/theory of CDA, and the framework of recontextualization are assumed to shape the study (in terms of data collection and analysis) and to make, more or less, explicit the ways that farmers perform crop cultivation utilizing the discourse of indigenous farming knowledge in the process.

Chapter Three: Research Design and Methodology

3.1 Introduction

Detailed descriptions of the methodology of the study are presented in this chapter. These include: the design of the study, the methodology used, the rationales for selecting the methodology, selection and description of the study setting, sampling plan, the instruments used to collect data, ethical issues, the procedures used to access to participants and implementation of instruments, data management procedures which included transcription and translation of the data, and (data) analysis procedure.

3.2 The Design of the Study

This study is designed inductively on the basis of the principles of qualitative research. According to Given (2008:706), the term "qualitative research" refers to peoples' meanings rather than the collection of numerate statistical data. Furthermore, Miles and Huberman (1994: 9) argue that all data are qualitative because they refer to "essences of people, objects and situations" [activities]. Dornyei (2007:27) also suggests that most data collected in the social sciences are related to people-what they do, what they think or believe in, what they plan to do, and so on.

This study, for instance, is organized around the discourse of two major crop cultivation activities-ploughing and farmers' seed acquisition practices (seed experience), and some discursive topics surounding crop cultivation activities. They were, then, interviewed and also involved in focus groups about these activities and topics. The data obtained, thus, are/were qualitative (as described in the Data Analyses chapters, the texts the participants

produced revealed a broader perspective about the way the farmers produce crops. In other words, the language and discourse they attached to these activities and topics showed us about their knowledge and their lived experiences as farmers).

In terms of epistemology, the study is situated within the perspective of constructionism and the approach of symbolic interactionism respectively.These perspectives of epistemology conceptualize knowledge as "personal," "subjective," "its existence within the accessibility of human beings," "its creation through the interaction of human beings, signs (language) and the environment," and "the existence of knowledge within the environment." Furthermore, Potter (1996:4) identifies constructionist approaches such as Discourse Analysis, Conversation Analysis, Symbolic Interactionism, and so on, and then, he states that what makes all these approaches similar is that they tend to treat discourse as the central organizing principle of construction. In terms of methodology, the study draws upon ethnographic fieldwork as developed by anthropologists.

3.3 Ethnographic Fieldwork

The methodology used in this study is ethnographic fieldwork. Ethnography is the art and science of describing a group, a community or culture (Fetterman, 1998:1). The study draws on the aims and procedures of ethnography to collect data to study the discourse of indigenous knowledge of crop cultivation.

According to Fetterman (1998), there are some aspects to ethnographic approach. First, ethnography studies real world settings. Second, ethnographic perspective requires multi-method approach to data collection.And finally, ethnography is interpretative and it aims to represent the participants' perspective.

Moreover, Kumar (2002:33), has written about the emergence of applied and developmental anthropology which has provided some concepts about how to study rural people's (for example, the farming community) knowledge. Thus, there is a distinction between two concepts: emic and etic. The emic perspective means the insider's perception of reality, or the knowledge they use to construct meaning to do different activities that sustain their lives. As Kumar (2002) has identified, the emic perspective

includes: fieldwork, staying in the field, relaxed observation, and conversation; rapport with local people and adopting the right attitude and behavior; focusing on in obtaining a better understanding of people's realities, their knowledge and respect for it. On the other hand, the etic perspective focuses on outsiders' such as policy makers, and development agents' perception of a practice or an activity that the insiders participate in.

Chambers (1983:201-202) has some points here. According to him, to bring change and development, there should be "reversals in learning", that is "outsiders have first to learn from farmers and from the rural poor." Accordingly, researchers have to try to understand and elicit farmers' knowledge systems. Thus, "sitting, asking and listening are as much an attitude as a method."

The above literature about ethnography and fieldwork was resource for me to conduct my study.As to real world setting, this study, for instance, focuses on farmers within the context of actual farming activities (ploughing and getting seed), and how they construct discourses about the ways they do these activities of crop cultivation.With regards to multi-method approach, the ethnographic methods of non-participant observation, semi-structured interviews, group interviews, focus group discussion, and collecting and analyzing documents were used in this study.In addition, using the emic perspective (that is, the farmers' explanations, categories, and so on), the farmers' discourses about the ways they cultivate crops were represented.Accordingly, they dominantly rely upon their indigenous farming knowledge to embark on activities.

3.4 Rationale for Using Ethnographic Fieldwork

The chosen research methodology must be concurrent with the theories used to back up the study. In the context of my study, the research methodology that can be most closely associated with the theory of symbolic interactionism is ethnography.More specifically, this study used ethnographic perspective. According to Gee and Green (1998:126), ethnographic perspective is not the same as doing [classical] ethnography. This means the researcher can productively use the principles guiding ethnography to elicit the data.

Fieldwork is necessary because the study should be conducted in the "field", that is, in the natural setting. The researcher should come close to the farming community, where

different activities of crop cultivation are practiced. Ethnography is essential, because it provides the researcher with some basic, emic–oriented principles for collecting data. With respect to this, Wodak (2004:188) has noted that naturalistic data for discourse originate from fieldwork and ethnography to explore the object under investigation (study from the inside) as precondition for any further analysis and theorizing.

The above literature about the methodology of ethnographic fieldwork was resource for me to conduct my study (actually, to study the discourse of indigenous knowledge of crop cultivation, it *was necessary* to apply ethnographic fieldwork). As to real world setting, this study, for instance, focused on farmers within the context of actual farming activities (ploughing and getting seed), and how they constructed discourses about the ways they do these activities of crop cultivation.With regards to multi-method approach, the ethnographic methods of non-participant observation, semi-structured interviews, group interviews, focus group discussion, and collecting and analyzing documents were used in this study.In addition, using the emic perspective (that is, the farmers' explanations, categories, and so on), the farmers' discourses about the ways they cultivate crops were presented as recontextualized by the participants.Accordingly, they dominantly rely upon their indigenous farming knowledge to embark on activities.

3 .5 Selection of Setting for the Study

In qualitative research, the setting of the study is very important, and can determine the research process.Hence, a researcher needs to develop criteria before indulging straight in the selection of the setting for the study. In this study, some criteria were jotted down before designating the study site. These include: the nature of the data to be collected, whether these data could be found in the setting, my own research interest-I enjoy, for example, to collect qualitative data, I appreciate rural and farming life and meanings there as significant-whether I know the local language of the setting, and the cost allocated for the study.

Having contemplated on these cardinal points, it was decided that my study setting should be Amharic speaking farming community. The rationale for nominating Amharic speaking farming community was that the researcher is proficient mainly in Amharic, and

since all data collection instruments need to be conducted in Amharic, it was assumed that it eases potential problems in transcribing and translating the data to English.

Thus, of the ten (10) Federal Regional States in Ethiopia, the Amhara Regional State was purposively selected. Again, of the Amhara Regional/Federal State, South Wollo Zone was purposively selected.There were some reasons for selecting South Wolo Zone. In his study in South Wolo, Belay (1998:03) has noted some indigenous farming knowledge that farmers practice, but how the farmers use language and discourse to construct their indigenous knowledge seem to remain for further research (study). Thus, having read Belay's (1998) educative article, the researcher became enthusiastic to conduct his study in South Wollo Zone.

Before leaving for the field, a letter was written to my department requesting a letter of cooperation to the Ministry of Agriculture and Rural Development (MoARD) office of South Wolo Zone. Recording equipment such as a tape recorder, cassettes, batteries, pens, note books, markers of different colour and large sized papers were also prepared.

At the MoARD office of South Wolo Zone, I spent some time with the head officer to obtain the sampling frame. Then, I learned that there were twenty- three (23) waradas in South Wolo Zone. Another officer helped me to draw a lot to identify my study warada, which turned out to be Tehulederae warada. The head officer, then, wrote a letter for me to the coordinator of MoARD of Tehulederae Warada.

Upon my request, the coordinator of the ministry of agriculture and rural development (MoARD) of Tehulederae warada produced the sampling frame, which consists of two (2) urban k□əbəles and nineteen (19) rural k□əbəles found in Tehulederae. From the nineteen (19) rural k□əbəles, I used a lottery method to select my study setting, which turned out to be k□əbəle 08, named Hitecha.

3.6 Description of the Study Setting

A brief description of the location of the setting of the study is now in order. Tehulederae is one of the 23 wərədas found in South Wolo. It is situated surrounded by, in the south Dessie, in the north, Ambassel and North Wolo zone, in the west, Kutaber, and in the east Wəre Babo, Kombolcha and k□alu. Tehulederae has climatic condition of a mix of cold

(dəga) 13 percent, moderate cold (woina dəga) 72 percent, and hot and dry (k□ola) 15 percent. The average temperature of this wərəda reaches from 15 degree centigrade to 21 degree centigrade.

According to the 1999 population census, the population is, male 48, 555 and female 48,173, making a total of 96,738. In terms of religion, 95 percent of the population is followers of the Moslem faith and 5 percent constitute the Orthodox Christian faith.

Despite its dissected topography (slopes, hills and ridges), according to the information obtained from the Culture and Tourism Department of the wereda, *Tehulederae* is rich in water and forest resources, and hence the nickname "water tower" ("*yə wouha mama*") of South Wolo.

Turning to the actual setting of the study, *Hitecha*, 08 rural k□*əbəle*, is situated at 25 kms away from *Dessie*, and 7 kms away from *Hayk*□, the capital town of *Tehulederae*. As in other parts of Wolo, the general topography of Hitecha is rolling terrain alternating with hill and slope here and there to near mountainous portions.

Another notable situation is the organization of the community. According to Dessaledgn (1991:26-27), around one hundred or more households located within reasonable distance of each other is termed as "*Got*□" in *Wolo*. Several *Got*□s form a k□*əbəle*. According to the information I collected from the k'ebele officials, this is exactly so at *Hitecha*. *Hitecha* is made up of 21 *Got*□s. It is composed of 148 male households, and 301 female households, constituting a total of 573 households.

Hitecha is a *woina diaga* zone and experiences two rainfall seasons, and many of the farmers follow a "bimodal" farming system. These two seasons are: spring (*bəlg*), which falls between mid February to the end of April, and summer (məher), from mid June to early September.

The primary economic activity of the farmers is crop cultivation. During spring or *bəlg* season, which makes up 20 percent of the cultivation, they grow chick peas, lentils, sorghum, chuckling peas, wheat and t□*ef*. During summer or *məhər* season, which makes up 80 percent of the cultivation, they grow wheat, oats, t□*ef*, peas and beans.

3.7 Sampling Plan: Getting Access to Participants of the Study

In the village, the chairman of the kebele introduced me to farmers. I also attended farmer meetings a few times. There, I had the opportunity to meet and talk to several farmers. The farmers themselves often referred me to people who they thought would be interested in talking to me about their farming, and I also approached farmers myself, after getting to know them through staying in the village.

As a qualitative research, the main focus of this study is on identifying farmers who could provide rich and varied information about their indigenous farming knowledge as they recontextualize how they perform farming activities. Hence, the focal participants considered in this study were farmers male and female, old and young, educated and uneducated.Moreover, the study followed "purposive" (Dorynei, 2007: 126) and "judgmental" (Fetterman, 1998:33) sampling procedure as a guiding principle in order to sample the research participants.

3.8 Data Collection Instruments

When desigining the conceptual framework in Chapter two, I argued that we do not directly understand the know-how and/ or knowledge that the farmers use to carry out crop cultivation activities (and in general nonlinguistic activities, for that matter). In activities that require "practical" knowledge, for example, crop cultivation activities, knowledge is "tacit" and "implicit", and the know-how is embedded in actions and activities (Van Leeuwen, 1993:50; Agrawal, 2004:1; Ellerman, 2006; Leeuwis, 2004). The process of converting the farmers' indigenous knowledge, which is mostly "tacit", "implicit" and "practical", into explicit knowledge is termed as "externalization" (Agrawal, 2004:1). For externalization to become what it means requires inserting one activity into another activity, for example, having farmers participate in research interviews and focus groups about the activities they do. This process of inserting one activity into another, that is, inserting nonlinguistic activity, "ploughing" into a linguistic activity, "participating in research interviews", according to Van Leeuwen (1993:51), is termed as "recontextualizing" (Van Leeuwen, 1993:59).This study views that the concept of recontextualization is synonymous with the sense of externalization.

Text production in the farming community can be generically structured as: researcher as interviewer asks questions about farming activities// participants (farmers) respond to the questions (answer the questions)//responses (answers) recontextualize ways of doing activities together with knowledge, beliefs, attitude, etc. So, this study strongly believes that the discourse of indigenous knowledge of crop cultivation can be obtained by transforming farming activities and topics surrounding the activities ("recontextualized activity") into discursive practice (interviews and focus group discussions as "recontextualizing activity") through the process of recontextualizations.

Therefore, as the main data collection instruments, interviews, group discussions, non-participant observation and collecting relevant documents were used. The reliability (the content and face validity) of the interviews, focus group scheduls, and the observation protocols for gathering relevant, adequate and dependable data that answers the research questions were checked out in two ways. First, the researcher modified them by including the comments given during the pilot study presentation. Second, the instruments were evaluted by my supervisor and some colleagues. It is argued that the data required to study the discourse of indigenous knowledge of crop cultivation should originate from these research instruments.

3.8.1 The Interview Instrument and Procedure

In general, the interview is a powerful tool for eliciting rich data on people's perceptions, views, feelings, preferences, knowledge and attitudes (Gray, 2004; Sarantakos, 2005).Again, Nikander (2006:11) is of the view that much of the influential work in discourse analysis originate from studies using interview data. Furthermore, "interview data (particularly, the"research interview") within discourse analysis are viewed as "interaction" and as "discursive act in their own right." Reisigl and Wodak (2001), as quoted in Wodak (2006:135), have presented a discourse model which suggests that taking part in an interview constitutes a social practice. The wrters argue that the activity has a number of linguistically relevant properties including: an interview is usually a two-party conversation: one person asks the other responds, both participants are co-present and frequently strangers as well. In this study, I used two types of interviews: individual (one-to-one) and participatory group interviews.

3.8.1.1 Participatory Group Interview (PGI)

According to Chapter two, discourse exists embedded to activities (practices). So, in this project, activities of crop cultivation were the center of the study. Thus, understanding the "agricultural seasonal calendar," on which different activities can be practiced, was necessary. Consequently, I used Participatory Group Interview (PGI), a method that I adapted from Kumer (2002) "participatory rural appraisal" (PRA), a method for community participation and data collection. As the name of this interview type implies, there is participation: doing an activity and talking about it. In this study, the participants drew the crop cultivation work calendar of the area as they responded to the interview questions.

The fieldwork had to be scheduled with months/seasons on which different activities of crop cultivation were practised. Hence, the participatory group interview (PGI) was used initially to be aware of the types of activities farmers undertake, and the agricultural season of Hitecha. For this, twelve (12) farmers- 6 male and 6 females- were purposively selected to participate in the group interview.The females were in the 42-47 age range, while the males were in the 38-56 age range. In terms of level of education, among the six females, two of them had completed grades three and four, whereas four of them had the experience of adult education .Of the six males, three of them completed grades seven, eight and ten, while three of them attended adult education . All of them were married and responsible heads of family, and they had been living in Hitecha (study area) for all their lives. Their primary livelihood activity is crop cultivation. These 12 farmers were asked to prepare the "Crop Cultivation Seasonal Calendar of Hitecha" based on interview questions (see Appendix I-1, pp.291-293; and Appendix III-1, pp.375-377 for the content of the interviews). The interview was conducted on 3rd March, 2012.

Preliminary information on the farming activities were gathered from the participants of Participatory Group Interviews (PGIs).The participants identified these activities: ploughing, seed practice; building bunches (dikes), crop protection, preparing plough implements, sowing, weeding, harvesting, soil enrichment activities, gathering/harvesting, threshing, and winnowing; and the seasons/months they were carried out. Thus, while the researcher was in the field, he analyzed the data obtained

from this instrument (participatory group interview) and has understood the months (seasons) on which each farming activity was performed. Also, from these farming activities, ploughing and seed practices were selected as discourse initiating activity, and for detailed study.

3.8. 1.2 Personal Interviews

Purposively selected sixteen (16) farmers participated in the personal interview.The farmers are all males and are in the 45to70 age range. In terms of level of education, five of them have completed grades three, four, six, eight and nine. One of them attended the education of the holy Qur'an; eight of them attended adult education and two of them have not learned to read or write. All of them were married and have been living in the area (Hitecha) throughout their lives. Crop cultivation was their primary livelihood activity.

The interviews were designed in a semi-structured format and were open-ended. The interview questions were set up from the emic perspective, that is, the participants were asked questions about crop cultivation activities from their own perception. A range of different issues central to the activities of ploughing and seed acquisition practice were included.They were asked, for example, to explain or define activities: "what does" ploughing mean to you? "What do you need to know or do to plough your fields?" and so on. Apart from these two specfic crop cultivation activities, some general topics surrounding crop cultivation were included to develop dialogue with the participants.

Consequently, the personal interviews have three parts. The first part, which was termed as "background part" of the interview, the participants were asked their ages, level of education, marital status, number of children they have, for how long they have lived in the area, and the primary activity they do. The second part was termed as "specific activities of crop cultivation" part of the interview. As it was already pointed out, two cultivation activities- ploughing and farmers' seed acquisition practices- were included in this part of the interview. The third part was termed as "general topics surrounding crop

cultivation activities" part of the interview (for the the content of the interview questions, see Appendix I-2, pp.257-272, instruments for the original data; and Appendix III-2, pp.344-358, instruments for the target data).

Furthermore, during the interview, probing was used which helped augment the text (the discourse data) obtained from the interviews and direct the flow of conversation. The interviews were mostly conducted in the farmers' courtyards, in the farm fields and the shade of trees, and averaged 2 hours in length.

Fieldwork for the personal interview was carried out on the basis of the crop cultivation season on which the activities of ploughing and seed acquisition were practiced. Thus, for the activity of ploughing, March to June, 2012 and for seed practice, May, June and October 2012 were used. .

3.8.2 Focus Group Discussions

In this study, two types of focus groups were conducted to gather discourse data about indigenous farming knowledge: focus group discussion one (FGD1-Mixed group), and focus group discussion two (FGD2-Elders group). These two focus groups were utilized for group understanding and as an ancillary method.

3.8.2.1 Focus Group Discussion One (FGD1-Mixed group)

Focus group discussion one (FGD1) consisted of mixed group. It was termed as "mixed group" because the sampling purposively selected young and old farmers and brought them together for a discussion, with the assumption that young farmers would tend to use modern agricultural technology, while old farmers would largely depend on their own knowledge.Thus, the sampling used the criteria of age. Accordingly, five young and middle aged and five old farmers, a total of 10, participated in the discussion. In terms of level of education, the five young-middle aged farmers were least grade four to highest grade eleven complete. The other five farmers, who were old as labeled in the study, have attended adult education. All of them were married, have lived in the village throughout their lives. Their primary livelihood activity is crop cultivation.

The discussion was carried out on April10, 2012 at 9:30AM, in the shade of a big tree.After 1:30 hour's discussion time; the participants were given a half-hour break time with refreshments. The average length of time for this group discussion was 3 hours (for the the content of the questions, see Appendix I-3, pp.265-268, for the original data instruments; and Appendix III-3, pp.351-353, for the target data instruments).

3.8.2.2 Focus Group Discussion Two (FGD2- Elders Group)

The second discussion method used to gather texts (discourse data) for the study was focus group discussion two (FGD2) comprising elder farmers hence: Elders Group. The participants for this group should be sampled with care. So, two criteria were set out: farmers respected in the community for their knowledge of crop cultivation, especially farmers who mostly use their own knowledge to cultivate crops, and secondly, elderly farmers who are knowledgeable about different sayings-poems, plough chant, and proverbs. Participants were recruited using snowballing method. Individuals who agreed to participate in the focus group were asked to identify other individuals who met the study criteria.Thus; ten (10) farmers were recruited to participate in this focus group.

The age of the farmers ranged from 55 and 75.Of these ten farmers, one of them was grade four complete, the other have attended adult education, but eight of them have no educational experience. All of them were married, have lived in the village throughout their lives and cultivate crops for their livelihoods.

The discussion was conducted on 12 May, 2012, at 9:30 AM, in the shade of a big tree. After 1:30 hour's discussion time, the participants were given a half-hour break time with refreshments. The full discussion averaged 3:00 hours in length (for the the content of the questions, see Appendix I-4, pp.269-271, for the original data instruments; and Appendix III-4, pp.354-356, for the target data instruments).

3.8.3 Non-participant Observation

Non-participant observation was another data gathering instrument used in this study. For this study, the term "non-participant" was used in the sense of observing the ongoing

activity of farming, writing notes about it and interviewing the participant of the activity at a convenient time after the activity.

Ten farmers were observed. The farmers were all males whose age ranged from 38 to 62. In terms of their level of education, three of the farmers were grades 3, 5 and 6 complete, whilst seven of them have the experience of adult education. All of them were married, and have lived in the same village throughout their lives. Crop cultivation is their primary livelihood activity.

The interviews and focus groups were aimed at having participants recontextualize their crop cultivation activities.The non-participant observation, on the other hand, was utilized to validate the discourses collected through the interviews and focus groups.To carry out the observation,the researcher stayed in the farming community during the different seasons on which farmers did ploughing and harvesting.

The non-participant observation was undertaken for ten (10) randomly selected farmers using observation protocol for one season of crop cultivation activities of ploughing and harvesting (mowing t□*ef*). The observations were made in April and June, 2012 for ploughing; and in October, 2012 for the activity of harvesting (see Appendix I-5, pp.272-273; and Appendix III-5, pp.357-358 for the contents of the observation and the protocol used).

Sayings (oral genres) about crop cultivation were another source of data for this study. In this study, genres of crop cultivation were collected in two ways: (1), through interviews and group discussions held among farmers, and (2) by listening and observation of farmers at the actual performance of farming activities.

3.8.4 Collection of Documents

Other sources of data were written documents (secondary data), which consisted of agricultural activity profile for moisture stress areas developed by development agents, posters about the mission objectives of developing agriculture in the area (Hitecha) and some relevant information from the strategy/policy of Agricultural Development Led

Industrialization (ADLI).These secondary sources (documents) are primarily used to explore the practice of discourse of modern agricultural technology in the study area.

The discourse of indigenous knowledge of crop cultivation cannot be adequately studied by using a single approach. The methodology used in this study is, thus, interdisciplinary in design, making use of qualitative approaches from Anthropology, Discourse, Social and Linguistic theories. A total of 4 types of data collecting instruments categorized into 6 methods, most of which were originally developed for this study, were used. These instruments, thus, provided some structure for the study.

This study is, thus, based on a corpus of texts dealing with the ways of embarking on crop cultivation.It includes different text types-texts that emerged from personal and group interviews, focus group discussions, non-participant observation and documents.All these texts represent the same social practice:crop cultivation.

To sum up, two main points are central in the foregoing discussion. First, it has been indicated that the sources of data for the study have come from personal and group interviews, two focus group discussions, documents and non-participant observation. Second, participants for each type of data collecting instruments were sampled purposively. Thus, the sample size of the study comprised 58 male and female farmer participants. This number was not fixed by some theory, but it was based on the enthusiasm to have more farmers participate in the study and to obtain rich, discourse data on indigenous knowledge of crop cultivation.The study was conducted from March to June, and October, 2012.

3.9 Procedures and Implementation

In what follows, the procedures and the implementation are described.

3.9.1 Research Ethics

Consideration of ethical issues is as significant as the preparation of instruments of data collection in order to study the discourse of indigenous knowledge of crop cultivation. Specifically, three concepts are useful from the perspectives of research ethics:

transparency, anonymity and confidentiality. Transparency has to do with the researcher introducing him or herself to the participants and making the purpose of study clear to them. Anonymity means that the researcher should build confidence in the participants that whoever has supplied the information cannot be easily accessible to anyone who might use against them. These three concepts are essential tools that build trust in the research participants about the researcher and the research process.

In this project, procedures of research ethics consisted of, first; at a general meeting, potential participants were provided with information about the researcher, the reason he was in their village, the research objectives and the assistance needed from them.

During the actual time of data collection,before beginnig the individual and group interviews and focus group discussions, participants were made clear about the research objectives ("…..the purpose of this interview/this discussion is to learn from you…."), and how they will participate ("…I will ask you questions…"), I asked their consensus to be interviewed for the purpose of the research and the interview being recorded ("….in order not to miss the points you raise…."), it was made clear that they could withdraw at any time ("….you can withdraw from the interview or group discussion at any time if you want to"), I attempted to create awareness that I would guarantee their anonymity and that any information they give/present will remain confidential ("…all responses are confidential and are used for research purposes only…"; "…your names will not be recorded to protect your confidentiality").

Before starting the focus groups, awareness was created emphatically on how the participants take turns ("….please, speak one at a time…" /"…take your turn to speak when you are sure your colleague has finished speaking"). Also, awareness was created that participants should respect the confidentiality of individuals and should not disclose information to other parties ("…other participants should respect the confidentiality of responses ,ideas ,disagreements …that colleagues raise in this discussion…")(All these orienting points can be observed in the opening paragraphs of each type of data collection instrument (see Appendix I-1-I-5, pp.257-273, data collection instruments for the original data;,and Appendix III-1-III-5,pp.344-358, instruments of data collection for

the target data).To summarize, in each of the research instruments (and sessions), the interaction was organized around giving orientations to the participants

3.9.2 Research Procedure

The tools were applied in the sequence of participatory group interviews (PGIs), focus group discussion one (FGD1), focus group discussion two (FGD2), and personal interviews (PI).The common procedures used when conducting the interviews and group discussions discussions were:

1) a number was assigned to each participant during the interviews, focus group discussions and non-participant observation. This enabled me to locate the respondent clearly and to capture what he/she said/talked about exactly. 2) the interviews and the focus group discussions were tape-recorded, and notes were also taken to supplement the recording.

3.10 Data Analytic Strategy, Procedure and Framework

In the sections that follow, the strategy of data analysis procedure and framework is described.

3.10.1 Transcription: Representing the Data

Following Kowal &O'Connell (2004:248), transcription, in this project, is understood as the graphic representation of the participants' utterances and behavior produced at the interviews and focus groups. Or it means transcribing (changing) the oral texts from the tape recorder to written forms. Thus, the recorded Amharic interviews and group discussions were transcribed using the principle of "a fuller approach to transcription" (Potter, 1996:11), and with great care, to reproduce the "broad content themes" in the original recorded material (interaction) into written text form.

During the process of transcription, the following transcription notations were used as developed by Jefferson (1985):

a) [ ] square brackets are used to show overlap, and transcriber added text, e.g [pause]

b) <u>underlined</u> parts indicate speaker emphasis.

Commas, full stops and question marks have been added for their conventional function.

3.10.2 Translating the Data

All of the source data were collected in Amharic language. These oral data were also transcribed. The next step was translating the original language data to English language written text form.

According to Newmark (1988:7), "translation is a craft consisting in the attempt to replace a written message in one language by the same message in another language."As can be imagined, translating data from one language into another cannot be a straightforward enterprise for getting word-for-word translation was not possible. In this study, despite the challenge, when the translation was carried out,balance was maintained by avoiding loss of the meanings (content) of the original text (data), and to appear in the target text (English language translation).

Thus, based on Newmark's (1988) suggestions on how to do translation, the strategies used were, searching for the equivalent English language translation for the Amharic original data sources of words, phrases, clauses, grammatical forms, and expressions. Similarly, sayings (proverbs, poems, plough chants) were translated by searching equivalent English sayinngs. But, this was not always so. Thus, attempts were made to provide the nearest translations of sayings (poems, ploughing chants, and proverbs). At times, certain Amharic expressions were not easily translatable into English.In this case, the Amharic word, idiom or expression was written using IPA, and presented in italic form. Then again, conceptual translation was made focusing on the content. Within the text, personal and place names, names of oxen, names of the indigenous seeds, and names of the components of the traditional plough were written in the IPA and italicized, for example, *dəd□ən*, name of ox.

3.10.3 Identifying the Discourses

Specifically, in order to analyze a discourse, the first step should be to identify the discourse found in a text. In order to identify a discourse, Potter and Wetherell (1987:138-139) suggest that a reseacher should analyze all accounts produced by participants to determine patterns of consistency and variation amongst them.Based on this suggestion:

a) I familiarized myself with the data by reading the transcripts again and again.

b) With a close examination of the vocabulary and grammar (what Potter &Wetherell (1987: 138) call “interpretative repertoires”-linguistic resources drawn upon to realize a particular talk) used by the participants when they talk about a specific topic or issue, I looked for recurring terms or patterns to identify the discourses in their talk.

c) I coded the regular patterns of talk to identify the dominant discourse.

d) Then, I looked for the most relevant label to describe the discourse.For example, discourse of the self and others.

3.10.4 Import and Translation of the Theories Used in the Study

For the purpose of this study (see Chapter 2), the theory of SFL, Symbolic Interactionism, Stracturation Theory, Appraisal Theory, and CDA as an analytic perspective were used.These theories were used with the assumption that they can provide insight into the social practice of crop cultivation, and serve as cues about what particular types of farming knowledge discourse might be at work. However, when non-discourse analytical theories (sociological theories) are imported into a discourse analytical framework, the theories should be translated into discourse analytical terms (Jorgensen & Phillips, 2002:158).Also, it was suggested the possibility of importing the theories without incorporating all the elements.

For example, some concepts like “action”,” agency”, “meaning making through symbols”, ”interaction”, “texts close to the actual experiences of people”, “representation of experience” and “narratives connected to systems of discourse” are central to the theory of symbolic interaction. In the context of this study, “action”, for example, can be related to the actions that the farmers exert to perform various activities of crop cultivation. Another aspect of action, as Fairclough (2003:27) has explained, can be related to the social relations and events that the farmers participate in.”Agency”, on the other hand, can be related to the actions and capacities of the farmers that they can control their lives through thinking, constructing and making use of their own knowledge, and recontextualizing this knowledge.

The Struturation Theory also needs translation in order to fit into CDA analytical framework. In this theory, "structure" and "agency" are the most important elements. When translated into discourse analytical framework, in the context of agricultural development practice, structure can refer to institutional structure and their practices such as designing agriculture development policy (including type of technology to be used), strategy, and so on.In terms of spatial dimension, where agriculture is actually practiced, structure can refer to the physical layout of the farming land (its location), the type of soil in it, and so on.Both types of structure can constrain or enable "Agency" in the practice of agriculture.

In the case of SFL, AT (appraisal theory), and CDA, the theories do not need translation in order to fit into a discourse analytical framework, because they have roots in linguistics and discourse theory.

In Chapter 1, four major research questions and two sub-questions were addressed. In order to answer the questions, the primary base for data analysis was Fairclough's (1992:73) three dimensional critical discourse (CDA) analytic model, which describes discourse as: text, discursive practice (text production, distribution, consumption), and social practice.Then, the theories used to back the study and the research questions were integrated with this model in accordance with their relevance (that is, to which dimension of CDA-text, discursive practice, or social practice-they are related to).

Accordingly, the first research question, and the two sub-questions seem to be related to linguistic analysis. The data used to answer this research question were analyzed using systemic functional linguistic theory(SFL),Appraisal Theory (for the analysis of semantics), and tools for textual analysis developed by Fairclough (2001: 93-9) within CDA.The remaining three research questions (research questions 2,3&4) seem to require a relevant social theory for better explanation and analysis of the points/themes they contain. Thus, the data used to answer research questions 2and3 were analyzed using the theory of Symbolic Interactionism. Research question 4, which asks the status of farmers' indigenous, farming knowledge, was analyzed using the Structuration Theory. However, during the actual performance of the analysis, flexibility was adapted.

Concerning crop cultivation sayings (proverbs, wise sayings, poems, plough chants), they were analyzed through step by step: first, they were transcribed and translated. Then, they were classified on the basis of the domain of crop cultivation activities or general practices of crop cultivation they refer to. In the analysis of the sayings, the focus was on both the linguistic resources (words, metaphors and grammar-transitivity, mood, markers of coherence and cohesion, so on) used to construct the texts /sayings and the content. In addition, they were analyzed in combination with the activity or discursive topic of crop cultivation in which they were articulated to foreground the farmers' indigenous knowledge and views (outlooks) about their activities of crop cultivation.

A close examination of the data indicated that almost all the interviews and focus group discussions repeat the issues, ideas, or discourses mentioned by the prior participant. So, the editorial principle was to select sample or representative texts or discourses. The text /discourse samples were, then, carefully selected from the research instruments, and at times, even clauses were extracted from longer texts (Halliday &Mtthessien, 2004: 50) state that the clause is the mainspring of grammatical energy), for detailed, critical analysis.When presenting the samples, it was found necessary to indicate in which research instruments they were produced, and to mention the text producer. For this purpose, the following abbreviations were developed and (see section 4.10.2) used:

(1) PI F Number M PI stands for the Personal Interview,
F= farmer; Number (1, 2, 3,…)shows
the identification number of the participant, and
M=male.

(2) PGIF Number F/M PGI: represents: Participatory Group Interview,
F=farmer; Number (1,2,3,…) shows the
identification number of the participant, and
F=female/M=male.

(3) FGD1FNumber M This is Focus Group Discussion one (1); F=farmer,
Number (1, 2, 3.…) shows the identification

number of the participant, and M=male.

(4) FGD2FNumber M This is Focus Group Discussion two (2);F=farmer ;

Number (1, 2, 3,…) shows the identification number

of the participant, and M =male.

(5)NPO FNumber M This is Nonparticipant Observation, F=farmer,

Number (1, 2, 3,…)shows the identification number of

the observed farmer, and M=male.

Mostly, it was participants' own voices: words, clauses or texts used to make the points in the analysis.After all, participants' own words, clauses or texts, quoted verbatim, can validate the analysis. As to data display (presentation), the original language (Amharic language) data obtained from the group interviews and the two focus group discussions were presented in Appendix II-1, II-2, II-3&II-5, pp.274-338 in complete/full form.Concerning the individual interviews, it was the sample or representative discourses/texts that were displayed. These, too, were presented in the original form in the same appendix (Appendix II-4, pp.315-333).During the analysis, in order to help readers to access to the original (source) language data, the target (translated) representative texts were given Appendix and page numbers in parentheses to indicate from which type of original corpus the sample or representative texts were taken.

As it was already discussed, the ideational, interpersonal and textual meanings of language and their realizations (transitivity, mood/modality, and deixis, markers of coherence and cohesion, and theme/rheme) produce particular dimensions of discourse-discourse as text, as discursive practice and as social practice. So, the transitivity, modality and textual systems of language can be resources for me to make thematic discourse analysis on the level of textual, discursive and social practice of the discourse of indigenous knowledge of crop cultivation.

3.10.5 Triangulation of Data

For the purposes of this study, multiple research instruments were designed and used to gather the data. It is obvious that each single instrument can have its strengths and weaknesses. Thus, the logical step should be to combine the strengths of the instruments

to build checks and balances through triangulation in verifying the validity and reliability of the data collected.

3.10.6 The Structure of Data Analysis

Chapters four, five, six, seven, and eight are concerned with the analysis of data based on the procedure of Critical Discourse Analysis (CDA). It is useful to start the analysis from the level of the text dimension for "it helps to identify and demarcate the discourses" (Jorgensen &Phillips, 2002:167).Based on this notion, the analyses in Chapters four, five and six focused on discourse of indigenous farming knowledge as text, at the micro-level, which included: interaction, language use and discourse.Chapters five and six focused on vocabulary (words and expressions) and grammatical construction of the discourse of indigenous crop cultivation knowledge respectively. The analysis in these three chapters (Chapters 4, 5, &6) should be taken as the "description stage" of the discourse of indigenous knowledge of crop cultivation as text. Thus, the analyses in these three chapters attempted to answer the first research question: What discourse do the farmers use to construct and/or recontextualize their crop cultivation activities? Chapters 7and 8 focused on the analysis of the discourse practice, "the stage of interpretation", and the social practice, "the stage of explanation", of crop cultivation at the macro-level respectively. The analysis in these two chapters attempted to answer the other three research questions (as to the three stages (orders) ("description", "interpretation" and "explanation") of CD analysis, see Fairclough, 1992:235).

Chapter Four: Data Analysis: Description, Interpretation, Explanation

4.1 Introduction

The analysis in this chapter is concerned with interactional control features, dimension of textual features, the participants utilized in the interaction.The focus is on three elements: turn-taking and the distribution of turns; topic control, policing, development; and formulation. The reason for focusing on these three elements is that they are relevant to the context of the study: participants' recontextualization of how they carry out activities of crop cultivation.Also, in this chapter, six dominant discourses are identified and presented.

4.2Interactional Control Features

According to Fairclough (2001:21), interaction is one of the dimensions of discourse. Indeed, discourse, text and interaction have very close meanings.It is safe to say that a good interaction is the outcome of participants' collaborative control of interactional control features.As identified by Fairclough(1992:139), interactional control features include: turn-taking and distribution of turns, topic selection and change, answering questions, setting and policing agenda and formulation. The main purpose of these interactional devices is to ensure that the interaction works smoothly at an organizational level.

In this study, the research instruments produced interactional data (discourses, texts). Thus, for the reason of "trustworthiness" (Lincoln & Guba, 1985:57), that is, for the validity of the data, it is very useful to briefly discuss how the interactions were produced in all the research instruments. As is evident in the research tools, the interviewer (in the interviews) and the moderator (in the focus groups), tried to draw out collaborative control of the interactional control features in the interviews and focus group

discussions.How? First, awareness was created in the participants (oriented them) about the research: its purposes, what they were expected to do (behave) during the actual time of the interviews and focus groups. Secondly, at the actual time of conducting the interviews and focus groups, participants were asked open-ended questions to avoid the chance of constraining their responses/talk. Besides, in all the research instruments, initiation (question)-response-feedback sequence was used. The feedback was in the form of "minimum response tokens" (Fairclough, 1992:146) like: 'hmm', 'yes', 'sure','right', and probing questions. The probing was linked to the participants' responses for clarification in order to learn/understand the discourses described in their talk, and to gain elaborated interactions. When a participant paused, the question was clarified with a tone that encouraged him/her to talk. The next question on the schedule was only introduced when a participant or the participants had exhaustively talked about the previous question/topic. They were guided when they completely drifted off topic.In sum, it was attempted to create "the spaces that allow the discourse to appear and articulate" (Denzin, 2009:160) or "conversational and of the 'life world' mode of topical development" (Fairclough, 1992:146) among the participants during their interactions.

In order to identify the interactional control features, the transcripts of the texts were read again and again, by focusing on three elements of the features: turn-taking and the distribution of turns; topic control, policing and development; and formulation.Then, each of these features was analyzed in terms of its appearance in the interaction, which participants used it (the term"participants" in this context includes both the interviewer/moderator and the research participants), and what they were trying to achieve by using the feature(s).

4.2.1 Turn –taking and Distribution of Turns

Fairclough (1992:234) presents some questions as a framework for the analysis of turn-taking process in an interactional setting. These set of questions are: "What turn–taking rules are in operation? Are the rights and obligations of participants (with respect to overlap or silence, for example) symmetrical or asymmetrical?" I used these questions as

a guideline to analyse the appearance (process) of turn-taking and the distribution of turns in the texts/interactions produced by the research instruments.

The notion of turn-taking implies a participant getting a chance to speak. Unless the participant takes turns in a regular pattern, the outcome can be asymmetrical interaction, because "interaction is organized around turns of talk that are delicately meshed together" (Puchta &Potter, 2004:12). Thus, turn-taking and the distribution of turns between participants can influence interaction.

A cursory examination of the interviews and focus groups depicts that the interviewer (and the moderator) can be seen as having the role of initiating the interaction and thus shorter turns, while the participants can be seen as having taken explaining role and thus longer turns (see Appendix II, pp.274-333 for the original data).

In the participatory group interviews (PGIs), a total of 13 questions (topics) related to crop cultivation practices were introduced to participants. The discourse structure data on turn taking shows that for these 13 topics, there were 58 turns. On average 5 participants took turns to talk about one new topic. This provides evidence that in the participatory group interviews (PGIs), the distribution of turns was relatively symmetrical/even.

Turn-taking can also be influenced by interruption (cutting short a participants turns) overlaps, and gaps between participants' alternating turns. In the participatory group interviews, there were some interruptions and overlaps, but hardly any gaps between participants' alternating turns.

As to the overlaps, all the12 participants answered the first question simultaneously (as a group). Consider the following text:

Interviewer: What is the present month? What is the name of the month we are in now? (Appendix II-1,p. 275).

[Participants together]: February (Append.II, p. 275).

The same pattern of response was repeated during the probing of the second question:

Interviewer: What kinds of farming activities do you carry out in February? (Appendix, II-1, p. 276).

F1f:"We work on the soil, build up dikes and do the piling.We also thresh crops." [Pause] (Appendix II-1, p.276).
(Probing) Can you tell me more about what other activities you do in February?
[All talking at once]: "Yes, she is right. We are on the soils……"
(Appendix II-1, p.277)

There were some interruptions also. As F3m was responding to the third question, before he finished uttering the last words, a female participant (F7f) interrupted him. Consider the following interaction:

Interviewer: What are the other months and seasons? (Appendix II-1,P.277)
F3m: Well, normally, we divide the months into four seasons, what we call "spring" has the months March, April, and May(Appendix II-1,p.277)
F7F: (Interrupting) Yes. Now, [and June] we are in the dry season (Append. II-1, p.277)

A similar situation occurred during question six, which asked participants to identify kinds of farming activities family members (women (wives) and children) do in each month. As F5m was responding to the question, F11f (a female participant) interrupted by asking him: "Well, who is looking after the cows? Aren't we? Who is making □*nd*□*əra*, preparing food for you?"While the question was about the kinds of farming activities that family members do in each month, and the expected response should be about farming activities, the woman assumed preparing food as a part of farming acivity, got surprised and interrupted why it was not included in the farmer's (F5m) response. In the farming community in rural Ethiopia, it is generally assumed that preparing food for the household is the responsibility of women.It also indicates division of labour. Most women, thus, assume that this responsibility means having power. It seems that F11f abruptly reflected that in her discourse.

Based on these interactions, it can be said that the simultaneous responses, the overlaps and interruptions are part of the ongoing interaction. It seems that they have occurred because of unconscious release of known (familiar) and shared information and feelings about farming activities.

The individual/ one-to-one interviews schedule consisted of 6 questions on ploughing and 6 probing questions, 5 questions on seed acquisition practice and 3 probing questions,

and 8 questions on some discursive topics/issues around crop cultivation practice, and 2 probing questions. Examination of turn taking between the interviewer and the participants show that each individual participant had the chance of 34 instances to talk about new topics. Thus, the distribution of turn-taking was symmetrical. Moreover, the interaction emerging from the questions and topics took place without any overlaps, gaps between turn-taking and interruptions. The absence of these turn-taking constraints enabled a participant to talk smoothly and discursively on the topics introduced to him.

At focus group discussion one (FGD1) (mixed group), 11 questions and 3 probing questions were used for initiating the interaction.These topics had produced 95 responses. Counting of turn-taking showed that each one of the 10 participants had 9 instances to talk on or respond to every new question (that they hold on the topic). This indicated that the distribution of turns was symmetrical.

In this focus group, only one participant was not sure (he hesitated) to complete the last part of the statement in his talk. This had produced an interruption from another farmer. Let us illustrate it. The question (topic) presented for discussion was "whenever you get together with other farmers, what do you and the other farmers mostly talk about?"

FGD1F9m: "Yes, we talk about ploughing fields, seeds and other farming stuff.Well, some farmers claim that their knowledge is theirs (interviewer:yes). All talk about their knowledge if a certain issue is raised. When a neighbouring farmer ploughs his field near my field, hmmm there are some……." (Appendix II-2, p.287)

FGD1F3m: [interrupting]" We talk about ploughing season. In <u>April</u>, for example, every farmer comes <u>out</u> in his field, except those included in the Safety Net Programme*. In fact, if someone everytime expects people's money, he <u>never</u> improves, he never experiences change in his life….." (Appendix II-2, p.287)

In this interaction, F9 attempted to tell us the topics farmers talk about. But why was he hesitated (hmmm…)? The answer might be detected from F3 responses. F3m emphasizes farmers ploughing in April. He also criticizes the Safety Net Programme that those farmers included in this programme did not plough their fields in April. The consequence of this is that "they have never experienced change in their lives." In other words, the

discourse of F3m reveals the negative impact of the Safety Net Programme. So, it was probably about the "Safety Net Programme" and those involved in it that F9m hesitated to produce (utter) in his talk and criticized his neighbouring farmers who depended on this programme, but failed to plough their fields in April:"---hmmm there are some---."

In focus group discussion two (FGD2-elders' group) 6 questions (topics) and 4 probing questions were used to initiate the interaction. These questions produced 58 responses. The turn-taking was counted, and the finding showed that a participant (of the total 10 participants) had the chance of 6 turn taking instances on new questions and probing questions. Thus, in this focus group, the distribution of turns was symmetrical, too.

In this focus group (FGD2), one of the questions participants were asked was to tell how ploughing, seeds, the oxen, good farmers, weak farmers, the farming implement and seasons (months) can be described. Then, sayings (poems and plough chants) began to flow. They were remembered and recited. Without any word of instruction from the moderator, participants rose from their seats and recited the poems and the wise sayings.Participants' recitation was accompanied by actions as if they were in the farming field doing ploughing. The elation the sayings and poems arouse among the participants was so high that there were laughter, applause, interruptions, overlaps and expressions of encouragement. To illustrate, when one respondent recited a poem, the participants were all in laughter (see Appendix II-3, pp.308-310 for the source data):

*The government started the Safety Net Programme in 2005 intended to safeguard food insecure households.It has two components: 1)labour-intensive public works with payments of a minimum amount, and 2)direct support (free payment) for labour –poor households (MoA&RD).

F9m We say this as we plough:
"The father bought ox and yoked to the beam, but if the child was afraid of it,
This is like bean crop grown tall on dung without seed."
(All in laughter) Uhhhhh------- ha! ha! ha! ha!
[F9m continued amidst the laughter] "It means the bean crop did not bear any seed, simply it stood tall."
Another respondent recited a poem like this:
F2m I say this as I plough:
"It is soiled,
His clothes are soiled,
He is not seen from far off.

A person who gets used to producing crops
Is similar to the colour of soil."

F4m Enough! Well said!
F6m Ha!
F2
F1 This is the real farmer!
F7

In this group discussion, there was also a pause and one interruption. When participants were asked how they and other farmers in the area make use of the sayings and poems among themselves, one of the respondents started off, but hesitated and paused as indicated (see Appendix II-3, p.310 for the source data):

F4m "Well, they talk about themselves and the farms. What else…." [Pause]. Well….

F6m [Interrupted]: "Knowledge steps onto people through poems, proverbs, sayings and examples.
A farmer always maintains some sayings of his own in his head.He knows also those we have told.They use them."

It is safe to assume that in this kind of situation the interruptions and overlaps (as in FGD2) can enhance the interaction.

To sum up, the foregoing analysis revealed that the research participants' turn-taking experiences in the interviews and focus group discussions were symmetrical. It is, however, not only participants having speaking turns that is the end of it. The most important thing is what the participant achieved during his/ her taking the turn of talking, and this directly takes us to the issue of topic control, policing and development.

4.2 .2 Topic Control, Policing and Development

In this section, the analysis focuses on the nature of topic control,policing and development in each of the interactions produced by the research instruments.According to Fairclough(1992:234), in order to analyze topic control in interactional settings, the analyst ask:"How are topics introduced,developed,and established, and is topic control

symmetrical or asymmetrical? How are topics (agendas) policed and by whom? Does one participant evaluate the utterances of others?" I used these sets of questions as a framwork to analyse how the various topics introduced to participants during the interviews and focus groups get controlled, developed, policed (established) and evaluated. As a part of the analysis itself, a summary of all topics introduced and the discourses produced from each research instrument (the interviews and focus groups) is provided in Appendix V, pp. 363-381).

The purpose of the participatory group interviews (PGIs) was two-fold: first, together with the participants, to develop the local seasonal calendar of crop cultivation, so that I can have information to adjust my fieldwork (data collection time) with the actual time of farming activities. Secondly, to use the local seasonal calendar of crop cultivation practices as data itself.

Consequently, the questions (topics) introduced to the participants were in steps: first, they were asked to describe the kinds of crop cultivation activities they carry out; then, to identify the present month; next, to state the types of farming activities they were doing in this month, and then, to identify the other months and/or seasons.One of the probing questions related to the last topic, that is, identifying the other months and/or seasons was the following. Let us consider it (see Appendix II-1, pp.274-281 for the source data):

Interviewer: Could you tell us what helps you to divide the months into these four seasons?
PGIF6m: I believe every year these seasons come (interviewer: ok).
PGIF4f: Some months are cold and others are hot (interviewer: sure).
PGIF3m: There is wind in some months. For example, in June (interviewer: sure).
PGIF1f: We put months having the same weather and characterstics together (interviewer: yes).
PGIF7f: In some months rain falls (interviewer: right).
PGIF9m: In some months, the sky is clear; there are no clouds (interviewer: sure).
PGIF10f: When it is summer season, the leaves of plants are green and wet.When it is winter, the leaves of plants get dry. We observe these in each cycle of summer and winter sesons (interviewer: right).
PGIF12m: The appearance of fresh crops like: peas, beans, chickpeas, chuckling peas, maize show us new season (interviewer: yes).

In this interaction, the participants produced texts having different features such as: cold,hot, rain, cloud, wind, dry leaves, wet leaves,fresh crops, with the months they

identified.Moreover,these features were stated by means of relational process types:"is","are" and unmodalised forms (categorical modality):"put","falls",which reveal facts.Thus, these text features together have developed the discourse of:"indicators to divide the 12 months into 4 seasons."

The other topic participants asked was to state (identify) the kind of activities of crop cultivation they and other farmers carry out in each month and season. Orienting to this topic, and directly relating to their experiences, respondents talked about farming activities they perform in each month without confining to a single activity, but shifting across interconnected activities. These different but related responses to the question of activities done in each month resulted in the development of crop cultivation seasonal calendar of the study village as shown in Figure 1.

As can be observed in Figure 1, in each of the twelve months identified, farmers carry out specified activities of crop cultivation. Each month constitutes the expected activities, and thus the expectations of the farmers that the activities and situations take in a regular pattern (in a normative pattern). But some situations may happen unexpectedly or fail to happen in the expected time (month). In fact, these have been in the farmers' discourses, for instance, in this group interviews when the farmers construct the activities of farming performed in each month, one of the farmers has baldly remarked:"All these ["these" refer to the activites of farming done in each month] are done if nature is suitable for us, but nowadays, it is uneven spring". By the expression "uneven spring" the farmer meant the late occurrence of spring rainfall.

Figure 1: Distribution of crop cultivation activities across months and division of Labour

	April	May	June	July	August	Sept	Oct	Nov	Dec	Jan	Feb	March
Men only	-Ploughing for summer ()"pieraing the land)souting sorghum and maize	Plonghin f or summer Assessing the field for pests anti-crop situations	Ploughing (turning up the soil, making soft soil; threshing)	Sowing preparing compost	Preparing compost	Assessing for pests clearing tiding inside the cops	Ploughing ("piercing the land)	Harvesting (mowing t□ef)	Piling, stacking, threshing, winnowing	Threshing first plonghing for spring cultivation	Threshing ,ploughing	Sowing spring season first ploughing for repeat ploughing for spring and summer cultivation
Joint labourlmen womeng children	Crop protection weeding spring crops		Harvesting spring crops lentils, Harricot beans, etc delivering the harvest near the plling/ stacking place	Seed teff bed preparation , first weeding	Weeding, crop protection	Weeding, crop protection	Harvestin g "mix-pulses" (chick peas, lentils, leans, peas, etc collecting fodder)	Harvesting (other crop types except teff)	Bring the harvest near the piling stacking place		Soil management (building terraces, dikes)	Soil management (building dikes, terraces)

As can be observed, Figure 1 reveals division of labour. The more physically demanding activities such as ploughing, sowing, mowing (t□ef), piling (stacking), threshing and winnowing seem to be the preserve of men, whilst the less physically demanding activities of farming such as crop protection, weeding, harvesting legumes such as chickpeas, lentils, chuckling peas, horse beans (for instance, I observed a woman harvesting chuckling peas in June, 2012), delivering the harvest near the stacking place seem the preserve of women.

Across the research instruments used, to each of the topics introduced, participants talked about topically without confining to a single topic, but shifting across a series of associated topics. The texts/discourses the participants produced were, thus, extensive and detailed. In fact, many of the farmers overarching issues, underlying causes of problems, and ways of cultivating crops (rich indigenous knowledge of farming practices) were constructed and displayed in the texts and discourses they constructed.

At the individual interviews, one of the general topics posed to each participant was to state who a farmer is.Consider one of the sample texts:

Interviewer: In your opinion, who is a farmer? What do you think of a farmer? (Appendix II-4, p.330)

PIF2m: Farming is life.Ploughing and man support each other.A farmer should carefully handle his land,for example, by using dung and manure or crop rotation by growing chickpeas, beans,haricot beans,lentils,the land bestows him the highest crop harvest.A successful farmer knows his field, he has very close relation with his field; knows each season; knows the characterstics of the weather(our place is, for example, wəy□na dəga),and the types of crops to be cultivated in it;knows levels of ploughing for each type of crop; knows his father's knowledge and uses when he does the activities. A feeble farmer is one who doesn't do the activities that a successful farmer does.
(Appendix II-4, pp.330-331)

In the sample text above, once the interviewer initiated the interview, F2 (the participant) used various methods to control and police the topic.First, he talked about "farming land" as "life", and then he shifted to talk about: "farming field and man support each other."The support the farming field makes is effective when a farmer fulfils what is strongly expected from him: "<u>should</u> carefully handle his land." The text producer (F2) further identified two types of farmers: "a successful farmer and a feeble farmer".

According to him, a successful farmer uses“crop rotation” and “manure (dung)”,to” handle his land” (that is, to fertilize the soil in the field).In this text, thus,the flow of the topics and the shifts between them worked in accordance with the pre-set topic (agenda).

What is more, F2 makes strong commitments to the truth of statements about material processes:”…the land bestows him the highest crop harvest”,” A feeble farmer doesn’t do what a successful farmer does”; mental process:”A successful farmer knows ……..”(“knows” appears 5 times in his text); and relational process:”A feeble farmer is one who ……..” These processes types enabled him to construct concrete statements about” who a farmer is” and “who a farmer is not.”

Turning to focus group discussion one (FGD1), one of the discussion topics introduced to the participants was to describe the types of farming knowledge they possess for the successful performance of crop cultivation activities. Eight (of the total ten) respondents constructed the type of knowledge they possess in this way: “We carry out all crop cultivation activities using our own farming knowledge”, “the method of cultivating crops which originates from ourselves“, “farming knowledge that has roots in our fathers and grandfathers time that we use to produce crops.” In these example texts, the types of farming knowledge at their disposal are not explicitly stated. Participants merely talked about: “our own farming knowledge”, “method of cultivating crops”, “farming knowledge that has roots in our fathers’ and grandfathers’ time.” This lack of explicitness may be accorded to the practical nature of farming knowledge at their disposal.

The participants also generated a variety of interconnected topics by adding to what they have said earlier in their responses. They talked about modern technology of agriculture and that “its use is determined by the nature of the farm land as theirs is “situated on slope, hillside and ridges.” They also talked about “the modern ploughshare they were urged to buy and use.” But, according to them, this “modern ploughshare” can not be used “to dig for a canal to dike water.” Instead: “we use our own former ploughshare; our own wooden wings are broad that fit in with our farm land.” These interconnected topics can reveal why the respondents divert to use “farming knowledge that has roots in their fathers’ and grandfathers’ time.”

The other farmers (two of them) have constructed the type of farming knowledge they possess as activities- the actual application of farming knowledge on farming activities as the following sample text delineates. Consider how the topic is controlled, developed and established:

FGD1F6m "Our farming knowledge means when nature becomes friendly with us, the knowledge we use to work on different activities of crop cultivation. There are ploughings we do in April and in June. We first plough in April, and then we make soft soil in the same month. In June, we work on the second level of ploughing, which we call "ayama", and then, according to our knowledge, we say "the soil in the field is piled on layer after layer": the wheat field is here the beans here, the tef there, and we sow all crop types.

According to the farming knowledge in our mind, we divide crops into two: fast growing and slow growing. The fast maturing are beans, peas, lentils, haricot beans, chick peas. Fast maturing means these crops are readily available for the family during summer. The crops in the slow maturing category include teff, sorghum and maize. The fast maturing crops are also used as fertilizer. After harvesting the fast maturing crops, we put manure (animal drops) in the field then we cultivate teff or wheat or barley. The soil has already retained nitrogen because the fast maturing crops fix nitrogen in the soil this is our way of doing,our going with crop production, our method and knowledge of crop cultivation that we learned about from our fathers." (Appendix II-2, p. 283)

Ways of crop cultivation are constructed in detail in this text. The text had used the following linguistic resources to recontextualize the activities and the knowledge used in some detail: " nature" "ploughings" "in April", " in June", " first plough," " make soft soil", "month" " repeat ploughing", ("ayama"), "according to our knowledge", the soil", "the wheat field", "beans", "t□ef", "sorghum", "maize", "peas", "lentils", "harricot beans", "chick peas", "fertilizer", "divide crops into two", "fast/slow growing/maturing", "summer", "manure" (animal drops"), "cultivate", "method of crop cultivation", "the soil retained nitrogen" and "we learned about (these) from our fathers "

The total force of these linguistic expressions help construct three ideas related to crop cultivation activities and knowledge: 1) knowledge of ploughing a field, 2) identification of two types of crops, and 3) fast maturing crops are also used as fertilizer. The text ends by clearly indicating the currency of indigeous knowledge practice:" this is our way of doing, our going (with) crop cultivation that we learned about from our fathers."

An important feature of the text is that it represents the discourse of "ploughed field by means of recontextualization.If we examine the sentence: "and then according to our knowledge, we say the soil in the field is piled on layer after layer" in its context, the conjunction temporal expression "and then", presupposes the activity of ploughing done using one's knowledge (indigenous knowledge). In addition, the expression "according to our knowledge" entails that the farmers have their own terms to describe the kind of ploughing they performed. Accordingly, the expression: "the soil in the field is piled on layer after layer," recontextualizes the actual performed ploughed field, in the manner planned to. We can create the image of the ploughed field meant for cultivating "wheat, beans, teff and all crop types," because the field is objectivated, made concrete and placed adjacent to us by means of deictic forms such as " the", "is", " here" and " there" "the wheat field is here, the beans there, the teff there".

At the individual interviews, the other topic the interviewer introduced to participants was to state what they need to know or do in order to carry out ploughing their fields. Consider the sample text below produced to answer that question:

PIF1m "I carry out ploughing during the season. This is necessary. All activities have season. The reason for doing activities in the exact season is that when the crop is harvested, the field can be ploughed again to cultivate another crop. Before sowing season, if the field is made soft through repeated ploughing, how nice specially, if compost is applied, it is very nice. Throughout my life, I have been using compost. It was only last year and this year that they made me touch fertilizers. I have been using compost preparing from dung and sheep and goats' excrement. Since the introduction of fertilizers, nothing happened but crop production reduced. Fertilizers are never, never suitable to my soil type which is barren, red sandy type. Around our place, there might be some farmers who say fertilizers are good, but this is not a wonder because they have large farm fields with black loam soil. I have never ploughed black loam soil myself." (Appendix II-4, p. 316)

One strategy of policing a topic seems when the participant introduces sub-topics within the main topic and moves the talk in a sequential way.In the example text above, the participant's mode of topic development regarding what a farmer needs to know to carry out poughing is directly related to his experience.The respondent talks about by

interconnecting different topics, for instance, season, how he prepares compost, the uphill farm land, reason for not using fertilizers, evaluating fertilizers ("crop production reduced"), repeated ploughing, soil types in his farm land, some farmers like fertilizers, they have black cotton (loam)soil, he has never ploughed black loam soil, and he could not use compost now. By using these interconnected topics, the respondent proposes that a farmer needs to know season of ploughing, repeat ploughing and the nature of the soil and the type of fertilizing material in order to do poughing. Again, he reveals that the type of farms he has can only be fertilized by means of his indigenous knowledge.

As can be observed, the respondent used material ("carry out" "ploughed" have been using, etc) and relational ("is", "have") processes clauses to develop his interconnected topics in the text. He used relational process to reveal the natural condition of his farming field: "is barren", and the firm relation between ploughing activity and ploughing season: "All activities have season." When he is the agent of the activity, he uses transitive (active) forms: "I carry out ploughing during the season." When he talks about the agency of others and their influence on him, he uses transitive construction making him the "receiver' of the action: "They made me touch." When the activities are not part of his experience, he uses negative expressions such as "never" "nothing happened, but---", "never suitable," and "have never ploughed." These expressions and transitivity constructions allowed the interconnected discourses and ideas to be established in his talk: "You see I was living close to the uphill farm for many years. I used compost to fertilize the soils. Now, the uphill lands are afforested and they gave me this piece of land, which is red, sandy soil type, not suitable to chemical fertilizers."

In the personal interviews, the other participants had similar pattern of topic development using the other topics, for example, seed and some discursive topics around crop farming introduced to them. This mode of respondents' topical development taught me some issues I was not conscious of. Identifying "type of soil", for example, was not included in the interview schedule, but I captured it from respondents' interconnected answers to the question on the topic of ploughing. Thus, respondents identified three types of soil found in their area: black cotton soils, low black cotton soils and red, sandy soil.

Of these soil types, according to the majority of respondents, it is only black cotton type that is suitable to ("can fit") fertilizers such as DAP and urea. According to them, the red sandy and the low black cotton types do not respond well to the application of chemical fertilizers, because these two soil types do not retain moisture (water). In all the research instruments used, respondents had frequently mentioned this problem.

At focus group discussion two (FGD2), one of the topics introduced to participants was "what types of farming knowledge, do you think, you possess for the successful performance of crop cultivation activities?" This question produced a range of responses with interconnected topics related to the types of farming knowledge they possess, as perceived by respondents. The texts (responses) can be grouped into four categories (see Appendix II-3, pp.302-314 for the source data):

1) A regular and existing practice of farming knowledge.

Example texts: "We gather dung and excrement and other sweepings and spread on the land" (FGD2).(Appendix II-3, p.306)
"We plough the land again and again" (FGD2).

2) Farming knowledge as a received knowledge.

Example texts: "Our fathers always used plough oxen, the beam and the yoke jointly to plough their fields. This farming knowledge is stepped up to this generation of farmers" (FGD2).
"Crop rotation is a very good farming lesson we learned from our fathers" (FGD2).

3) Farming knowledge which demands having the right knowledge.

Example texts: "A farmer should clearly know which crops are to be rotated with which ones" (FGD2).

"We begin the first ploughing in February, and in March, and then, in April, we plant stalk crops" (FGD2).

4) Farming knowledge as beneficiary and developmental.

Example text: "-----in this way, we have benefited a lot using our own knowledge. My knowledge for me is something good that

helps me show my development, something that encourages my development" (FGD2).

As can be seen, these texts are realized by material process clauses such as "gather", "plough", "begin", "plant", "have benefited", and relational process clauses like "crop rotation is a very good---", "---field is free", "my knowledge for me is something good." The material processes verbs construct actions for doing activities, where as, the relational processes verbs construct participants' high commitments to their farming knowledge. Thus, the texts have similar semantic relationship.

The following three sample texts were selected from focus group two (FGD2). Let us focus on how perceptions of the type of farming knowledge they hold on are constructed by means of other related topics.

Text-1 FGD2F9m The farming knowledge we learned from our fathers is ploughing and producing crops. Now, our knowledge is taken back somewhere and replaced by another one. The agriculture office sends out to us calling "Agriculture experts" but, their knowledge is in paper, and is not helping us. Without any farming knowledge, they order us: "Hybrid (best) seeds have come, please take and use them." When we take and plant them, previously unknown worms breed with the crops. They say "take pesticides and spray on them." The medicine, too, does not kill the pests and worms. The farmers who are advantageous or beneficiary are those who stick to and use their knowledge of farming (Appendix II-3, p.304)

Text-2 FGD2F10m Presently, we are making use of the knowledge of farming used previously by our fathers and grandfathers. It is true, "a farmer follows his father's foot print." At the time of our fathers', there were no worms-worms grown on chuckling peas, for example. There was a balanced rain. If the rains became late or disappear, our fathers prayed for the rain, and it would rain. Today, if farmers stay for eight days in the field and pray for the rain, there is no a single drop of it. Well, we do not know the conflict and imbalance. But the main thing is to exploit the farming knowledge we obtained from our fathers, and also by choosing the knowledge that fits our condition from technology, and use it as far as it brings crop yields.(Appendix II-3, p.304)

Text-3 FGD2F4m In our locality, some farmers say; "A farmer and an ear do not grow." The point is that if nature does not betray, one can grow vegetables, fruit, pepper, eucalyptus trees, and can get benefits from them. It is

> not only by growing crops that a farmer develops. But, if he wants to develop by growing crops, it should not be using fertilizers-the so-called " fertilizer" pinches seeds and gets you to sell your fat goat; otherwise, it has no use. The useful ones for a farmer are to use crop rotation and to know when and how to plough the field. If a farmer ploughs his field repeatedly, the field does not betray him- yes, the field does not betray him."(Appendix II-3, pp.304-305)

There is no significant variation in these three texts in the way they delineate perceptions of types of farming knowledge participants hold on for crop cultivation. Texts 1 and 2 have a common structure, that is, both texts begin with declaring indigenous knowledge-problematizing existing situations- suggesting solutions. As to suggesting solutions, Text 1 states: "The farmers who are advantageous or beneficiary--- use their knowledge of farming", whereas Text 2 argues; "But the main thing is to exploit the farming knowledge our fathers, er... and also by choosing---- from technology---." These two sentences, then, reveal the point of reference the texts have to indigenous knowledge of crop cultivation. Text 3 presents a problem in the form of preformulated saying: "A farmer and an ear do not grow," which is present in the discourse of "some farmers," then, it suggests a solution: "growing vegetables" and similar practices to augment crop cultivation. It further presents another problem: "fertilizer pinches seeds and gets you (a farmer) to sell your (his) fat goat; otherwise it has no use." The solution for this problem, according to the text, is: "to use crop rotation, to know when and how to plough the land." Thus, the text uses problem--------solution-------problem----------solution structure.

The common features of texts 2 and 3 are that both have drawn on preformulated sayings. In Text 2, we have the saying: "--- a farmer follows his father's foot print" and in Text 3 we have: "A farmer and an ear do not grow." Thus, the discourses in Texts 2 and 3 have "strategically persuasive purposes" (Johnstone 2008:244), because they position to the available local farming knowledge.

The persuasive strategy in Text 2 is to sustain the discourse of indigenous knowledge: -a farmer follows his father's footprint", means that a farmer looks for the knowledge of farming that his father was used to use. This interpretation of the saying "--- a farmer

follows his father's footprint", is contextually logical and correct here because the saying is accompanied by the evidential marker:"It is true."

The strategy in Text 3 is not only to reveal the conception of indigenous farming knowledge, but also to transform the pessimistic saying: "A farmer and an ear do not grow." So, the text constructs possible and alternative practices that help improve farmers, and thus implicitly argues against the saying. As discussed earlier, the text employs problem ------ solution / problem----- solution structure to deepen the argument formulated against the discourse: "A farmer and an ear do not grow." The text recommends (suggests) "repeat ploughing of the farming field" (here also repeat ploughing of the field implicitly assumes its firm relation in the text structure) as a possible solution (the second solution in the text structure) if a farmer wants to develop himself by cultivating crops. As can be observed, this recommendation is emphatically constructed (just consider the repetition); "if a farmer ploughs his field repeatedly, the field does not betray him- yes, the field does not betray him." Thus, by way of repetition, the text emphasizes the positive side, the usefulness and enhancement aspect of indigenous knowledge of crop cultivation.

In this section, some sample texts drawn from the discourses/ texts produced by 48 farmers, that is,12 participants in PGIs,16 participants in PIs, 10 participants in FGD1 (mixed group) and 10 participants in (FGD2: elders' group) were used to analyze participants' mode of topic control, policing and development. From the analysis, we saw that once the interviewer initiated the topics, the participants controlled the flow of the talk and the topics in every point they raised/discussed.

Also, there was no variation between educated and uneducated, young and old farmers (as focus group discussion 1 consists of 5 young and 5 old farmers) in terms of topic development, policing and control. In other words, in terms of their perceptions of the various topics introduced to them, no topic was rejected nor the participants astrayed from the topics introduced to them, nor divergent views were presented.Now, the next section is concerned with the third interactional control feature: formulation.

4. 2. 3 Formulations

For the analysis of formulation in an interactional setting (conversation, research interviews, for example), Fairclough (1992:235) suggests that the analyst consider these questions: "To what extent do participants formulate the interaction? What functions do formulations have, and which participant(s) formulate(s)?

At the outset, explaining the concept of "formulation" seems a good starting point. Based on Sack's description of "formulating", Fairclough (1992:157) defines formulation as "a particular form of discourse representation where the discourse is part of the on going interaction rather than a prior one." In group interviews, for example, with some intent, a respondent can formulate what the previous participant has said. Furthermore, Heritage and Watson (1979), as qouted in Ritzer and Goodman (2004:389), view a formulation as a part of interaction where: "It manifestly and specifically exhibits participants' understanding." From the two quotes, "participants" understanding of the discourse in the ongoing interaction" appear to be central to a formulation.

The interactions resulting from the research instruments, in this study, contain some formulations. At the individual interviews, to the question: "What do you think of your own (indigenous) knowledge to maximize crop yield?" a respondent gave the following response:

PIF1m "Do you mean my suvival; my existence and struggle along in this area by thinking and managing the farming activities, and my family every year; the extent that I should do farming activities? Do you mean: 'You know what fits you and how you carry out the activities, and the situation of my farming?' If these are what you mean, I have already talked to you. I know myself I know what it is in me as a farmer. Look at this manure! I have carried and brought them here from my home thinking it can fertilize the soil. Then, crop yields increase. When my family and I consume these spring crops, then the summer season comes, then I cultivate t'ef and other crops. The thing is not to be idle-idleness decreases production."
(Appendix II-4, p.332-333)

The theme of the above text is "a farmer has to improvise using his indigenous knowledge." But, because our focus is on formulation, the respondent has formulated the question he was asked by constructing his understanding of what he was asked using

modulated interrogatives: “Do you… do you mean ‘you know what fits you and the situation of my farming?” There is evidence in the text that shows his understanding of what he was asked. After all, the speaker does not stop after the questions he posed; he continued speaking, and particularly his statement: “If these are what you mean, I have already talked to you” shows his perfect understanding of the interview question. This respondent, thus, used the discourse of “formulation by questioning” strategy to reveal his understanding of the question he was asked and the status of his indigenous knowledge to maximize crop yield.

During the interaction in the personal interviews, especially with questions/ topics that asked the participants to identify the type of farming knowledge they possess, the extent of use of this farming knowledge, recalling back seasons/ years of high crop yield and the method of farming (knowledge included) used, the discourse of knowledge that transforms decisions about farming activities into performance, favourite farming implements and feelings about farming implement, there were further 9 respondents bouncing back the questions and immediately continuing talking on the topic they were asked.Let us consider these segments from the texts (see Appendix II-4, pp.315-333 for the source data):

When recalling back seasons of a high crop yield: “What about now? “(PIf1m)
When asked to identify the types of farming knowledge they possess: “You mean my own knowledge?” (PIf3m)
Source of knowledge to do amounts of ploughing:”Who do you think, then?” (PIf5m)
Using the present farming implements: “What do you think is there other than this one?” (PIf7m)
Seed acquisition practice: “You mean the seed crop I use? It is the ‘best seed variety” (PIf9m).
Using the present farming implement: “What else do I have then? “ (PIf12m)
Feeling about the present farming implement: “Whence do I get crop produce? “ (PIf13m)
Using the present farming implement: “How do you mean?” (PIf14m)
When asked to identify the type of farming knowledge they possess: “Do you mean my farming knowledge? “ (PIf16m)

In an interaction context, as in one-to-one interviews, participants can formulate the interaction by responding to a question posed to them with another question, or can use

expressions that show surprise like: “How come? “ This kind of formulation can show their understanding of ideas raised or asked in the interaction. Participants formulations in the above examples of text segments seem to show: “You are asking me/ us the obvious, but you don’t know this, really? “ It can be said the participants used implicit strategies to comment on the questions posed to them.

In addition, at focus group discussion two (FGD2), some participants used formulations in the interaction. The following texts are excerpted from large texts produced to answer the question on development agents’ reactions (that is, whether they encourage farmers to use their indigenous knowledge, intention to know farmers’ indigenous knowledge) to indigenous knowledge of crop farming.

FGD2F5m “They ordered us to plant seed that the field does not like and the farmers do not accept. If we say “no”, it seems we hate the government. When we accept and do, we become bereft of use and benefit. This kind of practice here in our place has resulted in a great loss of crop production on to us.” (AppendixII-3, p.312)

FGD2F3m “Now, the one problem my friend has just told us is about the fields down the main road the farm fields that respond well to the application of fertilizers (DAP&Urea).Many of the fields do not like fertilizers.When we were about to begin ploughing in April for summer crops, they came and ordered us to plant haricot beans, lentils, and chuckling peas. But,now …….” (Appendix II-3, p.312)

In both texts, the respondents used the pronoun “they” to refer to “development agents.” The main issue the respondents talked about is “mismatch of doing farming activities-what respondents normally do and what they were ordered to do.”

In a group interaction, as in FGD2, it may be the case that a participant can interpret, clarify or repeat a previous participant’ (the participant just before him/her) points of view, ideas, questions, suggestions, and so on. In the two texts above, the vital issue mentioned was:”April ploughing”, and it got clarified by means of formulation. F3 has formulated F5’s points of talk using: “…the one problem my friend has just told us is.” This expression shows formulation. In addition, this formulation reveals the shared experiences of the two respondents.

In the two focus groups, to most of the topics presented for discussion, the majority of respondents used expressions like: “the one my colleague /friend was talking about” and “my friend has talked on these things”,they, then, began constructing their own discourses on the topics under discussion. Thus, participants’ understanding of the different issues raised during the interaction (in both focus groups) was deep and multifarious.

To make some observations about the formulations by connecting them with topic development and establishment, when respondents talk on ploughing their fields by inter-connecting different topics, this shows stabilizing the established indigenous knowledge of farming order of discourse, however, this does not mean that respondents are conservative and resist transformation.The majority of respondents talked about the mismatch between modern farming technology and their farming condition, for example, soil type and fertilizers do not fit in; the modern ploughshare “does not fit in with their condition of farming land.” The interactional context itself is evident that it is unfitting farming technology that diverts them to use their own knowledge. When they talk about interconnected topics of problematic situations, like type of soil and its unsuitability to use fertilizers in it, they produced negative texts and views about the agricultural development policy (the institutional) order of discourse. To make another point, during the interaction, the formulation of opinions, view points or ideas was not in away to win acceptance from other participants. It was in a way that encourages others to talk about also. This indicates that the topics presented to participants were shared and familiar to them.To put differently, the formulations have opened wide options to other participants to develop the interaction.

To conclude the analysis in this chapter, with respect to interactional control features, the control of interaction was symmetrically exercised by both the interviewer and participants.In the interactional context, when the participants utilized the control features, they were trying to establish the farming knowledge they use, to clarify their farming context, and when they carry out the major farming activities. The texts produced in the interviews and focus groups were, thus, clearly the collaborative product of the interviewer and the participants involved in the study.

4.3 Constructing Six Dominant Discourses

Based on the findings of interactional control features in the analysis above as well as the discourse analysis of the texts obtained from all the research instruments revealed the existence of six dominant discourses. These discourses were grouped together from different topics/issues presented to participants in terms of their conceptual similarity within which the discourses occur. They are as follows:

4.3. 1. Discourses of Performing Ploughing

Discourses where participants constructed to show their ideational and interpersonal meanings: being able to do ploughing, both actual and potential. The discourses included in this category were produced when the participants of personal interviews describe ploughing, sets of knowledge a farmer needs to know to do ploughing, favourite farming implement they used to perform ploughing, feelings about the farming implement, the reasons for using the traditional farming implement, how to get plough oxen, naming plough oxen and the reason(s) for giving names to oxen.

4.3. 2. Discourses of Seed and Seed Acquisition

Discourses which show participants' ideational and interpersonal meanings concerning seed.The discourses included in this category were constructed on the following discursive topics/issues: describing seed, the types of seed crops used to cultivate the major crops, describing the meaning of "best seed variety", how seed crops are acquired, what they need to know in order to select seed, identifying landraces of the main crops cultivated in the area, and participants' seed preferences: their own selection or getting hybrid seed varities (HSV)?

4.3.3. Discourses on Different Topics around Crop Cultivation Practice

These discourses refer to participants' ideational and interpersonal meanings on topics around crop cultivation practice. The discourses included in this category were constructed on the following discursive topics/issues: identifying the type of farming knowledge that helps transform farming decisions to actual practice,solving (tackling)

farming problems, giving advice to family members and others on how crop cultivation should be done, crop cultivation topics given priority when talking with other farmers in village, identifying the type of farming knowledge to be used in the future,remembering years or seasons of harvesting high crop yield and recalling back how the various activities of cultivation were done.

4.3.4. Discourses of the Self and Others

These discourses construct participants' ability and capability concerning doing various activities of crop cultivation work, and also other participants such as development agents, and other farmers. The interest here is identity as well as discursiveness in a text. The discourses construct the self as active and capable in defining the farming knowledge one has; the self as transcending temporally: going into the past, living in the present and projecting into the future in terms of improvising farming knowledge and performing activities. The discourses were obtained from the following topics: describing the types of farming knowledge the participant possesses, the extent of using one's knowledge, trust in and reliance on one's knowledge, describing a successful farmer and a feeble (weak) farmer, discourses that refer to development agents, for example, "They learned about agriculture in pen and paper," and discourses that contain personal pronouns ("I") and other types of pronouns ("They","We").

In this discourse category, I have identified other discourses obtained through the process of recontextualization. I termed them: "The Discourses of Crop Cultivation Management Technique".These discourses emerged in this way: in the interactional context analyzed above,when the participants talked about the types of farming knowledge they possess, they talked in terms of techniques for managing their cultivation practice such as crop rotation and by distinguishing between fast and slow maturing crops.

4.3. 5. Discourses of the Present State-of-Condition

These are discourses produced by participants that show the constraints, problems they encounter and existing farming contexts (situations). The discourses in these category emerged from the following discursive issues/topics: from the participatory group interviews (PGIs), the characterstic features that occur in each month and season;

whether there is transformation/change or not in the way participants perform crop cultivation as a result of the introduction of inputs from modern agricultural technology in the area, comparing crop cultivation practised at the time of the participant's grandfather and father with the crop cultivation practised by the participant himself now, and identifying the major changes that have occurred in the mode of practice, whether the discourse and language use of participants and development agents are similar or different, source of farming knowledge used presently, and development agents' feelings about participants' own knowledge of farming.

In this discourse category, I have included some discourses which were obtained as a result of the process of "recontextualization"(see Chapter 2 on: The Process of Recontextualization).They are mostly discourses that constrain crop farming practice. These include: discourse of soil types and the nature and physical lay out of the farming land (participants described three soil types found in the area); the discourse of fertilizers such as: "fertilizers (Urea and DAP) do not fit in with red, sandy soil type"; and the discourse of modern farming technology such as: "we do not have congenial modern farming technology." Most of the constraint discourses are realized by negative constructions, negative forms of adjectives such as "difficult," "impossible" "hard" and so forth, and unrealized actions (which did not happen) such as: "….could have been ploughed using my own knowledge"

4.3. 6. Discourses of Crop Cultivation Sayings

Discourse of indigenous crop cultivation knowledge has different forms. Consequently, as one of the study's purposes, various sayings (oral genres) about crop cultivation practices were collected using the participants of the interviews and focus groups. The procedure used was systematic: first, the participants were asked to share what saying (poem or proverb) they know to describe the aspect of crop cultivation activity/topic in question. When they produced the sayings, they were further asked questions such as when and where the saying is used, how they and other farmers use the sayings among themselves, and then, the reason for using the sayings (why they committed the saying to memory, and also why they say it).

Accordingly, eight sayings were produced to construct ploughing, eight about season, four about oxen, two about seed, two about a farmer, eight about a hardworking farmer, seven about a feeble farmer, two plough chants (bragging) and five general sayings (context free sayings) like: “Asking how? is our fathers’ custom”, which is important to initiate discourse; “Necessity is the mother of invention”; which is produced by a respondent on the question of the farming problems he encountered and the action he took to solve them; “The father’s crop residue field is for the son”, “Be all talk (and no action) produces nothing” (“Be all mouth produces nothing”) and “let a goat be proud of leafage”.To make an important point with regard to sayings, a saying can refer either to the ideational or interpersonal meaning as the experience of this study shows.But the analyst should show to which one he/she gives focus(All the sayings have their respective sections for detailed description and analysis later in Chapters 7, 8 and 9).

Within each of these six dominating discourses, there are also other types of discourses, but, in one way or another, they are related to the dominating discourses.For example, in the discourses of ploughing, there are the discourses of affect, when participants describe their feelings about the farming implement, their reasons for giving names to oxen, and for using the farming implement. The discourses of affect are also present in the discourses of sayings when participants state their reasons for using different sayings about crop cultivation.In the discourses of ploughing, seed and seed acquisition, there are discourses of coginition,when participants define concepts such as ploughing and seed; when they classify crops such as fast and slow maturing crops; when they set seed selection criteria; and when they identify sets of knowledge a farmer needs to know to do ploughing.

It is acknowledged that these six discourses are closely interrelated.Needless to say, they were pervading themes in all the texts produced by the research tools.It can be said that it is the complex interplay of these six discourses that make up the broader context of the practice of crop cultivation in the study area.Thus, they are the focal issues of the analysis throughout the thesis.

Chapter Five: Vocabulary: Words and Expressions in the Context of Discourse of Indigenous Knowledge of Crop Cultivation

5.1 Inroduction

For Fairclough (2003:129):"words represent some part of the world in discourse." In fact, this is true. However, in the context of this study, some vocabulary having full meaning and sense in themselves, as in names of oxen, names of components of the traditional plough implement, and expressions (as sets of words) to refer to seasonal occurrences, phenomenon, and others are found significant, and need to be explicitly analyzed and presented to readers.

In analyzing vocabulary in this study, I adapted Fairclough's (2001: 93-9) model which states the experiential, relational and expressive values of words and other figures of speech-metaphor, metonymy, etc-in the texts produced by participants of a social practice.The experiential value of words refer to the text producers' experience of the natural and social world as coded in words and expressions; the relational value of words shows relationships and social relationship coded in vocabulary; and expressive value of words means text producer's evaluation-positive or negative-of reality, their beliefs, knowledge, the natural or social world as coded in their vocabulary. The data used for the analysis are drawn upon the personal and group interviews, and focus group discussions (see Appendix II-1, pp.275-282 for PGI original data; Appendix II-2, pp.283-302 for FGD-1 original data; and Appendix II-3, pp.303-315 for FGD-2 original data).

5.2 Expressing Seasonal Occurrences, Activity Processes, Phenomenon

According to the textual data produced from the research instruments, farmers use evocative words and expressions to characterize seasonal occurrences, processes of activity and phenomenon.Participants of group interviews (PGIs) were questioned to identify the characterstic features of each month and season.Accordingly, they used very significant expressions that describe the features of some months and seasons. Based on

the data, participants' descriptions of seasonal occurrences can be considered from two perspectives: negative and positive. Let us commence from the negative discourse. Participants described the time from August to September fifteen (15) as"*yəinbut wək*t" "padding season." This expression is used to show the stage of crop development, in which the crops are in the green stage, or not ripe enough for food. This expression implies the shortage of food during the time indicated (August to September 15), mostly in the homes of weak farmers, who did not work and produce sufficient crops in the previous seasons. So, it seems that it is a cautionary expression for the feeble farmers to be alert and produce sufficient crops.

September is termed as"*t igir yəmifət rbət wər*" "problem-causing month," because, as participants pointed out, it is during this month that pests and worms that attack crops occur. In addition, April and October are described as "danger months," for the reason that dangerous birds appear and attack crops. Respondents also complained about the changes in the climate and the seasons. In January, for example, "the rains do not start as in the previous years, making spring cultivation imbalance."So, they described this situation as*"yətəzaba bəlg wək t"* "uneven spring season" of the present day.

The participants' discourse experiences October positively. Hence, this month is described as*"yəgorəmsa mət gəbiya wər"* "adolescent sated" and*"yəkəbt mədələbiya wər*" "animal fattening" month, as fresh crops, ripe or at the green stage, are in season for food. But, the elders also caution and advice farmers using their evocative discourse: "A child as of childhood, crop as of its green stage."

In October, most crops, especially the pulses, are at green stage, but eaten fresh. The saying mentioned reveals the fact that saving of crops (grains) and appropriate control and management should begin while crops are at green stage so as to tackle the food shortage of "padding season".

Respondents' discourses drawn from the personal interviews and focus groups generally describe crops in terms of temporal dimension.During focus group discussion one (FGD1), for instance, several participants recontextualised the concept of indigenous knowledge of crop cultivation by categorizing crops into two: "short maturing," which

refers to legumes crops including chickpeas, lentils, beans, peas, etc., and " long maturing," which includes stalk crops such as sorghum, maize, millet and other crops such as t□*ef*, barley, wheat and oats. The discourses of respondents attach high value to the short maturing crops. The short maturing crops (pulses) have two basic uses: one, the pulses are readily available for summer season consumption (the summer rainy season is viewed as "problem season"), and secondly, these pulses are also used as fertilizer, which the farmers term as "*makəriya*". In simple description, "*makəriya*" means "crop rotation" first, by planting any of the legumes crops and then other types of crops.The participants generally believe that the roots of legumes crops retain moisture and other useful substances in the soil. These expressions reveal participants' experience of different crops.

At focus group discussion two (FGD2), the discourse elicited was that after harvesting the legumes crops, the farmers put dung and other sweepings on the field (farm) when they plan to sow t□*ef*. In the same group discussion (FGD2), another farmer, again, constructed these crops (pulses) as "(soil) moisturizer," which is termed in Amharic as "*nisa*□". Both "*makariya*" and "nisa□," though different expressions are used in the discourse of crop cultivation to refer to the same concept (meaning), namely, apart from serving as food, the short maturing crops (legumes/pulses) are used to fertilize the soil.

Regarding seed practice, participants discourse divided it into two 1) "Government seed," and 2) "Our best seed." By the government seed, "they mean the hybrid seed variety delivered to them or distributed to them by development agents. When they say "our best seed "they refer to the seeds they themselves select save for next season planting. According to the majority of respondents, "our best seed' is "high –yield producing seed" which they select during harvest season.

5.3 Expressions of Ploughing

Texts drawn from the participants of interviews and focus groups reveal that the term "ploughing" is understood in a general sense. In its general sense, "ploughing" ("□*r*□*a")* is understood as a way of life, as a primary livelihood activity. In this sense of perception, ploughing is understood generically, comprising other practices such as knowledge of

seasons, seed saving practice, soil management (building terrains, fertilizing soil), crop protection, weeding, and so on. Ploughing is also perceived, specifically, in the sense of "tilling fields". As a node of activity in the whole process of crop cultivation, ploughing is viewed as one of the major constitutive activities farmers carry out to produce crops.

There was an interesting discourse pattern found across the corpse in this study.For example, at the interviews and focus groups, when participants answer questions, especially on topics about ploughing and seed acquisition practice, the majority of respondents began their answers inserting the expressions: "according to our knowledge, we say or we do" or "according to the farming knowledge I learned from my father/we learned from our fathers." Based on these concepts, participants used some significant expressions (terms) in their discourses to demonstrate the cycles of ploughing done, and also analogical expressions signifying special ploughings they do to cultivate *tef*.

For example, initial ploughing is termed as "October ploughing" and "April ploughing" (*"betikimt yiwegal","bemiyaziya yiwegal"*).According to participants, the term "ploughing", means "to break the soil on the surface, by making small holes in the furrow." Also, participants reported that the "October ploughing" is done for spring season planting, and the "Aprilp loughing" is for summer season planting.

Texts containing strong arguments for commencing the first ploughing in October and in April were abundant on the topic of ploughing. Accordingly, by October, as respondents reasonably argued, the land is softer, for it has retained moisture from the main rainy season (that is summer season, which begins in mid- June and runs up to mid - September). Then, during the dry season in November, December, January, it is easier for them to work on the other repeated ploughing. Similarly, by April, the field is softer as it has retained moisture from spring rain, and thus easy to do the initial ploughing termed as "April ploughing." Respondents suggested in their own words that they do October or April ploughing to moisturize the soil.

To the question on what they think of cycles of (that is, ploughing the same field reaptedly) ploughing and how they describe each type and level of ploughing; the participants have used almost similar expressions in their discourses. According to them,

amounts of ploughing means ploughing the field repeatedly or repeated passes with some time gaps (for example,after fifteen days, twenty days, or even a month). Also, cycles of ploughing depend on the type of the crop to be cultivated. Participants have every reason to do amounts of plughing. Three important reasons seem to dominate in their discourses: in order to get good harvest, to minimize weeds, and to destroy potential crop pests (worms and others).

As an illustration, consider the sample text given below. It constructs both the categories of levels of ploughing and which types of crops require what levels of ploughing.

> PI F6m "Very good. Unless a field is ploughed repeatedly, we do not harvest good yield. The amount of ploughing depends on a particular crop type. I told you that teff requires five amounts of ploughing. The reason is that as the amounts of ploughing done increases, the yield increases. Stalk crops (Sorghum and Maize) require three to four amounts of ploughing. Lentils, peas, beans, barley, wheat, haricot beans, chuckling peas need two to three amounts of ploughing. In the first ploughing, I do breaking the crusted soil. In the second, I plough the repeat passing, in the third; I turn the soil up and down. This means, the soil inside is made to be in the upper position, and the one which was in the upper or on the surface, is made to be inside. Then, I do the fourth, the fifth, even the sixth and the seven termed as making soft soil." (Appendix II-4, p.317).

This text begins stating the reason for ploughing the field again and again is to harvest good yield. It then sets out to identify three groups of crops in terms of the amounts of ploughing they need. *Tef*, for example, requires at least five amounts of ploughing, sorghum and maize require at least three to four cycles of ploughing, and short maturing crops like lentils, peas, beans, ans so on, and also wheat and barley need two to three amounts of ploughing. Furthermore, in this text, the farmer discursively constructs four different types of performing amounts of ploughing the same land.

These are breaking the crusted soil or cutting through the crusted soil, "*gamsa*," refers to the first amount of ploughing, repeat ploughing, "*ayama*" or "*dagamos*,, "refers to the second cycle of ploughing, turning the soil upside down, "*galbata*," refers to the third amount of ploughing, and making soft soil, "*malaslas*, refers to the fourth amount of ploughing, for teff cultivation, the field must be ploughed at least five times. In this case, the fifth, the sixth, even the seventh amounts of ploughing are termed as making soft soil

(there is no different terminology for it). After ploughing his field with repeated passes thus, a farmer says: "The soil is piled on layer after layer" ("*yeirshaw afer tederdere*").

These four lexical expressions breaking the crusted soil (cutting through the crusted soil), repeat ploughing, turning the soil upside down and making soft soil have ideational meaning, and show us the farmers' experiences of working on repetitive ploughing of their fields to cultivate different crops. For planting summer (season) *tef*, most farmers start ploughing by doing "April ploughing." Then, they do the other amounts of ploughing (repeat passes) to effectively show up or match with the analogy of ploughing they have in mind which they said they received from their fathers. Consider the following representative text which draws upon past discourse and its analogy about ploughing, and how ploughing should be performed in order to cultivate *tef*.

> FGD1F5m In the first week of April, we, all farmers, work on April piercing.Our aim is to cause moisture to the soil. Again, I work on the repeated and turning the soil upside down through May. In June, the moisture is already there in the soil, and I work on making soft soil. Then, I leave the field "suppressing" the moisture in it until about July 20 to 25, which are days for sowing *tef*. The t□*ef* field prepared in this way we call "a granary daubed with t□ef". After ploughing repeatedly and preparing the field in this way, our fathers used to say: "We placed the tef harvest daubing in a granary." This means they have prepared the field just like "stacks of t□*ef*." During sowing, then, the t□ef bed is ploughed, stamped with human feet, calves, cows or oxen hooves and then we plant the t□*ef*." (Appendix II-2, pp.288-289).

In this text, the discourse is about preparing fields for cultivating t□ef. The expressions□ "suppressing the moisture in it," "a gramary daubed with t□ef," and "stacks of t□ef" establish this discourse. And this discourse is highly linked with past (previous) discourse of preparing the field for cultivating t□*ef*. Moreover, the amounts of ploughing done in the fields -"suppress the moisture in the soil"- and anticipation of positive harvest of t□*ef* "a granary daubed with tef" are tightly linked. We also observe that the expression "a granary daubed with t□*ef*" recontextnlizes how the fields should be ploughed to effectively bring out good harvest that can fill up a granary.

Thus, the similarity of expressions (lexical sets) the farmers used to describe the types of cycles of ploughing their field show that the discourse of doing cycles of ploughing is a shared socio-economic practice among the farmers.

Let us turn to consider two plough chants produced at focus group discussion two (FGD 2) and by two elderly farmers at the actual time of ploughing their fields (I noted the chants during my field observation) (see Appendix II-6, pp.341-345 for the source data; and Appendix IV, pp.360-364 for its translation).

On the right he flogs, on the left he flogs,
On the right he flogs, on the left he flogs,
He never envies other framers' barns.

He feels happier and happier when clouds appear in the evening,
He feels happier and happier when June bursts out with showers.
Alas! His hands grip the handle-slade in tight-fitting.
Ha! This is Dəjəne's boss.
Ha! Megal's boss,
Ha! This is Məgal's boss:

One who tightens the fastening leather strap to the yoke,
One who uproots deeply grown weed grass,
Flog him, flog him.
Be advised master,
Let the master be advised,
It`s enough master.
One who merges the soil with the broad wooden wings,
One who merges the soil with the broad wooden wings.
One who never steps out* in other farmers' crop fields.

This plough chant tells us that the farmer has already started ploughing his field. He has held the whip and flogs the oxen in the right and left (i.e. both oxen) so that they may pull the ploughshare quickly in the furrow.

The farmer feels "happier and happier' (his happiness is on the increase) when he sees clouds in the sky in the evening," and when "June bursts out (rains) with shower'. Because he is happy (his happiness is that the tilling season is ideal=there is rain), "his grip on the handle-slade is in tight-fitting." He is pleased: "Ha!" about all around him- the soil, the oxen (Məgal and Dəjən), the ploughing implement and the wet (moist climate. And so, he "merges (mixes) the soil with the broad woodenwings".

His overall happiness led him to feel a "boss." The idea of "boss" in the sense used refers to "power over others" i.e. the oxen (Megal and Dejen), both of which are animate beings).

In the chant, there are some vocabulary items coding the experience of the farmer when performing ploughing his fields. These include: "flogs" ("on the right and on the left"- refers to the ox "on the right" and the other ox" on the left"), "merges the soil together with the broad wooden wings," "… clouds appear in the evening" (it means it would rain the next day or at night. The expression suggests the associative knowledge of the farmer) and "… when June bursts out with showers."

The vocabulary items used in the chant further tell us real time actions or on the spot actions: "flogs', "merge the soil…", qualities of a good or hard working farmer: "never envies other farmer's barns," "never steps out in other farmers' crop farms". Overall, the chant is made up of words and expressions that can arouse emotions and energy for performing the activity of ploughing a field.

The following plough chant has also a similar purpose-to assert the text producer's braveness and strength to work on hillside farms:

When doing ploughing, it is by drilling the woodenwings,
And by felling apart the hillock in the land.
One who holds counsel with his oxen
And slits open the land with the thin beam.
One who is the master of □əl□m, the fire–lighter,
The instant he pulls the plonghshare, the furrow is seen.
When the ox on the right pulls to the right,
When the ox on the left pulls to the left,
Mixing producer of sorghum and wheat.
One who is leveller of the hillocks in the land,
One who stacks grain in the wide threshing ground.

This chant is realized by well-chosen phrases such as "…felling apart the hillock…", "…slits open the land…", "…leveller of the hillocks…", and "…holds counsel with his oxen…" to recontextualize the text producer's actions of performing ploughing.

5.4 Inventry of the Farming Implement

At the individual interviews, each participant was asked to tell his faviourite farming implement he uses to plough his fields.Accordingly,across all the participants, the common discourse was "*mofər*", " k□*ənbər", and "alənga":* "the beam", "the yoke", and "the whip" (see Appendix II-4, p.351 for the source text). Each of them were further asked to identify all the parts and names of the ploughing implement (strict inclusion), the use of the parts (function), and the position the parts occupy in the beam and in the yoke (spatial). Thus, participants identified twelve parts (components) and their names of the ploughing implement. These are presented below in Table 1.

Domain:"*mofər*"- the beam. It is a long, naturally curved wood which is joined to the yoke used in ploughing the farming land.

Table 1: The Components and Functions of the Beam and the Yoke

No	Name in Amharic	English version	Position in the beam	Function
1	□*rf*	Handle-slade	A long, moderately thiek wooden staff, inserted through a hole in the curved part of the beam downwards.	It holds on the ploughshare and used as a handle.
2	*marə□a*	Ploughshare	A metal, broad and sharp with a hollow handle which lets the handle-slade insert to it.	It is the main tool to cut into the soil.
3	*d□ger*	Wooden wings	Two broad, smooth wooden wings, placed side by side down the	These support the hardle-slade and the plough-share. They are not part of the slade.

			curved part of the beam.	
4	*wəgəl*	Rirg with hook	Made of iron, having ring with hook, placed down the curved part of the beam.	Used as the leg of the plough-share by being fixed to the curved part of the beam.
5	*mərgət*□	Leather strap	A long strap made of leather, placed in the curved part of the beam.	Used to tie the ring with hook with the lower part of the beam curved part of the beam.
6	*k*□□*t*□□ *rt*	Pin	A wooden pin inserted to the tip of the curved part of the beam.	Used to fix the wooden wings the ploughshare and the curved part of the beam.
7	*m*□*ran*	Fastening leather	A strip of leather fixed into the hole in the tip of the beam.	Joins the beam to the yoke.

Domain:"k□*ənbər"*- the yoke. It is a long round smoothly forged wood that is fastened across the napes of the oxen so that they can pull the beam.

No	Local/Amharic name	English name	Position in the beam	Function
8	*manək*□o	Tightening sticks	Four short sticks, two inserted in the left holes; and two inserted in the right holes of the yoke.	To keep/control the oxen in place.
9	*məwad*□*o*	Insulting leather	Leather made insulator tucked around the parts of the yoke where the nape of	To avoid abrasions on the nape of the oxen by friction as

			the oxen rests.	the oxen pull the ploughshare.

Other Domain: The Whip and whipstick

No	Local/Amharic name	English name	Function
10	*ələnga*	Whip	Leather or rope made in coils used to drive the oxen.
11	*ələnga □nts□*ət	Whip stick	A medium sized stick forged out in one of its tip parts where the whip is tied to, and used as a handle.

Table 1 shows the names (in Amharic and English) of each part of the beam and the yoke, where they are fixed (the positions the parts take in the beam and in the yoke) and their functions.As to the farmers, these parts of the ploughing implement should be in the possession of a good farmer; the parts fixed in their appropriate places (in the beam and the yoke) to perform the amounts of ploughing adequately to cultivate crops.

Another related point is that a team of oxen is considered the main part of the farming implement. Oxen are bred at home or purchased. There are various sayings about the ox such as “the ox is our dining bowel.” These will be discussed later in the thesis.

A genuine farmer, according to the farmers, is one who prepares the beam and the yoke, with all the components, and should be self-reliant in his own farming implements. In fact, preparing each part requires knowledge and skill, which is one of the constitutive knowledge for doing ploughing. For example, drilling holes both in the beam and in the

yoke for fitting in the other components requires skill. One of the participants complained saying:

> PIF1m "A farmer must have knowledge of the beam, the yoke and his oxen.In this village, out of the many farmers; you get only one who can dril holes in the beam and in the yoke. But, my father taught me how to cut drill holes in the beam and in the yoke. Now, what resents me bitterly is that they come and put me in trouble, saying: 'please, dril holes in my beam and in the yoke.' I never ask them even for a single coin."(Appendix II-4, p.318)

It seems that some farmers, who do not know how to drill holes in the beam and in the yoke, get help from those who can drill holes in the beam and in the yoke. However, the majority of the farmers depend on a *wagesa,* who drills the required holes in the beam and in the yoke through payment (In Hitecha, a skilled person who prepares and forges the ploughshare and the ring with hook, who drills holes in the beam and in the yoke is termed as *wagesa*).

According to paticipants' information, experineced farmers have two types of the wooden wings ("*dagar*"): the broad and the small/ narrow one. They use the narrow wooden wings to do the first type of ploughing but they use the broad wooden wings for preparing canal ("*boy* and to do the second type of ploughing ("*ayama*.)

Also, participants have very strong feelings about their farming implement.Let us consider some of the texts participants of individual interviews constructed on the question of the feeling they have about their farming implement (see Appendix II-4, pp.319-320 for the source data):

"It means my hand."
"Oh, my Allah! I love it! It is our stomach, it is our □*nd*□*əra*.
Even the government loves it."
"I consider it as my first born child."
"I get hold of the handleslade with a happy smile."
"Were my beam to break, I feel as if one of my children died."
"I look at them like a tractor."
"It is food to the family and myself."
"I consider it like my soul."
"I handle my plough implement carefully just like my eyes."

As can be observed, these texts represent different ways of expressing feelings about the same thing: the farming implement.Again, these feeling tones (these strong voices of the farmers) show that the farmers have to make do with the traditional (indigenous) farming implement. Any of these texts, however, do not imply lack of receptivity to change by using other types of ploughing implements, for example, tractors.

To sum up, the words and phrases used to nominate the parts of the traditional ploughing implement show: (1) indigenous nomination of the parts of the ploughing implement, and (2) the materials used to design the implement such as tough wood, leather and iron. It can be safely said that these show the underlying knowledge of the farmers, at the conceptual level, and their conceptions of the farming implement that fit, in terms of their own context, to carry out the activity of ploughing their fields.Participants' commitment (in terms of feeling) to their farming implement is, also, very high. Thus, the words used to name the different parts of the farming implement are indigenous terms and construct the discourse about indigenous knowledge of the ploughing implement.

5.5 Naming Oxen

Oxen are termed as the "engine of the beam or the ploughshare" as the engine of a tractor is used to move the broadblade." Additionally, at the personal interviews, participants constructed oxen as "human beings" and so as "active listeners of instruction, they don't speak, though." The interviews showed that all the participants named their oxen. Let us consider representative texts (see Appendix II-4, p.317 for the source texts):

> "To make them obey to my instructions (orders), for example, to "go up; come down; by addressing them by their names when we work on ploughing."
> "When you call your oxen by their names, they become happy."
> "Unless you call them by their names, they do not obey to your instructions."
> "We also feel happy when we call them by their names."
> "In order to identify, manage and control them during ploughing."

Apart from other minor reasons, these texts show one strong, common reason for naming oxen: to control them when working on ploughing.

Consider the following sample text which states the need to name oxen and the criteria used to name them:

> PIF5M "I named my oxen *gare*, *ganbar*, *cagu getu*. We give names to our oxen using their colour body build, behavior, the labour they put into ploughing or just like peoples' names. Our oxen must have names. If one of the oxen stucks out towards the down position, I call him by name and get him straight. I say: d□ənbər go up; go up." When I say:" come! *get*□u ascend, he goes up in the furrow. But if simply I say: 'Go up! Go up! Up you go! They do not know who is ordered to do the action." (Appendix II-4, p.321)

This text reveals that a farmer names his oxen based on some observable or concrete (tangible) evidence or signposts. When asked how a farmer names his oxen, all the sixteen (16) respondents (as in F5m in the above text) named their oxen on the basis of colour, performance and skill, body build, relating the oxen to good or positive fortune, for example, season of high crop yield, the farmer may get additional farm fields, or just like people's names. Shape and size of horns was also in the respondents' discourse as a signpost to name oxen, although this was not identified in the data. Thus, naming oxen is one of the social practices of the farmers. The data on how respondents named their oxen are discussed below. The main thrust here is how the farmers create the words and the choice of these words to name their oxen, and of language forms, proper nouns are basic here.

5.5.1 Names given based on colour:

Amharic name	*məgal*	t□□*agu*	*gurez*	*wəyno*	*məsk*□əl	*nə*□*əl*	*d*□*ənbər*	*sorət* or *kuli*	*fənza*
English version	red coloured on both flanks	grey	black and white coloured	wine	the cross	white coloured on one or both flanks	the sun	red coloured	the tail is white, the rest black or red

5.5.2 Names given based on body build and strength:

Amharic name	*d*□*əbo*	*Deb*	*nəbero*	k□*əm*□*s*	*go*□*u*
English version	the hyena	the bear	the tiger	dress	the buffalo

5.4.3 Names given based on good fortune, time of high harvest or just like people's names:

Amharic name	*səndəwo*	*kasa* or *kasse*	*məadu*	□*ələm*	*məlku*	*mola*	□umət
English version	the wheat	reward	the meal	prize□ giving	his look	full	promotion

5.5.4 Names given on the basis of labour or performance

Amharic name	*tagəl*	*fana*	*dəme*
English version	struggle	torch	my blood

5.5.5 Names given on the basis of conduct or behavior of the ox:

Amharic name	*gəre*	*mənor*
English version	good-naturd	Living

5.5.6 Names given on the basis of skill (quick or swift):

Amharic name	*nəbero*	*d□əbo*
English version	Tiger	the hyena

The data on the above presentation show that participants used the idea of association to name their oxen. For this, their choice of words and concepts can be evidences. Strength of oxen, for example, is associated with some wild animals like hyena, tiger and bear.

The good behavior of the ox is associated with the abstract goodness such as good natured and generous. We can observe the system of association in all the six signposts farmers mark to name their oxen. Furthermore, the associations seem optimistically oriented to positive and effective upshot of the activity of ploughling.

We learn many important ideas from the words related to naming oxen. Among others, naming oxen is important for facilitating the tedious activity of slope and hillside ploughing. To add another point, the desire to control and mange difficulty through giving identity stand out in the texts. The naming process further shows the problem solving strategy of farmers regarding performing hillside ploughing. In another aspect, the signposts farmers' use (as criteria) to give names to their oxen show their highly developed concepts and discourses related to indigenous knowledge. The naming process is based on observable and tangible thing, for example, colour, or something associated with the ox, for example, the ox may have caused to bring something good, and not predicted.

In addition to giving names to oxen, participants also described their oxen by means of sayings. Consider some of the sayings participants at the interviews produced to the question of how they describe their oxen (see Appendix II-6, p.339-343 for the source data)

1) "The ox is our bowl".

The saying above is constructed in declarative statement, and "the ox" is the theme of this declarative statement.The saying is a metaphor; the "ox" is symbolized by a "bowl", or given the quality of a bowl. In order to knead dough, we must have the crop, and then we must change the grain to milled flour. But, the main thing is to get the crop; the grain. It is because of ox, it is the shoulder of oxen that produces the grain or crop. In sum, the saying suggests that without the ox, we do not have food crop.

2) "It is queer an ox and a farmer ever quarrel,
But the ox passes through freely and gets into the yoke."

The general message of this saying is that a farmer and an ox (the more accurate expression is a team of oxen) are "hand in glove" they are intimate and work in

cooperation without any disagreement.Like “the ox is our bowl,” the following saying foregrounds the value of oxen:

3) “He who has no ox in April and May,
His wife has no t□ef for milled flour or straw to the home.”

As it was discussed throughout this thesis, April and May are important months for working on ploughing for summer season planting of *tef*. Farmers begin the first breaking of the soil in April. And ploughing without an ox is unimaginable. So, it is because of oxen that *tef* is produced to process □*nd*□*əra*, and straw is obtained for different purposes at home.

Participants also described associative meaning using the idea of oxen. Consider the following saying:

4) “You, oxen, back one another,
Man is envious, the season is evil.”

In general, oxen work in a team. The second person pronoun “you” in the saying is used to address (bequeath) responsibility to the oxen to back one another while working in the field. The reason for this responsibility emanates from two problems that the text producer experiences: “man is envious”, which foregrounds iniquitous behavior (such as lack of reason and morality in the environment), and “the season is evil”, which depicts negative experience of farming season, as one of the participants in the PGI put it: “uneven spring season.” It seems, then, that the saying is used to suggest: “oxen if you work together, if you follow my instruction, if you go straight in the furrow as a team while pulling the beam, we can together (you and I) challenge the two problems.”

5.6 Metaphors and other Figuarative Expressions

In the texts produced from the interviews and focus groups, the majority of participants used metaphors and other lexical forms of discourses. Respondents often commented on some farming technologies they were urged to apply in their crop cultivation practice, but which they found unfitting using the expression “the so-called.” For example, “the so-

called experts," "the so-called technogy" (even they did not produce the word "technology" correctly) and the so-called modern improved ploughshare." During focus group discussion two (FGD2), one respondent emphatically said: "…….because of the so –called agricultural experts, we are to pass the night without dinner." In the context of text construction used, the expression "so-called" seems to be ideologically motivated to qualify that the thing or entity before it is not considered real, amiable or fact. In other words, "so-called" is used to show negative expressive value of development agents and technology.

Some respondents (in the interviews) used words in the form of the feminine gender.They used, for example, " she- soil" to refer to the soil, "she-field" to refer to the fields, and the "she–beam" to refer to the beam. During the individual interviews, for instance, a respondent (OTOI F6M) said: "it is the she-beam that produces crop." The "she-beam" in Amharic is "mofəritu". It seems that farmers liken the soil, the field and the beam to a feminine gender to state the size and also to show (reveal) their feelings of closeness and affection to these things (the soil, the field, and the beam) they talked about.

Metaphor, according to Fairclough (2001: 99), is a means of representing one aspect of experience in terms of another. In the individual interviews, respondents used metaphors abundantly in their discourses. When asked how they feel about their farm implement, respondents answered: "It means my hand", "It means our stomach", and "I look at them like a tractor "(This one is, in fact, a similie). Let us consider the following sample text produced to answer the question about what the participant feels about his farming implement:

> PIF3m "This one, the wooden wings, "*degar*," Oh my Allah! I love it! It is our stomach it is our "□*nd*□*əra*"; it is useful to upbring my children.It is useful to sustain my family and myself. Even the government himself loves it; the government takes care of it. I also love it."(Appendix II-4, p.320)

In this text,the participant dominantly used metaphors to construct his feelings about his farming implement.He talks about the wooden wings, "deger" one part of the beam, and in general about the farming implement by relating it to "our stomach," "our □nd□əra", "up bring my children", and "even the government himself loves it."

With other topics, for example, stating indigenous knowledge of crop cultivation, answers using a metaphor include "It is a farmer's and his family mouths to feed." When stating ploughig, "life assurance, life, *ndəra*"; about oxen; "oxen are the engine of ploughing," and "the ox is our dinig bowel." In these examples, respondents used metaphors to deepen their feelings about indigenous knowledge, ploughing and oxen.

Furthermore, a number of different metaphors were used to construct the various sayings (poems, proverbs, plough chants) related to crop cultivation practice. In the individual interviews, respondents constructed a hardworking farmer in this manner "unless a farmer pokes poverty by strong oxen…. ", "To defeat penury, to fill up his granary…. ", and "The farmer is lion …." In these bits of texts, we find metaphors like:"pokes poverty", "defeat penury" and "farmer is lion" revealing the qualities, behaviour and experience of a hardworking farmer.

At the participatory group interview (PGIs), one of the questions they were asked was how they describe months (seasons). The following text was produced to answer the question posed to them:

> "September is hill,
> October is slope,
> November is abundance,
> Where has she been living till now?" (Appendix II-1, p.279)

In this text, "September" is compared to a "hill," "October is compared to a "slope," and "November" is compared to "abundance." Except in November, in the first two months, there is the experience of a problem, but the problem minimizes as one descends from the "hill" to the "slope" then to the "abundance." The saying appears to reveal shortage of food grain during (recall the analysis on" padding season") September and October and the "abundance" in November, because it is harvest season.

As the producer of this text explained, the word "she" in the last line of the text: "where has she been living till now?" does not denote any female figure, but it stands for a weak (lazy) farmer. The use of the word "she" is, thus, ironic.By giving a feminine quality to the weak farmer (but save gender biase here), the text wonders how "she" has gone through the problems of shortage of food grain in September and October.

Aside from metaphors, similes are also used to construct the texts respondents produced by directly comparing two activities or situations. On the topic of the importance of ploughing, a respondent, for example, recited a poem which signifies that what so ever the nature of the farm fields (as most farmers plough hillsides and slopes), producing crops should be a must, because in the market buying food grain is expensive: "….like caterpillars bounds are poured into it" (people (farmers) in rural areas use Bound (probably in the sense of pound?) to mean Eth 10 Birr note. Bounds are plural).

During the personal interviews, when participants were asked about the availability of the indigenous seed varieties, ten respondents identified three indigenous varieties of the white t□*ef*: *k□re*, *asnak□*e and k□*əzəz*. The respondents used metonymy when they talked about these indigenous varieties of t□*ef* as in the following extracts: "…you can get *k□re* and *asnak□*e easily in the market or from colleagues," "k□*əzəz* is rare these days. You can find it only in very few, successful farmers," and "*k□re* and *asnak□*e are available in our area." These texts depict that the three indigenous varieties of white t□*ef-k□re*, *asnak□*e and k□əzəz are pervasive in the area (as can be observed, in these texts, these three names are used as a theme or topic of the texts).The metonymic use of the names of the indigenous t□*ef* varieties in discourse shows the discursive practice-in the sense of text production, distribution and consumption-of these varieties of t□*ef* among the farmers.

To sum up, as dimensions of language, nouns and adjectives in single and as a set of expressions of various kinds have enormous function for the farmers to construct meanings in the complex situations of crop farming practices. Meaning construction is displayed when the farmers used words and expressions to describe seasonal occurrences, farming activities such as cycles of ploughing; to give names to their oxen; and to name the parts of their traditional farming implement. Besides, they used metaphors and metonomy to construct different kinds of sayings to recontextualize (construct) their activites and to structure their experiences as farmers.

Chapter Six: The Recontextualization of Two Crop Cultivation Activities and Related Topics

6.1 Introduction

In this chapter, the description focuses on the grammatical construction of the texts generated by the recontextualizing activities or research instruments (interviews and focus groups). In particular, the main focus is upon the ideational, interpersonal, textual and attitudinal functions and meanings of language as constructed in the texts that refer to ploughing fields, seed acquisition practice, and some discursive topics around crop cultivation activities. Recontextualizations of experiences, relationships, and attitudinal meanings relating to two specific crop farming activities, and some discursive topics surrounding the practice of crop cultivation are ubiquetous at all levels of text production in this study. In Chapter 5, for example, names of oxen, names of levels of ploughing, seasonal occurrences, etc. were recontextualized by means of vocabulary (words, expressions, etc.).Here also, the analysis begins by highlighting recontextualization using concrete examples.

6.2 Recontextualization

A text is produced in a discursive event, an event which is an instance of language use (Fairclough, 1992).In this respect, recontextulization is one of the most important processes of text production.In order to illustrate the concept of recontextualization, consider some of the texts participants of the interviews and focus groups produced to the question of identifying the types of crop cultivation knowledge they possess:

PIF6m "Farming knowledge that I got from my mind." (Appendix II-4, p.322)

PIF8m: "The knowledge I use when I do crop cultivation."(Appendix II-4, p.322)

PIF16m: "It is farming knowledge I learned from the country, my father and my grand-father. Now, we prepare the beam and the yoke from good wood type. This is the type of farming knowledge I have."(Appendix II-4, p.323)

FGD1F3m: "Plolughing itself needs knowledge and has its own knowledge. We work on breaking the soil, repeat passing, turning the soil upside down, and making soft soil.These activities need knowledge.We work on different farming activities: sowing, weeding.All farming activities have season." (Appendix II-2, p.287)

FGD2F1m: "If we plan to grow t'ef, we plough the land five, six or seven times. Then, we harvest good t'ef." (Appendix II-3, p.288)

FGD2F6m: "Farming knowledge that our forefathers were using and which is stepped up to us." (Appendix II-3, p.288)

Some of the above texts have recontextualized the type of crop cultivation knowledge the participants possess in terms of specific meaning. In the texts of PIF16, FGD1F3 and FGD2F1, for example, we have specific activities such as: "we prepare the beam and the yoke from good wood type", and identification of different levels of ploughing land: "breaking the soil "(which means the first ploughing"), "repeat pass," "turning the soil upside down "; "sowing","weeding" and "ploughing the land five, six or seven times." The rest of the texts (the other texts) have very general meaning; consider the texts constructed by: PIF6, PIF8 and FGD2F6. Thus, these participants talked about or recontextualized indigenous knowledge of crop cultivation. In other words, the respondents constructed discourses about what they perceive or what they have in their heads about indigenous knowledge of farming.

As regards to the three metafunctions of language (ideational, interpersonal, and textual), a crucial point can be raised. Fairclough (1992:76) has noted that every clause is multifunctional, because it is a combination of ideational, interpersonal and textual meanings.When examined from this perspective, all the texts produced on the topics or activities presented to participants, in this study, are a combination of ideational, interpersonal and textual metafunctions. However, in the sections that follow, the analysis is presented by grouping crop cultivation activities in terms of ideational, interpersonal and textual metafunctions of language (transitivity, modality, textual and linguistic resources relating to appraisal system) for the purpose of focusing on meaning constructed by single/particular metafunctions.

6. 3 Constructing Two Farming Activities and Related Topics (Ideational Meaning)

The practice of crop cultivation can be highly assumed as the product of the interaction between the "outer experiences"-the actions of the farmer, in terms of his "doing" or "acting" to happen the process-and "inner experience", the world of his consciousness as reflected in his thoughts, feelings, perceptions, decisions, emotions, knowledge and imaginations.This process represents participants' ideational meaning of crop cultivation practice.

In systemic functional linguistics (SFL), the ideational (experiential) meanings and function of language is realized by transitivity system. In the context of this study, ideational meaning means farmers' recontextualizations of the ways they enact ploughing, acquiring seed, and talk about some discursive topics around crop farming. The dimension of meaning brought about by transitivity system is central to the analysis of farmers' recontextualizations of the ways they carry out these farming activities, for it allows us to ask questions about who is acting, and what kinds of action they undertake.

In this section, the motivation for analyzing transitivity is to work out what knowledge, belief, or ideology determines how a process is signified in the discourses and texts when the research participants constructed ploughing their farms, getting seed crops, and discursive topics surrounding crop farming practices. In particular, the description (and the analysis) focuses on the process types and participants, choices made in voice (active or passive); and from the dimension of Symbolic Interactionism (SI), "agency", which is the major concern, and participants "meaning construction/making" are focal points of the analysis.

The data used for the description and the analysis are drawn from the individual interviews and focus groups relating to the Dominant Discourses Category: Discourses about Performing Ploughing, Discourses about Seed and Seed Acquisition and Discourses on Topics around Crop Cultivation Practice.

The ideational meaning of farming activities is partitioned into two categories for ease of analysis: 1) constructing ploughing and seed acquisition (that is, the specific activities), and 2) constructing discursive activities surrounding crop cultivation (that is, discursive topics connected to crop cultivation).

6.3.1 Constructing Ploughing and Seed Acquisition

At the personal interviews, one of the questions posed to participants related to the activity of ploughing was what repeat ploughing means, the necessity of performing repeat ploughing and whether all crops require similar levels of ploughing.To these questions, most participants provided the following type of answers (see Appendix II-4, pp.317-318):

PIF2m: "Unless I plough my field repeatedly, I do not get good yield. From the many years of ploughing experience, I understand that ploughing repeatedly makes the soil fertile; it is to cause the soil maintain moisture inside it.This is called "moisture absorption".

PIF6m: "First of all, what I do is I prepare my farming implements and the oxen. --- I start the first ploughing in April. I plough five to six times to cultivate t□*ef*".

PIF12m: "--- I start the first ploughing in October for spring season cultivation. When I want to cultivate t□*ef* in summer season, I begin the first ploughing in April."

PIF13m: "--- Sure. I plough my fields many times. I know which crops require how many cycles of ploughing. t□*ef* needs at least five cycles of ploughing. First, I work on the first ploughing. After some days, I work on the second cycle of ploughing: repeat ploughing. Then, I turn the soil upside down. I also plough to make the soft soil".

A close scrutiny of these texts shows that they have a common clause structure (pattern) which can be labeled as□ Actor + Process + Goal. In each text, for example, "I" is the Actor. As to the processes markers, we can identify: "plough," "prepare," "start," "want," "work on," "begin and "turn." These are material processes clauses showing action. There are also two mental processes□ "understand" in F2, and "know "in F13 texts. Here, the participants are "senser" and "phenomenon". Thus, the processes of working on levels of ploughing are material and mental.

As Fairclough (1992) explains, directed action realized as a transitive construction (Subject/Actor-Verb/Process-Object/Goal) identifies an agent acting upon a goal. Thus, the text producers constructed levels of ploughing by means of transitive construction. The choice of transitive construction, which is also in the active form, signifies goal driven action, using the local knowledge, because, directed action and knowledge go

simultaneously, and participants as accountable agents of carrying out the necessary levels of ploughing in order to produce crops. So, in the texts, agency, causality and responsibility, which are indespensible fators for meaning construction, are made explicit.

Similar constructions can also be observed in other activities related to ploughing. Consider the following texts given by respondents on a range of constituent knowledge related to the activity of ploughing (see Appendix II-4, pp.315-333 for the original data):

PIF1m "I called them *get□u, s□ndew* and *məgal*."
PIF3m "I give names to my oxen to make them happy."
PIF9m "I breed my oxen at home."
PIF5m "First, I do the first amount of ploughing, which we call "breaking the soil."
PIF6m "In the third, I turn the soil up and down."
PIF7m "In the fourth, we make soft soil."
PIF15m "I use the farming implement to plough my land and produce crops."
PIF16m "I fix the farming implements together and yoke the oxen to the beam, and after that I plough my fields."

By focusing on their actions (consider the subjects in each clause), the text producers (farmers) have presented the activities related to ploughing such as namig oxen, breeding oxen, doing cycles of ploughing and using the farming implements as dynamic and active. Thus far the description was about the activity of ploughing. Let us now move to participants' seed acquisition practice.

For the majority of participants, without seed there is no crop production. For crop production, however, according to them, seed should be "the best seed variety." When asked what they mean by "the best seed variety," almost all the respondents answered: "The seed I/We select from the crops during harvest season." In addition, for the majority of respondents, seed preference is most often associated with high yield, sustainable use and low external input, which in other words means the majority of respondents use" the best seed variety" to cultivate their major crops.

Let us now turn to consider participants' experiential meaning of the process of "the best seed variety" acquisition practice. At the one-to-one interviews, the participants were asked what they (need to know) in order to select their best seed variety. Respondents looked for three basic selection criteria: 1) the colour: "by looking carefully at the ears, it should have the right shade of cololur." 2) "the appearance of the grain should be healthy: free from any fungus and pest attack." 3) the size: "the appearance of the stalk should be big and the grain should be fat and healthy." In the case of t□*ef*, they selected the entire earheads as seeds for crops. The texts the respondents constructed commonly begin with: "I/We look for/at---- "and then, these three criteria are tagged onto them.

Consider the following two examples extracted from the interviews:

PIF4m "We select the superior quality seed during harvest season. We select seed by looking at the superior crops which are not mixed with tares or other residues. Before sowing, we sieve the seeds appropriately to have neat seed." (Appendix II-4, p.319)

PIF9m: "I use the best seed variety by selecting from the crops in the field; it can be seed teff, seed wheat, seed barley-all types of crop seeds.The way I get seed crops is that during harvest season, I select the best seed crop.I also take from Agriculture Office.There are seeds that technology has created. But, throughout my farming experience, I select and save my own seed crops. The seeds the Agriculture office distributes for us need to change every season; they are not the same as the indigenous seeds. The yield is good, but they need a lot of fertilizers." (Appendix II-4, p.319-320)

These two example texts show that the text producers are the agents of selecting the indigenous seed crops to cultivate the major crops. Most of the texts produced to answer the questions on what participants look for in order to select the best seed variety and the type of seed they use to cultivate their major crops are akin to the two example texts shown above. Focusing on participants' seed acquisition practice, if we consider these two texts, the core clauses in texts F4m and F9m appear to be: Subject +Verb (select) +Goal (seed crop).

F4 "We select the superior quality seed during harvest season."
F9 "I select and save my own seed crops."

The use of “we” in F4 text seems to imply “inclusion,” that is, the text producer is referring to other farmers, and can be interpreted as selecting the potentially good yield producing seed is a shared and social practice among the farmers in the area. Another feature of the texts is that in both of them, the practice of seed selection is actively constructed by means of transitivity.Participants’ choice of transitive construction means that they are responsible agents themselves in acquiring the best seed variety.This is evidenced from their talk to recontextualize their actions and experience.

During my field observation in harvesting season, I observed four farmers mowing t’ef together.I documented what I observed in my fieldnote.

> The four of them were doing the mowing in two ways: more of the time, they mowed the te’f and placed on ground.At times; they looked at the te’f crop carefully, mowed it, tied and placed it separately.Later, when the farmers took a mini-break, I joined them and asked why they mowed the te’f in two ways.They replied:”When we mow and tie and place the te’f separately, it is te’f seed for the next planting season.”

Having considered the aspect of participants’ seed acquisition practice, let us turn to examine the discourses of crop cultivation sayings related to seed. First, and in general terms, the discourses of sayings about crop cultivation were found to be significant in that when participants do or construct farming activities and farming related topics/issues, the majority participants inserted relevant sayings in their texts related to ideational, interpersonal and attitudinal (appraisals) meanings. Thus, the majority of the participants have good knowledge of sayings to describe ploughing, seed and seed acquisition, and different topics surrounding farming activities as the “what” question produced. It is argued here that awareness of what, how; when and why farming sayings (proverbs, poems) are used or said involves ability and coginition of practices.

At the individual interviews, participants were asked to state what sayings they know to describe seed. This question generated three sayings. Let us consider them one by one.

One of the most frequently mentioned saying (almost all participants used the saying to describe seed) was:

1. “Seed is bartered for flour.” (Appendix II-6, p.341)

A closer examination of the saying shows that it is a combination of ideational, inter-personal and textual function of language. In terms of ideational meaning, the saying is in passive transitive construction, but the saying itself speaks that this is done deliberately to focus on “seed.” It also shows a process: “bartered.” In terms of interpersonal meaning, the saying is declarative, and shows that the text producer has close affinity with the proposition of exchanging seed, most likely, with other farmers. In terms of textual meaning, “seed” is the theme of the saying, making the ideas in: “seed is bartered” significant.

According to respondents, the saying means that “the best seed variety is comparable to any valuable thing found in the area (village) or in farmers’ houses.” And above all, whether in the village, or in farmers’ houses, there are indigenous seeds of different crops: *t’ef*, sorghum, chickpeas, and so on, making bartering easy enough.

Participants remarked that the indigenous seeds have existed with them because: “we say: “seed is bartered for floor.” In focus group one, a participant produced a text which signifies that “seed is bartered for flour” is a social practice. Let us consider it:

> FGD1F3m “----So, those farmers who selected and saved the white t’eff variety exchange with those farmers who have selected and saved the red t’eff.Nobody says: ‘No, I do not give, sell or barter it to you.’ We learned this from our fathers who said: “seed is bartered for flour.”
>
> (Appendix II-2, p.286)

As we have observed, a farmer is expected to select his own seed crop during harvest season, and most farmers do. But, there are also a few who do not do this. In such a context and when the target subjects show up, other farmers pointing towards them say: “During sowing season, a lazy farmer says: ‘the seed is finished off.’” In the context used, this saying seems an indigenous way of alerting a lazy farmer to select his own enough seed crop in the future.

There is also another saying, in the form of a poem, which refers to a lazy farmer and his household (wife). Let us examine the saying: