

LOCAL AGRICULTURAL KNOWLEDGE CONSTRUCTION AMONG THE GIRIAMA
PEOPLE OF RURAL COASTAL KENYA

by

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(Under the Direction of Sharan Merriam)

ABSTRACT

The purpose of this study was to understand how local agricultural knowledge is constructed and disseminated in a rural community in coastal Kenya among the Giriama ethnic group. Local agricultural knowledge was of special interest as it is vital to life in rural Giriama communities. The research questions that guided this study were:

1. In this community, what factors shape the process of local agricultural knowledge construction?
2. In this community, how do adults learn local agricultural knowledge?

In order to provide an in-depth and focused perspective on this process, a qualitative case study research design was selected. Data were collected in Kenya during a five-month residence. Field observations, interviews, and examination of artifacts constituted the data set. Data were analyzed using the constant comparative method.

This inductive analysis process revealed that local agricultural knowledge was shaped first by the modernizing influences of individualization, government agricultural practices, school attendance, and the increased monetization of life. In addition to modernizing influences, evolving gender roles, time and energy constraints, and access to knowledge also shaped local

knowledge. It was also found that local agricultural knowledge was learned through observation, trial and error, social interaction, conferring with respected people, and oral literature.

These findings prompted four conclusions: (1) modernization was a pervasive force that shapes the construction of local knowledge, (2) that local knowledge construction is strongly shaped by gender, (3) that local agricultural knowledge construction was an informal process, and (4) that ensuring community survival was the principal motivation influencing the construction of local knowledge.

Implications for practice drawn from these conclusions are that adult educators must consider gender as they plan and implement interventions and that interventions that utilize and build on informal methods are likely to be most effective. Finally, it was suggested that future research should more fully document and understand the educative function of oral literature and that additional research to understand the impact of age on local knowledge construction should be pursued.

INDEX WORDS: Indigenous knowledge, Local knowledge, Knowledge construction, Informal education, Adult education in Africa, Rural development, Agricultural development, Kenya, Malindi, Marafa, Giriama, Giryama, Mijikenda

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DEDICATION

I dedicate this dissertation to my parents, George and Lahoma Beckloff, who throughout my life have supported me, shared their wisdom and values with me, and passed on much common sense. I cannot imagine trying to navigate life without these precious gifts.

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CHAPTER 1

INTRODUCTION

It is always the same, when I plant in straight lines, if there are mice, they start eating at one end and move on swiftly straight down the line, and I quickly lose the whole crop. I always replant randomly because there is a greater chance that less seeds will be found by the mice this way. (Silas Katana, farmer in Kilifi District, Kenya quoted in Porter, Allen, & Thompson, 1991, p. 195)

This innocuous sounding statement by a farmer in Kenya is in reality an expression of a conflict being fought on the continent of Africa. This farmer planted in straight lines after being shown the new technique as part of a development project directed by Australian agriculturalists. When this imported Western knowledge failed he quickly reverted to the method of planting used in his area by generations of successful farmers in his Giriama ethnic group. Several years ago when I, an American, lived in this area and initiated a small-scale agricultural project, I taught Giriama farmers the same practice as my Australian predecessors. I relished my success as some farmers did as I taught and wondered at the obstinacy of those farmers who clung to their traditional practices. I spent little time questioning why my knowledge, Western knowledge, should take precedence over the knowledge that Giriama farmers had accumulated in this unique context and passed down over numerous generations.

Western Hegemony

The reality is that Africa and the West have long been in conflict in many arenas and knowledge is one of the contested issues. The West and Africa have fundamentally different

views of reality and different approaches to constructing knowledge (Fatnowna & Pickett, 2002). This has generated epistemological conflict in which the West is perceived as “developed” and successful and Africa as the poor underdeveloped continent that the West must save.

This assumed superiority has a long history but was never more obvious or damaging than during the African slave trading and colonial eras of history. In “Christian” Europe the belief that Africans were lesser beings and needed to be saved eased the introduction of the oppression that was to be inflicted. In describing this frame of mind Fanon (2004) describes the colonist as one who “is not content with stating that the colonized world has lost its values or worse never possessed any. The ‘native’ is declared impervious to ethics, representing not only the absence of values but also the negation of values” (p. 6). Guided by such sentiments Europeans dubbed the continent the “dark” continent and saw it as their duty to save Africans from themselves (Fanon, 2004; Nsamenang, 2004; Semali, 1999).

Convinced of their superiority, Europeans were blind to the rich African cultures that they sought to replace with their Western culture. As an example of such blindness Ocitti (1994) offers the following quote from H. J. Baker’s 1913 publication titled *Children of Rhodesia*:

The children of this land (Rhodesia) are nonentities. Nothing at all is done for them. They feed, sit about, and sleep and in this manner they grow until the time comes for themselves to do something ... they have no nurseries, no tea parties, no birthdays, and *no instruction* [Ocitti’s emphasis] from their parents. They are there, and that is all. Their lives are one big nothing. (p. 14)

Apparently, because the children Baker observed were not having tea parties he judged that they were uncultured and uneducated. Bolstered by such ethnocentric attitudes and coveting Africa’s

enormous resources, European nations set about using their superior technology to carve up Africa and dominate its peoples.

It was not an accident that this process of domination attempted to recreate the continent into a European likeness (Mudimbe, 1988, 1994; O'Toole, 2001). Not only was Europe's assumption of superiority a motivation for colonization, but the active promotion of all things Western was a primary tool of colonization. Associated with this desire to reconstruct colonies into the image of the colonizer was the strategy to weaken and subvert all things African.

Education was an obvious tool for colonialists to employ towards this end (Okere, Njoku, & Devisch, 2005). European colonialists, many of them missionaries, began to aggressively promote "real education," Eurocentric education. European style education of the youth was foremost in this effort. Children, who had been taught traditional ways at home, went to these schools and were told that European ways were right and African ways were "primitive." Ntseane (2006) describes how

missionaries who came to Africa found indigenous knowledge systems that they dismissed, destroyed and replaced with Western-derived knowledge systems Africans who received Western education and religion maintained the colonial status quo by perpetuating Western norms and adopting Western values at the expense of the indigenous world. (p. 222)

Wane (2000) supports this description as she relates that in her schooling in Kenya she learned about the West, including the American Revolution and Niagara Falls, but did not learn any indigenous knowledge—knowledge that was once considered vital knowledge for her Embu ethnic group. Semali (1999) relates how, as a teacher in the early days of independent Tanzania, he searched in vain for Tanzanian material, but was forced to use foreign texts. In such an

environment he states that his students viewed indigenous knowledge as “unofficial knowledge” and consequently automatically turned to outside knowledge to solve problems. Julius Nyerere, the first president of independent Tanzania, lamented this problem of forced Eurocentric education and declared that the result was that the student gets the “worst of both systems” (1968, p. 278).

Thus, the Western knowledge-African knowledge conflict stems from Western ethnocentrism that defines the African as an inferior other who needs to be remade into a Western image. Wherever Western colonialism has gone on the continent, this conflict has ensued. In this environment Western knowledge is vigorously advanced in ways that some label as violently opposed to indigenous African knowledge (Fanon, 2004; Reynar, 1999; Walker, 2004). Such antagonism is clearly described when Jegede (1999) states “This evangelistic mission of Western education (including science) meant that it was used, not to promote the healthy coexistence of the Western and the African cultures, but as a sanitizing and civilizing medium” (p. 124). Rains (1999) terms the conflict as “intellectual apartheid” and describes how Western knowledge in just a few hundred years has been institutionalized to the extent that indigenous knowledges based on thousands of years of experience are now dismissed as primitive. Maurial (1999) adds that “modern minds consecrate a reductionism that assumes Western information as the only one valid form of knowledge, while simultaneously denying indigenous ways” (p. 60). In a similar vein Doxtater (2004) posits that “Colonial-power-knowledge communicates particular cultural presuppositions that elevate Western knowledge as real knowledge, while ignoring other knowledge” (p. 619). This litany decrying the hostility of Western knowledge towards indigenous knowledges is concluded by Wangoola’s (2000) assertion that in Africa development and progress has come to mean “ ‘becoming like someone

else'. Africa's history, culture, religion, clothes, food, architecture, names, music, and so on were 'backward impediments' to be systematically erased to pave the way for 'modernization'" (p. 270). Many similar quotes could be mined from the literature but perhaps the above are sufficient to communicate clearly the harm inflicted on nonwestern societies by Westerners who promote their knowledge and their ways as superior.

The dismissive attitude of the West towards African indigenous knowledges clearly illustrates the epistemological battleground mentioned earlier. On the surface it often seems that Western knowledge has won this battle and is on the way to displacing indigenous knowledges in Africa; however, African scholars, including educators, are stridently challenging the usefulness of Western knowledge in Africa. Nsamenang (2004) declares that "Painful lessons from a pattern of unrequited development and the unfulfilled dreams of education in sub-Saharan Africa make the rethinking and re-negotiation of education and development work both mandatory and an urgent priority" (p. 4). Additionally, Diouf, Sheckley, and Kehrhahn (2000) lament the epistemological ethnocentrism that devalues indigenous knowledge and maintain that many adult education "programs are ineffective because the educational methods used are based on Western models of adult learning that do not fully incorporate the informal and community-based educational practices used in African villages" (p. 33). Additionally, Ntseane (2006) criticizes HIV/AIDS education programs in Botswana as being based on Western knowledge and largely ineffective. She gives the example that "Western style adult education materials on HIV/AIDS prevention have assumed that women simply need to be given the message to say "no" to men. This position ignores the local understandings by men and women of the causes and origins of HIV/AIDS" (p. 221). Such challenges to the hegemony of Western knowledge raise the issue of identifying approaches to adult education in Africa that are more suitable.

African Indigenous Knowledge

If we are to find approaches that are more appropriate, we must focus on Africa and seek models of education that are indigenous to the continent. This search leads to a consideration of traditional educational practices of African communities that persist in contemporary life. Studies of these practices are most often described as studies of African indigenous knowledge. In these studies, many definitions of indigenous knowledge are offered. The following description is suggested as it illuminates key aspects of this knowledge with an African emphasis:

For Africans, indigenous knowledge is about what local people know and do, and what they have known and done for generations—practices that developed through trial and error and proved flexible enough to cope with change. The ability to use community knowledge so produced ... forms important literacy skills that are critical to the survival of indigenous peoples. (Semali, 1999, p. 95)

This description of indigenous knowledge highlights that it is knowledge produced in a specific context. No two contexts are identical and even knowledges produced by neighboring communities are likely to differ. Environmentally, soils may differ, rainfall patterns differ, water runoff systems are unique for individual environments, and so forth. Socially, each group of people has its unique legacy of events, personalities, relationships, successes and failures over generations that affect how that community interacts with its world. Due to such factors a community generates its own unique knowledge base—its indigenous knowledge.

Another key aspect is that indigenous knowledge is more than traditional knowledge. Von Kotze (2002) writes that “because such knowledge is inextricably linked to daily life and living, it has to be constantly reassessed, rediscovered and remade in terms of changing

conditions” (von Kotze, 2002, p. 237). Indigenous knowledge is rooted in the past but continues to grow and develop in the present as it adjusts to ever changing contexts (Maurial, 1999; Mwadime, 1999; Nsamenang, 2004; Semali, 1999). Thus, while indigenous knowledge is traditional knowledge it is also contemporary knowledge.

Indigenous knowledge touches on all that people know and do and accordingly is termed holistic knowledge (Maurial, 1999; Mwadime, 1999). Indigenous knowledge, as described in the literature, encompasses healthcare, farming, warfare, education, culture, the environment, social relations, domestic activities, and religion (Diouf et al., 2000; Fasokun, Katahoire, & Oduaran, 2005; Ntseane, 2006; von Kotze, 2002; Vontress, 1999; Wane, 2000). In addition to the holistic nature of the topics included in indigenous knowledge, the literature describes indigenous African education as being holistic in terms of who teaches, what is taught, as well as the methods used. Indigenous African education occurs in all of life’s settings and utilizes diverse methodologies. Kenyatta (1965) describes Kikuyu mothers in Kenya teaching infants by singing lullabies to them before they can speak. As soon as they can speak she will begin to instruct them about family heritage and ask questions such as “What is your name?; Who is your father?; What is his age-group?; What is the name of your grandfather?” (p. 97). Riddles, proverbs, stories, role playing, games, dance, and songs are all means of instruction and are part of the normal routine of life. Additionally, rituals are an important component of indigenous African education, especially, but not limited to, circumcision rites as one passes from childhood to adulthood (Brantley, 1978; Kenyatta, 1965; Mosha, 2000; Nsamenang, 2004; Ocitti, 1994; Raum, 1940; Wane, 2000). More formal instruction is also offered in specialized apprenticeship programs such as when a traditional healer passes on his or her knowledge (Ocitti, 1973; Vontress, 1999).

It is instructive to note that each of the methods discussed in the preceding paragraph is carried out orally. This is a persistent theme in the literature and in fact orality has been noted as a defining characteristic of indigenous knowledge (George, 1999; Maurial, 1999; Ntseane, 2006). Interestingly, Wangoola (2004) posits that language developed among humans primarily for the purpose of storing and sharing just this type of information. He adds to this by stating “This community experience, in coded form, is stored in the speech community’s language; in words, phrases, idioms, parables, jokes, songs, dances, taboos, etc.” (p. 235). In his discussion of African indigenous education systems Reagan (2005) identifies the teaching of such oral traditions as a central feature in the intellectual training of Africans and asserts that this is the case even in those African societies that have an established literary tradition. Boateng (1985) identifies oral literature—fables, folktales, legends, myths, and proverbs—as an important educational vehicle in Africa and quotes the Twi proverb “the wise child is talked to in proverbs” (p. 117) as an example of these vital African oral traditions.

That African indigenous knowledge is oral shapes it in many ways. As indigenous knowledge is passed on in face-to-face encounters, it is socially constructed. I assert that this is not an accident but a conscious choice that reflects African societal values. In and of itself orality reinforces the message that good relationships are essential to community survival. Thus, how this knowledge is passed on is vitally important (Simpson, 2004). Additionally, orality allows for incremental changes in indigenous knowledge from generation to generation. As one generation receives the knowledge passed on from prior generations it may subtly alter it to better fit the current circumstances—there is no written archive to hinder this process. In the same way that conversations between parents and children differ based on new circumstances, conversations

from one generation to the next can subtly adjust to ever-changing environments (Goody & Watt, 1988).

Another important aspect of indigenous knowledge is the passing on of this valuable knowledge. Ocitti(1973) asserts that:

The chief function of each generation was not to change or modify the indigenous education [knowledge] whose goodness had withstood the test of time; it was, as it were, to maintain the status quo and to hand it over to the next generation, which, in turn should do likewise. (p. 95)

Central to an understanding of African indigenous knowledge is appreciating that this knowledge is sustained from generation to generation through a system of education developed by communities for this express purpose. In this manner, each generation is equipped to be effective members of society (Nafukho, Amutabi, & Otunga, 2005; Ocitti, 1994). In many African societies these systems provide content and processes designed for specific ages and expectations (Kenyatta, 1965; Nafukho et al., 2005). In traditional societies and some contemporary rural societies this means an age-group system in which society members move through life as a group receiving age-appropriate instruction (Fasokun et al., 2005; Kenyatta, 1965; Ocitti, 1973). At each stage those who are younger receive instruction from members of society who are their elders. Ocitti asserts that “every normal person in traditional society ... played also the double role of a learner and a teacher almost throughout his life on earth” (Ocitti, 1994, p. 53). Parents, grandparents, extended family members, community elders, and fellow age-group members all play key roles in passing on indigenous knowledge within an African community (Fafunwa & Aisiku, 1982; Kenyatta, 1965; Mosha, 2000; Ocitti, 1973, 1994).

Thus, in most cases this learning in African communities occurs as a normal part of daily life. Western educators normally describe this type of learning as informal (Coombs & Ahmed, 1974; Merriam & Brockett, 1997; Merriam & Caffarella, 1999; Ocitti, 1994). That is to say it is not carried out at fixed times by specialists trained for this purpose. It occurs at any time as opportunities and needs present themselves and lessons are taught by those more knowledgeable onsite. However, this flexibility does not mean that this education is not intentional. The intention is there and opportunities to teach are seized as an everyday part of life. Nevertheless, there are aspects of indigenous education that take on more formal structures. Coming of age rites are planned events taught by selected members of society, normally the most elderly of the community. Additionally, the training of healthcare professionals and other specialized areas may be more formal, but rarely in a planned “school” environment (Ocitti, 1973; Vontress, 1999). Regardless of these somewhat formal occurrences, the most common feature of indigenous education in Africa is its informal nature.

Summarized, indigenous knowledge is local peoples’ knowledge that is socially constructed by a community of people in a specific context through ongoing oral conversations between community members both past and present. Construction and reconstruction of this knowledge is dynamic as communities adapt the body of knowledge passed on to them from former generations to ever-changing circumstances. Community survival and identity are intrinsic to knowing, living by and passing on this knowledge—traditional but tailored to contemporary life.

The focus of this study is the process of constructing and passing on local knowledge within communities in Africa. This process can provide a truly African model for adult educators as they seek to resist the hegemonic influence of the West and engage in efforts that enhance the

learning of adults in African contexts. Little literature currently exists that describes this process of local knowledge construction in African communities. There is some literature that describes traditional systems of indigenous education but these tend to draw attention to an idyllic pre-colonial Africa. While this is useful, it does not provide a credible pattern for contemporary educators who must work in our globalized world. What is needed is an in-depth study of knowledge construction in a local community that is building on its heritage as it copes with the present. The setting chosen for this study is a community located in rural Malindi District in the Coast Province of Kenya composed of people belonging to Giriama ethnic group.

The Giriama Context

The Giriama have a long history as a proud people who have resisted domination by other peoples, including the Galla, the Swahili, the Maasai, the Arabs and the British (Brantley, 1981; Champion, 1967; Porter et al., 1991; Spear, 1978, 1981). Under pressure at times they have migrated to new lands, other times they have negotiated with their oppressors, and they have occasionally violently resisted. In 1914 the Giriama took up arms against the British colonizers who had been pressuring them for years to work on local plantations and serve as porters for the British army (Brantley, 1981). Due to the overwhelming technological advantage of the British, the revolt was brought to a relatively quick and bloody end. In many ways the Giriama have never recovered from this blow. Prior to this time they were successful traders and routinely produced an abundance of maize (corn) that was exported from Kenya by Arab and Swahili merchants. Today the Giriama are a people primarily engaged in agriculture but they struggle to grow enough food to feed themselves. Increasingly they are forced off the land to work in the local tourism industry or other forms of employment in urban centers.

Culturally, the Giriama organize themselves in family groups that are strongly patrilineal. A hundred and fifty or so years ago the Giriama in Kenya largely resided in fortified cities known as *kaya*. These cities were governed by elders who exercised a great deal of sway over Giriama life and beliefs (Spear, 1978). By the time of British colonization these *kaya* remained largely as cultural symbols inhabited by only a few elders. One of the acts of retribution the British inflicted on the Giriama after their revolt was to dynamite the one remaining *kaya* (Brantley, 1981). The Giriama have since significantly expanded the area they inhabit and any central governing systems have disappeared. This leadership has been replaced by homestead elders making decisions that govern their families (Parkin, 1991). In contemporary households, a patriarch and his wives and sons and their wives and children live together as a homestead composed of several houses. Although most homesteads have fewer than 50 people, I have visited homesteads in which close to 100 people of all ages reside in 20 or so houses. In these homesteads, age and gender are used more to differentiate than is parentage. Those of the same age group are considered sisters and brothers and all adults are involved in the rearing of the children. To a significant extent, property is held communally, problems are solved communally and the community shares in the setbacks or triumphs experienced by its members. Very little happens in isolation from the group. It is in such a community that I conducted this study.

Problem Statement

The West and Africa are in an epistemological conflict in which the West appears to dictate what knowledge is useful and how knowledge should be taught. This is experienced in African adult education efforts that teach Western concepts and do so in Western ways. I have experienced this in Kenya as I planned adult education programs designed to assist local farmers

increase their agricultural production. In retrospect my efforts had a strong Western bias both in content and teaching methodology.

As I have sought literature that would describe adult education interventions that are fully informed by African contexts, it has become clear that there is little literature in the field that attempts to do this. There is some literature that describes indigenous African education systems but this literature tends to focus on conditions prior to European colonization of the continent rather than present-day African contexts.

Contemporary African models of education are available—local knowledge is being dynamically constructed and learned within African communities. That is to say that knowledge received from prior generations is adapted to contemporary situations and adopted as community knowledge (Maurial, 1999; Mwadime, 1999; Nsamenang, 2004; Semali, 1999; von Kotze, 2002). This knowledge, not entirely traditional but not wholly new, becomes locally accepted knowledge that is passed on within the community. Understanding how this process occurs in an African community can inform adult educators as they seek uniquely African models of adult education.

Purpose of the Study

The purpose of this study was to understand how local agricultural knowledge is constructed and disseminated in a rural community in coastal Kenya among the Giriama ethnic group. The research questions that guided this study were:

1. In this community, what factors shape the process of local agricultural knowledge construction?
2. In this community, how do adults learn local agricultural knowledge?

Significance of the Study

For too long adult educators and development workers in Africa have approached their work with a Western bias. This bias is somewhat understandable as literature in these fields has few contributions that privilege voices from Africa. This study seeks to do this as I learn from a community of people in Africa and articulate my understanding of how these people construct their unique local knowledge. Doing so will contribute to the theoretical knowledge base by augmenting our understanding of indigenous knowledge and, more specifically, how this knowledge is constructed in a contemporary African community. The study will also contribute to the theoretical understanding of informal education practices of contemporary African peoples.

This enhanced understanding will inform those who seek to assist indigenous communities, particularly in Africa, as they adapt to the increased pace of change in a globalized world. Worldwide indigenous communities struggle with how to resist Western hegemony as they cope with the stresses of modern-day life. For example, communities in Africa challenged by the AIDS pandemic struggle with the Western wrappings of solutions aggressively promoted to them. For practitioners this study will suggest ways to present potential solutions to such issues more appropriately. Doing so will facilitate a process of community evaluation of proposed solutions as to their potential usefulness and incorporation into local knowledges. Perhaps one day Giriama farmers, as well as other communities, will not be encouraged to abandon their ancestors' accumulated wisdom but instead to embrace it and use it to evaluate potentially useful new knowledge as they care for their families—a task they have carried out for generations.

Definition of Terms

In this chapter, the term indigenous knowledge has been widely used; however, in the title of the study and periodically in the text the term local knowledge or local people's knowledge has also been used. Pottier in his introduction to the text *Negotiating Local Knowledge* (Pottier, Bicker, & Sillitoe, 2003) used a similar approach as he frequently interchanged the terms local knowledge and indigenous knowledge in this chapter without differentiation or explanation. Antweiler (2004) also used both terms when stating that "Indigenous or local knowledge is both universal and specific and defies any simple essentialism" (p. 1). "Simple essentialism" certainly is unhelpful as it seems that there is a tendency to lump various types of knowledge with shades of difference into a single construct that is often labeled indigenous knowledge. Sillitoe (1998) in an article entitled *The Development of Indigenous Knowledge* defended his use of the term indigenous knowledge as being the most widely used term in contemporary development discourse, but acknowledged that authors of similar articles used other terms such as rural people's knowledge, indigenous technical knowledge, traditional environmental knowledge, folk knowledge, popular knowledge and indigenous agricultural knowledge. Antweiler (2004) lists no less than 34 terms associated with this type of knowledge and in a chart identifies a particular semantic stress found in the use of each term.

In this vein, Reynar (1999) eschews the use of the term "indigenous knowledge systems" and advocates for the use of the term "indigenous people's knowledge" as it "acknowledges the interconnectedness of people and their knowledge" (p. 300). Similarly, of the 34 terms he lists Antweiler (2004) states that "I prefer the term 'local knowledge', because it connotes one important dimension, situatedness in local culture and environment and avoids some connotations of other terms" (p. 3). Emphasizing situatedness and avoiding some unhelpful

nuances of the term “indigenous knowledge” are precisely the issues that have drawn me to use “local knowledge” in the title of this study.

As has been the case in this introductory chapter, the term indigenous knowledge is often used to differentiate that which is Western from that which is nonwestern. This constructed binary is helpful at times as it highlights concepts that exist independent of Western thinking and presents them as credible alternatives in the face of Western hegemony. The difficulty is that this process divorces concepts from the very people who produce them and homogenizes them to the extent that they lose much of their unique flavor and meaning (Reagan, 2005; Semali & Kincheloe, 1999). While a motivating factor of the study was to counter Western hegemony, the purpose of this study was to delve deeply into how a specific group of people situated in a unique context constructs its own knowledge. Consequently, I have chosen to label the phenomenon studied as local knowledge construction in order to accentuate the situatedness of the study. A second reason this term is used is to clarify that the knowledge studied is not just traditional knowledge passed on from prior generations, but includes knowledge from external sources as well as knowledge newly adapted in the community. *Local knowledge*, as used in this study, is knowledge that is socially constructed by a community of people in a unique context through continuing conversations between current and past community members. Construction and reconstruction of this knowledge is a dynamic process as communities adapt the body of knowledge passed on to them from previous generations to an ever-changing environment. Community survival and identity are inextricably linked to knowing, living by and passing on this knowledge—traditional but tailored to contemporary life.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this study was to understand how knowledge is constructed and disseminated in a rural community in coastal Kenya among the Giriama ethnic group. In order to facilitate timely completion of the study, data collection focused on local agricultural knowledge. The research questions that guided this study were: (a) In this community what factors shape the process of local agricultural knowledge construction? and, (b) In this community how do adults learn local agricultural knowledge?

This chapter is composed of three sections; the first is a discussion of literature that describes the Western domination of Africa with a particular focus on how education has been a tool for this domination. Secondly, the literature that describes indigenous knowledge in Africa and how this knowledge is constructed has been addressed. The final section focused on literature regarding the Giriama people of rural coastal Kenya.

Western Domination of Africa

Western domination of Africa has its roots well back in the history of Europe. The “West” as it is used in contemporary life, encompasses Europe and those societies around the world, such as the dominant group in North America, that are offspring of European heritage. Early in European history it would seem that Europeans considered themselves superior to the rest of the world and did not hesitate to express this and in so doing construct an inferior “other.” Mudimbe (1994) recounts how Flavius Philostratus, a Greek born in 170 A.D., wrote in *Icones* about the mythical Greek hero, Hercules, humiliating a band of “Pygmies of Libya” who, in their earthly wickedness, wished to do him harm. Mudimbe’s point in recounting this story is

that Libya was the term used in ancient Greek geography to denote the continent of Africa and that the “Pygmies of Libya” were described as an army of black “ants” that Hercules easily crushed. From this early image of the powerful white European dominating black Africans the idea of European/White supremacy has continued to be perpetuated in Western society.

In addition to literature, Mudimbe (1988, 1994) also points to visual art as another medium used by Western society to promote its assumed superiority and the idea of an inferior “other.” Often this seems merely to be an innocuous fascination with the exotic peoples of the world but the result is more ominous. For centuries, non-western art (or what Westerners assumed was art) has been appropriated from foreign lands, marveled at by Europeans and judged to be interesting but inferior using the European standards—of course little effort was made to understand the originators’ perspectives. Additionally, it has been common for Western art depicting Africans to accentuate the exotic and discount the similarities shared by both Westerners and Africans. Such art depicting “savages” or “natives” who were obviously not civilized Europeans was fascinating to Europeans in the same sense as the exotic wildlife of these foreign lands was fascinating.

The Historical Context

The construction of Africans as savages was especially obvious as Europeans began to explore sub-Saharan Africa. Mudimbe (1994) discusses at length papal decrees that set the stage for European subjugation of Africa. He reports that in 1493 Pope Alexander VI in his *Inter Coetera* bull stated that “the Catholic faith and Christian religion be exalted and everywhere increased and spread, that the health of souls be cared for and that barbarous nations be overthrown and brought to the faith itself”(p. 30). This decree led to the policy of *terra nullius* (no-man’s land) that declared that non-Christian lands and wealth could be sized by “Christian”

Europe in the name of converting these lands and peoples to Christianity. Mudimbe asserts that *terra nullius* was a concept that convinced Europeans of their right to dominate territories outside of Europe. This ultimately led to Europeans enslaving many of these peoples and eventually colonizing them. This position was said to flow from a “Natural Law” that allowed Europeans to convince themselves that “It would be the ‘mission’ of the stronger race to help their inferior ‘brethren’ to grow up” (Mudimbe, 1994, p. 37). In this vein European explorers set out claiming Africa for their monarchs. In one such example Vasco da Gama visited the East Coast of the continent, in what is now Kenya, and convinced the local ruler of Melinde (Malindi) in the name of friendship to erect a pillar with the name of the Portuguese king on it. This pillar, conveniently supplied by da Gama, overlooked the harbor and proclaimed Portugal’s connection Malindi to all who entered (Mudimbe, 1994). Little did the ruler realize the territorial claims this act of “friendship” would engender for Europeans. Interestingly, today this pillar is a site frequently visited by the scores of Europeans who visit this idyllic Indian Ocean tourist haven.

As competing European territorial claims began to emerge, in order to minimize unseemly European infighting, the 1884-1885 Berlin conference was convened and the continent of Africa was divvied up between the dominant European powers (Mudimbe, 1994; O’Toole, 2001). In European eyes this was practically an act of benevolence and they set about colonizing the continent with little regard for its population. Mudimbe (1988) describes this colonization process as one that was intended to “organize and transform non-European areas into fundamentally European constructs” (p. 1).

Thus, a desire to transform Africa into a European image is part and parcel of both the motivation of colonialism and its implementation on the African continent. This blatant ethnocentrism is perhaps not surprising as many societies define themselves as ‘the people’ and

others as somehow less than this, but few societies have acted as violently or effectively in promoting their assumed superiority as those in the West. Fanon (2004) asserts that Europeans “have never stopped placing white culture in opposition to other noncultures” (p. 150). This opposition has often taken the form of outright domination carried out with varying degrees of violence.

Education a Tool of Domination

Education is one area in which this domination is evident. Ocitti (1994) discusses a myth promoted by Europeans that there is not such thing as indigenous African education. An example of this myopic perspective is a quote Ocitti offers from H. J. Baker’s 1913 publication titled *Children of Rhodesia* in which the children of Rhodesia (Zimbabwe) are described as just laying around, eating and sleeping with nothing to do and no one teaching them. Worst of all was that they had no tea parties to attend! Based on such observations their lives are described as “one big nothing” (p. 14).

Such sentiments express blindness to cultural practices that are not European and an inability to value the rich tradition of education practiced in Africa or elsewhere. Education, regardless of the terms used to describe it, is practiced in all corners of the globe as societies pass on their culture to following generations. However, European colonists were unable to appreciate this kind of education and set about “educating” the African. Elabor-Idemudia (2000) describes how the colonial administration in Nigeria required her and her age mates to attend Western-style schools in order to obtain ‘formal’ knowledge. She recounts how they were forced to give up folkways learned at home, including her mother tongue, as they were considered primitive. She states that they were “in fact, being educated against our own interest” (p. 107). Similarly, Wane (2000) reports that as a student in Kenya, located across the continent on the East Coast

but also colonized by the British, she “was not taught about my culture or about the things my parents learned from their parents...I *was* [emphasis in original] taught about the American Revolution, Niagara Falls, and the Second World War” (p. 55). Ntseane (2006) from Botswana, in southern Africa, offers a similar perspective when she describes how indigenous knowledge systems in Botswana were disregarded and actively opposed by missionaries who sought to replace them with Western knowledge systems. Mulenge (2001) in his review of Mwalimu Julius Nyerere’s contribution to adult education states that:

According to Nyerere, the primary purpose of the colonial education systems rooted in European traditions and culture was to bring the colonized in to the capitalist social and economic structure in which the colonized are more effectively exploited and dehumanized by their colonial masters. Through a meticulously planned and executed process of assimilation, the African child was gradually cut off from his own history, his value system, his own cultural origin and identity. (p. 454).

From this description it is clear that Nyerere saw the control of knowledge through education as an arena in which Western colonialists purposefully acted to solidify their domination of Tanzania and the rest of the continent.

Such attacks on indigenous African knowledge systems have had an enduring impact on the continent. Ntseane (2006) addresses this as she describes how “Africans who received Western education and religion maintained the colonial status quo by perpetuating Western norms and adopting Western values at the expense of the indigenous world” (p. 222). This devaluing of the indigenous was evident when Wane (2000) began asking questions of older women in her home area and they wondered aloud what she, a Western educated women, could learn from them, uneducated African farmers. Semali (1999) also touches on the long-term

influence this colonial strategy had when as a teacher in recently independent Tanzania he was unable to find textbooks written from a Tanzania perspective and the resulting reliance on European texts encouraged his students to view indigenous knowledge as unofficial knowledge. As a result, his students automatically looked to knowledge from outside Africa to solve problems. In a similar vein, Okere, Njoku, and Devisch (2005) describe the perception of the school in colonial Africa as the “privileged site to enter the true and universal knowledge” (p. 7). This privileging of Western knowledge silenced the voices of the elders, “Africa’s ‘*informal intellectuals*’ [emphasis in original]” (Okere et al., 2005, p. 6). The result of this relentless attack on indigenous Africa and the corresponding promotion of European education is that many, both outside and inside Africa, tacitly accept the myth that before the arrival of the white man on the continent no worthwhile education or knowledge systems existed (Ocitti, 1994; Okere et al., 2005; Wane, 2000).

Western Knowledge—African Knowledge Clash

Imposing Western style education on colonized African societies was a strategy for ensuring the domination of African peoples but it was also an expression of a specific form of ethnocentrism that some have termed epistemological ethnocentrism. Mudimbe (1988) discusses this at length and mentions several examples of black African knowledge attributed to others. Examples are: Yoruba statuary credited to Egyptians; Benin art claimed to have actually been of Portuguese origin, the great walls of Zimbabwe ascribed to Arabs, and assertions that Hausa and Buganda political statecraft originated with white conquerors. Another example mentioned, which would be humorous if it were not so disheartening, is Carl Sagan attributing complex Dogon astronomical knowledge to extraterrestrial visitors who shared their otherworldly information with the Dogon. It seems that there had to be some explanation for the Dogon

having incorporated this knowledge into their oral traditions before it had been written about in the West. Mudimbe (1988) follows up these examples by defining epistemological ethnocentrism as “the belief that scientifically there is nothing to be learned from “them” unless it is already “ours” or comes from “us” (p. 15).

Semali and Kincheloe (1999) offer another example of epistemological ethnocentrism when they describe a group of anthropologists who wanted to test the IQ of a “primitive” group of people in Africa. To do this they gave the participants 20 items and asked them to divide them into groups of like items. The correct answer, determined by Western experts, was four groups—tools, food, clothing, and cooking utensils. The Africans put them into 10 groups (they grouped tools with related objects, e.g. knife with an orange) and stated that this was the way any wise person would do it. Semali and Kincheloe also point to a bizarre study conducted by Herrnstein and Murray and published in 1994 in which it was “concluded that Africans who live in Africa possess an average IQ of 75” (p. 36). Such epistemological ethnocentrism blinds many Westerners to the value of African knowledge and the systems that produce it and cause them to dismiss African educational traditions as illegitimate forms of education (Diouf et al., 2000).

Unfortunately, we must continue to use the present tense as we discuss Western epistemological ethnocentrism. Today it is rarely expressed in overt colonial domination but it exists in more subtle forms that nonetheless marginalize African knowledge systems. Okere et al. (2005) state that African governments, hegemonic cosmopolitan science, universities, and international donors all “go on aligning ‘modern’ knowledge with management, power, technical efficiency, whilst giving any local knowledge the inferior status it got from European colonial and missionary teachers and administrators” (p. 8). Von Kotse (2002) portrays what many would term neocolonialism when describing how “so-called development” in the “developed” nations

results in greater deprivation in marginalized communities as local knowledge systems are disregarded, cultural values undermined, and natural resources are exploited. In support of this view Youngman (2000), an adult educator based in Botswana, describes the giving of aid by the West as imperialism and comments that “the provision of aid is undertaken primarily in the self-interest of the providing countries. Its ostensible purpose is to promote development, but although the language of aid suggests a disinterested and benevolent helpfulness, the reality is different” (p. 97). In his critique of aid Youngman, as well as Walters and Watters (2001), view the giving of aid by the West as being motivated by a view of the world in which the West is the pinnacle of development and the rest of the world needs to be modernized. This drive for modernization is viewed as an attempt to dominate in order to serve the interests of Western capitalism. Owomoyela (1996) continues this line of thought by positing that development is merely a “code word for westernity and the polar opposite of Africanity” (p. 168). Elabor-Idemudia (2000) add that the very process of development and modernization undermine indigenous African knowledges and ways of life.

An important aspect of many development projects is nonformal education programs for adults. These programs are also being subjected to intense scrutiny from educators in Africa. Avoseh (2002) asserts that:

The fact is that the world of Africa is very different from the world of the developed societies yet adult education in Africa has not tried to be different. The over all (sic) result is a long history of colonial and postcolonial efforts of adult education in Africa that has not made any significant impact on the ordinary people. (Adult Education in Post-Colonial Africa section, para. 5)

Diouf et al. (2000) in their study of agricultural extension classes in Senegal report that these efforts were mostly ineffective as they were just too Western and ignored the informal, community-based educational systems practiced by the communities they wished to influence. Similarly, Ntseane (2006) criticizes HIV/AIDS education in Botswana as being based on Western epistemology and values while ignoring local understandings of the disease and community values. She continues by declaring that the result is unnecessary divisions between men and women, denied opportunities for communal problem solving, and, unfortunately for those affected by the disease, largely ineffective programs that have done little to reduce human pain and suffering. Youngman (2000), supported by South African adult educators Walters and Watters (2001), attributes poor performance of adult education programs largely to adult education agendas in Africa being driven by Western capitalistic agendas. From this perspective is not surprising that many now view such development programs with increasing hostility. Reynar (1999) in a scathing critique states that:

This unilateral identification of human success with modernity ... has resulted in development, as being the actuator of modernity, tragically and forcefully destroying cultures around the world....The conclusion that development is, in and of itself, violent, is becoming increasingly difficult, if not impossible to refute (Shiva, 1998, p. 232-33; Alvares, 1992). (pp. 285-286)

Wangoola (2000) adds to this critique by stating that Africa's development and progress has come to mean "'becoming like someone else'. Africa's history, culture, religion, clothes, food, architecture, names, music, and so on were 'backward impediments' to be systematically erased to pave the way for 'modernization'" (p. 270).

The hostility towards western epistemological ethnocentrism evident in these statements is understandable and shared by many. Consider the following quotes from authors writing on this topic: (a) Doxtater (2004) posits that “Colonial-power-knowledge communicates particular cultural presuppositions that elevate Western knowledge as real knowledge, while ignoring other knowledge”(p. 619). (b) “This evangelistic mission of Western education (including science) meant that it was used, not to promote the healthy coexistence of the Western and the African cultures, but as a sanitizing and civilizing medium” (Jegede, 1999, p. 124); (c) Rains (1999) terms this epistemological conflict as ‘intellectual apartheid’ in which:

Hermetically sealed, the closed system of “Western” knowledge production has been institutionalized, in a matter of several hundred years, to such a degree as to dismiss indigenous knowledges based on thousands of years of experience, analysis, and reflection as primitive (Allen, 1989; Deloria 1997; Harjo & Bird, 1997). (p. 317)

and finally (d) Maurial (1999) adds that “modern minds consecrate a reductionism that assumes Western information as the only one valid form of knowledge, while simultaneously denying indigenous ways” (p. 60). Additional quotes could be gleaned from the literature (Semali & Kincheloe, 1999; Walker, 2004) but it is clear from these that in a postcolonial world Western epistemological ethnocentrism continues to be perceived as a negative force that harms many nonwestern societies.

Western Knowledge Domination Challenged

Given this perception, it is not surprising that there are many voices in Africa challenging the dominance of Western knowledge. Nsamenang (2004) evocatively expresses this challenge when he states “Painful lessons from a pattern of unrequited development and the unfulfilled dreams of education in sub-Saharan Africa make the rethinking and re-negotiation of education

and development work both mandatory and an urgent priority” (p. 4). For many concerned with Africa this rethinking and renegotiation takes the form of a call to Afrocentrism (Dei, 1994, 2000; Elabor-Idemudia, 2000). Mulenge (2001) reminds us that this is not an entirely new effort and asserts that “Nyerere deserves credit for trying to rejuvenate the African’s pride in himself and what he can do.... to restore the confidence of the colonized African in his worth, in his African values and ability to solve his own problems” (p. 463). Owomoyela (1996) captures this call when he states “a return to the traditional way of life before the encounter with Europe is indeed impractical....What is possible...is the reinstatement of those habits of the heart and mind that constitute the African difference” (p. 51). This is the essence of an Afrocentric approach, not an attempt to undo that which cannot be undone, but taking a new direction that both challenges Western dominance and reasserts the validity and value of African culture and practices.

In terms of development efforts, Semali and Kincheloe (1999) apply this approach when they call for a new focus on indigenous knowledges in order to help indigenous people “solve their problems their own ways” (p. 19). Wangoola (2004) describes development as being:

about a people harnessing the knowledge they are masters of; that is their own home-grown knowledge, supplemented by knowledge adaptations from other peoples, and applying it for that people to be more and better.... Development is cultural action, starting from where you are. (p. 237)

Reynar (1999) supports this approach to development when affirming that there are no solutions separate from those that start with people who are “living artfully in particular localities” (p. 301). With particular emphasis on nonformal adult education efforts associated with development programs Diouf et al. (2000), Ntseane (2006) and Avoseh (2002) appeal to educators to be sensitive to indigenous African knowledge and to more completely incorporate it

into their programs. Their appeal is based on a need for more effective programs and awareness that this will likely not occur if educators are not guided in their efforts by an increased awareness of African indigenous knowledge.

Section Summary

This section has discussed literature regarding the historic and ongoing clash between the West and Africa. This clash has roots far back in history; was violently expressed in European colonization of Africa; and continues in neocolonialism today. The root of this clash is European ethnocentrism. Epistemological ethnocentrism has resulted in African knowledges and education practices being largely dismissed. This has harmed African societies and increasingly there is a call for Afrocentric views of education and development in Africa. This had created a renewed interest in African indigenous knowledge.

African Indigenous Knowledge

Despite my preference for the term local knowledge when describing this study, this section includes many references to indigenous knowledge. Much of the literature reviewed uses the term indigenous knowledge, thus it is prominent in this section. Because of my uneasiness with the term, the section concludes with a discussion of its usefulness to the study.

A discussion of African indigenous knowledge must begin with a caveat. Africa is a continent composed of more than 900 million people (United-Nations, 2007) who speak approximately 2,000 languages (Ojo, 2005). Given this diversity, it would be a mistake to think of African indigenous knowledge as a single monolithic entity. Although a case can be made that there are many commonalities across the continent (Dei, 2000; Owomoyela, 1996; Wangoola, 2004), differences across the continent are at least as significant as the commonalities. Thus, I may use the term African indigenous knowledge but this is done in full awareness that across the

continent there are many differences in this knowledge, to the extent that it is likely more appropriate to speak of knowledges rather than knowledge. This will become especially evident in this section as characteristics of indigenous knowledge are discussed. Foremost among these characteristics to be mentioned is that indigenous knowledge is knowledge tied to specific locations. Other characteristics are that indigenous knowledge is holistic; it is traditional but dynamic; and it is learned in lived experience. Finally, the section will conclude with a discussion of appropriate terminology on the topic.

Knowledge Tied to People in a Specific Locality

Indigenous knowledge is widely described as knowledge that is tied to a specific and unique location (Dei, 2000; Fasokun et al., 2005; George, 1999; Maurial, 1999; Mwadime, 1999; Nsamenang, 2004; Semali, 1999; von Kotze, 2002). It is knowledge produced as residents of a specific location survive in that location. It is unique as no two locations are identical. It is knowledge that has been produced as people interact with their natural environment including climatic patterns, soils, topography as well as the local flora and fauna. Reynar (1999) alludes to this when stating that “Indigenous cultures have ... established their ways of life in balance with a living and dynamic ecology” (p. 298).

In addition to the natural environment, the social environment also influences the production of indigenous knowledge. George (1999) states that indigenous knowledge is “knowledge that has evolved in a particular societal context and which is used by lay people in that context in the conduct of their lives” (p. 80). This aspect of indigenous knowledge ties it inextricably to a specific people. Even when the natural environments of two communities are very similar, social environments differ. Von Kotze (2002) alludes to this as he describes knowledge that:

is defined in terms of livelihood activities, may be knowledge about changes in policies, about who is who in the hierarchy of decision makers and who can grant access to resources and services,...and how to draw on old people's knowledge of local herbs and roots in order to cure ailments. (p. 237)

This kind of knowledge about social hierarchies and personalities exemplifies that indigenous knowledge is inseparable from the people who produce it. It is this bond that motivates Reynar (1999) to advocate for the use of the term indigenous people's knowledge rather than indigenous knowledge as this term "acknowledges the interconnectedness of people and their knowledge" (p. 300). Ntseane (2006) discusses African indigenous knowledge as knowledge that deals with connections—connections between one's inner self, ancestors, family members, the community as well as the environment. Thus, this knowledge can be described as knowledge that is produced as a people in their unique milieu interact with their natural environment as they go about the daily business of living within that context.

Characteristics of Indigenous Knowledge

As people go about living in a unique context they produce their indigenous knowledge, thus, this is knowledge that touches upon all aspects of living. As Semali (1999) describes it "For Africans, indigenous knowledge is about what local people know and do" (p. 95). "Knowledge about what people know and do" describes knowledge that touches on all aspects of life and, therefore, a defining characteristic of indigenous knowledge is its holistic nature (Fasokun et al., 2005; Maurial, 1999; Mwadime, 1999). Given this holistic nature as one reads the literature about indigenous knowledges it is not surprising to find many topics discussed. Some of these topic are: healthcare, farming, warfare, education, culture, the environment, social relations,

domestic activities, and religion (Diouf et al., 2000; Fasokun et al., 2005; Ntseane, 2006; von Kotze, 2002; Vontress, 1999; Wane, 2000).

An additional characteristic of indigenous knowledge is that it is traditional knowledge and ever changing. It is traditional in the sense that it is knowledge that is accumulated over many generations as a people survive in a specific location (Dei, 2000; Ntseane, 2006; Semali, 1999). Avoseh (2002) describes it as “an important bridge between the past and the present with a shuttle to the future” (Introduction section, para. 1). Each generation is taught this knowledge and accepts the responsibility to pass it on to the next generation. As Ocitti (1973) states:

The chief function of each generation was not to change or modify the indigenous education [knowledge] whose goodness had withstood the test of time; it was, as it were, to maintain the status quo and to hand it over to the next generation, which, in turn should do likewise. (p. 95)

Ocitti seems to imply in this quote that indigenous knowledge changes little as it is passed on to the next generation. Ntseane (2006) seems to indicate this as well as she describes indigenous knowledge as needing to be more dynamic. Reynar (1999) however views the resistance to change by indigenous people as strength as this ensures survival as communities cautiously embrace change. However, many others (Dei, 2000; Maurial, 1999; Nsamenang, 2004; Semali, 1999; von Kotze, 2002) choose to emphasize the dynamic nature of indigenous knowledge. The dynamism they argue is evident as the natural and social environments that indigenous people live in are ever changing and these people do adapt to these changes; their very survival is a testimony to that fact. Nsamenang (2004) is particularly articulate as he pronounces that:

Knowledge systems and institutions in Africa are not and have never been static: they are and have been fluid, as they tend to change in response to environmental pressures, culture contact and existential imperatives....Far from being timeless, static, and rigid, indigenous agricultural practices by Africans were constantly revised and adapted (Scott 1985). (p. 37)

Some may choose to emphasize the tendency of indigenous knowledge to resist change and others may choose to emphasize the dynamic nature of indigenous knowledge but this is merely describing two sides of the same coin. In reality, indigenous knowledge is traditional, as it clings to accumulated wisdom, and it is dynamic, as it adapts in order to ensure the survival of those who produce it.

In any case, if the people who produce the knowledge are to survive this knowledge must be learned. That is to say, accumulated wisdom must be passed on and adaptations must be incorporated into the knowledge base. Most of what has been written about this learning process refers to the former—the passing on of accumulated wisdom. In Africa this usually takes the form of preparing the youth to be successful members of society (Nafukho et al., 2005; Ocitti, 1994). Most often this occurs informally as part of every day life not in a formal system (Nsamenang, 2004; Ocitti, 1994). Although informal, systems have been developed that provide appropriate instruction in terms of methods and subject matter (Kenyatta, 1965; Nafukho et al., 2005). In some more traditional societies this involves an age-group system in which society members move through life as a group and at each stage receive age-appropriate instruction (Fasokun et al., 2005; Kenyatta, 1965; Ocitti, 1973). The younger are continually instructed by their elders. As Ocitti (1994) describes this “every normal person in traditional society ... played also the double role of a learner and a teacher almost throughout his life on earth” (p. 53). In this

way, the accumulated wisdom of an African community is passed on and each member of the community plays an active role in the process both as learner and as teacher (Avoseh, 2001, 2002; Fafunwa & Aisiku, 1982; Kenyatta, 1965; Mosha, 2000; Ocitti, 1973, 1994).

Western educators with a penchant for categorization may consider this educational process and attempt to place it in a predetermined category. The categories most commonly used in the West are formal education, nonformal education and informal education (Coombs & Ahmed, 1974). Coombs and Ahmed (1974) relate *formal education* to “schooling” that occurs at a fixed location and time and is taught by specially trained people as part of a planned curriculum. *Nonformal education* is at its essence “an expression of the negative” (Brennan, 1997, p. 186). That is to say, it is defined by what it is not—it is not formal education. Nonformal education is a concept that was developed and has been sustained due to perceived deficiencies in formal education or schooling (Brennan, 1997; Coombs & Ahmed, 1974; Ewert, 1989; "Ministry of Education Science and Technology," 2003; Minnis, 2006; Rogers, 2005). Coombs and Ahmed (1974) define nonformal education as “any organized, systematic, educational activity carried on outside the framework of the formal system to provide selected types of learning to particular subgroups in the population, adults as well as children” (p. 8). Merriam and Caffarella (1999) offer a similar definition: “nonformal education has been used most often to describe learning opportunities outside formal educational settings that complement or supplement the needs of underserved adults or learners in developing nations” (pp. 28-29).

Similar to nonformal education, *informal education* is considered in opposition to formal education. Coombs and Ahmed (1974) define informal education as :

the lifelong process by which every person acquires and accumulates knowledge, skills, attitudes and insights from daily experiences and exposure to the environment

Generally, informal education is unorganized and often unsystematic; yet it accounts for the great bulk of any person's total lifetime learning—including that of even a highly “schooled” person. (p. 8)

Merriam and Caffarella (1999) add that “this form of learning occurs most often in learners’ natural settings and is initiated and carried through primarily by the learners themselves” (p. 32). This is the type of learning that makes up the bulk of learning for each individual and humans in general (Coombs & Ahmed, 1974; Merriam & Brockett, 1997; Merriam & Caffarella, 1999). A person may be unschooled but be highly educated through informal education. One might even describe all educational activities as an attempt to enhance informal learning (Coombs & Ahmed, 1974). Informal learning is at the heart of the field of adult education. Marsick and Watkins (1990) remind us of the position of Eduardo Lindemann, a founder of the field, when they state:

Lindemann (1961) further assumed that education is life; that the approach to adult education will be via the route of situations, not subjects; and that the resource of highest value in adult education is the learner's experience. Lindemann's vision seems clearly focused on informal and incidental learning. (p. 17)

It would seem, therefore, that Lindemann's view of adult education was one of enhancing the informal learning that is already occurring in life while not supplanting it with formal systems. Jarvis' (1987) in his discussion of informal learning states that “This is the process of much social living, such as living within the family and is a source of a great deal of learning from both pro-active and reactive situations” (p. 68). This is learning that occurs around the kitchen table,

around a cooking fire, at the coffee shop, under a shade tree, in a bus, or virtually any other place humans spend their time.

An additional type of informal learning often discussed by Western educators is experiential learning. If informal learning is the learning that occurs in the course of everyday life, then certainly the experiences of everyday life prompt this learning (Marsick & Watkins, 1990). A foundational thinker in American education, John Dewey, (1938) believed that “all genuine education comes about through experience” (p. 25). David Kolb (1984), a pioneer in the field of experiential learning, described learning as “the process whereby knowledge is created through the transformation of experience” (p. 41). Jarvis (1987), in an attempt to widen the definition, has suggested “that learning is the transformation of experience into knowledge, skills and attitudes, and ... this occurs through a variety of processes” (p. 8). Thus, experiential learning, although sometimes discussed as a separate category of learning, can accurately be described as an element of informal learning.

With this background information, we return to the question of how African indigenous education systems fit into these categories. Before delving into this, it must be acknowledged that this exercise is a comparison of paradigms that are the result of different epistemologies. These categories of education are Western constructs that Africans have not traditionally used (Brennan, 1997; Reynar, 1999). Nevertheless, Avoseh (2001), of the University of Namibia, asserts that “education in traditional African Society was a lifelong process that could not be separated from the rest of life’s activities” (p. 482). Mosha (2000) in his study of the Chagga people’s indigenous education system similarly states that “The bulk of indigenous education is given in the context of *everyday interaction in life* [emphasis original]” (p. 163). Nafuko et. al. (2005) in their description of adult education in Africa add that it can be characterized by

“Learning through seeing, observing and doing” (p. 31). These statements would seem to place African indigenous education systems firmly in the informal education category. In fact, Ocitti in his publication, *An Introduction to Indigenous Education in East Africa* (1994), describes indigenous education as informal education but he cautions that “to equate indigenous education with informal education is to oversimplify what is an otherwise complex phenomenon” (p. 19). This does seem to be the case, especially as informal education, as perceived in the West, is largely unplanned or planned by the learner for his or her benefit. Conversely, in African communities, indigenous education may be largely spontaneous but it is purposeful and carried out by other members of the community with the intention of passing on valuable knowledge within the community.

It is worth noting that this is accomplished through non-written means. Orality has been noted as a defining characteristic of indigenous knowledge (George, 1999; Maurial, 1999; Ntseane, 2006). While many in the West view orality as an indicator of underdevelopment, African societies have traditionally relied on non-written communication for the transmission of important knowledge. Choosing to utilize face-to-face encounters to transmit this knowledge shapes indigenous knowledge and reflects African values that place a high value on relationships that connect community members past and present (Ntseane, 2006). Another aspect of orality is that this is relevant to the previous discussion of the adaptability of indigenous knowledge. As there is no written record of exactly what is passed down, this frees each generation to make the needed adjustments without having to “amend the constitution” (Goody & Watt, 1988). This is very similar to subtle changes that occur in conversations in which positions are honed and altered as new points are raised and considered. As generations converse over time this knowledge is freely adapted as needed to more perfectly serve contemporary society.

The question that remains unaddressed in this discussion is just how this adaptation of accumulated wisdom occurs and how this adapted knowledge is learned within a society. Undoubtedly, as has just been discussed, it is a social process but what can be said beyond this? Von Kotze (2002) describes knowledge produced as part of a community's efforts to address the problem of reoccurring drought but does not address the process through which this learning occurred. Easton Monkman, and Miles (2003) provide some intriguing details in their discussion of how a region of Senegal adapted their local knowledge in a way that changed the custom of female genital cutting. They mentioned that this was an inclusive process that emphasized collective initiative but the article is more concerned with how to approach change than documenting the learning process. Given this paucity of discussion about exactly how indigenous knowledge is adapted and learned in communities, it is not surprising that Mwadime (1999) states "We need to advance our understanding of the creation and flow of IK [indigenous knowledge] in local communities in an effort to facilitate the generation of local solutions to local problems" (p. 257). This need has been addressed in this study.

In concluding this section, it is important to reconsider the use of the term indigenous knowledge as it applies to this study. First, consider the last word in this phrase—knowledge. The use of this word might imply that there is one body of indigenous knowledge. As has already been discussed, this is not the case; in fact, from the literature it is clear that each community possesses its unique knowledge base. With this in mind, this study seeks to avoid using the term knowledge in a way that implies the existence of only one body of indigenous knowledge (Semali & Kincheloe, 1999).

I also question the appropriateness of the use of the term indigenous in this study. The American Heritage Online Dictionary defines indigenous as: "Originating and living or

occurring naturally in an area or environment” (Pickett, 2000). Thus, using the term indigenous raises the question of how long does a certain group of people need to live in an area to be considered indigenous? For example, in Kenya I know of a community of Kamba people who migrated from their home area and for the past two or three generations have lived among the Giriama people in what is considered a Giriama area. Giriama people themselves have lived in most parts of what is now known as Giriama land for only a hundred and fifty years (Spear, 1978, 1981). Africa’s history is replete with stories of people migrating to new areas (O’Toole, 2001) and this clouds who is and is not indigenous to a specific location. It seems that the term indigenous has been popularized as part of the postcolonial discussion intended to differentiate the colonizers from the colonized. Indeed Maurial (1999) states “‘Indigenous’ peoples are assumed here to be the peoples who were or are colonized by the Western World” (p. 59). As the goal in this study is to understand the how a type of knowledge is constructed and not to differentiate colonized from colonizer, I have chosen to avoid the word “indigenous” when describing the study’s purpose and instead to use the term “local knowledge.” This choice was made in order to emphasize that the knowledge I seek to explore is situated in a specific locality that has a unique social and physical context (Antweiler, 2004). Additionally, as the literature has made explicit, this knowledge is more than traditional knowledge but includes contemporary knowledge and newly adapted knowledge.

In summary, indigenous knowledge, or local knowledge, is knowledge that is linked to a specific location, holistic, traditional but dynamic, and is passed on and learned orally (not through written means). There has been little written about how this dynamic knowledge is adapted and consequently learned within the communities producing it. How this occurs in a rural community of the Giriama ethnic group on the coast of Kenya is the focus of this study.

The Giriama Context

This section will discuss the historical context of the Giriama people, will also address aspects of the Giriama culture, and discuss literature describing a large but unsuccessful development project implemented among the Giriama people. Oral history of the Giriama people begins in the late 1500s and locates them much further up the east coast of Africa at a place known as Singwaya in what today is part of Somalia (Brantley, 1978; Champion, 1967; Spear, 1978, 1981). The Giriama at that time were not known by that name but were part of a group of people that the Swahili people of that area called the “Kashur” (Spear, 1978, p. 23). Sometime in the late 1500s the Kashur decided to migrate from Singwaya due to attacks on them from the Galla people. The Kashur migrated not as a single group but in six groups who began their migration at different times. According to oral history, each group was led by a different son of a common mother and father. The people that eventually became known as the Giriama were led by a son of that name. All six groups moved southward down the coast into what today is Kenya (Spear, 1978).

The Giriama were part of a second wave of migration and traveled south to Mwangea, a high place located just south of the Sabaki River. They remained there until the Galla, who had been pursuing them, began attacking them again. Because of this, they moved further south but were still harassed by the Galla. Finally, the Laa people (also known as the Wataa) showed them a high place on a forested ridge that could be easily defended. They built a fortified city in this location in which all of the Giriama lived. The Laa also showed them how to make arrows with metal points and how to make and use arrow poison. It was only through these changes that they were finally able to fend off the Galla and live in relative peace (Champion, 1967; Spear, 1978, 1981).

The fortified city in which the Giriama survived became known as Kaya Giriama. The other groups of the Kashur people built their own fortified cities (kayas) and finally nine kayas were built. The kayas became the focus of identity for these groups and each group developed their own identity and dialect of their common language. In the 1940s the nine groups adopted the name “Mijikenda”—literally the nine kayas (Spear, 1978). Today Mijikenda is the common name used for this collection of nine peoples of whom the Giriama are the largest group.

Life for the Giriama remained centered around the Kaya until the mid-1800s. The kaya was governed by a collection of male elders who had progressed through a complex system of male age-sets. Brantley (1978) describes these age-sets as a gerontocracy that “served as the basis of Giriama political organizations, as a measure of the historical past, and as a guarantee for future transmission of customs” (p. 250). The senior age-set, known as the Kambi, “met every fourth day in the *moro* [inner circle of the kaya] to adjudicate disputes and to regulate relations with neighbours” (Spear, 1978, p. 61). Spear continues his description by stating that although the age-sets system was an egalitarian system in which all males participated, not all participated equally. In actuality this government “was dominated by the old, the wealthy and the ‘fathers’ of the ruling *rika* [age-set]” (Spear, 1978, p. 63).

Kaya Giriama was located on a ridge running parallel to the coast some thirty miles inland. The Giriama soon realized that this was an ideal location to engage in trade with the Swahili people, who inhabited coastal cities such as Mombasa and Malindi, and other people who lived further inland. The Swahili needed goods to export to Arabia and beyond as well as markets for goods they were importing. The Giriama soon became a critical link in this international trade. Giriama men began to organize trading caravans inland to trade with the Kamba and Chaaga and many of these men began to accumulate wealth outside kaya power

structures. Additionally, as this was generally a physically demanding enterprise that favored the youth, these trading caravans shifted power dramatically away from the old men of the Kambi. This, combined with population pressures and reduced threats from Galla and Maasai, resulted in more and more Giriama leaving the kaya and establishing independent homesteads. The first European missionaries arrived at about this same time and in 1845 reported that some Giriama were now living outside the Kaya. Spear (1978) writes that:

for the next fifty years the Giriama pushed inexorably northwards....By 1900 the Giriama had cleared and settled the whole of the Mijikenda plateau west of the kaya ridge from their own kaya to north of the Galana, an area 20 miles wide and seventy miles long.
(Spear, 1978, p. 110)

Leaving the kaya had a dramatic impact on Giriama life as it precipitated a reduction in the authority of the Kambi as well as reduced the importance of the age-set system. Both Spear (1978) and Brantly (Brantley, 1978, 1981) report that the last age-set among the Giriama was initiated around 1870.

This may not reflect a rejection of the kambi and age-set system but just a natural outworking of an increasingly dispersed population—an adaptation to new realities. At any rate, with the decline of the kaya the new unit of settlement became the homestead (Brantley, 1978; Spear, 1978). A homestead can loosely be defined as “an agnatic joint family under a recognized head” (Parkin, 1972, p. 17). The homestead remains the primary organizing entity in Giriama life today. A typical homestead is composed of a patriarch, who functions as the homestead head, and his wives, his sons and their wives and children and his unmarried daughters. Parkin (1972) reports the average size of a Giriama homestead is “just over seven adults (including three men and four women) and eight children (p. 17). However, the size of the homestead varies by

location and occupations of the residents. Homesteads located in the western interior, in which cattle keeping is a major activity, tend to be significantly larger than those nearer the coast, in which farming and off-homestead labor are predominant (Parkin, 1991). Within the homestead leadership is provided by the homestead elder, although he might consult others both inside and outside the homestead (Brantley, 1981; Parkin, 1991). It is widely accepted that homesteads flourish or falter based on the abilities of the homestead head (Spear, 1978). The larger the homestead the greater the influence of the homestead head within the larger Giriama community. Parkin (1991) relates that some extremely large homesteads are jokingly compared to the *kaya* and the head of a very large homestead does indeed have influence somewhat like the *kaya* elders. He gives the example of one such homestead near Malindi in which a famous Giriama doctor, Kabwere Wanje, had 166 wives and children residing in it. Anecdotally, at one time I lived near this homestead and can attest that to this day it is quite large and famous. Despite the existence of such large and influential homesteads, from the late 1800s up to the present day the leadership of the Giriama people has been highly decentralized with the homestead head being the primary decision-maker in day-to-day life.

This decentralized leadership has been cited as a contributing factor in the next significant event in the history of the Giriama people. At approximately the same time the Giriama began abandoning the *kaya*, the British began to assert their control of the country they created and named Kenya. In the early years they ignored the Giriama as they focused their efforts on dominating the people living in the fertile highland areas. Eventually, their eyes turned to the less productive areas in which the Giriama lived. Spear (1978) reports that representatives of the Imperial British East Africa Company contacted the Giriama in 1887 but they had little impact. Finally, in 1912 they started putting pressure on the Giriama who reacted “in 1913 by

condemning European ways (such as wearing shirts and trousers, washing with soap and attending mission schools) and adopting a policy of non-cooperation with the British reinforced with traditional oaths” (Spear, 1978, p. 141). The British however were not deterred in their quest to dominate the Giriama, seize the most productive land, and force the Giriama to provide labor for British controlled plantations and armed forces. The Giriama also persisted in their resistance and repeatedly ignored demands that they provide porters for the British Carrier Corp (Brantley, 1981; Spear, 1978).

Finally, on August 17, 1914 open conflict broke out between the Giriama and the British (Brantley, 1981). It began as an isolated event in remote area. Rumors spread like wildfire and although the British military response was coordinated, the Giriama lacked any central structure to organize their actions. According to Brantley (1981), this was a fact the British failed to appreciate fully as they negotiated for peace with some Giriama leaders who realized the futility of the rebellion. When the British reached an agreement with these leaders it was assumed that they would be able speak for all Giriama people. However, these leaders were not successful in their attempts to convince others to lay down their arms. The result was continued sporadic and scattered acts of violence that British interpreted as a general rebellion by the Giriama people and responded accordingly. Although the actual fighting lasted just over a month, Brantley (1981) reports that in the years that followed the Giriama became a dispirited and divided people. This was due in no small part to the fact that the British chose a path of corporate punishment for all the Giriama, not just the relatively small number of dissidents who persisted in the rebellion.

Following this traumatic event the Giriama were a compliant people throughout the colonial period and Parkin (1972) reports that even their proclivity towards ever expanding their territory was dormant. They had accepted a more settle life that saw some move into towns

voluntarily to become laborers. Parkin (1972) further states that “the official government view through the colonial era and in the new one of independent Kenya is that the people—the Giriama—are among the nation’s most economically disadvantaged” (p. 1). Parkin additionally describes them as a people who are viewed by others as having changed very little but who themselves are aware of vast changes within their societies.

Some of the customs described by Parkin (1972, 1991) in his anthropological studies are those surrounding marriage, bridewealth and sexual relations; funeral practices which are of great significance for the Giriama; beliefs and practices about accumulated wealth; the practices of witchcraft and divination; and Giriama clan relationships.

There have been and are many attempts to improve the physical conditions in which the Giriama live, although few have been attempted on the scale of the Magarini Settlement project that began in 1972. This enormous project, largely funded by the Australian government and considered almost universally as a failure, is described in great detail by Porter, Allen and Thompson (1991) in their interestingly titled book *Development in Practice: Paved with Good Intentions*. In this work they describe a development project that began with the Australian government wanting to do a project “somewhere in Africa” and finally deciding to fund the Magarini project. This site was selected in large part because it was felt that dry land farming techniques developed in Australia could be utilized in this similar climate. This proved not to be the case and millions of dollars later the Australians withdrew from the project and today there is little to show from this undertaking outside of a few buildings, rusted machinery and some heavily rutted dirt roads. Porter et al. give many interesting details as to why this failure occurred but they attribute it largely to a blatant disregard for Giriama people’s knowledge. They recount how agricultural experts were brought in to advise Giriama farmers and that these experts never

visited Giriama farms or consulted with Giriama farmers. As has been the case throughout recent history, in the face of the project's failure the Giriama were labeled as recalcitrant people who resist change. Porter et al. however describe them as a people who have developed the ability to withstand external threats, as they perceived this project. In the minds of the authors the Giriama are not backward obstinate people but are a people who "have demonstrated a remarkable resilience based on an ability to withdraw and sit out the crises" (p. 210). They add that the Giriama are survivors and it is to their credit that once again they have survived a threat brought on them by outsiders, regardless of their presumed good intentions.

In summary, this section has described literature relating to the context of the Giriama people. This literature has touched on the historical context, some cultural practices and portrayed information concerning a large, failed, externally funded development project among the Giriama.

Chapter Summary

This chapter is a review of the literature informing this research project. It has mentioned literature that depicts the domination of Africa by the West through colonization and the related epistemological ethnocentrism expressed through education systems imported from the West. Additionally, it was noted that this domination by the West is increasingly being challenged and that for many this is a call for a more Afrocentric view of education and development. In accord with this call, the second section of this chapter dealt with the concept of African Indigenous knowledge. It described this knowledge as being tied to a specific location, holistic, traditional but ever-changing, and passed on through non-written means. Additionally, a section was included that detailed why local peoples' knowledge might be a more appropriate term than indigenous knowledge. This section concluded by relating that there is a paucity of literature

describing how local peoples' knowledge is produced and learned, which is the topic of this research project. The final section of the chapter mentioned literature describing the Giriama context with a focus on history, some cultural practices, and literature regarding a development project carried out in the area.

CHAPTER 3

RESEARCH METHODS

The purpose of this study was to understand how local agricultural knowledge is constructed and disseminated in a rural community in coastal Kenya among the Giriama ethnic group. The research questions that guided this study were: (a) in this community what factors shape the process of local agricultural knowledge construction? and (b) in this community how do adults learn local agricultural knowledge? This chapter explains the methodology used to conduct the study. The chapter begins with a description of the overall design of the study and then elucidates the processes used in sample selection, data collection, and data analysis. The chapter concludes with a discussion of researcher bias, study limitations, and translation issues.

Design of the Study

In order to gain the desired in-depth understandings this study utilized qualitative research methods. Qualitative research is informed by an interpretivist or constructivist paradigm (Crotty, 2003; Merriam, 1998, 2002b). Glesne (1999) describes this as a “paradigm, which portrays a world in which reality is socially constructed, complex and ever changing” (p. 5). Merriam (2002b) underscores the significance of this paradigm for qualitative research when she writes, “The key to understanding qualitative research lies with the idea that meaning is socially constructed by individuals in interaction with their world” (p. 3). This perspective is fundamental to this study as it was a study of how a group of people goes about the very process of socially constructing their local knowledge.

Qualitative research has several distinct characteristics and a primary one is that qualitative researchers go to the people they wish to study and spend significant time with them (Bogdan & Biklen, 1998; Merriam, 1998; Patton, 2002). Normally this fieldwork occurs in “natural settings” (Crossley & Vulliamy, 1997) in order to facilitate learning how people in that setting make meaning of it. Qualitative researchers “focus on in-depth, long-term interaction with relevant people in one or several sites” (Glesne, 1999, p. 5).

A second characteristic of qualitative research is closely related to the notion that fieldwork is necessary. “Researchers strive to *understand the meaning* [emphasis in original] people have constructed about their world and their experiences; that is, how do people make sense of their experiences?” (Merriam, 2002b, pp. 4-5). Crossley and Vulliamy (1997) add that “culture, meanings and processes are emphasized, rather than variables, outcomes and products” (p. 6). Discovering the meanings people have made of their lived experiences is central to qualitative research (Bogdan & Biklen, 1998; Glesne, 1999; Merriam, 1998; Patton, 2002).

A third characteristic of qualitative research is that instead of using instruments to make physical measurements or questionnaires to survey a sample population, the researcher, a person, is the primary research instrument (Glesne, 1999; Merriam, 1998, 2002b). The researcher collects data, analyzes the data and represents the data often with little assistance other than an audio recorder and a word processor. This process is carried out using all the researcher’s human senses in order to maximize understanding of the phenomenon being studied. The researcher as instrument is central to qualitative research and makes it a very human process, which adds richness to the product but must be factored into the reader’s assessment of the study’s findings.

Another characteristic of qualitative research is that it is inductive (Bogdan & Biklen, 1998; Crossley & Vulliamy, 1997; Glesne, 1999; Merriam, 1998, 2002b; Patton, 2002). That is

to say “instead of testing preconceived hypotheses, much qualitative research aims to generate theories and hypotheses from the data that emerge” (Crossley & Vulliamy, 1997, p. 6). Because of this Patton (2002) describes it as a “discovery-oriented” approach. The goal is to discover meanings that have been constructed, increase understanding and propose theories for consideration—in qualitative research there is no “null hypothesis” to prove or disprove. An additional feature of qualitative research is that the product “is *richly descriptive* [emphasis in original]. Words and pictures rather than numbers are used to convey what the researcher has learned about a phenomenon” (Merriam, 2002b, p. 5).

Case Study

This study utilized the case study approach to qualitative research. Merriam (2002b) describes the case study as:

an intensive description and analysis of a phenomenon or social unit such as an individual, group, institution, or community. The case is a bounded, integrated system (Stake, 1995, Merriam, 1998) The unit of analysis, not the topic of investigation, characterizes a case study. (p. 8)

A case study focuses on what is being studied while resisting distractions from that which is outside the case.

Merriam (1998) characterizes case studies “as being particularistic, descriptive, and heuristic” (p. 29). It is particularistic in that researchers focus on a particular phenomenon. Researchers take a holistic approach and seek a detailed understanding of the single phenomenon being studied. Within the bounds of the case one looks at the phenomenon both broadly and deeply in ways that cannot be accomplished in more wide-ranging studies.

Case studies are descriptive in that “the end product of a case study is a rich, “thick” description of the phenomenon under study. *Thick description* [emphasis in original]... means the complete, literal description of the incident or entity being investigated” (Merriam, 1998, pp. 29-30). The goal of a case study is to study the case in a comprehensive way and in some sense to experience it to the extent that the researcher is able to share this experience in the final representation of the study. In this way the uniqueness of each case is obvious to readers of the final product.

Some have questioned the usefulness of such a unique study and have wondered how such specific information is useful in other contexts. The third characteristic mentioned by Merriam (1998), the heuristic nature of the case study, speaks directly to this point. Case studies “illuminate the reader’s understanding of the phenomenon under study” (Merriam, 1998, p. 30). This illumination allows the reader to apply understandings gained to different situations or perhaps to think about the phenomenon studied in new ways. It might give new insights to history or experiences and influence program planning. Case studies produce specific knowledge that generates new insights that can influence unrelated situations.

This study was a case study of how local knowledge is constructed by members of a household of the Giriama ethnic group located in rural Malindi District, Coast Province, Kenya. Using a case study approach allowed me to focus my data collection and gain an in-depth understanding of the participants’ lives as they engaged in farming, childcare, healthcare, religious activities, and interacted with each other and the wider community. In this way, I was able to gain insights into the perspectives of community members as they participate in this array of activities and was able to gain a holistic and rich understanding of the knowledge being constructed.

As my hope is that this study will prompt new insights, the heuristic aspect of the case study approach was especially important. I have been involved in various capacities in encouraging change in Giriama communities for more than ten years and with this study I seek to promote new perspectives produced by in-depth understandings that will shape these efforts. It is my desire that adult educators will be influenced to look at their programs in Africa and other parts of the world in new ways, ways that are grounded in the lived experiences of people.

Sample Selection

With qualitative research studies the number of people involved, the sample, is normally quite small, perhaps even one (Patton, 2002). “Generally speaking, qualitative researchers are prepared to sacrifice scope for detail” (Silverman, 2005, p. 9). In-depth understanding is more important than being able to generalize findings across large numbers of people. With this in mind, the sample is rarely selected randomly, but is instead purposefully selected as the researcher desires “*information rich cases* [emphasis in original] those from which one can learn a great deal about issues of central importance to the purpose of the research” (Patton, 2002, p. 46). A purposefully selected sample is one carefully chosen with the aim of obtaining as much focused information as possible. Because of this, the criteria used to select the sample are particularly important.

The case purposively selected for this study was a Giriama community in rural Coastal Kenya. This case was selected as rural Giriama people are a people who continue to use traditional knowledge and have both resisted and adopted new practices in contemporary life. They are a people who are constructing local knowledge on an ongoing basis and are thus involved in the practice this study wished to understand. They are also a people of whom I have some knowledge and relationships that facilitated my entry into the research site. I relied on

these friends as key informants to guide my selection of a sample as well as resolving logistical issues such as housing and domestic provisions. In addition, this case was selected as I had the language skills to carry out research in this community. Swahili, which I speak fluently, is widely spoken there and most interviews were done in a mixture of Swahili and Giriama, a related language in which I have intermediate ability.

Given my intermediate ability in the Giriama language and my desire to avoid cultural errors, I sought the assistance of a Giriama research assistant. With advice from key informants, a part-time research assistant, Rehema, was employed. Rehema is a female in her mid-twenties who has recently completed a post-secondary diploma course in community development. She accompanied me during the beginning stages of observation and provided language and cultural guidance. She also helped transcribe and translate interviews.

The case selected was a Giriama community in rural Coastal Kenya but within that case, a specific sample was selected for the study. I chose to use a typical case approach to sample selection in order to provide insights useful to a larger number of people. Patton (2002) argues that this approach is used when one wants to “illustrate what is typical to those unfamiliar with the setting” (p. 236) and adds that this is often an appropriate approach for community development studies. Bogdan and Biklen (1998) add that a typical case approach is useful when one desires a degree of generalizability. By choosing to study a typical Giriama household in rural Kenya, I was able to describe an example of local knowledge construction that is meaningful to many people, not just those familiar with the Giriama context.

The selection of a sample to study was a step addressed after my arrival on the field. With assistance from key informants, I purposefully selected a sample that represented a typical case—a typical Giriama homestead. Parkin (1972) defines a Giriama homestead as “an agnatic

joint family under a recognized head” (p. 17). Using this definition, he found the average size of a Giriama homestead to be just over seven adults (three men and four women) and eight children. In my conversations with key informants about selecting a homestead to work with in the study, I mentioned that I sought to work with a homestead consisting of six to fifteen adults, both men and women who represented at least two generations and that there should also be some children. I also clarified that I thought that in a typical homestead some members would work in town, some would farm, some would be literate and some not literate, and that there would be some children in school. An additional criterion used in selecting the homestead was that it should be within walking distance of Marafa town where I would be living. With this in mind, a homestead was eventually suggested and after visiting the homestead in the company of a key informant and seeking their permission to conduct the study in their homestead, it was agreed to do the study with them. This homestead had a recognized male head, 29 adults consisting of 17 women and 12 men representing two generations. In addition, there were 31 children. This was a larger homestead than I anticipated working with but this proved to be a benefit as, despite busy schedules of homestead members, I was able to spend much time with the family without intruding unduly into the life of the homestead.

Data Collection

Qualitative research in general and case studies in particular usually rely on three methods of collecting data—observations, interviews, and documents/artifacts analysis. While the dominant method of data collection was participant observation, this study utilized each of these methods.

Observation

A defining characteristic of qualitative research is that it occurs in the setting being studied. Understanding the context of study participants is an essential aspect of case study research and this can only be accomplished by being in the context (Glesne, 1999; Merriam, 1998; Patton, 2002). Interviews are important but the information gained in an interview is secondhand information while observation allows the researcher to experience the phenomenon being studied firsthand (Merriam, 1998, 2002b). Being in the context for an extended period is also an essential part of building trust with study participants. Glesne (1999) recounts how her study participants admitted to giving less than accurate responses when she first arrived but assured her that over time, as trust grew, they saw no need in doing this. Additionally, being in the field observing firsthand allows one to learn about things which people are unwilling to talk about or perhaps seem so routine they don't think to mention them (Merriam, 1998; Patton, 2002). In conjunction with interviews, observations also provide information to be asked about in subsequent interviews as well as the opportunity to triangulate understandings gained through other methods (Merriam, 1998).

In qualitative research, observations are carried out with the purpose of gaining useful data and not just satisfying the curiosity of a restless mind (Patton, 2002). As a tool of research, observation should be part of a research plan, be systematically recorded, and subject to procedures for checking validity and reliability (Merriam, 1998). Observations can be carried out through a variety of approaches. These approaches exist along a continuum from being a pure observer where one stays on the sidelines as an interested but uninvolved part of the scenery to being a full participant in the scene while at the same time observing what is occurring (Bogdan & Biklen, 1998; Glesne, 1999; Merriam, 1998; Patton, 2002). Merriam (1998) describes what

actually happens in participant observation as “a schizophrenic activity in that the researcher usually participates but not to the extent of becoming totally absorbed in the activity” (p. 103).

Summarized, observation is an important part of qualitative research as it allows the researcher to learn firsthand about the context. Being in the context over a period of time also encourages relationships and builds trust. Observation also works hand in hand with interviews as observations provide information to be discussed in interviews and a way to check findings from interviews with what is observed actually occurring. Finally, observations can be done in a detached way, or as a full participant, or, more likely, as a partial participant who also observes.

In my observations, I was a partial participant. As the only Mzungu (person of European descent) living in the Marafa area, I quickly became known as a resident in the area but my being the only Mzungu in the area also made it difficult to be considered a normal resident and able to participate normally in community events. At the homestead I was able to develop relationships that allowed me to be visit and not be entertained as a guest at all times, even though I was never considered one of the family. As a partial participant, I spent hours at the homestead talking with those present, sitting under trees shelling corn, preparing green vegetables, and observing as participants completed household chores, cared for children and negotiated tasks to be accomplished. I worked with women in the fields and noted how they carried out their agricultural tasks. For example, I observed that most women of the homestead planted their corn in lines rather than traditionally in a triangular pattern. I also observed that only the women of the homestead worked in the fields and that the men of the homestead were rarely in the homestead during working hours.

In the larger community of Marafa, I was able to observe residents as they went about their daily activities. I noticed how people dressed, how they completed purchases and I was able

to attend several community functions. For example, I observed that men and women routinely sit separately at public meetings. I was able to observe such public meetings and, despite not blending in with other attendees, my presence did not appear to affect how meetings were conducted. In order to provide a degree of focus to the study it was anchored in agricultural activities but the centrality of agriculture in Giriama life provided many opportunities to observe a broad assortment of activities that had agricultural links.

In all my observations in the field I jotted notes then expanded those notes soon after each session in the field (DeWalt & DeWalt, 2002; LeCompte & Preissle, 1993; Spradley, 1980). Interestingly, when visiting the homestead I soon learned always to have a pen and paper in my pockets rather than in the daypack that I always carried. Giriama hospitality requires that any load carried by a visitor be taken from them and kept in a safe place at the homestead until they are ready to leave. On several occasions I wanted to jot something down but could not as my paper and pen were in my pack safely stored in the backroom of a house. Below is an example of my expanded field notes:

Date of visit/discussion: 25 September 2007

Time: 8:00 a.m. – 3:00 p.m.

Person/Place: Kwa Kalulu

Date handwritten: 25 September 2007

Date typed: 25 September 2007

Today Kadzo and I went to Kwa Kalulu. We greeted starting at Bidhii's house then we greeted Safari and asked him about his wife who is sick and is in the local hospital. He told us she is still sick and the problem is a headache and a problem with her tonsils. He was taking care of the children at home today and commented that it was not

easy. We continued greeting people. Mzee Kitsao was working and it looked like he was installing a new rivet in order to repair a hoe. We continued greeting people and as usual ended up down at Dama trees [trees near Dama's house]. Dama, Tabu, and Sidi were there along with Marko who was as usual walking everywhere and looking into everything. Tabu was cooking sima [staple dish of boiled corn meal] and Dama talked about "uhalwe" that is sima that is left over from the previous day and eaten in the morning. Some was brought out and people were breaking it off in chunks and eating it cold. Flora was over in the kiswenya patch picking some. Dzendere came down and greeted us as well. Flora brought the kiswenya over and she and Sidi began preparing it for cooking. The backside of Dzendere's house was pretty much collapsed. Now I understand why she was talking to me about needing a new house yesterday.

Throughout the study, I prepared 31 separate sets of expanded field notes from my observations filling some 140 typed double spaced pages.

In addition to field notes, I also kept a regular fieldwork journal in which I wrote my activities, my concerns and plans and even expenditures. I kept separate electronic notes detailing methodological events, decisions, and concerns. For example, after writing my first set of expanded field notes I wrote:

Format: I set up a template for the expanded field notes. It has a wide right margin, double spaced lines and line numbering. I will begin each set of notes with the date of the field visit, the date when the expanded field notes were first written and the date they are being typed.

While observing in the field I also drew maps of the homestead and Marafa. These maps provided a record of physical locations and required that I pay attention to the details of how space, objects, and people are arranged (DeWalt & DeWalt, 2002).

By utilizing these methods, I gained a deeper understanding of the context, developed trusting relationships, and improved my language skills. The beginning phase was a critical time as, although some people knew my name and had an idea of who I was, community members did not know me well. In the beginning, I was viewed as merely as a casual visitor. Gradually, during the first weeks on the field as I engaged in preliminary observations I built relationships and was able to develop the rapport necessary for the interviews conducted later as the study progressed.

Interviews

Interviews may be described as conversations with a purpose (Bogdan & Biklen, 1998; Merriam, 1998). Interviewing is an important methodology of qualitative research, as it would be difficult to understand the perspectives of another person without speaking to the person and listening to him or her. As Patton (2002) explains:

We interview people to find out from them those things we cannot directly observe....We cannot observe feelings, thoughts, and intentions. We cannot observe behaviors that took place at some previous point in time. We cannot observe situations that preclude the presence of an observer. We cannot observe how people have organized the world and the meanings they attach to what goes on in the world. We have to ask people questions about those things. (pp. 340-341)

Interviews may be with one person or a group (Bogdan & Biklen, 1998; Merriam, 1998, 2002b; Merriam et al., 2001) and either situation requires a unique approach. As has been previously

stated, in qualitative research the researcher is the main instrument and, thus, the quality of the data gathered during an interview is dependent on the interviewer (Glesne, 1999; Patton, 2002).

Not only is listening important but the questions asked are also important. Open ended questions that prompt extended answers are the mainstay of qualitative interviews (Glesne, 1999; Merriam, 1998, 2002b; Patton, 2002). Interviews are also conducted in a variety of approaches that range from highly structured interviews with the wording and order of questions predetermined to unstructured interviews that seem like an informal conversation (Merriam, 1998, 2002b; Patton, 2002).

In this study, I primarily conducted informal interviews. DeWalt and DeWalt (2002) describe informal interviewing as being when the researcher “follows the lead of the participants but asks occasional questions to focus the topic or clarify points that she/he does not understand (Spradley 1979)” (p. 122). Informal interviews take on the feel of natural conversation but the participant is likely aware that they are instructing or explaining specific points to the interviewer. As I collected data I began to think of interviews more in terms of conversations. This was especially true as in this collective oriented society most interviews were group interviews and took place in public places, such as under a tree at the homestead. Usually a core group of targeted adults participated in the interview but other adults and children came and went as the discussion progressed. Thus, in these interviews I did not use an interview guide to ask specific questions but constructed conversation guides with goals of a conversation detailed and a listing of topics to explore. As I continued to collect data I analyzed data previously collected and noted areas that I wish to explore and informally asked questions of participants when opportunities for discussions arose. Conversations were conducted in Swahili, Giriama, and occasionally in English.

Several of these conversations were audio recorded and these were transcribed into the language of the interview with the assistance of my research assistant Rehema and other paid transcribers. Transcribed interviews were then translated into English. Translations were done by four paid Giriama translators fluent in their own language as well as Swahili and English. All translators had completed the equivalent of a junior college education level. Portions of each translation was back translated by a different translator into the original language and compared to the original transcript. In case of any questions arising about a translation a different translator rechecked the translation and if questions remained, I consulted with other Giriama speakers and selected an agreed upon translation. Following is a section of an English transcript of an interview prepared using this method:

Date: October 10, 2007

Participants: Dama Kambi, Sidi, Kadzo (Kitsao), Rehema, Dzendere & Randy

Location: Kwa Kalulu, under trees in front of Dama's house

R: So now my research is about agriculture isn't it? I want to know how Giriama people do their agricultural work; how they used to do it and how they do it today. If the agricultural practices have changed or not and if they have changed then why. So I have a lot of questions about agriculture. (he laughs)

S: Long time ago the agricultural production was high but now it is less

(One of them is giving out some money for buying medicine for headache and flu-11 seconds)

R: That's ok

D: during that time our grandfathers used to really work hard on the farm.

R: ok

D: They used to grow some maize and harvest a lot. They also used to plant many other things.

R: ok

D: You see they used to grow some maize, cowpeas, grow some simsim and sorghum. Fifteen interviews were audio recorded representing approximately 12 hours of recordings and some 460 pages of transcripts similar to the above.

Documents and artifacts.

A third source of data in qualitative research is documents, which is “the umbrella term to refer to a wide range of written, visual, and physical material relevant to the study at hand”(Merriam, 1998, p. 112). This is a wide-ranging category of materials that can include printed material, such as government published documents, textbooks, newspapers, novels, or non-printed material, such as tools, artwork, photographs, music and religious objects (Bogdan & Biklen, 1998; Harber, 1997; Merriam, 1998, 2002b). In this category Merriam (1998) also includes “physical trace material” which are changes in the environment due to human activity.

As the Giriamas people do not have a tradition of written literature, I did not use written documents. I did however pay attention to oral literature such as riddles, songs, and proverbs (Boateng, 1985). Indeed, oral literature was a rich storehouse of local knowledge and a significant means of knowledge transmission. I also noted such items as farming and household tools used. An example of this was observing that the household head used nontraditional bellows in his blacksmith shop.

Such artifacts can be an additional avenue for researchers to triangulate data gained by other methods (Merriam, 1998) and can provide additional information that cannot be gained

through interviews or observing human behavior. Such data is especially valuable as it is information that is unaltered by the researcher's presence (Merriam, 1998, 2002b).

Summary

Three common methods for collecting data in qualitative research were used in this study. I used interviews to gain detailed understandings of how people have experienced their context and made meaning of it. I used observations to gain broad understandings of the context studied and to build relationships and trust. Observations also informed interviews as well as to confirmed findings from interviews. I used artifacts as an additional avenue providing information that is unaltered by my presence and unfiltered by other's interpretations. Similar to data from observations, I used artifacts to inform interviews and triangulate information from observations and interviews.

Data Analysis

Data was analyzed using the constant comparative method. Merriam (1998) wryly states that this method involves doing just what the name implies—constantly comparing. This inductive process analyses data and generates categories related to the research questions. Merriam (1998) states that constructing categories “begins with reading the first interview transcript, the first set of field notes, the first document collected in the study” (p. 181). This was true in this study as data analysis began while still collecting data and provided direction to the study on an ongoing basis. After being in the field for about ten weeks I paused to analyze data collected and identified topics to investigate further. These topics included planting corn in rows; corn plant spacing; use of terraces; planting corn in rows across a slope; planting mango and cashew trees; and the discontinued planting of sorghum. I also noted that further exploration of containers being used as well as agriculture and household tools would

likely illuminate local knowledge construction as the use of nontraditional containers and tools had been observed.

As data collection ended and the focus turned to more complete data analysis I read field notes and interview transcript several times and began a process of open coding. Eventually I identified 63 themes in the data and used a word processing program to code data and eventually sort it. An example of an interview (# 10) coded and sorted using this system follows.

Code	Data Source	Line number	Data Segment
Expertise	I-10	0925	Rt: If I see some place there is a problem I will go to that teacher
Learn by doing	I-10	0059	Rt: and I also started learning and continuing to do the work
Learn by doing	I-10	0172	R: so you went to the shamba with those ones Rt: yes (p. 8) Rt: yes, - - while they cultivate I also cultivate yes
Learn by Observing	I-10	0057	Rt: and also seeing from my neighbors how they work and also seeing
Modern Ag Practices	I-10	1385 - 1400	R: Kanjelinjeli [a local corn seed variety] and ph4[commercial seed variety] Rt: aaa - - - I will take the Kanjelinjeli R: ok Rt: yes R: you will take that one?

			<p>Rt: yes</p> <p>D: Yes - - - These ones are not easily destroyed</p> <p>Rt: They are not easily destroyed</p> <p>F: They are not</p> <p>D: These ones are not easily destroyed</p> <p>Rt: Even if you store them in the lutsaga [granary]</p> <p>they can not be destroyed</p> <p>D: But this - - Ph4 you have to store it very safe, - - -</p> <p>but the Kanjelinjeli is a good one</p> <p>R: it is a good seed</p> <p>Rt: it does well but the - - - ph4 hey - - in fact if you</p> <p>store it in the lutsaga it gets destroyed</p>
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After comparing these themes carefully with the two research questions, the number of codes was reduced to 19 that had direct bearing on the research questions. Following this, field notes and interview transcripts were reanalyzed and coded with these 19 codes. Data were sorted then cut and pasted into document files based on each theme. Following is an example of this analysis with data from two different interviews (# 06 and # 08) that relate to the gender theme.

Code	Data source	Line numbers	Data
Gender	I-06	1388 - 1392	<p>K: There are other talks that are supposed to be done by the</p> <p>grandmother but not the father in law.</p> <p>R: ok</p> <p>K: So there is no need of telling your father-in-law because</p>

			that one is for the grandmother so you call your grandmother, sit down and tell her.
Gender	I-08	117 - 129	<p>S: When you come back from the shamba [farm] female children are taught how to pound maize, while male children are given a panga [machete]</p> <p>Dz: Female children are taught about digging and pounding</p> <p>(p. 6) R: At the shamba, yes</p> <p>Dz: and pounding</p> <p>R: and pounding</p> <p>Dz: When you come back from the shamba you are given maize to pound</p> <p>R: yes</p> <p>Dz: you winnow (<i>kuheheta</i>), you winnow</p> <p>R: you winnow</p> <p>Dz: you learn to winnow</p> <p>R: ok</p> <p>Dz: Slowly, slowly until you are used, now you know how to dig and pound</p>

This final grouping of similarly coded data was further analyzed and formulated into study findings.

Validity and Reliability

All research at its essence is a human enterprise and as such is open to questions of trustworthiness. How can those who seek to use the findings produced be confident that they trustworthy and therefore useful? Qualitative research, in which the researcher is the primary research instrument, is subject to such concerns and researchers using this approach take such considerations quite seriously. Most often, these concerns are expressed in terms of study reliability as well as internal and external validity.

The reliability of a study has traditionally been linked to the possibility that a study could be replicated by another researcher. This raises interesting issues in qualitative research, as each instrument, the researcher, is unique and likely to produce different results even if two studies have identical structures. Thus, reliability in qualitative studies becomes a question of whether other researchers, based on the methodology used and the data produced, can agree that the findings make sense (Merriam, 2002a). A procedure I used to ensure reliability of my findings was keeping a research journal. In addition to writing field notes, I kept a journal in which I logged steps in the research process itself. I noted my reflections on how the research process was going on, problems I saw and success I experienced, as well as key decisions made in the study. In this way I constructed an “audit trail” (Merriam, 2002a) of the study. One instance of this audit trail was an entry made in my journal on October 10, 2007 in which I commented on the process of translating interview transcripts into English. On this occasion I wrote:

I am in the process of comparing the two English translations of the first Giriama transcript. The process I am currently using is to have both translations and compare them as I type one English transcript. That transcript is turning into an amalgamation of both translations. I have found myself reading the original Kigiriama/Kiswahili transcript

and then choosing what I feel is the most accurate words suggested by the translators. I am using words and phraseology suggested by the translators. Although I began by considering one translation as the base translation, as I have continued I have found that I am finding both helpful and am using both almost equally. At times I judge one to be most accurate and at other times the other. Some sentences may even be a combination of the two translations. At this point, there have not been any significant differences in the two translations but if there are I will note this and discuss it with one or more of my key informants or sort it out by means of comparing back translations.

Entries such as this were made periodically, particularly at decision points in the study.

Internal validity is concerned with questioning if the findings presented are consistent with reality (Merriam, 2002a). In the social sciences, in which human beings are often the phenomenon being studied, one could make the argument that another human being, the qualitative researcher, is in an ideal position to understand the reality being studied. Nonetheless, misunderstandings or misconstruing of events or of another person's words does occur and qualitative researchers employ specific measures in order to prevent such human events from tainting findings.

One such measure is triangulation, which is defined by Glesne (1999) as including the "use of multiple data-collection methods, multiple sources, multiple investigators, and/or multiple theoretical perspectives" (p. 32) and is central to ensuring validity and reliability of the study. In order to triangulate findings I collected data using multiple methods, as has been described, and utilized varied sources of data. While I focused data collection efforts on the participating household, I also regularly used member checks, that is to say I often consulted with key informants about data collected and discussed my tentative understandings with them.

Such member checking (Glesne, 1999; Merriam, 1998, 2002a) was invaluable to ensuring that my understandings were grounded in the reality of the context. Six months after collecting data and well into data analysis, I was able to return to Kenya and meet with key informants to share results and ask for their input. In this way, I sought to ensure that my findings are indeed congruent with the reality expressed by study participants. A further measure taken to ensure the internal validity and reliability of the study was to reside at the research site for five months, which allowed time for repeated member checking and deepened my perceptions of the context.

In addition to reliability and internal validity, an additional concern is the external validity of the study. This is most often described as the generalizability of the study findings. That is to say, can these findings be applied to other situations? Given the small size and purposeful selection of the sample in qualitative studies, their generalizability is not discussed in same terms as quantitative studies that have large samples selected at random. With qualitative studies the generalizability of a study is determined by the reader (Merriam, 2002a). The reader determines if the study is useful in the context they wish it to inform. The richness and thickness of the descriptions produced will allow the reader to determine the reliability of the study as well as its generalizability to other circumstance.

Researcher Bias, Assumptions, Limitations, and Translation Issues

For more than five years, I worked in community development in this area of rural Kenya. During this time, I sought to teach agricultural methods that I believed would increase maize (corn) production. I have come to believe that my goals and teaching methods were much closer to my rural Oklahoma roots than the rural Kenyan context that I wished to help “develop.” These efforts were minimally effective and I now consider them to have been an unintentional participation in Western hegemony inflicted on Giriama people. With this background, I am

predisposed to resist Western hegemony that unthinkingly promotes Western ways rather than Giriama traditions. I am unlikely to support Western knowledge unless the Giriama people themselves have evaluated the knowledge and view it as helpful.

While I espouse a pro-Giriama stance in this, I fully acknowledge that I conducted this research as an American. As an outsider in the community my perspective occasionally was at variance from community members. It is likely that from time to time I gave different interpretations to events than community members. While I energetically sought out the perspectives of community members, when my perspectives differed, I did not consider them invalid but analyzed the differences in order to gain additional insights.

I consider that my status as a community outsider had both limitations and benefits. I was limited in that I undoubtedly missed some culturally important happenings and likely misunderstood other happenings. Keeping accurate field notes and having regular discussions about such events with key informants was important for minimizing this limitation. Alternately, being an outsider benefited the study as I feel that I did notice routine occurrences that an insider might have overlooked. As an outsider who has some experience in the context, I considered myself a knowledgeable outsider. As such, I was able to identify important phenomena that a novice in the context might have missed while also not ignoring routine events that an insider might have overlooked due to familiarity.

Gender was a factor in data collection as much of Giriama society is regulated in terms of gender. In Giriama society, males and females do not routinely spend significant amounts of time together, particularly in private settings. As a single male, this did affect my interactions with Giriama women, as I only worked in the farms of the older widows of the homestead and not with younger women. This was particularly true with interactions away from the homestead.

However, at the homestead females of all ages appeared comfortable interacting with me as long we interacted in the presence of others.

Race was also a factor. As a person of European heritage, an *Mzungu*, in a black African community, I was not able to melt into the background. The longer I was in the community and behaved in an unassuming manner, my presence was less a distraction but usually noted. Due to customary Giriama hospitality shown to visitors and the unfortunate impact of European colonial presumptions of superiority, an *Mzungu* is often treated with deference. While this occasionally opened doors, it also presented some barriers to forthright communication.

Language was an additional dynamic in the study as I collected data in English, Swahili, and Giriama. I am a native speaker of English, fluent in Swahili, and have a moderate ability in Giriama. As was described in previous sections, a part-time research assistant was employed to assist with language and cultural guidance. She as well as other hired local people fluent in Giriama, Swahili, and English transcribed interviews from audio recordings into the language of the interview. Following this, an English translation of non-English transcripts was produced. In order to verify their reliability, portions of English translations were back translated by assistants and compared to the original transcripts. Any problems with translations revealed by this process were discussed with other Giriama speakers and resolved.

Chapter Summary

The purpose of this study was to understand how adults construct and disseminate local agricultural knowledge in a rural community in coastal Kenya among the Giriama ethnic group. This chapter has described the methodology used to conduct this study. It has described the design of the study as being qualitative in nature and has clarified that the research sample was purposefully selected using specified criteria. The methods of data collection and data analysis

have been outlined. Additionally, issues of validity and reliability have been addressed. Finally, researcher bias and assumptions, study limitations, and translation issues have been acknowledged.

CHAPTER 4

CASE DESCRIPTION

The purpose of this study was to understand how adults construct and disseminate local agricultural knowledge in a rural community in coastal Kenya among the Giriama ethnic group. These research questions guided this study: (a) in this community, what factors shape the process of local agricultural knowledge construction and (b) In this community how do adults learn local agricultural knowledge? This study was designed to investigate a very specific case. Towards this end, a family living in a specific division of a specific district in the country of Kenya was chosen for the study. Following is a description of the selected case that begins with an exploration of its location and concludes with a description of the major participants in the study.

Location of the Case Studied

The family chosen for the study lives in a rural homestead located in the Marafa Division of the Malindi district of the Coast Province of the country of Kenya. Kenya is located on the east coast of the continent of Africa. Bisected by the equator and home to the second tallest mountain on the continent, Kenya presents a striking array of climatic zones. Mount Kenya is located virtually on the equator but with an elevation of over 17,000 feet has a historically maintained a permanent icecap. The slopes of Mount Kenya are home to highly fertile and well-watered farmland that, unfortunately, Europeans found strikingly beautiful and very much like Europe. That is, Europe without its industrial smokestacks and tiny farms. Following the Berlin Conference of 1884 in European powers divvied up the continent between them and Briton claimed an area of East Africa in which they formed the British East Africa Company in 1888,

the East African Protectorate in 1895 and eventually the colony of Kenya in 1920 ("History of Kenya," 2008).

During this period of overt British domination and the eventually demarcation of an area now known as the country of Kenya, the British rulers paid little attention to the indigenous owners of this land. Boundaries were drawn with little or no regard for the ethnicity or claims of those who had lived there for centuries. The fertile highlands were confiscated and given to Europeans. Some of these displaced owners of the land found themselves surviving by doing menial jobs on the same land they once lovingly tilled. Others were relocated to less productive land belonging to other ethnic groups. The indigenous residents of this land and its resources were exploited for the benefit of a small country located on another continent thousands of miles to the north.

This exploitation provoked many incidents of violent resistance against the British. The Mau Mau guerrilla movement of the 1950s provided the impetus for the British to relinquish their colonial claims on Kenya. On December 12, 1963, Kenya was declared an independent nation lead by Jomo Kenyatta, one of the leaders of the Mau Mau and a British trained anthropologist.

The part of east Africa that we now know as the country of Kenya is approximately twice the size of the state of Nevada and is home to approximately 38 million people ("The World Factbook: Kenya," 2008) representing some 40 ethnic groups. Administratively, the country is divided into eight provinces, which are divided into districts, which are divided into divisions and divisions are composed of locations. This description of the location of the study will begin at the District level and progress down to the Location level and eventually to the homestead studied.

Malindi District

This study was conducted in the Marafa Location of the Marafa Division of Malindi District in the Coast Province of Kenya (see figure 4.1). The largest town and headquarters of the District is Malindi. Positioned on the shores of the Indian Ocean a two-hour drive north of Kenya's internationally known port city and the provincial headquarters, Mombasa, Malindi is a mid-size town located almost halfway between the Tanzanian border to the south and the Somali border to the north. The tourism industry is the engine that drives its economy. Malindi's beautiful palm fringed sandy beaches attract droves of tourists from Europe's cold climes, particularly in Europe's winter months, known in Malindi simply as "high season." Tourist hotels of various classes line the beach from well south of town up to Malindi Bay, which is home to several local fishermen and their boats. The southern edge of the bay is demarcated by Vasco da Gama point upon which the stone marker left by Vasco da Gama in 1499 was eventually erected in the sixteenth century (Martin, 1970). To the north a pier juts out in the water to service the few commercial fishing boats that visit Malindi. Further north of the bay more hotels appear and can occasionally be seen for some five miles up to the mouth of the Sabaki River. There are pockets of tourism-related developments dotting the coast even north of this river.

Tourism is a major industry for the entire coast of Kenya, which is served by one major paved road that extends from the Tanzanian Border south of Mombasa, through Mombasa, on north through Kilifi then to Malindi. As it continues north of Malindi however, it is paved for only an additional 30 - 40 miles although the road continues northward towards the town of Lamu and the Somali border. Malindi boasts the amenities of most modern cities—reasonably dependable electricity, piped water, telephone service (cell and landline) and high speed internet

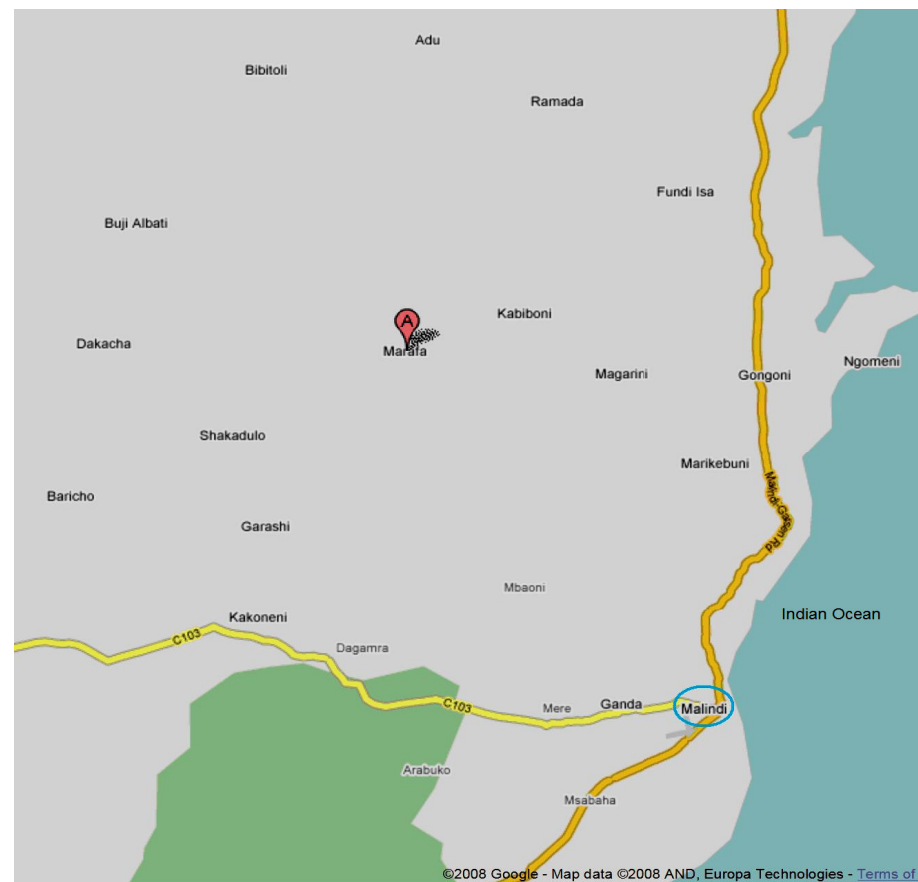
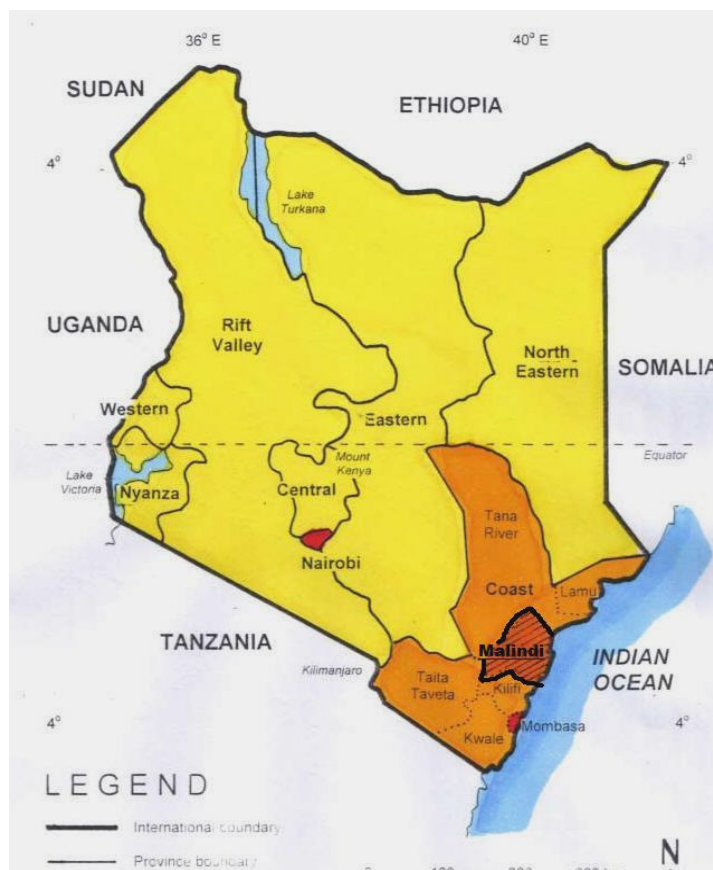


Figure 4.1 Map of Kenya with Malindi District¹ highlighted and a detailed map of Malindi District showing the town of Marafa (approximately 30 miles from the town of Malindi)

¹ Downloaded on August 13, 2008 from http://www.malindikenya.com/malindi_district_map.htm and adapted

access. However, one only need travel 10 or 15 miles any direction from Malindi before these conveniences, other than cell phone service, begin to disappear.

Public transportation facilities to an inexperienced visitor might appear undeveloped and rather chaotic but actually function efficiently and relatively cheaply. This applies to travel both within town and for travel up and down the coast on the major road or inland on the unpaved roads that lead to the numerous population centers of the district, which are largely inhabited by



Figure 4.2. Vasco da Gama Point

people of the Giriama ethnic group. Marafa, the primary site of data collection for the study, is approximately 30 miles from Malindi and to reach it one need only hire, for about 75 cents, one of the numerous tuktuk taxis roaming the streets of Malindi to take you to “*staiji mpya*” (the new stage). Upon reaching the stage, any of the plentiful touts there will direct you to a vehicle

traveling to Marafa. After boarding the vehicle, which could be anything from 15 passenger van to a large “country” bus, one finds an empty seat and waits for the vehicle to fill up with passengers and cargo. Once the vehicle, perhaps the green bus with Saddam proudly written across its front, is full, it eases its way out of the crowded stage and on to the main coastal road going north towards the Sabaki River. This is the paved section of the road and one learns to enjoy both the speed of travel and the relative smoothness of the ride.

After about 15 minutes of the smooth and fast ride, the bus crosses the bridge over the Sabaki River built by the Japanese a few years ago. This bridge signifies that the more challenging part of the journey is about to begin. The bus slows and prepares for the left turn onto the unpaved road that is the main transportation artery for Marafa division. During the one and a half hour trip to Marafa town the bus stops every ten minutes or so for passengers and cargo to leave the bus and others to board the bus. Although the Swahili language is widely spoken, the predominant language is Giriama. Your fellow passengers are likely to be a mixed group of male and female as well as young and old. Often seats are fewer than passengers are so it is common for some passengers to stand in the aisle. Seated younger passengers routinely join those standing when a white haired passenger boards the bus and needs a seat.

For virtually the entire trip along the right hand side of the road one can see poles for electrical cables but interestingly wires are only seen for the first ten minutes of the trip. A few months ago the state controlled national electrical company installed these poles and most residents link their arrival and implied promise of electricity to the hotly contested national elections of December 2007. Despite the next significant political contest being five years away, area residents hope that within the next year wires will be installed and electrified. Marafa has never had electrical power so waiting a few more months does not seem a burden.

Although the road is unpaved and receives very little regular maintenance it is easily passable by two wheel drive vehicles unless heavy rains have fallen in the past few hours. Rolling hills dominate the countryside, but the road encounters few steep inclines and the one stretch of notoriously slippery dark clay soil thankfully occurs on a flat part of the road. On rainy days the driver and passengers all breathe a sigh of relief upon successfully navigating this section of the trip.

Shortly after passing this section on the way to Marafa the trading center known as GIS comes into sight. GIS is home to a secondary school, lots of hawkers selling tomatoes, okra, eggplant and other vegetables, and, if you look carefully amid the underbrush off to the right, unused, rusting farm equipment. This spot in the road derives its name, GIS, from the English title “General Investigation Station” a name that harkens back to the large Australian funded settlement scheme that was active here back in the late 70s, 80s, and early 90s (Porter et al., 1991). One wonders if the vegetables being hawked to bus passengers represent one of the few success stories emanating from this large development project.

From GIS Marafa is only a few kilometers away but this is arguably the roughest part of the road and speeds above 30 kilometers per hour are rarely possible. On this section the bus weaves from one side of the road to the other looking for some relief from the large potholes and head-jarring washboard wrinkles that blight the road surface. Riders on bicycles traversing the footpaths that run parallel to the road trade the lead back and forth with the bus only to be overtaken a final time as the bus crosses a dry-water crossing of a seasonal stream and begins to climb the final hill on the edge of Marafa town. The bus climbs the hill slowly but faster than dismounted riders can push their bicycles up the hill.

Marafa

As the bus slowly climbs the hill, a few passengers begin to stand, grab their luggage, motion to the tout, and move to the door of the bus in order to alight at the “Estate” stage. This is the first stop for Marafa bound passengers to disembark. Its designation as Estate once again is linked to the Australian funded development project. Estate is a block of 25 to 30 houses located on the right side of the road that are clearly distinguishable from other buildings in Marafa by their appearance and building materials. Once they housed expatriate and upper level local staff of the project but are now available to those willing to pay a modest rent and lucky enough to have an inside contact to help arrange it. Although Estate’s houses are still considered nice by Marafa standards, unfortunately, its tennis court is now in disrepair, overgrown with trees and the asphalt is cracked, but with a little imagination one can hear shouts of “good shot” or perhaps “g’ day mate.”

For bus passengers who do not alight at Estate the bus continues up the hill and towards the top slows as it approaches a four-way intersection. The intersection neither has nor needs any stop signs, as the number of vehicles passing here in a normal day is unlikely to exceed one or two an hour. At the intersection, the bus makes a right turn and stops so that more passengers can alight. Some passengers leave the bus and walk down the road beyond the rear of the bus. Perhaps they live in the nearby homes in that direction or perhaps they live in the many areas beyond Marafa from which people come to access public transportation. A few passengers alight and walk over to the women seated under the nearby tree selling cassava, mangoes, fish or other foodstuffs. Most remain on the bus and it pulls away for the one-minute trip that will take it to the heart of Marafa town. In town the bus turns around and parks at the main stage, just across from the Townside lodging house and cafe. As Marafa is not its final destination, some

passengers alight but several remain on the bus. After a few more passengers join those in the bus, it departs back down the same road on which it entered town. Upon reaching the four-way junction once again it pauses to collect any passengers waiting for it then turns to the right and continues its journey to Baricho where it will spend the night before starting its return journey to Malindi via Marafa early the next morning.

Marafa town is the headquarters of Marafa Division, a formal administrative unit of Kenya's central government. The District Officer, the primary representative of the government in the Division, maintains an office here. Several government ministries such as agriculture, forestry, youth, health, and lands and settlement also maintain offices here. The major health center for the division is located next to the Divisional offices. Although staffed only by health officers and nurses, it treats dozens of patients daily for serious injuries and illnesses. Most are treated on an outpatient basis but there is a small ward for those who need to be admitted for longer-term treatment. Treatment is not free but is highly subsidized by the government and some donor organizations. As Marafa is still waiting for electrical supply, the health center has been fitted with a solar powered lighting system that allows for several hours of lighting each evening.

The main street in town runs from the previously mentioned four corner intersection to the government offices and the medical center on the other end of town. One could travel the length of this street with a leisurely 15-minute walk. On this walk, one would first pass a few groups of women sitting on either side of the road informally selling foodstuffs to those passing by. (A brand new modern market building has been built for them close to the Medical Center but no one uses it and it sits idle.) Walking past the informal traders one would soon notice a road leading off to the left and a sign announcing that Marafa Secondary and Primary schools are

in that direction. During the school term, one can see older students in white shirts and gray trousers or skirts and younger students in pink shirts and green shorts or skirts. The former attend the secondary school and the latter the primary school. Continuing down the main street one would pass about 20-30 buildings that house some 14 shops, and at least four “*hotelis*” (small cafes) lining the streets. The shops are mostly of the general variety that sell many items but may



Figure 4.3. View of the Main Street in Marafa.

specialize in one genre of merchandise such as food, clothing, or plastic ware. One general store also doubles as a laundry where clothes are washed by hand by a worker sitting in the shade at the side of the building. This shop also provides a mobile phone battery charging service using the small gasoline powered generator humming at the side of the building. Continuing down the street one would soon pass on your right the town’s mosque. Despite its prominent position in town, those who regularly use it are few and, unlike in Malindi, in Marafa prayer calls from the

mosque are rarely heard. Although no churches are passed on our stroll down the street, there are many church buildings in the Marafa town area that are active on Sundays (or Saturday as the Seventh Day Adventist denomination is popular in the area).

Beyond the mosque one would pass a few more shops and hotelis before reaching a Y in the road. Continuing straight and slightly to the left leads one to the Government offices and the Medical Center but following the right hand road leads one to the only tourist attraction in the Marafa area and out of town towards Adu Location. The tourist attraction is known as “Hell’s Kitchen” and has been described as a miniature Grand Canyon (Martin, 1970). While local



Figure 4.4. Hell’s Kitchen

people pay it little attention, every few days it does attract a vanload of tourists who make the daytrip from Malindi to enjoy the unique view and an experience in rural Kenya. Some effort has

been made to develop it and attract more tourists with their shillings but currently it has little impact on Marafa's economy.

The economy of Marafa can only be described as limited. There are no major industries in Marafa and most area residents survive as subsistence farmers who just hope to grow enough food to feed their families. Farmers near town do bring some of their produce such as milk, vegetables, cassava, and fruit to sell in Marafa but the prices paid are significantly less than one would be paid in Malindi. Some vegetables are transported to Malindi for sale but pineapples and charcoal are the most common items produced in Marafa Division and sold in Malindi and beyond. Some timber is also sold but not in large quantities as the sale of the most desirable type is prohibited. Marafa's many shops, its government offices as well as the medical center attract a steady flow of area residents into the town but expenditures are small. As I observed customers in shops and hotels, few customers spent more than 100 shillings (\$1.30) at a time and most customers cautiously removed the money from where it was hidden within folds in their clothing and carefully counted out the coins or a few tattered and soiled bills.

Although never crowded, shoppers and people visiting offices or the medical center fill Marafa's street during the daytime hours. Most people are walking but bicycles are common. Motorized vehicles occasional pass by as do donkey carts. Secondary and primary school children are commonly seen in Marafa and are easily recognized by their uniforms. Government office workers are recognizable by their "sophisticated" western dress and mannerisms. While most local men wear Western style shirts and trousers, the clothing's worn state and the wearers' choice of local sandals or no footwear clearly identify them. Local women also rarely wear western style shoes but always wear a leso, an outer wrapper, covering from the waist to the ankles, even if underneath it is a western style dress. In Marafa the Giriama language is most

common, although the majority understand Swahili and, if one was needed, it would not be difficult to find an English speaker. Most of the people seen in Marafa are ethnically Giriama and are subsistence farmers or small-scale, self-employed businesspeople. The homestead selected as my primary site for data collection is composed of just this kind of people.

The Homestead: Mudzi

This homestead selected is a 15-minute walk from Marafa town and just off one of the main roads in the area. Local residents know it by the name of the now deceased homestead head who founded the homestead but we will just refer to it as Mudzi (homestead in the Giriama language). Mudzi is a large homestead containing some 15 homes and, at last count, 60 people—31 children, 17 women and 12 men. Within Mudzi there are nine married couples, four widows, a single mother, three unmarried and childless adult women and three unmarried and childless men. Although the homestead head, the eldest male, has two wives, only one wife and her children live at Mudzi. The other wife and her children live in another town located some thirty miles away.

Mudzi is organized in a large rectangle of houses roughly 30 yards wide and 90 yards long. Within the rectangle are several groups of trees under which much of the domestic work of the family is done. Also within the rectangle of houses is a group of stakes used to tie up the family's cowherd during the nighttime hours. The herd numbers approximately twenty and while they belong to individual members of the family, they are kept together as a single herd, a testimony to the unity of the family. In addition to cattle, Mudzi has a few head of sheep, around a dozen goats, numerous chickens, a few ducks, and three or four dogs. These animals roam the homestead relatively freely during the day and at night are sheltered in buildings located near the houses in which cooking is done and corn is stored. These kitchens and the houses in Mudzi are



Figure 4.5. Typical Giriama Homestead

built with traditional building techniques that use local poles and slender branches to erect frames for walls, which are then filled with stones and moistened soil. Although not considered permanent structures, these homes will stand for a decade or longer if protected from rain. Grass cut from nearby meadows is the roofing material for most roofs. Four of the houses have tin roofs rather than grass, which is a sign that the owner receives a regular income that allows for this significant expenditure.

Mudzi is home to three generations of a single extended family. Residents either trace their lineage back to a single male, Mudzi's founder, or are wives of males who trace their lineage back to the founder. Other offspring of the founder have moved away to begin their own homesteads but residents of Mudzi have elected to remain together as part of the original homestead. The older generation is composed of the homestead head and his wife, two widowed aunts, his stepmother, his unmarried sister, and a sister-in-law. The middle generation of Mudzi

consists of eight married couples, a single mother and five unmarried and childless adults. The majority of the 31 children are offspring of the middle generation but eight children are the youngest offspring of the older generation. Despite some children technically being uncles and aunts to their age mates, they relate to each other as brothers and sisters.

The homestead head, Daudi, is the eldest male resident of Mudzi. Daudi divides his time between Mudzi and the home of his other wife in another town. In his absence, his wife, Tabu, and one of his sons, Juma, seem to assume the role of homestead head and deal with family issues as they arise. Daudi is the only male in Mudzi with more than one wife, as it seems the younger generation has opted for monogamous marriages. The widows who live in Mudzi were wives in polygamous marriages. Other than Daudi, who is a retired civil servant, all the adult males of Mudzi spend the majority of their time outside of Mudzi working to earn money for their families. Conversely, with the exception of two unmarried females, the adult females spend the bulk of their time working in the nearby family farms or completing domestic chores at Mudzi.

The Mudzi family land consists of several fields near the homestead and another large farm purchased years ago that is located a forty-five minute walk to the west. Each nuclear family is assigned a portion of Mudzi family land that they cultivate as their own. Some of the fields are quite fertile and reserved for corn while others are less fertile and set aside for cassava or other less demanding crops. The area is hilly and most of the fields have some slope, some rather steep. An exception to this is one field that is located next to a seasonal stream. This field is flat and very fertile due to silt deposited by seasonal floods and contains several banana plants, an uncommon plant in this dry area. Women have the primary responsibility for the farms, and in fact, I observed only women working in the farms. Growing food for personal consumption is

the focus of farm work. For the Mudzi family, and most people of Marafa division, food means only one thing—corn. Cassava root is widely grown and eaten but it is not “food.” Cowpeas, pumpkins, green grahams, and pigeon peas are other food crops grown on family farms. The



Figure 4.6. Fields near Mudzi.

Mudzi family harvests and eats many green leafy vegetables some of which are cultivated, but many are uncultivated and simply harvested as needed.

Despite being very rural, Mudzi is not isolated. National and international news is available through the family’s radios, at least when the batteries are fresh, and local news is readily available as Mudzi is located next to a main road and near Marafa town. Marafa is an information center as vehicles coming from Malindi, and other parts of the division pass through town several times a day and each one is sure to bring news with it. A few newspapers from Malindi make their way to Marafa but most news is passed from person to person orally. This sharing of news is facilitated by the almost daily holding of official meetings of one variety or

another in Marafa. Mudzi's close proximity to Marafa allows them to tap easily into this flow of information. Most of the family's shopping is done in Marafa and most of the school-age children attend school there. In addition, two of the unmarried adult females operate a food kiosk in Marafa and one of the men is employed there in a government office. Thus, family members are in Marafa often and quickly hear of current events or local gossip. Just in case they miss something, people walking down the nearby road or on any of the many nearby footpaths are sure to pass on the latest news.

In summary, although larger than many area homesteads, Mudzi is a typical homestead of the area as to its physical appearance and its inhabitants. Some in the area might consider the family wealthy due to the extent of the land they own but its houses are typical with few modern amenities. In addition, as is typical of the area, the family depends on its own fields for its food but is also dependant on some family members working off the farm to earn much needed money. It is also typical in that several generations of a single extended family live at the homestead.

Study Participants

At Mudzi, family members readily made themselves available to participate in the study. Participation was limited only by their physical presence at Mudzi while I was there. In the study I quickly discovered that, as most adult males spent little time during daylight hours at Mudzi, the female family members would participate in my study more than the males. Mudzi is a busy place with all adults very engaged in providing for the family as their unique roles dictate. Realizing this I was grateful for being able to conduct the study in a large homestead as, despite everyone's busy schedule, someone was usually available to spend time with me. Much of my time was spent with two older widows, Kadzo and Hawe, as they had fewer family

responsibilities and more time to spend with their inquisitive visitor. As the oldest females in Mudzi, they seemed to share a special bond and in conversation, it was common for them to finish each other's thoughts. Kadzo in particular is outgoing and each time I visited Mudzi took it upon herself to make sure that I had someone to talk to and something to do. While Kadzo and Hawe were the participants I regularly spent time with, other family members also participated, especially the other women of Mudzi.

In addition to Mudzi family members, I also had contact with several other Giriama people from the area. Most were workers in local NGOs and one, Rehema, was my research assistant. Following are two charts describing participants in the study, their role at Mudzi, and in the study.

Table 4.1 Study Participants at Mudzi

Pseudonym	Gender	Age range	Role at Mudzi and individual information	Role in Study
Daudi	M	60-70	Homestead-Head, Grandfather; Retired Civil Servant, eight years formal education (rare for men his age)	Interviewed and part of observations
Tabu	F	50-60	Female Homestead-Head (wife of Daudi), Mother and Grandmother	Interviewed and part of observations
Kahindi	M	35 - 45	Son of Daudi, Husband of Esther, Father of six children, Rarely at Mudzi, employed in Malindi	Peripheral
Esther	F	30-40	Wife of Kahindi, Mother of six children	Interviewed and part of observations
Karabu	M	30-40	Son of Daudi, Husband of Dama, Father of five children; Occasionally at Mudzi, Self-employed local cattle and goat buyer	Part of observations and informal conversations
Dama	F	30-40	Wife of Karabu, Mother of five children	Interviewed and part of observations
Juma	M	30-40	Son of Daudi, Husband of	Interviewed and regular

Pseudonym	Gender	Age range	Role at Mudzi and individual information	Role in Study
			Deborah, Father of two children; Civil Servant employed in Marafa	part of observations,
Deborah	F	30-40	Wife of Juma, Mother of two children	Part of observations
Muvera	F	20-30	Daughter of Daudi, Single Mother of two children	A participant in several interviews in observations
Hawe	F	60-75	Sister to Daudi, Widow, Grandmother (although she has no children of her own), Oldest female	Significant role, interviewed several times, she took me to her farm several times
Kadzo	F	60-75	Widow, Mother and Grandmother	Significant role, interviewed several times, she took me to her farm several times and helped organize my observations
Kazungu	M	30-40	Son of Kadzo, husband of Samini, father of five children; Self employed as a local timber cutter	Part of observations
Samini	F	30-40	Wife of Kazungu, Mother of five children	Interviewed and part of observations
Sidi	F	50-60	Widow, Mother and Grandmother but has children still in primary school; Employed part-time to cook relief food at local nursery school	Interviewed and part of observations
Ngoma	M	25-35	Son of Sidi, Husband of Nyevu, father of one child; Self employed as a local timber cutter	participant in several interviews and observations
Nyevu	F	15-25	Wife of Ngoma, Mother of one child	Part of observations
Kasichana	F	50-60	Widow of a son of Mudzi founder, Grandmother	Interviewed and part of observations

Table 4.2 Study Participants not Mudzi Family Members

Pseudonym	Gender	Age range	Individual information	Role in Study
Baraka	M	45-55	Development worker at Local NGO	Key Informant, interviewed once
Charo	M	25-30	Development worker at	Key Informant

Pseudonym	Gender	Age range	Individual information	Role in Study
			Local NGO	
Hamisi	M	45-55	Development worker at Local NGO	Key Informant, interviewed once
James	M	40-50	Development worker at Local NGO	Key Informant, interviewed once
John	M	30 – 40	Government Agricultural Extension worker, not a Giriama, not from the area	Interviewed once
Rehema	F	20-30	Part-time Development Worker, Recent College Graduate	Research Assistant
Safari	M	40-50	Development worker at Local NGO	Interviewed once

The charts above describe two groups of participants in the study. Seventeen participants were from the Mudzi homestead and seven were participants from outside Mudzi. These participants from outside the Mudzi homestead are, with the exception of John, of the Giriama ethnic group and from Malindi District. The four who are described as key informants and Rehema, my research assistant, were cultural coaches and provided language assistance. Both John and Safari were included as during the study they were identified as having specific information useful to the study.

Chapter Summary

This chapter has described the case studied. The case purposely selected was located in Marafa location of Marafa Division, in Malindi District in the Coast Province of Kenya. The homestead studied, Mudzi, is large homestead but typical of this rural area. Twenty-four people participated in the study in a somewhat formal manner. Seventeen were members of the Mudzi homestead and seven others who were not Mudzi family members also participated in the study.

CHAPTER 5

FINDINGS

The purpose of this study was to understand how adults construct and disseminate local agricultural knowledge in a rural community in coastal Kenya among the Giriama ethnic group. This chapter describes the findings of the study and presents a narrative account of the major findings of the study organized in terms of the two research questions. These research questions are: (a) In this community what factors shape the process of local agricultural knowledge construction? and, (b) In this community how do adults learn local agricultural knowledge?

This study sought to increase understanding of how adults construct and disseminate local agricultural knowledge—a knowledge base received from prior generations and then reconstructed as the current generation adapts to contemporary realities. Throughout their lives, study participants evaluate both the knowledge passed on to them by ancestors and new knowledge accessible to them from a variety of sources. Based on this evaluation they then choose the knowledge that best seems to meet their contemporary needs. They may choose to keep some ancestral knowledge while discarding some in favor of new knowledge. These choices then are put into practice as they live their lives. Thus, this unique knowledge base is embedded in practices that study participants engage in as part of daily life.

The process of reconstructing local knowledge was explored in search of answers to the two research questions: What factors shape the process of local agricultural knowledge construction? and How do adults learn local agricultural knowledge? As can be seen in Table 4.2, four factors that shape the process of local agricultural knowledge construction were found

to be modernizing influences, gender, time/energy constraints, and access to knowledge. Five ways in which adults learn local agricultural knowledge were identified as observation, trial and error, social interaction, conferring with respected people, and oral literature. As local agricultural knowledge is inseparable from the actions of study participants in every day life, the following discussion is frequently couched in the context of specific practices.

Table 5.1 – Study Findings

<p>1. What factors shape the process of local agricultural knowledge construction?</p> <ul style="list-style-type: none"> • Modernizing influences • Evolving Gender Roles • Time/Energy constraints • Access to Knowledge <p>2. How do adults learn local agricultural knowledge?</p> <ul style="list-style-type: none"> • Observation • Trail and error • Social Interaction • Conferring with respected people • Oral literature

Factors that Shape the Process

In this section, four factors that shape the process of local agricultural knowledge construction will be discussed. These factors, although discussed separately, do not exist in isolation from each other but rather as part of the dynamic milieu of daily life. This interplay between the factors is exemplified in the discussion of the first factor, modernizing influences, a force that is pervasive in Giriama society. Modernizing influences is a grouping of forces that push the homestead away from traditional practices and towards a more “modern” way of life. These influences are: (a) *cha moyowe* (individualization), (b) government agricultural practices, (c) school attendance, and (d) increased monetization of life. The second factor, evolving gender roles as is seen in the organization of work and social interaction. The third factor is time and

energy constraints and the final factor is access to knowledge. The size and scope of social networks as well as location affect access to knowledge.

Modernizing Influences

The first factor that shapes the construction of local agricultural knowledge to be considered is a grouping of influences, largely external, jointly labeled as modernizing influences. These influences often run counter to the traditional practices that have been passed on from ancestors. They represent pressures brought to bear by Kenyan government policies and Western cultural practices present in Giriama society since the colonial period, but increasingly adopted as the norm in contemporary Kenya. Specific influences to be discussed are: (a) *chamoyowe* (individualization), (b) government agricultural practices, (c) school attendance, and (d) increased monetization of daily life. Even though Mudzi is far from Nairobi, the capital city of Kenya, and has little direct contact with the West, these pressures have changed the knowledge that family members use in daily life and what they will pass on to the next generation.

Cha Moyowe was a term study participants often used to describe a variety of changes that have taken place at Mudzi within the last 20 years or so. These changes point to increasing individualization within the homestead. The first people I heard use the term were Kadzo and Hawe as we discussed the trend in the family to do less communally and more individually. Rehema, my research assistant, explained the term as meaning “Every person following his or her own affairs.” This conversation took place as we discussed that people of Mudzi have changed from the practice of having a joint granary for the entire homestead to each family within the homestead having their own granary. As I discussed this further with others in the homestead, I learned that in the recent past the homestead had abandoned several practices linked to this. This change seems to have begun twenty years or so ago. Khadzo linked the

changes to the death of her husband, a former homestead head and stated that the family started separating at that time. When I asked for a more specific timeframe, she mentioned her son Kazungu, who I estimate to be around 35 years old. She clarified that at the time she gave birth to him the homestead still worked together “but before he grew up we started separating to work as individuals.”

Before the family began separating to work as individuals, they worked closely together to provide food for the entire homestead. The homestead head organized the family’s work on their *dzumbe*, a communal farm. Sidi described how as a child she attended family meetings in the evening and everyone was told that the next day they would all go to the farm to plant. Hawe described how at the farm the homestead head would assign each family member a certain number of portions of ground to cultivate and all were expected to finish this before they did other work. Corn harvested from the *dzumbe* was taken to the communal granary where it was controlled by the female homestead head. This corn was used for food and selling it was strictly forbidden. Cooking was also done communally and Kadzo described how one woman would be given corn from the granary by the female homestead head so that she could cook on one day, and then the next day another woman would be given so that she could cook that day. Family members also sat together to communally eat the evening meal.

Eating the evening meal together made possible one of the important aspects of this communal society. As the evening meal was being prepared and everyone waited for it, all the men of the homestead and many of the children would gather in a certain place, light a fire and sit around it. Sitting there, they would discuss the day, tell stories, instruct the children, and occasionally correct the behavior of the children. This gathering was called *dhome*. Daudi, the eldest male at Mudzi, described *dhome* additionally as a place where if someone had an issue to

discuss with the family they could bring it up. He commented on how helpful it was to have a place where people came and discussed things that were on their mind. A key informant, James, described to me how as a child he sat at *dhome* and heard his uncle tell of his experience visiting another homestead and being treated in a way he considered disrespectful. James recalled his uncle telling the children present that at their homestead they were not to act that way and to treat all guests with great respect. Juma, when talking about his experience with *dhome* as a child, spoke of how his grandfather sang and was a good singer. He continued, “He would explain to us the places for hunting and to get animals there, to trap them. He was someone who could really talk.” Most people described *dhome* as a meeting of the males, but Daudi explained that there was also a *dhome* for the women of the homestead. Sidi agreed and stated, “There was for women and for the men.” I was also assured that when needed both genders would sit together and resolve issues. Kadzo stated, “Sometimes [there] was a need and the men would call you there.”

This communal approach to the homestead did not ignore the individual. In addition to the communal farm, *dzumbe*, each nuclear family was assigned a small plot of ground to farm called a *koho*. If a man had more than one wife, each wife would have her own *koho*. Each family or individual was responsible for all work on their *koho* and entitled to its produce. Whereas produce from the *dzumbe* could not be sold, produce from the *koho* could be sold if the owner so desired. Hawe informed me that “Maize from the *koho* you can use them the way you want. If you want to buy something but you don’t have money you can sell some of your maize and get money.” Kadzo further explained that a wife would not be given corn from the communal granary to give as a gift to her parents, but if one wanted to go visit her parent’s homestead “to visit them you take those from your *koho* and you can visit with your husband.”

Samini described how as a child she had her own *koho*. She said she sold what she grew there and explained, “I buy clothes because I am still young and I have no other way to spend. I buy clothes for Christmas holiday.” The *koho* catered to individual concerns but the *koho* was always secondary to the needs of the homestead. All in the homestead understood that work in the *dzumbe* took priority over work in a *koho*. Hawe and Kadzo explained this to me in the following exchange:

When you finish your portions [at the *dzumbe*] you can go to your *koho*. You go and dig at your *koho* until evening. If you wake up earlier you can go to *koho* first and cultivate” (Hawe). “While it is still dark” (Kadzo). “Yes, while it is still dark” (Hawe). “You go to the *koho*” (Kadzo). “It is still dark” (Hawe). “You go and dig until the first hour (7 a.m.) then you go to the *dzumbe*” (Kadzo).

In the *dzumbe/koho* system of cultivation the individual was not forgotten but the group, the homestead, took precedence.

This has changed within the last generation as *cha moyowe* has taken hold—all follow their own affairs. The family no longer has a *dzumbe* but every nuclear family has been allotted fields for their own use. Hawe told me “Yes, you just farm for your own family, you cannot farm for another person’s family, no, just your family.” Tabu stated, “Everyone has their own farm. I cultivate by myself with my ability at the farm.” Each family stores produce from their fields in their own granary and each family is responsible for their own food. Although an individual family’s fields are not referred to as *koho*, they function in the same way; each family is only concerned with their fields and they can do with them as they please. What was once catered to as a concession to individual needs in a strongly group oriented society is now the dominant practice—*dzumbe* has been abandoned and *koho* is the norm. This was brought home to me one

day when I noticed Dama giving a basket of maize from her granary to Samini. Later that morning Dama told me about this and I wrote in my field notes:

As we continued to remove the cornhusks, Dama mentioned how the USA had sent food aid to needy people. She continued that it was not just the USA who did this, but that the maize we had seen Samini carrying to her house was maize that Dama had given her. She said she did so as Samini's family did not have any food in the house and she could not let them go hungry.

This was an act of benevolence from one sister-in-law to another and not a homestead using communal resources. Communal concern has not disappeared but communal action is diminishing. It is not surprising that another example of this is that now each nuclear family cooks their own food and eats it in their own house.

Each family cooking their own food and eating it at their home has affected the practice of *dhome*, sitting together in the evening waiting for the meal. Although Daudi, the eldest male and homestead head, assured me that it was still practiced at Mudzi, the women asserted that it was not. This was addressed in the following conversation about *dhome* that I recorded in which Sidi, Muvera, and Kadzo participated:

It is not there" (Sidi). "It is not there because even the youths cannot sit down there, at eight in the evening they are walking around at the trading center" (Muvera). "They go out drinking palm wine" (Kadzo). "They go to Matopeni [local drinking spot] to drink and leave only one old man at *dhome*" (Muvera). "What will he discuss?" (Sidi) "So the old man will not just sit there alone. He also goes into the house when he feels cold" (Muvera). "That is why there is no *dhome*" (Sidi).

A few minutes later Muvera added, “There is no *dhome* because people do not live together, they got separated.” She made this statement despite the fact that in Mudzi 60 people still lived in a single homestead, looked to one man as the homestead head, and interacted with each other virtually every waking hour of the day. As compared to just a couple decades ago, they now lived separate lives. They no longer farmed together, stored and used the harvest communally, cooked together, ate together or sat together and conversed every evening—now they practiced *cha moyowe*.

When I inquired about how *cha moyowe* began Hawe explained, “The reasons why people changed is that you go to the farm every morning the others don’t come. So you work there alone all day long. Tomorrow is the same, now that’s what led to separation.” Kadzo concurred and added that, “Someone goes to work [employment], he will not even bother to work at the farm; but he eats well and looks after his wife while the others go to the farm, yes. So people thought they were being exploited.” From this explanation, it would seem that there has been a breakdown of a communal sense of responsibility as well as authority. This has dramatically changed how homestead members go about planning their farming activities. Sidi asserted that “[there is] no planning again. You just wake up in the morning and say ‘Let’s go to the farm’ then you just go.” Muvera added, “The reason is because each family makes their own plan for themselves.” No longer does the homestead head make plans for the homestead but each nuclear family does this for itself.

The nontraditional mindset of *cha moyowe* has dramatically shaped the local agricultural knowledge used in Mudzi. The children of Mudzi have practiced only individualized farming and, almost certainly, this is what they will use as they mature. It seems likely that this individualization will only increase as each nuclear family explores new ways of farming with

only limited input from others in the homestead. The modernizing influence of *cha moyowe* has taken root and its impact is unlikely to diminish in the future.

Another modernizing influence in Mudzi is government agricultural policies. As was mentioned in chapter one, some years ago I worked in this area of Kenya as part of a small agricultural development project. One of the practices I promoted at that time was planting corn in rows as opposed to the triangular pattern, known as *mafiga*, traditionally used by Giriama farmers. A few farmers adopted this practice as the results of my efforts but many did not. With this background, I was interested to know how the people of Mudzi planted. I was taken to a field on my first observation visit to Mudzi and noted that the corn was planted in rows. Over subsequent visits to various farms, I found that almost all Mudzi farms were planted in rows. The only cornfield not planted in rows was Hawe's. Hawe is the oldest person in Mudzi and, although suffering from what seemed to be severe arthritis, she daily worked in this field. It was cultivated traditionally as she planted *mafiga* and intercropped corn, cassava, pumpkins, okra, sweet potatoes, and cassava in the same field. She told me more than once that this field was located on the very hill where she had been born. When I asked why she planted *mafiga* and not in rows she mentioned that it was easier for her. I also surmised that with so many memories linked to the field she wanted to hang on to the old ways. However, I also recall that I always left her field (and I visited it on several occasion) with food of some kind in hand. I contrast this with the fields I visited that were planted in rows with only corn. After the corn is harvested it will produce little if anything to eat until the next harvest.

In any case, all the other Mudzi cornfields I visited were planted in rows. When I asked Esther about how she came to know about planting in rows, she responded, "I was taught by the agricultural people. I was taught in the shamba and at meetings." Tabu also told me "we were

told by agriculture (extension workers) to plant in rows.” I later visited with John, a government agricultural extension officer based in Marafa, about how he and his fellow officers taught people to plant and he responded that they taught people to plant in rows and were “strongly against broadcast planting.” This policy of opposing traditional planting methods and promoting planting in rows had obviously influenced the planting method used by most Mudzi family members.

I wondered why the change it had been adopted so widely. When I spoke with Esther about this, she mentioned that she was taught in the farm and at meetings over a period of time. Tabu also spoke of being taught at the farm and attending meetings. At the farm she said “They just came here and talk so that you can know and plant in rows.” When I asked how many times they visited the farm she replied, “We went to the meeting. Yes, whenever there is a meeting for ‘agriculture’ you just go. You are advised that these days to plant in rows. Don’t plant ‘Kigiriama’ [*mafiga*]; stop that and start planting in rows.” A few minutes later she added, “So we just get used to that. So you start being told and you finally take it.”

In addition to verbal pressure, family members described other coercive policies designed to change their planting method. In one conversation about planting Kadzo stated, “if your corn crop is eaten by a goat and, agriculture, you planted in rows, come and count the rows, but if you planted *mafiga* then....” I wondered what she meant by this but Muvera clarified it for me “So that person, those people from agriculture come to check whether you did not plant in *mafiga*, if you did not plant in rows, they do not come.” As I came to understand it, the situation was that if a person’s crops were damaged by another person’s goats or cows (Not unusual as animals routinely graze freely and there are few fences) the normal procedure was to notify the agricultural officer. The officer would then visit the farm and assess damages to be paid by the

animals' owner. However, if the owner of the crop had planted traditionally, the agricultural officer would not bother to assess damages and the crop owner could not pursue a claim. On the other hand, if the crop had been planted in rows, damages would be assessed and one could be paid. Tabu explained it as follows, "They [extension officers] said when you plant, you all plant in rows. That is why, if a goat or even a cow gets in, then you are able to talk with them and be paid, but if you plant just like that, you cannot be paid. Even if you report to them, you will not be listened to."

Despite these coercive measures, Tabu expressed great conviction about the benefits of planting in rows. She stated, "With the rows, its maize is a lot, because you plant two seeds here, here so you harvest a lot." I questioned her further "So you can't go back and plant *mafiga*?" but Tabu firmly answered, "No, I will always use the rows." It would seem that most Mudzi family members agreed with her and that this is a permanent change in their agricultural practices. Thus, the influence of government agricultural policies has shaped local agricultural knowledge.

A third modernizing influence is increased school attendance. Daudi was the oldest person in Mudzi who had attended school. Daudi is about 65 years old and on several occasions he told me that he attended school with great difficulty as his father and grandfather opposed him doing so. He stated that his grandfather, the homestead head at that time, wanted his sons and grandsons to be taking care of his large herd of goats and not going to school. He recounted how one day a schoolteacher, who was a relative, talked to his father and tried to convince him to allow Daudi to go to school. His father agreed—as long as the teacher would come and herd goats in his place. Through difficulty, Daudi eventually completed school through the eighth grade, at that time a high level of education for a Giriama man, and was eventually able to land a plum job as a local government official. Although Daudi attended school, none of the women of

Mudzi of the same generation did. When asked if she had attended school Hawe replied that at the time there were not any schools but that there was “*kuimba na kucheza ngoma tu*” (only singing and dancing). Although 15 years or so younger than Hawe, when asked about school Sidi responded, “No, I did not go to school, we were just taught with the hoe.” Of the oldest generation of Mudzi only Daudi attended school and he only until the eighth grade level. I contrast this with the Mudzi of today in which all school age children, both boys and girls, attend school. I vividly recall how Mudzi was full of children during school holidays but seemed empty on school days.

This dramatic change of life, from few children attending school to all children attending school, has had an impact on how Mudzi now practices agriculture. It seems Daudi’s father and grandfather correctly judged that they would have few goats if the children of Mudzi were in school and not herding goats. Daudi told me that when he was a child that there were goats from Mudzi “down to Deke,” a distance I estimated to be two hundred yards or more. I am not sure how many goats this actually represents but if one imagines a football field full of goats, it could easily be several hundred. I compare this to the dozen or so goats owned by Mudzi today, a number that could easily fit into a 20 by 20 foot space. There may be other factors contributing to this striking reduction in numbers of goats, but the fact that on most days there are no children to herd them is surely a major factor.

Children attending school has also contributed to a change in the crops grown at Mudzi. When I asked about crops the adults in Mudzi had been taught as children to grow, grain sorghum was routinely mentioned. This was interesting as I had not observed any grain sorghum in the fields. When I asked about this, I was told that very little was planted these days because weaverbirds usually destroyed the crop. Grain sorghum has a loose unprotected seed head at the

top of the plant that is prone to bird damage. I wondered if the number of birds had increased or what the issue was. In a discussion with Sidi, Muvera, and Kadzo I came to understand that children attending school was a contributor to this change. In the conversation, I asked why they no longer planted sorghum, and Sidi responded, “The children from this place do not like that anymore. They cannot go to the shamba from seven to evening.” Muvera added, “By seven the child wants to go to school.” Kadzo then described using a sling to drive the birds away but said they would come back after you chased them away. Muvera continued to discuss this and explained that, although she had planted sorghum in the past she was unlikely to do so again because guarding it was such a problem. She stated, “It is very hard work. You have to be there by six o’clock in the morning. Until six your return (you stay there the entire day).” Sidi added, “You can’t leave.” Muvera continued that it was every day without a break: “You do not even have a single day to rest; it will be eaten.”

From this conversation, I came to understand that, without children being available as crop guards, Mudzi family members could not successfully grow crops that have exposed seed heads that make them vulnerable to damage from birds. The many responsibilities of Mudzi adults prevent them from making the daily sunup-to-sundown commitment to guard these crops, which was needed for a successful harvest. Corn, with its kernels safely ensconced behind husks, is now virtually the only cereal crop grown. In the past rice, millet, finger millet, and sorghum were all grown in addition to corn, but now this single cereal crop predominates. Both livestock rearing and cereal crop production practices reflect the impact that increased school attendance has had on knowledge choices made by the Mudzi family.

A final modernizing influence to be discussed is the increasing monetization of daily life. A shift from a barter economy to a money-based economy can be traced back to the colonial

government's imposing taxes on the population and demanding that they be paid in cash, thus forcing people to work in colonial enterprises for a salary. Daudi explained to me that when he began his career as a local government official he reported to Major Winwright, a British man. He described part of his job as collecting taxes from local people and stated that if people did not pay the tax, he would be forced take them to be locked up. The current Kenyan government has continued this focus on monetizing life. Daudi's son, Juma, has succeeded him in his government position and in an interview in his office, Juma explained that the government wanted Giriama people to change from farming for food to commercial farming for money. The agricultural extension worker, John, accentuated this policy in an interview when he stated that he and the other extension officers would never stop preaching "The gospel that farming is business." One could surmise that one reason behind this governmental policy is that it is difficult to tax crops produced and consumed as food. In any case, encouraging an increased flow of money is an overt policy of government that began in colonial times and continues to the contemporary era.

More than government policy encourages the use of money as modern conveniences used daily also contribute to this trend. As will be discussed in following sections, in the past people made their containers from local materials that required no money, but now for the sake of convenience they buy containers. As Kadzo explained, "You just have to have money as they are kept in the shops. You just have to go to the shops and buy them." Similarly, the abandonment of manual grinding stones for the use of engine-powered grinding mills requires money. The anticipated use of the grinding mill that also pounds the corn will require even more money. When Esther spoke of using it she asserted, "If you have money you use it." These new time and energy saving conveniences all increase the demand for money.

Another change that requires money is the use of certified seeds, commercial fertilizers, and manufactured insecticides in corn production. John, and his fellow extension officers, not only teach local farmers to plant in rows but they also promote for the use of these inputs, all of which must be purchased. As I spoke with Esther about the use of these inputs and mentioned that they were expensive, she agreed and stated, “Yes, the problem is money but if we had some we would buy.” In a later discussion about using insecticides in corn production, Samini declared, “But the one who has money buys from the shop. If you are poor like us you get the kasembiji (a local plant used as an insecticide), boil it and pour it into the corn.” A stated preference for purchased inputs was a persistent theme as we discussed this. Esther spoke of the local practice of using ashes as an insecticide and affirmed, “No, it is not ashes any longer, ashes were used long ago.” It seemed that there was general agreement that if one had money it was better to buy agricultural inputs rather than use their local knowledge to treat the same problem. Regardless of the accuracy of this belief, it increases the pressure on people to acquire more money.

This need for more money has affected how the people of Mudzi view themselves and they routinely referred to themselves as people who had no money. The most striking example of this occurred in a conversation about weeding corn in which Hawe casually mentioned, “There are big weeds, there are big weeds, weeds of the Swahili are small weeds, weeds of the Giriama those are big.” This confused me, as I was not aware that weeds changed according to the owner of the field. As I asked more about this, Daudi explained:

The Swahili weeds are the small ones, when they are just growing because the Swahili have a lot of money, they just pay someone to weed, that is why they are called Swahili

weeds. The Giriama weeds are normally the long ones because we do not have some money so we delay to weed. We wait until they are tall. That is the Giriama weeds.

Hawe, using her hands to demonstrate, explained further stating, “When they are of this size, that is the Swahili weeds, but when they are here, it is for the *Mkia*.” *Mkia* was a new word for me and when I ask for its meaning Tabu clarified, “It is for the Giriama people, *Mkia*.” Rehema chipped in, “*Mkia* is a poor person” and Hawe added “Someone who has nothing.” This was an amazing statement. Mudzi had significant land holdings and was a large homestead with many buildings and more than 60 people living there but because they perceived that they had less money than Swahili people did, they described themselves as having nothing. Interestingly, John commented on this mindset in my interview with him. He is not from this part of Kenya and is from another ethnic group. When I asked him about his view of local farmers, he replied that the biggest problem was that people here were “convinced that they are poor” and continued that it seemed that people looked at “agriculture not as something than can employ you” and that people “value a salary.”

John lamented this desire for employment in lieu of commercial farming but for “people who have nothing” employment would seem to be the quickest way to get something—to get money. This drive for more money is seen as the men of Mudzi leave the farm so they can earn money. As has been discussed earlier, this is changing agriculture into a sphere now dominated by women. This quest for more money is also a significant reason that children are attending school in ever-greater numbers. At school, they learn very little that will help them be successful farmers and flourish at Mudzi but they are learning information and gaining credentials they will need as they seek employment in the future. The persistent perception is that a better future will require more money and, to the people of Mudzi, obtaining money leads out of the fields and

into the classroom and eventual employment. This monetization of life has already changed local agricultural knowledge and, as it continues, the pace of change seems likely to increase and extend ever more deeply into daily life.

Influences that are largely external to Mudzi are changing the homestead as it moves away from the traditional and towards a more Westernized way of life. These influences are *chamoyowe*, government agricultural practices, school attendance, and an increased monetization of life. These influences are pervasive in Giriama society and have a direct impact on the next factor to be discussed, evolving gender roles.

Evolving Gender Roles

A second factor that shapes the process of local agricultural knowledge construction by Giriama people is that of evolving gender roles. That gender roles were evolving was obvious on my first visit to Mudzi. My friends, who were introducing me, and I arrived accompanied by Juma, my friends' main contact at Mudzi. We sat down under some trees and family members began to come, with chairs in hand, and sit with us in preparation for the discussion. Our discussions soon began and I realized that, while there were several adult women present, Juma was the only adult male from the homestead. During the course of that discussion Juma made a point to tell me that I shouldn't be worried if I only found women on most days at the homestead. He explained that the adult men worked away from Mudzi and were rarely at the homestead during daylight hours. Indeed, I did on many occasions find only women at Mudzi and came to realize that work on the homestead was largely organized by gender. Women spent most of their time at the homestead or working in the family's fields. On the other hand, men spent most of their time earning money off the farm through either small-scale businesses or employment in Marafa or in Malindi.

Daudi, the male homestead head, is a retired civil servant and was at home during the day. However, as he spent about half of his time with his other family in another location, he was not at the homestead on a daily basis. On those days that he was present he spent most of his time sitting under a lean-to on the side of his house. I came to discover that he was a blacksmith and this lean-to was his workshop in which he repaired the family's farming tools and made traditional Giriama knives that he sold. Of the other adult males at Mudzi, two were self-employed local timber cutters, one was a self-employed livestock trader, and two were employed off the farm—one in Marafa and one in Malindi. While collecting data I did not observe any of the men of Mudzi working in the family fields.

When I asked the women of Mudzi about the men not working in the fields Sidi explained, "The men around here saw trees." Muvera added, "They go to the farm but not much," and Kadzo further clarified that "it used to be both men and women long ago." Muvera's explanation of the change was that "therefore if there is no food, then he goes out to look for food and I go to the farm so that we both come back and eat." The focus of men on off-farm activities in the pursuit of money was further elucidated when Samina stated, "the husband has no time to concentrate in the farm because he has to go to work." Additionally, one day I mentioned to Karabu, a male Mudzi family member and local livestock trader, that I was surprised that Mudzi women seemed to do most of the work of caring for the homestead's cattle but I had previously understood that this was usually the work of men. He replied, "I have no time to take care of cattle." He further explained that, due to the demands of men's work, these days women did most of the work of caring for cattle. From my observations and these comments, I found that, while providing for the homestead was a primary goal of both men and women at Mudzi, the accepted role for men was to provide for the homestead through earning

money off the farm. Conversely, the most common role for women was to remain at the homestead taking care of the children, completing household tasks and working in the fields to grow food for the family.

Of the eleven women who participated in my study, only two regularly earned money. One, Sidi, was employed part-time at a local nursery school cooking lunch for the children and the other, Muvera, operated an informal kiosk in Marafa selling deep-fried cassava for part of the day. All of the other women spent most of their time at either the homestead or working in family fields. Both of the women who worked part-time off the farm were single mothers of young children and their off-farm employment did not preclude them from farm work but was done in addition to it.

As was predicted by Juma in my first meeting with Mudzi family members, I did indeed spend most of my time at Mudzi with the women of the homestead. This was due to the already mentioned fact that the men primarily worked out of the homestead and to my primary interest being in agricultural knowledge and practices. In every instance it was the women of the homestead who, in response to my requests to know more about their farm work, took me to the fields. I worked with the women as they prepared fields to plant, planted, weeded the new crop, harvested produce and then carried the harvest back to the homestead. On only one occasion did I note in my field notes actually observing a man working in a farm and this was away from Mudzi while visiting the homestead of family related to Mudzi by marriage. On days when the women didn't go to the fields I sat with them under shade trees in the homestead as they shelled, pounded, and winnowed corn or gathered green vegetables and prepared them for cooking. Occasionally one of the men might walk through and shell a few ears of corn as we visited but it was the rare occasion that a man remained for more than a few minutes. The women of Mudzi

had great fun as they taught me to pound corn. Not only was I inept, but this is something that I never saw another male doing, not even young boys. I suspect they may still occasionally talk about this *mzungu* man pounding corn and get a hearty laugh from it.

When I asked the women of Mudzi about the role of women I was consistently told of work that involved farming, preparing food, taking care of the homestead or childcare. When I asked Sidi this question she responded, “the work of a woman is pounding corn, grinding, fetching water, fetching firewood, looking for relish (green vegetables), bathing children.” She added that “a woman has a difficult job, she can start pounding corn at six in the morning” and Muvera, who was seated nearby, added “then fetch water; then she comes to cook, fetch some firewood and look for green vegetables.” Finally, Hawe, a grandmother also present, inserted that “it is easy these days because you take the corn to the posho mill [for grinding] but it was the grinding stone in the past.” Describing the differing roles of men and women at Mudzi was not difficult for these women and was readily seen as I conducted my observations.

Men are focused on earning money in order to provide for the family, and women are focused on growing food and providing for the daily needs of the family. This division of labor is magnified as the need for money intensifies due to the increased monetization of life. It extends even to decision making. I once asked a group of women if they would consult their husbands before trying a new crop and I was assured that they would not, as the men had no time to worry about farming. Samini responded by affirming that a wife would just plant the new crop and she envisioned the conversation that might occur between a wife and her husband in this situation “You can just plant and when he comes he sees them. They grew to reach this height and he asks ‘When did you plant these?’ ‘I planted them.’ ‘Where did you get the seeds?’ ‘I was given them by my friend and I planted.’ Yes, you can just plant.” In Mudzi, it seems that agricultural work

and the knowledge surrounding it is increasingly becoming a domain for women and the involvement of men in this domain is decreasing.

This is likely to have an enduring impact as children are taught about farming by their parents at the homestead. In every instance when I asked the women of Mudzi who taught them to farm they first mentioned their parents, with a particular emphasis on their mother. Tabu, wife of Daudi and the female homestead head, when asked about being taught to farm responded “You are taught by your mother. A woman is for her mother and a man is for his father.” The young girls of Mudzi are in the process of receiving from their mothers’ agricultural knowledge, and their fathers have little impact on this aspect of their lives. As they grow into adulthood and begin growing crops for their families, it is their mothers’ knowledge they will use.

In addition to work being organized according to gender, in Giriama society social interaction is often organized according to gender. While men and women easily mingle during informal discussions at the homestead, at most public meetings males and females commonly sit as separate groups. I attended several public meetings while collecting data and, with one exception, the men and women quite naturally, with no instruction to do so, sat in separate groups. The lone exception was a meeting in Marafa of professional men and women seated around a table in a classroom, a highly Westernized environment. I mentioned my observation of this separation of men and women at public meetings to Hamisi and Baraka, two male key informants of the study, and they agreed that this is normal in Giriama society. When I asked them about discussions within a homestead Baraka responded that “if it happens it is for the men doing it separately but whatever is discussed or agreed upon by women will never come or be shared to men and whatever is agreed by men will never be shared to women.” When I inquired

further about how husbands and wives might jointly process information from a public meeting, Hamisi responded that:

The women talk among themselves with other women and men with other men. The women discuss it and pick those issues they can put in practice. Men will do the same. One thing is men might pick something then they go force women to do them, but there is no way that women will adopt some issues from a meeting and you know, put pressure to men so that they can do them together.

Baraka added that:

A decision that should come from a woman to a man, it, it ah normally is done at ah, ah at the bed. It is quiet and on the pillow is where the man now can be submissive to some ideas or to, to the woman. So next day when he has to find words to use to convince the men he will present it as his idea he will never say “my wife told me this” He will say [tell] you “now I slept and I decided” he presents it as his idea but basically it has come from the woman, although he will never say it.

Obviously, I was not privy to any pillow talk between husbands and wives but observing husbands and wives publicly sit and talk together at Mudzi was unique enough that I noted in my field notes the one occasion I viewed it. I wrote, “Karabu came over and sat near Dama on the same log she was on. He talked with her and worked on ears of corn as they talked. It struck me that this was the first time I had seen a husband and a wife sit and talk together since I had been coming to Mudzi.” The rarity of this kind of interaction between men and women underscores that in Giriama society information is commonly processed according to gender and rarely across genders. Processing information socially is fundamental to local knowledge construction in the

group-oriented Giriama society. That this process is gender linked shapes the knowledge being constructed.

Time and Energy constraints

In considering the factors that shape the process of local agricultural knowledge construction by Giriama people, the third factor to be discussed is time and energy constraints. Early in my observations, it became apparent that adult members of the Mudzi homestead are very busy. In their effort to earn needed money, the men of the homestead usually left early in the morning and returned late in the evening. I also observed that the women were very busy and on most days quite occupied with their activities. One afternoon at the homestead, I sat with several women in the shade under trees in the homestead and as we shelled corn I asked Kasichana what a normal day was like for the women of Mudzi. Assisted by the other women present she gave me the following list of 21 chores that are completed in their day: (a) carrying water from the well; (b) sweeping around the house; (c) cooking and feeding the children porridge; (d) washing the utensils; (e) going to the farm to collect green vegetables; (f) preparing the vegetables; (g) cooking the vegetables; (h) harvesting mature corn; (i) carrying the corn back to the homestead; (j) shelling corn; (k) spreading corn out to dry in the sun; (l) pounding the corn kernels; (m) grinding the corn; (n) winnowing the corn; (o) cooking food; (p) serving the food; (q) eating; (r) cleaning up; (s) talking with others; (t) bathing; and (u) sleeping at around 11 p.m.

Despite the length of this list, from my observations it was obvious that it was not complete. I observed women going to the surrounding bush, axe in hand, and returning an hour or so later carrying a sizeable bundle of firewood on their heads. Of course, clothes must also be washed and this is done by hand by either using water carried to the homestead or carrying the clothes to the water. Also caring for children is a never-ending part of life. As the women shelled

corn and gave me their list of chores, there were several children sleeping and playing nearby. In addition to keeping an eye on these children, the women were also watching the corn drying in the sun and regularly shooing chickens, goats and sheep away from it. There are also the homestead's cattle that must be seen to, a chore now done by these women. In addition, I regularly met these women in Marafa taking children to the medical center or buying needed supplies. In contemporary Kenya, the demands on women's time have increased as children, who once helped a great deal with farm and domestic chores, now spend most of the day in school and husbands who used to be available at the homestead are now working off the farm.

This organization of work by gender not only shapes knowledge construction, as has been previously discussed, but it also increases the demands on women's time and energy. An example of this comes from one evening I spent at the homestead. On this evening, I sat with Sidi and her adult son, Ngoma, exchanging small talk when about thirty minutes before dark she stood up and said she needed to go to her farm and bring some corn back to the homestead. She asked if I wanted to go and I happily agreed. She, her teenage daughter, Ngoma and I walked fifteen minutes to the field. The corn had been harvested and the ears were hidden in piles in the field under some corn stalks. Sidi filled two gunnysacks with corn, one for her and one for her daughter. Although no one suggested I do so, I also put what I could in my daypack to help. It was almost dark when we finished filling the bags. Ngoma helped Sidi and her daughter position the sacks of corn on their heads to carry and in the dark we started back to Mudzi. In my field notes I wrote, "It appeared that it never occurred to him or the females that he could help carry the corn... It was quite dark when we arrived back at the homestead." As illustrated in this example, the women of Mudzi have significant demands on their time and energy that the men seem not to have. Both men and women seek knowledge that will help them incorporate into

their lives practices that conserve time and energy but the examples that follow deal more with knowledge choices that primarily affect women.

A significant part of the work of the women of Mudzi, and a major demand on their time and energy, is food preparation. In preparation for cooking, mature corn kernels are removed from the cob, dried in the sun, then pounded in a large wooden mortar with a wooden pestle approximately four inches in diameter and four feet long. This pounding removes the outer covering of the kernel and produces cracked kernels that are easily ground with less roughage. The cracked corn is then ground into meal that is mixed with water and boiled into a stiff porridge, known in Giriama as *wari*, which is eaten by hand and garnished with a stew normally composed of vegetables. Wari is the staple food of the Giriama; in fact, it is often just referred to as food. How this food is prepared has gone through significant changes during the lives of the women of Mudzi and these changes represent knowledge choices that are exhibited in the women's practices.

As I visited with Hawe, the oldest member of the Mudzi homestead, about her childhood she described how she ground corn as a young girl by kneeling in front of a stone and then pushing another stone held in both hands across the flat stone in front of her. This surprised me as the grinding stones I was familiar with among Giriama people were two circular stones placed one on top of the other. A person using these stones sits flat on the ground with legs straddling the stones. Corn is then feed into a hole in the middle of the top stone and ground as the top stone is rotated with one hand using a wooden handle. Hawe and Kadzo explained that the grinding stones that one kneeled in front of and used with two hands were older then the round stones that one straddled and turned with one hand. They further explained that the round stones had replaced the others. Kadzo and Hawe further clarified that now people rarely use either type of

grinding stone but take the cracked corn to the *mtambo*, an engine-driven grinding mill. Of course one has to pay for this and Kadzo commented that these days if people don't have money they just boil their corn whole and eat it rather than grind it by hand with the stones. The choice to not use these grinding stones was illustrated a couple weeks later when Kadzo wanted to demonstrate the use of the round stones to me. She found the stones in Sidi's house and in my field notes I observed that:

It seemed obvious that they had not been used much in recent years as they were dirty and all of the wooden parts were missing. There were several children watching Kadzo use the stones and I wondered if they had ever seen them used before or if they would ever see them used again.

I later spoke with Daudi, the oldest male in Mudzi, about the decision to stop using the original stones that women knelt over and pushed with two hands. He stated that they stopped because it was hard on their knees and it was hard work. He commented that “*Jasho iliingia kwa unga.*” (Sweat went into the flour.) He said people finally said “no!” and started using the round stones as they were easier.

In another conversation Juma remark that engine-powered grinding mills had significantly helped women. He stated that “before these came women had to dig in their farms, it was a must as people have to eat, also if people eat they must have firewood, and they must have water and on top of that the women had to grind corn and pound it.” He concluded by stating that at that time “it was not easy for a person (a woman) to live many years because of all the work.” In the face of these considerable demands on the time and energy of Giriama women, a choice has been made to abandon traditional grinding knowledge and begin using new knowledge about grinding that is perceived to conserve these valuable resources.

Food preparation may be further revolutionized as it is anticipated that Marafa will eventually have engine-powered mills that pound the corn as well as grind it. This was mentioned first by Dama and Esther one day as I sat with them and shelled corn. They explained that when Marafa finally had electricity this new type of mill would surely come and eliminate the difficult and time-consuming task of manually pounding corn. When I asked if they would use it they both readily responded “*Nitaitumia*” (I will use it). In my notes I observed that “Dama talked about how good it would be to send a *gunia* (a gunnysack) of maize with someone to the *mtambo* and have it come back in an hour or so properly pounded and ground. She said as hard as she is working now she can’t do a *gunia* of maize in a day.” I asked what she would do with the time it saved and she responded that she would spend more time farming and I sensed she was already thinking of the extra acres she could plant. Later I asked Kadzo about the possibility of the new mill and if she would use it. I wondered at her age if she would be open to this but she responded that she would use it even if she is old. I questioned her further and she laughed and responded that she would use it “Because the muscles are tired; I am tired. I wish only to take *wari* in my hands and eat.” In these women’s minds, the time and energy savings obviously outweighed the monetary cost of using these machines.

Another example of time and energy constraints shaping knowledge construction is the type of containers used to carry and store water. I had observed that currently only plastic containers are used to carry water from the well and then store it at the homestead. When I asked about this I was assured that it had not always been so. Daudi, Hawe, and Kadzo, the oldest in the homestead, all spoke about in the past using clay pots and gourds as containers. They described how the water kept in these containers stayed cool and really tasted good. Muvera, a young woman, enthusiastically joined in their comments, although I wondered if she herself had

experienced it personally. When I inquired why they were no longer used, given they were so good and could be obtained without paying any money, I was told by Daudi that the problem with the gourds was they broke easily when dropped and “*ikivunjika huwezi kuishona* (if it breaks you can’t repair it)” and that to get a new one was not easy. Kadzo agreed and said she could drop a plastic container and still use it but if a gourd was dropped it would be totally damaged. She added that getting plastic containers was very easy and that “you just have to have money as they are kept in the shops.” Conversely, she said that to get a clay pot one had to get the right kind of soil, mold it, then collect firewood, arrange pots on the firewood, fire the pots for hours, then wait for them to cool. After cooling one had to test them by thumping them and listening for the right sound. Some pots would be good but some would be cracked and were discarded. It was a long process and no one expressed a desire to return to it despite the clay pots keeping water cool and tasty. Just as modern grinding technology has been adopted despite its cost, plastic containers are now ubiquitous as the time and energy they conserve justify their purchase price. The need to conserve time and energy is one aspect of the push for modernization.

Conversely, while plastic containers have been embraced by the people of Mudzi, other new knowledge has been rejected because it is perceived as too demanding. Juma described how Giriama people have not accepted some new agriculture knowledge because it requires too much time and energy. Specifically he mentioned many Giriama people do not plant in rows, as they are taught by extension workers, because it is just too slow. He also spoke of Giriama people rejecting “modern” grain storage methods. He stated, “If you tell a person to use [these methods] the person will respond that it is a long process, it’s too cumbersome, difficult, very tiresome, now they totally don’t want it. Now, they don’t have time to look at things like these.” The

people of Mudzi, the women in particular, live busy lives with many demands on their energy and time. They seek new knowledge to help them effectively manage their time and energy and resist knowledge when it is perceived that putting it into practice would demand too much time and energy.

Access to Knowledge

A final factor that shapes the construction of local agricultural knowledge is access to knowledge. Local agricultural knowledge is oral knowledge that is shared through social interaction. Access to this knowledge is dependant on the size and scope of a homestead's social networks as well as the location of a homestead. The importance of this social network was illustrated in one conversation at Mudzi when I wondered about sharing information and asked how a person who had heard news would share this with others at the homestead. Muvera responded, "That one, that one is a must. Because if that information concerns everybody to know, even if it is not everybody, she will still pass it to everyone." Kadzo added, "She will call all the people, she will call all the people" and Muvera continued, "they come together then she says I have heard this and this." When I inquired further if only some people in the homestead might initiate this, Muvera, a young single mother, assured me that "anyone with something important that she wants to tell the others [can do this]." My impression from this conversation was that the participants considered it a responsibility of homestead members to share information learned from outside the homestead with others in the homestead. The social communication network within Mudzi was important as a means of sharing information gathered as homestead members participated in the larger extended social networks in which they lived.

As previously mentioned, Mudzi is a large homestead with some 15 homes and 60 people—31 children, 17 women and 12 men. Each of these individuals, particularly the adults, is

a potential source of new information to Mudzi as they interact in the larger community. I contrast this to nearby homesteads that I visited, the largest of which was four houses and the smallest homestead was composed of only two small buildings, a house and a kitchen. Although I may not have met all the members of this homestead, I did meet six—a middle-aged woman, a teenage girl, a teenage boy and three younger children. Mudzi has approximately ten times the number of people as this homestead and, thus, ten times the number of information gatherers. With one-tenth the people, this homestead's social network is much smaller and their ability to gather information within the area's social network is much more limited than is Mudzi's. As this homestead was located near a field owned and regularly visited by Mudzi family members, it is possible that to some extent they function as part of the Mudzi social network. In the absence of a relationship such as this, they would be at a singular disadvantage.

An additional aspect of this is contacts to other homesteads through marriage. Mudzi is home to 12 wives and each of these women represents a contact with another homestead and its social network. Giriama society looks upon marriage as relationship between two families and interaction between these two families is expected. It was common for Mudzi family members to be gone from the homestead for several days at a time and often it was due to an illness or a death in the family of one of the wives' that necessitated travel back to their home area. One instance of this was the unfortunate death of Kasichana's mother. Her home area was a distance away, beyond Malindi, and she and Tabu traveled there for the funeral, which lasted five days. Tabu stayed the entire time and Kasichana even longer. Several other family members told me they would also have gone but they just did not have money for the bus fare. The contribution of these relationships to information sharing and knowledge construction was demonstrated when I asked Esther how she would go about learning to plant watermelons, a crop she had not planted

before. She quickly responded that she would get a teacher and that it would be easy to get one as her mother-in-law, Tabu, was from an area where watermelons were grown and Tabu could easily direct her to someone who could teach her. Tabu was a link into a social network that had information not readily available at Mudzi. Each wife in a homestead represents a connection to another homestead, and a large homestead, with many wives, has access to a large resource base that is potentially rich with knowledge.

An additional aspect of Mudzi access to knowledge was its location. Mudzi's close proximity to Marafa, gave it daily access to a ready supply of information. As a divisional headquarters, home of the area's best medical services, a secondary school, numerous shops and as the transportation hub for the area, Marafa is awash in information from all parts of the division as well as Malindi and beyond. Members of the Mudzi family were in Marafa many times during the day. Juma worked in Marafa and Muvera sold cassava there. Other family members were there buying goods, taking children to the medical center or attending meetings. I attended three different public meetings in Marafa (Mudzi family members were present at each one) and my observation was that there was a meeting of one sort or another on an almost a daily basis. Mudzi family member Juma, who as a local government official attended most meetings, confirmed this to me in a conversation as he explained that on that day he had to attend two meetings and that there was a meeting in Marafa almost everyday but that that was good as it brought development.

I contrast Mudzi's access to knowledge from Marafa to another homestead I visited in an isolated area located in the division but an hour's drive away from Marafa. No vehicles reach this homestead on a regular basis and the road to the homestead is little more than a footpath. The main road, where one could access public transportation, I estimate to be five miles away.

The nearest shop for buying basic goods was a similar distance as is the health center, which offers only basic services. One of the women of the homestead underscored the isolated nature of the area as she commented how grateful she was to a local NGO that had been active in the area, as it had shown concern for “*watu wa kando* (people to the side, out of the mainstream).” *Watu wa kando* just do not have regular access to external information; whereas the people of Mudzi have access to new information on a daily basis and can easily and quickly incorporate this into daily life.

Access to knowledge through oral social networks is integral to the construction of local knowledge. Mudzi, due to its large size and close proximity to a major trading center, has access to a large amount of knowledge on a daily basis. This access to knowledge shapes the process of local knowledge construction by homestead members.

Summary

In this section, four factors that shape the process of local agricultural knowledge construction have been discussed. The first factor discussed was a grouping of modernizing influences that are pushing the homestead away from traditional practices and towards “modernity.” These influences are: (a) *cha moyowe* (individualization), (b) government agricultural practices, (c) school attendance, and (d) increased monetization of life. Gender, as is seen in the organization of work and social interaction, was the second and the third was time and energy constraints. The final factor was access to knowledge, as affected by social networks and location.

How Adults Learn Local Agricultural Knowledge

The reconstruction of local agricultural knowledge is an ongoing process that is shaped by the four factors discussed above. Just as the reconstruction of local agricultural knowledge is

an ongoing process, the learning of this knowledge is ongoing. As children Mudzi homestead members were taught by their parents “all they needed to know” about farming but as adults they continue learning new knowledge as they grapple with the responsibility of caring for their family. The following section identifies five ways that these adults learn local agricultural knowledge. One of the challenges of discussing this learning with participants is that it takes place informally as they go about their lives and is not identified as learning. Despite these challenges, the five ways of learning local agricultural leaning identified are observation, trial and error, social interaction, conferring with respected people, and oral literature.

Observation

As I considered how to discover the ways people learn new local agricultural knowledge, one approach that was effective was to discuss with participants new crops they were growing or to ask how they would go about learning to grow a new crop. James, a key informant, two years ago had begun to plant pineapples commercially. I asked him how he learned to plant them and he responded, “By visiting these farms seeing what people are doing and having people talking about planting pineapples you hear what they normally say and for example the spacing from one plant to the other.” I assumed he asked questions of the farmers and probed further by inquiring, “So you went to some of the farms and talked to farmers personally or?” James quickly responded, “No, no, no just observation. Observation, you observe what people are doing and if you have any question to ask you can ask but in most cases people normally observe.” In a similar vein, when asked a hypothetical question about learning to plant pineapples Ngoma also spoke of visiting farms growing pineapples but clarified, “When I go there I will just look on the seedlings and know how they were planted. So, I will not ask anybody but will just go and do the

same.” Once again, he would rely on observation rather than asking questions of those growing pineapples.

As James and Ngoma are both males, I wondered if males approached this differently than females but that did not appear to be the case. I asked Samini how she would learn to plant watermelons, a new crop being planted in the area, and she responded that she had not planted them but already knew how to do it. I asked if she had talked to those who had planted them and she explained that she had helped to harvest them in another person’s field. She then began to describe in some detail how to plant them. When I mentioned that it seemed she did know how to plant them she responded, “I have seen them being planted.” When I inquired further if someone had explained to her how to plant, she firmly responded, “No, I have seen them.” Tabu responded similarly when I asked about planting pineapples and she said she had planted them and knew how to do it. I asked who had taught her she responded, “I just looked at the *ujuzi* (skill linked knowledge) like that. Yes, I looked and got the *ujuzi*.” As I probed a bit more she added, “I just looked how you can plant them and I started planting.” As we continued discussing, she mentioned several vegetables not commonly grown in this area that she knew how to grow. I once again asked her who taught her how to grow them and she replied, “It is just *ujuzi*. It is *ujuzi* of the eyes.” This seems to be a succinct way to describe knowledge linked to a skill gained not by asking anyone and being told but merely by observing what others were doing.

Other skills were also learned this way. Ngoma works off the farm earning money by felling trees and sawing them into lumber, all done manually with hand tools. When, in a conversation, I asked him how he learned to do this he responded, “I came to know this” and Kadzo quickly interjected, “He wasn’t taught by anyone.” Ngoma continued, “We just knew it

on our own. We saw people doing it.” Daudi responded similarly when I asked him how he had learned to do blacksmith work. He explained that as a young man he had watched an older uncle do the work. He said that when he was watching he had not really planned to do blacksmith work but, when the uncle died and there was no one in the homestead to do it, he tried and found that he could do the work.

It is interesting that in this case Daudi was not watching his uncle with the intent to learn the skill. Just as part of living in the same homestead, he observed and inadvertently learned an important skill, he gained “*ujuzi* of the eyes.” Some of the learning mentioned above was intentional but a great deal of it just occurred as part of life. Perhaps learning by observation in this way is incidental but participants clearly remembered this knowledge long after the observation and were able to practice the observed skill when called on to do so.

Trial and Error

Just as learning by observation most often occurred as part of normal life, learning by trial and error was frequently described as part of the experience of everyday life, often after observing others. At times participants described this kind of learning as intentional, even describing their actions as an experiment, but at other times, they spoke of skills acquired without intention but just as they went about their daily routines. James connected learning through observation and learning through trial and error by stating that one can observe someone doing something and gain knowledge but it is only when knowledge is used that it becomes a skill. He gave the example of using grinding stones to grind corn, which he had observed and thought he could do, but had never done it. He stated that he had the knowledge but not the skill and that the one who has actually done it has the skill. Just as Tabu described learning by observing as *ujuzi* of the eyes, Kadzo described this type of knowledge as “*ujuzi* of the head.”

She used this term in a discussion in which Samini described cooking *wari*. Assisted by others present during the discussion, she described the process step-by-step:

So I first prepare the fire and put the pan with water in it. I will not put any flour until the water starts doing what? “Starts boiling” (Kadzo) when it boils, I put the flour in and start stirring. “You start stirring” (Kadzo) I won’t put more flour in immediately but will wait for awhile. “Let it boil” (Hawe) When it is ready, I’ll take the stirring paddle and stir as I add more flour. I’ll keep putting in the flour while stirring. I will not just stir and stir until the flour is mixed then serve it. I will make sure the flour has finished expanding. What will I use? “*Ujuzi*” (Ngoma) “*Ujuzi* from the head.” (Kadzo) So I use the *ujuzi* in my head and wait for it to expand and then serve it.

In this discussion, Samini described a skill perfected through years of cooking *wari*. Although one can safely assume she has observed others cooking *wari*, when she uses *ujuzi* from her head to cook it she is using a skill she has made her own through the crucible of trial and error as day after day she prepares *wari* for her family.

Likewise, in the preceding section it was noted that Ngoma learned to saw trees by observing others, but he also developed his skills through practical experience. He described this in the following way “you do something on your own from your knowledge till you come up with something. Just like the way I do my work of cutting trees and finally make some money out of it.” A specific example of his learning through experience is a ruler he uses in his work. He spoke of it in this way:

If I give you my ruler, you will not be able to read or use it. Don’t think it is the ruler from the shop, it is a stick and you can’t read it. So we used our intelligence and invented that.

Ngoma observed others and gained basic knowledge about cutting trees and sawing them into lumber but he further honed his skills and improvised tools needed through trial and error.

Another example of taking knowledge learned through observation and adapting it through trial and error was mentioned by Daudi. It has been discussed previously that he learned to do blacksmith work by observing his uncle. One day, as I watched him work, I noticed that he was using unique set of bellows to stoke his fire. In my field notes I described them as follows:

The bellows consisted of a piece of maybe 2 inch metal pipe about 14 inches long with what appeared to be a heavy duty paper bag (cement bag?) attached. He would pull it backwards with his right hand to fill it with air. His left hand held the pipe and directed it towards the hot coals. When the bag was full of air, he would bring his right hand forward forcing air out the pipe to stoke the charcoal.

When I later asked him about the bellows, he explained that traditionally sheepskins are used but he did not have the skins and did not want to spend money. He said he thought about it and came up with an idea and decided to experiment with paper bags. He told me he just tried it and it worked, although he spoke of using different kinds of paper bags to find the one that worked best. As we spoke about this, his nephew Ngoma went up to his blacksmith's lean-to and brought the bellows down and proudly showed them to me. It is easy to imagine the next generation of blacksmiths at Mudzi continuing to use this knowledge when their time comes.

In my discussions about agricultural practices, participants often spoke in ways that reflected learning through trial and error. Although I was not sure if the experience was their own or told to them by another, they spoke of knowledge that was rooted in practical experience. An example is a discussion with Esther and Kadzo about using hybrid and local seed varieties. In regards to hybrid varieties Kadzo stated, "If you store them in the granary they can be destroyed.

They are penetrated.” Esther clarified, “They are eaten by insects.” Kadzo explained, “Those ones produce big ears of corn but they get destroyed easily. When I mentioned a local seed variety Esther replied that she preferred this variety. At this Kadzo stated, “Yes, these ones are not easily destroyed.” Esther echoed, “They are not easily destroyed.” Kadzo again agreed, “These ones are not easily destroyed.” Esther continued, “Even if you store them in the granary they cannot be destroyed.” Kadzo inserted “But this – PH4 (a hybrid variety) you have to store it very safe – but the Kanjelinjeli (a local variety) is a good one.” Esther submitted, “It does well but the – PH4 hey – in fact if you store it in the granary it gets destroyed.” Kadzo concurred, “They get completely destroyed.” In this discussion Kadzo and Esther agree that hybrid corn varieties produce a lot of corn but do not store well using traditional methods. On the other hand, the local variety did better when stored traditionally. This is knowledge rooted in the real life experience of those who have tried both varieties and determined their strengths and weaknesses.

As described by the participants, learning by trial and error is ongoing as they go about their lives. Accordingly, knowledge learned in this way was often linked to specific tasks, such as cooking, sawing trees into lumber, blacksmith work and storing various varieties of dried corn. Some participants termed this type of knowledge as *ujuzi* of the head, which seemed to connote knowledge learned through a combination of seeing and doing. This can be contrasted with learning through observation, which one participant termed as *ujuzi* of the eyes and did not involve practical experience.

Social Interaction

Just as learning through observation and learning through trial and error are ongoing as part of daily life, learning through social interaction is constant in Mudzi. Personal relationships are highly valued in Giriama society and the priority placed on social interaction exemplifies

this. Several specific behaviors will be identified that demonstrate this value and the many expressions of it in Giriama society and specifically in Mudzi.

The value placed on relationships and the interaction these relationships engender is revealed by the importance placed on exchanging greetings. Through my previous experience in the area, I was well aware that exchanging greetings was important in Giriama society but, frankly, I did not appreciate the centrality of this practice to effective participation in society. This was brought home to me in a variety of ways.

Early on in my data collection, in discussions with key informants and my research assistant, Rehema, about establishing effective relationships at Mudzi it was emphasized that each visit should begin with greeting each person present in the homestead and end with saying goodbye to everyone. With this knowledge, prior to beginning observations at Mudzi I practiced appropriate greetings with Rehema and was not surprised that each time Rehema went with me to Mudzi she made sure that I greeted everyone on our arrival and said goodbye as we left. This practice took a significant amount of time but it became an essential part of learning who was present, who was already in the farm working, what events had occurred in the homestead since my last visit, who was sick, and who was available to spend time with me that day. It was an opportunity to gather information and a time to cultivate further a relationship with each person I greeted.

Unfortunately, while I was very careful to exchange greetings at Mudzi, I was less careful while walking in Marafa and soon learned that these lapses inhibited relationships and social interaction. I recall one day walking past two women who were standing on the side of the road and engaged in a conversation. As I did not know them and did not want to interrupt their

animated discussion, I walked past them without greeting. I described the incident in my field notes as follows:

At one point I neglected to greet two ladies as they seemed to be involved in an intense conversation and I didn't recognize either of them. Just as I was passing, one of them greeted me and I returned the greeting. She then scolded me for not greeting them. I agreed that it was a mistake and ask that she forgive me. She said she would but it was clear that I had made a mistake. The lesson—greet people! I will likely greet some people that I don't need to but that is preferred over offending people by not greeting them.

At times, I was aware that I was not as active in greetings as expected but apparently, I was not always aware of committing this faux pas. James, a key informant who also lived in the same house as I did, on more than one occasion reminded me of the necessity of always greeting those I passed. He invariably included in the reminder a statement that one never knew when they might need help from someone they had earlier neglected to greet. I continually worked at being aware of all those around me and greeting them but never seemed to be as attentive as my Giriama friends who as we walked together were constantly greeting others. My struggle to develop adequately this social skill essential in rural Giriama society accentuated the fundamental importance Giriama people place on relationships and social interaction.

A conversation with Muvera about when a family meeting at the homestead might be convened further illustrated this social value and that greetings are fundamental to sustaining relationships. When I asked what might prompt a homestead meeting Muvera replied, "If there is a misunderstanding. When you don't even greet each other. When you are staying together and you don't even greet one another that is bad." She continued that the family could sit together

to solve that problem and give advice that let no one keep anything in her heart but to speak it out. Yes, or even when you meet your relative you do not handle her as a human being. So we discuss it together there.

She concluded by stating, “Yes, even if we are living separately but peace is from God.”

Relationships within the homestead were too valuable to tolerate them being damaged by misunderstandings that inevitably develop. A failure to greet another person was seen as the first sign of such a breach and described as a failure to “handle her as a human being.” Even though the more than 60 people in this homestead are living increasingly individualized lives, such an event between two people was enough to prompt group efforts to restore peace, so highly prized that Muvera described it as coming from God.

The relevance to this study of the high value placed on relationship by the Mudzi family members and the larger Giriama society is that much learning of local agricultural knowledge occurs as people in relationship continually interact with each other in face-to-face encounters. This was highlighted in an interview with Safari when he explained how Giriama people used to walk with small stools and that upon meeting they would often move to the side of the path, take out their stools and sit down to talk. He added:

Now when they talk they exchange information. How is the season this year? How is (*sic*) your children? How are your animals? You know they are exchanging information about their environment; they are exchanging information about new people. They are exchanging information about everything. They can tell you my wife died and you know my children ----- And that is information sharing which isn't in the newspapers but now hear because our culture is oral they would get information from that.

It is instructive to remember James' admonition to me that if I failed to greet someone in a chance encounter that I might one day need their help and they might not be eager to help me. There is an expectation that those who are in relationship and who greet each other also help each other. This expectation of mutual assistance amplifies the value of information sharing within Giriama communities.

Although I did not observe people walking about carrying small stools, I did observe people throughout the day, in practically all situations, continually greeting each other and exchanging information. Life at Mudzi is lived publicly, outside the house, on paths, under trees, in the fields or any of the innumerable public places. The only mention of actions that occurred inside one's house came about when speaking about what a new wife learns when she comes to the homestead. In this conversation Tabu lightheartedly commented, "the only job you are taught is that one inside the house." Hawe, as she laughed with her, added, "The one of filling the homestead." Practically everything else occurs outside in the presence of other people and social interaction is constant. Women do household chores outside and chat as they do them. Footpaths inevitably pass right through homesteads and those on the path must stop and greet the inhabitants and share news before continuing on their way. The most common form of travel is by foot, which results in face-to-face meetings that invariably generate an exchange of greetings that may be long or short depending on how long it has been since meeting, the news one has to share and the depth of the relationship. Additionally, meals are usually eaten outside with others of the same gender with all seated around and eating from common bowls; to eat by oneself would indicate selfishness. From observing such behavior, I became convinced that life in Giriama communities is structured in ways that encourage social interaction.

On many occasions I observed an example of this as Mudzi women on their way to work in a field would first pass by a neighbor's house and retrieve tools stored there or borrow any that were needed. Retrieving these tools and later returning them always involved several minutes if not an hour of conversation. When I mentioned this to key informants and wondered if borrowing tools was common, they confirmed that borrowing tools was just a normal part of life that everyone did. I surmise that this practice is not just convenient but also helps ensure regular interaction between neighbors.

Another example is working together in the fields. On my second observation visit to Mudzi I visited a field with Kadzo in which Samini and Dama were working together. They told me that on this day Dama was helping Samini in her field and that the next day Samini would go to Dama's field and help her. They informed me that this is a common practice known in Giriama as *meria*. During my time at Mudzi I found that *meria* was an indeed a common practice that may even have gained popularity now that each nuclear family is responsible for itself. In one discussion with key informants about informal information sharing, James related that such sharing commonly occurred as people practice *meria* and work together. The example he gave was of women hoeing together and one using a new technique that another would notice and then begin using herself. Perhaps the primary motivation for practicing *meria* is to lessen the workload, but it also encourages social interaction as people work together and this interaction promotes the informal learning of new knowledge.

In addition to these informal gatherings that encourage social interaction, there are many formal social gatherings that I observed Mudzi family members participating in. Meetings were an almost daily occurrence either in Marafa or in venues near Mudzi such as the local nursery school or under a tree. Meetings were held by many entities for many reasons. Government

officials held meetings; NGOs held meetings; extension workers held meetings; schools held meetings; churches held meetings; women's and men's groups held meetings; farmers' groups held meetings; and politicians held meetings. In short, meetings were a normal part of life at Mudzi and my impression was that there seemed to be general acceptance that when a meeting was called and one could go that one should go. On more than one occasion, I met women at Mudzi dressed up for something special and was usually told they were going to a meeting of one sort or another. The sheer number of meetings called and attended convinced me that this formal social interaction and the associated opportunities for informal discussions was a valued part of life and useful for learning new information.

Funerals were another formal social event regularly attended by Mudzi family members. Fortunately, there were no deaths at Mudzi during my data collection but homestead members attended funerals of relatives and neighbors in the Marafa area and even some distance away. My observations of a funeral came from attending in Marafa town the burial of a schoolgirl who I did not know. The burial was held at the homestead of the girl's parents and following Giriama custom she was buried in the homestead near the house. As my friends and I walked up to the burial site around 1:00 p.m. we encountered a large number of people already gathered. A crowd of people was standing around the grave near the house but more were seated about 75 yards from the house taking advantage of the shade of nearby trees as the midday sun was blazing. I estimated 500 people were present but there was a continual flow of people arriving as well as some leaving. While most were focused on the formal ceremony of the burial, the social aspect of the event was obvious. In my notes I recorded "Near the grave there was little talking but further away there was more talking. There was constant greeting as people recognized acquaintances and went over to shake hands." Later as I walked away from the grave and joined

those seated under nearby trees, I noted “At this distance from the actual burial people were talking freely about many things. I wondered if they were even paying attention to the proceedings.” While at the burial I happened to meet one young man who I discovered was a politician running for local office. As this was shortly before national elections, I was not too surprised and when I later asked my friends with me at the burial about it they assured me that most of the politicians running for local office were in attendance.

I was present for only two and a half hours but was assured that many people were at the burial from early morning and would remain until late that evening, particularly as it was known that a bull had been slaughtered and a meal would be served. The evening before I had walked with Hawe, a grandmother from Mudzi, to the burial site as she, following Giriama custom, went there to spend the night sitting with others. I had been informed prior to this that traditional Giriama funerals lasted from five to eight days and that traditionally the crowds in attendance ate and slept at the affected homestead during this time. I inquired of my friends if they expected that tradition would be followed with this funeral but they commented this was unlikely as the family was Catholic and the burial had been done according to those traditions.

From my observation, I concluded that funerals in Giriama society are significant formal events that incorporate many strands of significance and that one of those strands is that funerals provide natural forums for the exchange of information among those in attendance who commonly number in the hundreds. From my experience of attending the funeral of a girl who I did not know, I vividly recall the greetings warmly exchanged among attendees, the buzz of conversation I heard as I sat with others under shade trees, as well as the friendly greetings even I, a non-voting visitor, enjoyed from an eager politician moving among the crowds. All of these actions underscored the social aspect of this event.

The burial I attended occurred on a Saturday and it seemed that, particularly if the body had been embalmed, this was a common day for burials. In my notes, I reflected that on this particular day, among my relatively small circle of Giriama friends I was aware of two other funerals that were taking place, one of which lasted the full traditional period of five days. I mused in my notes that most Giriama have a much wider social circle than I have and on most weekends are likely to know of several funerals that they might attend. Each funeral represents an opportunity provided within Giriama society for social interaction and the informal exchange of information.

Funerals and meetings are examples of formal aspects of Giriama society that prompt the informal sharing of information. Features of Giriama society such as greetings, the public nature of everyday life and cultural practices such as borrowing tools and *meria* have also been mentioned as encouraging the informal exchange of information.

Additionally, there are social exchanges in Giriama society that seem informal, but are done expressly to teach local knowledge. One of these is the training of new brides when they arrive at their husband's home. In discussing this with the women of Mudzi it was clearly a point of pride on the part of the bride and her family that the bride knew what was expected of her before she was married. Tabu explained, "so when I got here I knew every kind of job" but she did concede that she was taught to do certain jobs the way it was done at her husband's home. Kasichana explained that this was necessary as a bride's new home was "somebody's home" and Deborah clarified that by this she meant "It is different from the home you were born, at your home. Here is for others but our home is there, where you were born." In order to train a new bride to fit into the work life of the homestead, the new wife worked with other women in the homestead. Most often this was her mother-in-law, but the husband's grandmother was also

mentioned. Kasichana described that as a new wife she went to the farm with her mother-in-law and continued, “We go to fetch water. We go and get firewood, to look for green vegetables; we look for firewood; we pound [dried corn]; we grind....She is my mother-in-law.” As I continued the conversation with Kasichana I mentioned that she now had a daughter-in-law and she declared that she was teaching her just as she had been taught. She explained, “I go with her to fetch water, to get firewood, to get mboga, and she comes to cook.” What both Tabu and Kasichana described to me was a process in which young brides were taught Mudzi’s knowledge about completing household chores by doing those chores together with women already in the homestead. This occurred as part of normal life but with the express intention of preparing the new bride to be an effective part of the homestead—social interaction with a training goal.

In my interactions with the people of Mudzi I also experienced this working together with an “instructor” so that I could learn about farming. I had mentioned that I wanted to learn about Mudzi farming practices and their response over the ensuing weeks was to take me to the farm and work with me. Kadzo took me to her farm, put a hoe in my hand and assigned me a portion to prepare for planting. She then worked beside me instructing me and correcting my mistakes as we worked. She later took me back to her farm and worked with me as we planted corn, cowpeas and pumpkins. Hawe also took me to her farm, gave me a hoe and taught me to weed while taking care not to damage the variety of plants she had planted there. Tabu took me to a field of corn ready to harvest and taught me how to harvest it. As she worked beside me and observed that I was not doing it the way she wanted, she corrected me on the spot and continued to answer my questions while we worked. As I worked with these women while they completed their normal duties, we interacted, and they taught me much about their farming practices. This

interaction was informal, a part of daily life, but done with the purpose of teaching me specific knowledge.

In this section, social interaction has been described as a way that learning occurs in Giriama society. Maintaining many effective relationships was depicted as an important value of Giriama people and it was suggested that Giriama society is structured in ways that encourage social interaction. The priority placed on greetings in Giriama society was portrayed as an expression of this as well as an important form of social interaction in which useful information is exchanged. Additionally, the public nature of daily life, walking as a common activity, the prevalence of the practices of borrowing tools and *meria*, the pervasiveness of formal social forums such as meetings and funerals, and intentionally working together in order to teach specific skills were all portrayed as vehicles of social interaction that resulted in learning local knowledge.

Conferring with Respected People

A unique form of social interaction used to learn local knowledge is conferring with those in the community respected as having expertise in a specific area. When I inquired how one would learn to plant a new crop a common response was that they would consult a person with recognized experience growing the target crop. Samini responded to this question by stating, “I will go to someone who planted them, I will go to the one who has already planted them.” Esther responded similarly, “You will need to ask those who have planted....I will get a teacher first. If I see some place there is a problem I will go to that teacher.” It is interesting that both women specified that they would seek out someone who had actual experience growing the crop. They did not want a teacher who merely claimed to know how to plant the crop but someone they respected as having actual experience growing the crop.

Safari emphasized the importance of respect for the messenger when he described his efforts, as part of a development project, to communicate HIV/AIDS information in Giriama communities. He explained that during the time of this project the government was pursuing a mass media education campaign but people were not paying attention to it and it was not effective. He continued that local officials of the Ministry of Health were also speaking to the issue but that “people were saying these people are talking just because they are being paid.” The problem was not that the message was not being heard by people but they just did not respect the messenger. He mentioned that young messengers were especially at a disadvantage as people would say, “you are a young man how do you know all these things? You don’t know these things. If you don’t know these things you have no authority to tell us.” Young inexperienced messengers lacked the credibility that age and its associated life experiences impute.

Safari continued that as he reflected on how to communicate effectively he concluded that, “There are people who if they just make a statement that statement is taken like it is a law.” As he considered who in Giriama communities might have that kind of respect, he eventually identified four societal roles—religious leaders, traditional birth attendants, traditional healers and village elders—that he felt would be esteemed messengers of this information. Religious leaders were thought to have significant authority to speak in ways that would be respected, although he explained that as the project continued it was discovered that religious leaders were shy to speak about sexual matters. Traditional birth attendants were found to be ideal as they were not shy to speak about sexual issues, were in a natural role to do so and had authority to speak about such topics. Traditional healers were also found to be good messengers of this information as people were already going to them to deal with health issues and “the word of the local healer is a law so people would actually accept.” Village elders were also found to be

effective messengers as they were accustomed to dealing with sensitive relational issues as they were routinely called upon to resolve quarrels. Also, they are normally an “old man or old woman” and are known as people who listen and speak with a degree of authority, due to their being members of the community as well as representatives in the community of the chief, a local government official. In this conversation Safari expressed confidence that the project he was working with had been successful because men and women in these four roles were respected voices in their communities with the needed credibility to effectively speak the message about HIV/AIDS.

This section has described conferring with respected people as a specific type of social interaction employed as a strategy for learning new information. Respected people were identified as those who have recognized expertise in the topic of interest, such as planting a specific crop or health issues, or those who hold positions of authority in their community. It was also noted that young people are unlikely to be viewed as having the requisite expertise to engender respect.

Oral Literature

Another aspect of social interaction that was found to be useful in learning local knowledge is oral literature, such as songs, riddles, proverbs, and wise sayings. The importance of oral literature was impressed on me during my fourth visit to Mudzi. As it was raining, I was sitting in Sidi's house and talking with Hawe and Kadzo. Hawe mentioned singing as a young girl and I casually asked her if she could remember the songs she had sung and sing one for me. Hawe, a shy person, demurred but Kadzo volunteered to sing. After she sang a song, I asked her if she would sing it again and allow me to audio record it, which she readily agreed to do. After recording her singing, I played it back for her, which pleased her and she sang another one. Soon

another woman joined us and she sang as I recorded, then other people crowded into the house to sing and listen as I played back the audio recordings. Eventually the rain let up and as the house was getting crowded we moved outside and sat under trees. Spontaneously people began to walk up and sit down to sing with us. People I did not know wanted to sing a song for the group and be recorded. After each song I played the recording for the group to listen to again. The singing eventually ended after more than two hours and after I had recorded more than thirty songs. The songs, all in the Giriama language, covered such topics as marriage, the evils of gossiping, the loss of culture, witchcraft, death and mourning, attending meetings, HIV/AIDS, politics, love, prayer and specifically praying to God through ancestors, attending a party, and welcoming a relative to the homestead. During subsequent visits, I was often asked to play back what I had recorded and to record new songs.

On the evening of that first event, I mentioned it to Hamisi, a key informant, and his comments underscored the importance of song to Giriama life. He explained that songs in Giriama culture were actually classified into specific categories depending on the rhythm and dance styles and then mentioned five different categories of songs—*Gonda*, *Kijembe*, *Sengenya*, *Ndimba* and *Namba*. He further explained that often a homestead is linked to one specific category of song and the children of that homestead are taught to perform in that style. He added that there used to be periodic competitions between singing groups.

Soon the conversation with Hamisi turned to Giriama riddles and eventually James joined in. They explained that if one had a riddle that you wanted to challenge others to respond to, you would say *chondonyi* (riddle) and the responding person would say *dhekaiha*. If the responding person is not able to correctly guess the answer to the riddle, he or she admits defeat and is told to name a town. After a town is named, the person with the riddle says “I went to (the town)

shopping and discovered that (reveals the answer to the riddle).” One riddle they told me is “*paramanje ya podzo kaimera iweni* (a hard green graham seed will not grow).” They explained that the correct answer is “*kirevu cha muche* (the whiskers of a woman).” On my next visit to Mudzi, I was surprised when someone turned to me and said *chondonyi* but was able to respond *dheheka* (actually an incorrect attempt to say *dhekaiha* but close enough that they proceeded to tell me a riddle). Following this, the next hour or so was spent telling me riddles and me trying to guess (always incorrectly) their meaning. I was also able to tell some of the riddles Hamisi and James had shared with me. They knew the answers and were pleased that I knew at least some riddles. After this episode while at Mudzi if the conversation lagged, it was common for someone, even a child, to look at me and say *chondonyi* and the riddles would start. One young boy, perhaps eight years old, was especially keen to do this and once asked me a riddle that prompted many questions of the boy from the adults present. They later explained that the riddle he had told was one he had made up on his own.

In addition to riddles, I discovered that proverbs and wise sayings were very common. These would routinely be quoted to underscore a point in a conversation or speech. For example, in a discussion with Hamisi about a project that seemed to be taking a long time, he commented, “An elephant is not eaten in a day.” Another proverb told to me was “*Mutsimba wa kisima simunywa madzi* (the one who digs the well is not the one who drinks the water)” a comment on the reality that often those who do the hard work are not those who benefit. Another bit of wisdom was shared in the saying “*chala kimwenga kakibanda tsaha* (one finger cannot kill lice),” a comment on the futility of one person trying to live independently. In my notes, I only recorded ten such sayings but this was merely the tip of the iceberg. I am convinced that a

concerted effort to document these would produce a list of hundreds of sayings touching on a multitude of topics.

From my observations, I was confident that oral literature was a common and valued form of interaction among Giriama people that communicated accumulated wisdom but I wondered if it was a means of learning contemporary information. One clue that it might be was found in the songs that I had recorded at Mudzi. One woman, a traditional birth attendant, had sung songs about HIV/AIDS and specifically about foods that HIV positive people should eat. When I discussed this with key informants, Hamisi and Baraka mentioned that Safari, a local NGO worker from Marafa Division, had implemented a project in which local song composers were taught basic information about HIV and asked to compose songs that taught this information. They commented that in Marafa he had even organized a traditional competition between singers, a *pingano*, with the singers he had taught. This *pingano*, which they had attended, had drawn large crowds that came to hear the music and to experience a *pingano*, which is rare these days. They were confident that the songs the traditional birth attendant had sung were a result of this effort.

With Baraka's assistance, I was later able to interview Safari about his efforts. Early in the interview Safari commented, "To communicate effectively you must submerge into the culture of the people. You get to know how people communicate before you can even start, start giving information." This conviction guided his efforts to train local song composers. Safari explained that,

The song composer will sing only once but if he sings or she sings that song will be sung throughout. We don't need newspapers. We don't need banners. We don't need these other things but when the singing is done she, he or she has forwarded and people will

start asking “what does the song say?” They listen carefully and they follow whatever is eh, is taught by the musician.

Local song composers were apparently very interested in this as Safari stated that one of the challenges faced in the program was that they had planned a training session for 25 song composers and invited that number but 40 song composers came for the training. Safari described the songs composed as having a lasting effect as “the music remains in the minds of the people and it will take ages and ages, because I remember, you can remember what your mother taught you, the first songs in your life.” Moreover, he added that these songs were sung at funerals, memorial ceremonies, and at many other meetings. He added that they would be remembered even after the composers had passed on. Safari further clarified that as the songs became popular it was decided to multiply the reach of the musicians and several albums of the songs were recorded. Eventually, the songs became a regular feature on a regional radio station that played indigenous music. Safari described that as a result of the use of this contemporary technology that even people in towns knew the songs as they listened to them in their cars, or houses at all times of the day. When I asked Safari to comment on the effectiveness of the program he commented, “the song composers –is one of the most effective ways if you want to bring change or education. I might be biased but I think music is one of the most effective ways.” As I had already unexpectedly heard songs about HIV/AIDS sung in at Mudzi, it did in fact seem that it had been effective.

This conclusion was strengthened two weeks later when with Kadzo I visited the homestead of Samini’s parents. This homestead was in the Marafa area but several miles from Mudzi. After we had been there for a couple hours, Kadzo mentioned that Samini’s mother was a traditional birth attendant and a song composer. Kadzo asked if I had my audio recorder with me

and could play the songs that I had recorded at Mudzi about HIV/AIDS. I did so and this woman immediately recognized the songs and soon sang another song about HIV/AIDS that she said she had composed. She then commented that as a song composer the local government official and local school administrators had asked her to compose songs. She mentioned one head teacher who had asked her to write songs and sing them to encourage boys to stay in school and another one to educate young girls about how devastating early pregnancies are.

From these exchanges, I was convinced that oral literature and songs specifically were a means of learning health related information as well as raising awareness of contemporary social issues. I still wondered if specific local agricultural knowledge was learned this way. When I asked key informants about this, they assured me that it was. James gave the example of his grandfather who, one year when the rains delayed until the month of July, defied local knowledge and planted corn even though it was very late in the season. To everyone's surprise, he was successful and had a good harvest of corn. After this success, he composed a song telling what happened and encouraging people to go ahead and plant corn even if the rains did not come until July. Although I have no means to know how many people changed their practices due to his song, I am confident that many heard its message and listeners received new information that they could evaluate and choose to use or ignore.

Oral literature in the above segment has been depicted as a common and highly valued form of social interaction used to teach local knowledge in Giriama society. Songs, riddles, proverbs and wise sayings were all cited as examples of contemporary Giriama oral literature. Accumulated local wisdom, information about HIV/AIDS, and local agriculture knowledge were mentioned as examples of the types of knowledge learned through Giriama oral literature.

Summary

The research question that we have sought to illuminate in this section is “How is local agricultural knowledge learned?” Five answers to this question suggested in data collected have been detailed. I have proposed that observation, trial and error, social interaction, conferring with respected people, and oral literature are strategies used to learn new information. These strategies are all informal in nature in that they most often occur as a part of normal life with little prior planning. Despite this, at times these strategies are pursued with the intention of passing on needed knowledge. Utilizing these strategies Mudzi homestead members are able to keep abreast of new information in contemporary Kenya and are able to use that information in their lives in ways they determine appropriate.

Chapter Summary

The purpose of this study was to understand how adults construct and disseminate local agricultural knowledge in a rural community in coastal Kenya among the Giriama ethnic group. The research questions guiding the study are: (a) In this community what factors shape the process of local agricultural knowledge construction? and, (b) In this community how do adults learn local agricultural knowledge? This chapter described the findings of the study and Table 5.1 presents the major findings of the study that contribute to answering to the research questions.

Four factors relating to the first research question, “In this community what factors shape the process of local agricultural knowledge construction?” were described. The first of these to be considered was modernizing influences, which were identified as: (a) *cha moyowe* (individualization), (b) government agricultural practices, (c) school attendance, and (d) increased monetization of life. The other factors were evolving gender roles, time/energy

constraints, and access to knowledge. The second research question, “In this community how do adults learn local agricultural knowledge?” was then addressed and five responses were described. Observation, trial and error, social interaction, conferring with respected people, and oral literature were portrayed as avenues used by participants as they learned new local knowledge, including agricultural knowledge. The following chapter will elucidate further the significance of these findings and provide concluding discussions of the study.

CHAPTER 6

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This is the concluding chapter of this document. The purpose of the study was to understand how adults construct and disseminate local agricultural knowledge in a rural community in coastal Kenya among the Giriama ethnic group. The research questions that guided the study are: (a) In this community, what factors shape the process of local agricultural knowledge construction? and, (b) In this community how do adults learn local agricultural knowledge? This final chapter begins by presenting four conclusions prompted by findings of the study, continues by describing implications for practice arising from study findings, and concludes by positing suggestions for future research on this topic.

Conclusions and Discussion

As I have considered the findings of this study, four conclusions have been arrived at. The first of these is that modernization is a pervasive force shaping the construction of local knowledge. The second conclusion is that local knowledge construction is strongly shaped by gender. The third conclusion is that local agricultural knowledge construction is an informal process. That is to say, it occurs as people go about their normal routines and not due to an organized educational program. The last conclusion to be discussed is that ensuring community survival is the principal motivation that shapes the construction of local knowledge.

Conclusion One: Modernization is a Pervasive Force Shaping the Construction of Local Knowledge

Community survival has long been a driving force in Giriama society. Despite the Giriama historically living in sparsely populated areas, they have not been isolated from others. Some of their neighbors have been more powerful than the Giriama and have posed a threat to them. In their interactions with these powerful neighbors, the Giriama have responded with strategies to adapt to the more powerful forces and survive as a community. In modern times they are once again faced with a powerful force, the force of modernization, that they must adapt to if they are to survive. This section briefly traces the history of the Giriama society as they dealt with the powerful forces surrounding them and will conclude with a consideration of the impact of the force of modernization on contemporary local knowledge in Mudzi.

When the Galla attacked the ancestors of the Giriama people in Singwaya during the 1500s, they migrated to new location (Brantley, 1978; Champion, 1967; Spear, 1978, 1981). When the attacks continued they adapted their pattern of life, constructed fortresses, lived in those fortress, and developed a centralized gerontocracy form of government (Champion, 1967; Spear, 1978, 1981). Later when that threat subsided and new trading opportunities presented themselves, they left the fortresses and began to expand their territories and live in homesteads rather than fortresses. This adaptation to new realities dramatically altered their gerontocracy form of government as each homestead became more independent. The change signified a new era for the Giriama people as they flourished in their new lands. The Mudzi homestead is a product of this adaptation as it is located in these new lands and functions as self-sufficient homestead.

The expansion of Giriama territory continued until they once again faced a powerful force, the British. In 1914 they clashed militarily with the British and were soundly defeated (Brantley, 1981; Spear, 1978). This new reality again changed the community as they submitted to the demands of the British, halted their spread into new lands, began paying taxes, started working for the colonialists, and adopted some British customs. Contact with the British threatened the Giriama but the community adapted to contemporary pressures and survived.

As the British expanded their control over not just the Giriama, but also all of their neighbors in east Africa, the influence of European culture was inescapable. This influence was compounded by the fact that following the Berlin conference of 1884-85, the entire continent of Africa, save for the country of Ethiopia and, arguably, the country of Liberia, was colonized by European countries (O'Toole, 2001). The Europeans tried to justify this colonization as merely their destiny to help the people of Africa, who they deemed inferior, to “grow up” (Mudimbe, 1994). In accord with this attitude, Europeans established colonization processes that were intended to “organize and transform non-European areas into fundamentally European constructs” (Mudimbe, 1988, p. 1). Among the Giriama, people began wearing European style clothing, began using colonial currency, and a few select children began attending British initiated formal schools.

The Europeans used education as a tool of domination, which catapulted the impact of European colonization into future generations. African parents and children were told that the path to a better life was found in formal education. Children attended formal schools where they were taught to abandon their traditions and that European knowledge was “real” knowledge (Elabor-Idemudia, 2000; Okere et al., 2005; Semali, 1999; Wane, 2000). British colonialism in Kenya persisted roughly from 1888 to 1963 when Kenya became an independent nation

("History of Kenya," 2008). Despite the fact that Kenya is no longer a British colony, in contemporary Kenya, parents, including the parents of Mudzi, make significant sacrifices in order for their children to go to school. It is noteworthy that the education system that the parents of Mudzi sacrifice to send their children to is fundamentally the same system established by the British colonial administration.

The persistent impact of colonialism extends beyond the education system. As Ntseane (2006) explains, "Africans who received Western education and religion maintained the colonial status quo by perpetuating Western norms and adopting Western values at the expense of the indigenous world" (p. 222). Consequently, notwithstanding the end of colonialism, the influence of Europe, as represented by Western culture and economic power, remains a powerful force in Kenya. The rhetoric may have changed but many would argue that a new colonialism is alive and well in Africa. They posit that this is manifested in the efforts of the West to "develop" Africa and that this has perpetuated the colonial goal to remake Africa into a European image (von Kotze, 2002; Walters & Watters, 2001; Youngman, 2000). Accordingly, Owomoyela (1996) boldly asserts that development is merely a "code word for westernity and the polar opposite of Africanity" (p. 168) and Wangoola (2000) adds that Africa's development and progress has come to mean "becoming like someone else" (p. 270). This identification of development or modernization with the dominant global forces of the West is apparent in Mudzi.

In contemporary Mudzi the forces of modernization include Kenyan government officials, non-government development agencies, local schools and mass media outlets such as radio and newspapers. The core message of all these voices is that the pinnacle of life in the modern world is the West. Every child hears the message that a better life awaits those who succeed in school, move to cities, and enjoy the fruits of modernity such as running water,

electricity, television, movies, and owning a car. Relatives living the successful life come home and tell stories of the wonders of modern urban life. In contemporary Mudzi, the Galla no longer attack and the British no longer rule with an iron fist but they are facing a new force, modernization, which permeates virtually every sphere of life.

Just as the Giriama people historically have faced strong forces and adjusted their practices in order to survive, Mudzi family members are now dealing with the forces of modernization and are adjusting to it. Farming methods are changing due to the intervention of government extension workers such as John, a Kenyan extension worker who stated that he and his fellow officers were “strongly against” traditional Giriama planting methods. The modern push for all children to attend school has encouraged changes in the crops planted, as children are no longer available as crop guards. Individualization promoted by Western values and economic policies has taken root and altered forever how Mudzi produces its crops, stores its harvest, cooks its food, trains its children and even eats its meals. Muvera poignantly described of the loss of *dhome* (children and adults sitting together talking while supper is cooked) when she spoke of Daudi’s unsuccessful attempt to maintain the practice and explained that, “So the old man will not just sit there alone. He also goes into the house when he feels cold.” Modernization in Mudzi has meant more individualization, which precludes communal traditions such as *dhome*, *dzumbe*, *koho*, as well as cooking and eating communally—such practices just do not fit in modern times.

In addition to individualization, the increasing push to further monetize the society, epitomized by John’s comment that he and other government extension workers would never abandon “The gospel that farming is business” has changed Mudzi in a fundamental way. In today’s Kenya, the clear message of the forces of development is that a better life requires

money. There are school fees to pay; plastic jerry cans, metal cooking pots, new dresses, new shirts, leather shoes, soap, medicine, and kerosene for lamps to buy. There are machines to hire for grinding corn or even plowing farms. A desire for this better life is changing Mudzi, particularly gender roles. No longer do families work together in the farm to provide for themselves, but increasingly men leave farming and child rearing to their wives as they depart the homestead in search of employment for money. As Samini explained, “the husband has no time to concentrate in the farm because he has to go to work.” While adult roles in Giriama society historically have been linked to gender, the forces of modernization have further accentuated these roles. In the past, much of the farm planning was done by male homestead heads but now that men’s focus is off the farm much of this planning is done by women. Perhaps this shift in gender roles enhances the power of women in the homestead but it also tethers them ever more firmly to the family’s fields. In any case, the drive for increased money has changed how the people of Mudzi now view the roles of men and women.

The forces of modernization offer a lifestyle to Mudzi family members that they have never before imagined. While idealistic outsiders, such as myself, may wonder if the loss of traditional knowledge is too high a price to pay for such a lifestyle, not a single member of the Mudzi family seemed to share these concerns. Perhaps they have been enticed by the promises of modernity or perhaps they are merely once again doing what they have always done—ensuring their survival by adapting to a force that is too strong to oppose directly (Porter et al., 1991). In any case, modernization is a pervasive force that shapes the local knowledge of Mudzi. While the Giriama have not pursued modernization with the vigor of some ethnic groups in Kenya, I cannot think of a significant aspect of their lives that is untouched by it.

Conclusion Two: Local Knowledge Construction is Strongly Shaped by Gender

Modernization has certainly had an effect on how gender roles are perceived in Mudzi. Nevertheless, a significant gap in the literature was the absence of any mention of the impact of gender on local knowledge construction. This is surprising as this study revealed that gender plays a significant role in the construction of local knowledge. Much of life in Mudzi is organized by gender. Increasingly, men work out of the homestead and women remain in the homestead caring for the daily needs of family members and working in the fields cultivating food crops for their families. I was informed of this division of labor early in my data collection as Juma encouraged me not to be surprised if on my visits to the homestead I only found women present. This was indeed the case and, as I focused my time in the homestead and their fields, I spent most of my time with the women of the homestead. Just as my interaction was mostly with the women of Mudzi, they also spent hours each day interacting with each other but relatively little time interacting with the men of Mudzi.

In addition to spending time at Mudzi, I also attended several public meetings including meetings called by government officials, meetings held by local NGOs, and church services. Although these meetings included both men and women, there was little interaction between the genders as men and women spontaneously sat in separate groups. When I wondered if men and women routinely discussed information from meetings after they returned home, Hamisi and Baraka doubted that this occurred. Baraka explained, “If it happens it is for the men doing it separately but whatever is discussed or agreed upon by women will never come or be shared to men and whatever is agreed by men will never be shared to women.” Hamisi agreed and added, “The women talk among themselves with other women and men with other men. The women

discuss it and pick those issues they can put in practice. Men will do the same.” Clearly, gender affects not only the organization of work but also social interaction patterns.

That social interaction patterns are organized by gender shapes local knowledge construction. It is much more likely for a woman to find herself in a field planting corn beside another woman and taking note of her technique than for her to observe a man in the same situation. Women spend hours together each day chatting and learning all manner of information from each other but only a few minutes chatting with men and learning from them. Conversely, men spend much of their time with other men and are more likely to learn new information from other men. In the midst of such daily interactions, local knowledge is constructed and, as these daily interactions are largely organized according gender, gender consequently strongly influences the construction of local knowledge.

I also observed that the women of Mudzi have significant demands on their time and energy that the men may not have. These demands have increased as children who once spent much of the day helping with farming and domestic work now attend school and men are working away from the homestead. Women literally work from before daybreak to well after sunset carrying out their chores. When talking about this with Sidi she commented, “the work of a woman is pounding corn, grinding, fetching water, fetching firewood, looking for relish (green vegetables),and bathing children.... A woman has a difficult job; she can start pounding corn at six in the morning.” Muvera was listening and added, “then fetch water; then she comes to cook, fetch some firewood and look for green vegetables.” Later Kasichana gave me a list of 21 chores that women do almost every day and this was an incomplete list as I regularly observed women engaged in activities not on the list. Because of these demands on their time and physical energy, women in particular were very willing to consider new knowledge that might ease some of their

burden. In their lifetimes, the older women of Mudzi had already adopted two new grain-grinding technologies and expressed a willingness to use a potential new grinding machine that also pounds the corn, thereby eliminating one of their demanding chores. Due to the already high demands on their time and energy, the women of Mudzi are unlikely to incorporate new knowledge that increases their workload but are likely to consider new knowledge that eases their workload.

As has been mentioned in the preceding section, the forces of modernity are accentuating the already existing division of labor in Mudzi. More men are working off the farm and more responsibility for the homestead and the farm is being placed on women. Increasingly farming is becoming a domain of women as women are not only providing more of the labor, but are also making more farming decisions. Because of this shift, women are increasingly the source of agricultural knowledge in Mudzi and therefore it their agricultural knowledge that will be passed on to the next generation.

Conclusion Three: Local Agricultural Knowledge Construction is an Informal Process

As the study found that adults in Mudzi learn local agricultural knowledge using five informal means, I conclude that the process of developing Mudzi's local knowledge is an informal learning process. It is informal in the sense that classes are not attended, a syllabus is not followed, and specially trained teachers are not used. This categorization as informal corresponds with the common classifications in the West that education is either formal, nonformal or informal (Coombs & Ahmed, 1974). With this classification system, *formal education* is described as scheduled, occurring at a special location, part of a curriculum, and taught by a trained expert. Because of this, it is often linked to schooling. *Nonformal education*, as the name suggests, originated as a means to correct perceived deficiencies in formal education

systems. It is organized and systematic but often not part of a formal educational institution (Brennan, 1997; Coombs & Ahmed, 1974; Ewert, 1989; "Ministry of Education Science and Technology," 2003; Minnis, 2006; Rogers, 2005). Merriam and Caffarella (1999) offer the following definition: "Nonformal education has been used most often to describe learning opportunities outside formal educational settings that complement or supplement the needs of underserved adults or learners in developing nations" (pp. 28-29).

However, it is the third classification, *informal*, that most closely describes what was observed in Mudzi. Merriam and Caffarella (1999) state that "this form of learning occurs most often in learners' natural settings and is initiated and carried through primarily by the learners themselves" (p. 32). This type of learning requires no special location, is not part of a curriculum, occurs on any day and at any time, and may or may not involve another person. It is the type of learning through which we humans construct most of our knowledge (Coombs & Ahmed, 1974; Merriam & Brockett, 1997; Merriam & Caffarella, 1999). As was the case in Mudzi, people may be unschooled but be highly educated through informal education. Many of the Mudzi adults had not participated in any formal schooling, most had not attended beyond a grade school level, and none had progressed beyond a high school degree but all possessed a great deal of knowledge about surviving in their unique surroundings. When asked how they gained this knowledge they pointed to activities that are part of their daily lives and not a single instance of participating in a formal training activity was mentioned or observed.

Instead of formal educational processes, learning was derived from observing others, through trial and error, from interacting with other people, conferring with respected people, and through the medium of oral literature. James spoke of learning to grow pineapples by observing the fields of others and explained, "Observation, you observe what people are doing and if you

have any question to ask you can ask but in most cases people normally observe.” Samini expressed confidence that she could plant watermelons, a new crop for her, because “I have seen them being planted.” As Ngoma spoke of learning to saw timber as a small-scale business by observing others, Kadzo was quick to interject, “He wasn’t taught by anyone.” Tabu described this type of knowledge as “*Ujuzi* of the eyes,” a skill gained merely through using one’s eyes as one went about one’s life. Others spoke of “*Ujuzi* of the head,” which indicated gaining or honing a skill through trial and error. Examples of this type of learning are Samini’s detailed description of the process she uses to cook *wari* and Daudi perfecting improvised bellows from paper bags for his blacksmith work. Samini and Daudi both began with basic knowledge gained through observation then by regularly practicing what they observed they gained new knowledge that translated into changed practices.

Oral interaction has been identified as fundamental to learning indigenous or local knowledge (George, 1999; Maurial, 1999; Ntseane, 2006) and this was the case in Mudzi as no one spoke of learning to farm from any form of written material. Instead, adults in Mudzi learned as they shared information during the countless routine face-to-face interactions they engaged in during their day. They exchange extended greetings with almost every person they meet as they walk footpaths, work in their fields or under shade trees in the homestead, make purchases at local shops, or attend community gatherings. The importance placed on these exchanges was painfully obvious to me when I was castigated for not greeting adequately despite my attempts to do so. Life in Mudzi was structured in ways that maximized interaction within the homestead and with its extended social network. This interaction and the relationships nurtured by it are invaluable sources of knowledge accessed constantly in daily life. The knowledge shared in these

exchanges is both traditional and new as these relationships reflect a shared connection between community members both past and present (Ntseane, 2006).

A unique aspect of this social interaction is conferring with respected individuals. Safari described these respected people as “People who if they just make a statement that statement is taken like it is a law.” In his HIV/AIDS education program he identified four societal roles—religious leaders, traditional birth attendants, traditional healers and village elders— that he judged would be respected conveyers of the program’s message. Although some proved more enthusiastic communicators on the subject than others were, he felt the education project had been successful due to the respect granted these messengers by those who consult them.

Another means of social interaction that was used in knowledge construction was the exchange of oral literature, such as riddles, proverbs, and songs. Wangoola (2004) points to the importance of oral literature in local knowledge construction when he suggested that language developed among humans principally for the purpose of storing and sharing information created in daily life and stated “This community experience, in coded form, is stored in the speech community’s language; in words, phrases, idioms, parables, jokes, songs, dances, taboos, etc.” (p. 235). Additionally, Boateng (1985) identifies oral literature such fables, folktales, legends, myths, and proverbs as important to education in Africa and Reagan (2005) in his discussion of African indigenous education systems identifies the teaching of such oral traditions as a central feature in the intellectual training of Africans. With this foundation provided by the literature, it was not surprising to discover that Giriama people share much information through oral literature. Safari commented that “song composers –is [sic] one of the most effective ways if you want to bring change or education.” James told of his uncle composing a song about his successful harvest of corn planted late in the season that encouraged others not to give up if rains

came late but to go ahead and plant anyway. I experienced the proclivity of the people of Mudzi to share spontaneously riddles, proverbs and songs as they worked, sat in a house waiting for rain to stop or relaxed under a shade tree. Sharing oral literature was a routine part of life that promoted the exchange of information and the construction of local knowledge. Westerners rarely consider singing or riddle and proverb sharing as important processes of human learning but this study highlights that such activities are indeed vital components of informal learning among the Giriama.

Each of the means of learning local knowledge described above can be described as informal, which is to say it not part of a planned program conducted in a particular location by a specially trained person. This corresponds with Avoseh (2001) and Mosha's (2000) description of indigenous education in Africa as education that is part of every day interaction in life and not separate from life's normal activities. Learning observed in Mudzi is also similar to what was described by Nafuko et. al. (2005) when they state that adult education in Africa is "Learning through seeing, observing and doing" (p. 31). Statements such as these encourage the categorization of such learning as informal, which Ocitti does in his publication, *An Introduction to Indigenous Education in East Africa* (1994) but he also counsels, "to equate indigenous education with informal education is to oversimplify what is an otherwise complex phenomenon" (p. 19). Indeed, I find it hard to portray as purely informal when Kasichana, as a young bride, learned how domestic chores were done at Mudzi by working hand in hand with her mother-in-law. This learning did occur as part of normal work routines but it was work completed jointly with an educational purpose. While her mother-in-law probably did not have a set curriculum she followed, she likely did have a mental checklist that ensured that Kasichana was adequately trained. This type of education fits most easily in the informal education category

but it seems more complex than learning that “is initiated and carried through primarily by the learners themselves” (Merriam & Caffarella, 1999, p. 32).

While learning local knowledge in Mudzi may not fit perfectly into the informal learning category, it is certainly a better fit than either formal or nonformal. Each of the five learning processes identified—observation, trial and error, social interaction, conferring with respected people, and oral literature—can readily be described as informal processes. In concluding this section, it is noteworthy that these learning processes have persisted in a community greatly affected by the forces of modernization. As the community struggles to survive, what is learned is changing but how it is learned remains largely unchanged.

Conclusion Four: Ensuring Community Survival is the Principal Motivation that Shapes the Construction of Local Knowledge

Local knowledge is a knowledge base used to ensure a community’s survival. Semali (1999) in his definition of indigenous knowledge speaks of this knowledge as a form of literacy that is “critical to the survival of indigenous peoples” (p. 95). Ocitti (1973) describes indigenous knowledge as knowledge “whose goodness has withstood the test of time” (p. 95) and is handed over to succeeding generations virtually unchanged. Reynar (1999) cites this conservative attitude towards change as a positive attribute that protects communities from rash change that might threaten community survival. This same drive to survive is cited as the motivation by others for constant adaptation of indigenous knowledge (Dei, 2000; Maurial, 1999; Nsamenang, 2004; Semali, 1999; von Kotze, 2002) . This adaptation occurs as situations change and demand new approaches. Mwadime (1999) describes a model representing the process used by communities to evaluate knowledge and determine if it should be kept or discarded. He lists two questions used in this process. The first is whether the knowledge is needed to survive

physiologically and the second is if the knowledge is “culturally, traditionally or spiritually desirable” (p. 253). If the response to both questions is “yes,” he suggests that the knowledge is absolutely necessary. If the answer to both questions is “no,” he writes that the knowledge is useless. If the knowledge is culturally desirable but not needed for physiological survival, then its retention is discretionary. However, if the knowledge is not culturally desirable but is needed for physiological survival it is still considered necessary knowledge. In this model, ensuring physical survival is the ultimate goal of indigenous knowledge. Cultural practices and values are important but may be sacrificed in order for the community to survive.

The practical outworking of this model in communities is a pragmatism that leaves little room for clinging to the old ways for the sake of tradition. This was evidenced in Mudzi as we discussed why traditional water containers have disappeared and been replaced with cheap plastics. While the virtues of clay pots were described longingly, no one expressed a desire to go back to using them. The demands of contemporary life do not afford the time and effort they require. Accordingly, knowledge of making and using clay pots is quickly fading away. In contemporary life, this knowledge is considered discretionary, if not useless.

This pragmatism was also evidenced in the dramatic shift in Mudzi away from communal farming to “*cha moyowe*”—individual families farming only for themselves. This change has had a dramatic impact on Mudzi, as each family is now responsible for growing and storing their own food, cooking their own meals, and families now eat separately. Homestead planning, information processing, and childrearing have been altered by this change, but Mudzi family members did not express a desire to go back to the old ways. Perhaps this is due to the family not completely abandoning Giriama homestead tradition, as Mudzi family members still live together as a community. While some Giriama homesteads have elected to separate and live on

their individual farms in nuclear family units, Mudzi family members have chosen to maintain the tradition of living together. The form of *cha moyowe* practiced in Mudzi has led to individualized farming but not independent living. Some traditions have been retained and others abandoned. The survival of the homestead is at the center of both choices. Both Hawe and Kadzo identified frustration arising from feeling that not all family members were contributing equally as the reason for abandoning communal farming. This frustration threatened family harmony and a change was made. Despite the resulting significant loss of traditional knowledge, the homestead survived.

As an idealistic Westerner, abandoning such traditions troubled me but as I spoke with Mudzi family members and other Giriama people about this, they did not share my concerns. What was important to them was that they survived in the contemporary world and they accepted that doing this meant giving up some of the old ways. I was presented with a metaphor of this attitude one day at Mudzi. Kadzo's two-room house was in bad shape and we had previously spoken of her plan to build a new one. On this day, I arrived at Mudzi to find her tearing down the walls of her old house and wanting to be helpful, I assisted her in the process. We slammed wooden poles against the soil walls punching holes in them, knocking them down amid clouds of dust, and settling debris. As we worked, I wondered what she must have been thinking during this process. Were memories of the past going through her mind as we demolished a structure that for years had been a significant part of her life? I glanced at her but even as she commented that her son, who is now dead, had helped her build this house, her face revealed little emotion. As we worked, she cautioned me not to damage the valuable components of the house that she wanted to keep—the strong posts on the corners and the long horizontal roof pole at the crown. It is likely that she was experiencing emotions that I did not detect, but her approach was very

pragmatic. She knew she needed a new house, as the old one was no longer suitable, but she also knew there were parts of the old house that were still needed and valuable. That was her concern, salvaging the parts still needed for survival while letting go of what was no longer suitable. As Mudzi family members considered their future survival, this mirrored their approach to local knowledge construction. Some knowledge was deemed no longer suitable and was discarded. Other knowledge was judged useful and retained for the future. The motivation for both choices was ensuring the survival of the community.

This section has described four conclusions prompted by the findings of this study. The first conclusion was that modernization is a pervasive force shaping the construction of local knowledge. The second was that gender is a strong influence that shapes local knowledge construction. The third conclusion was that local agricultural knowledge is constructed using informal means. The fourth conclusion was that ensuring community survival is the principal motivation shaping the construction of local knowledge.

Implications for Practice

Adult educators in a variety of guises are actively working among Giriama people and other communities that have similarly been judged to be behind the times. The Kenyan government, foreign governments, as well as both foreign and domestic nongovernmental organizations are among the entities hard at work trying to change the Giriama people and propel them deeper into modernity. While some may lament many of changes that modernity brings, Giriama people want a life with fewer hardships and more opportunities and modernity promises such a life. Giriama people have made and will continue to make choices that they hope will lead to the improved life they long for. Wise and conscientious adult educators can adapt their efforts in ways that assist the Giriama people to understand more fully the changes being proposed and

facilitate their evaluation of these proposed changes. Toward this end, I suggest two implications for the practice of adult educators among the Giriama and similar communities. The first is that gender must be strongly considered as adult educators plan interventions in such communities. The second is that interventions that utilize and build on informal methods are likely to be most effective and facilitate community evaluation of proposed interventions.

Adult Educators Must Consider Gender as They Plan and Implement Interventions

I sat in the shade of the large tree under which all public *baraza* (meetings) are held in Marafa and listened as local officials explained to the gathered crowd the latest in a string of programs (all funded by foreign governments) designed to increase agricultural production. In order to incorporate local concerns into the program it was explained that in each locale a committee of residents would be formed and consulted. It was further clarified that these committees would be composed of three men and one woman. A few minutes later John, a local Kenyan agricultural extension officer, suggested to the crowd that the composition of these committees should be changed to include two men and two women, as “Women are farmers.” This was a rather mild statement but the crowd erupted with loud applause—from the women. It was obvious that he had hit upon a sensitive topic for them and this study confirms that John was indeed addressing a critical issue. Women are the principle farmers and increasingly are the primary decision makers on the farm. Despite this, programs are skewed towards incorporating male input more than female input. In addition, I noticed that all six Ministry of Agriculture extension officers in Marafa division were male. A clear implication from this study is that this kind of imbalance cannot be ignored if the effectiveness of such programs is to be improved. Especially in contemporary society, women need to be involved in all phases of program planning and implementation.

This is particularly true in agricultural training programs, as women are the primary farmers, but it is also vital with all types of educational programs. As has been described in this study, women have significant demands on their time and energy that men may not have and may not fully recognize. If the voices of women are not included in program planning, it is likely that the time and energy constraints experienced by women will not be adequately considered and proposed interventions will not fit into their demanding lives.

It was also found in this study that communication between men and women in Giriama society is often limited. As Hamisi and Baraka explained, men talk to men and women talk to women. In light of this dearth of communication between men and women, it is particularly vital that Giriama women be purposely included in all phases of a program if they are to benefit from it. The importance of their inclusion is underscored by the central role social interaction plays in the construction of local knowledge. Local knowledge is constructed as people interact socially. In Giriama society, social interaction often means men talking to men and women talking with women. If only men have participated in planning and implementing an adult education program, women will be unable to hold informed discussions about it. In the absence of such discussions, knowledge construction will be inhibited. Conversely, programs that have purposely listened to women and shaped program plans accordingly and have utilized women to facilitate interventions with other women will be solidly positioned in the community's social networks. Such programs will encourage the construction of valuable local knowledge.

Considering gender when planning adult education interventions primarily relates to a reorientation that is more inclusive of women but this should not be interpreted as a disregard for the concerns of men. Teaching only men about agriculture is no more appropriate for men than it is for women. A careful understanding of the division of labor and social interaction by gender is

needed in considering all interventions. Men seek new knowledge to help them be successful in providing for their families. Just as relying on men to facilitate learning with women is likely not to be effective, relying on women to facilitate learning targeted for men will probably not be effective. If adult educators are to consider adequately gender as they plan and implement interventions, they must take into account the unique roles and concerns of both females and males. Nevertheless, as historically women have been marginalized in many adult education and development programs, purposely addressing this inequity is of critical importance.

Interventions that Utilize and Build on Informal Methods are Likely to be Most Effective and May Facilitate Community Evaluation of Proposed Interventions

This study identified five ways adults learn local agricultural knowledge and all five are informal. That is to say, adults learn as they go about the normal routines of life. Adults observe other adults and remember what they saw until one day they try to imitate what was observed. As they incorporate this new knowledge into their practices, they gain a deeper understanding of what is useful and what is not and hone their skills accordingly. They interact with others frequently throughout their day and with them process information that further informs their lives and affects how they live. Occasionally they seek the advice of people they respect and further adjust their behavior. They also exchange riddles, proverbs, and songs that contain new information and suggestions for living. In this way, as adults go about their lives local knowledge is continually constructed and the adults of a community adjust to contemporary realities and the community survives.

All too often, adult educators approach their profession with a Western bias that ignores the effectiveness of such informal learning and, perhaps not surprisingly, their programs are routinely found to be ineffective (Avoseh, 2002; Diouf et al., 2000; Ntseane, 2006; Ocitti, 1994).

Just as Ocitti (1994) wrote of colonialists who observed the traditional lives of children in Rhodesia and inaccurately judged that no one was teaching them, it might be tempting for modern day educators to look at the lives of adults in rural Africa and judge that they rarely learn new information. The reality, of course, is far different as they daily exchange and process new information despite not attending classes or obtaining a formal education. In light of this, the goal of adult educators should be to seek out avenues for introducing new information using existing informal systems and not relying on formal or nonformal education systems from the West. A strategy of encouraging the informal observation of new farming practices can be pursued. Facilitators of interventions can intentionally share information in ways that quickly introduce it into informal information networks. Contacts with respected messengers in communities can be carefully cultivated and information respectfully shared with them. In collaboration with local song composers, informational songs can be composed and the singing of such songs can be encouraged. The exchange of riddles and proverbs that teach can also be encouraged.

Utilizing such informal methods through which information is routinely shared can ensure that new information is accessible to all. It can also shift power from messengers of modernity to those whose lives actually depend on this information. Adhering to informal methods would preclude teachers from standing in front of people and hammering a message that they need to change in a particular way until, as Tabu recounted, “You finally take it.” Rather, a facilitator of such informal interventions would introduce new information in ways that allow the target population to use it practically and evaluate its usefulness to them. The proposed intervention can then be adapted to increase its efficacy, adopted wholesale, or discarded as unhelpful.

Consider the following hypothetical description of how an intervention introducing new agricultural methods might utilize informal methods:

Samina is a field worker in a local NGO and she has been selected as the leader of this intervention. In collaboration with local village elders, she is introduced to several homesteads. As the first step in the intervention, she spends several weeks establishing relationships with the female members of these homesteads. Through these contacts, she identifies a small piece of ground next to a major footpath used by women as they daily collect their homestead's water. Eventually, she seeks and is granted permission to use this field for the planned intervention. As she begins preparing the field for planting, she speaks to several women and suggests that using the tradition of *meria* they should help each other with their farm work. Several women agree to this and they go as a group to each woman's field and work together. The women soon began to notice the new methods used by Samina. Some ask her about them but others over time just start experimenting with them on their own.

Women in the community regularly walk by Samina's field on their way to collect water and take notice of all that is happening there. It becomes one of the many topics of their discussions as they work in the fields or complete household chores under their homestead's shade trees. Occasionally Samina joins in these discussions, responds to questions, or tells stories but she does not to dominate the discussion. By the second season as Samina continues to work with the women she begins to notice that some of them are starting to use some of the practices she uses. Others use part of them but not everything while others continue as in the past. One day as Samina works in the field of one of her friends, Jumwa, she notices that Jumwa has taken a method Samina has used and altered it slightly. She asks Jumwa about this and quickly realizes that it is a significant improvement and she makes the same change to her practice and talks to

other women about Jumwa's farming expertise. She later notices that women are going to Jumwa and asking her about her farming.

By the third year of this intervention farming practices used by the women in this community have begun to change and harvests have begun to increase. Women who were originally reluctant to make these changes are talking to their neighbors who do use the new practices and asking about them. One evening while at an all-night wake during a local funeral ceremony, to Samina's delight she hears women singing songs that describe the changes they have adopted in their farming practice. She smiles as she hears a woman, who has traveled from a distant town by bus to attend the funeral, ask about the songs and their meaning. She realizes that the intervention has successfully facilitated the construction of new local knowledge. The intervention has placed new information into the local social network largely through observations, new skills have been honed through trial and error, information continues to circulate through normal social interaction, a local woman having been recognized as a skillful farmer is being consulted, and oral literature is repeatedly telling the story of this intervention in the community and beyond.

The above description is hypothetical and is, undoubtedly, an idyllic account of what might happen by using informal education methods. However, the description is grounded in the informal practices identified in this study and does suggest a realistic approach to utilizing informal methods in an adult education intervention. Doing so will increase the effectiveness of these interventions as new information is quickly interjected into the flow of information within a community. It will also facilitate the early adaptation of these interventions to fit the local environment as it encourages learning through trial and error. Doing this transfers power from

agents of modernization into the hands of those who actually use the information and whose survival depends on the local knowledge being constructed.

Although these implications for practice have been discussed in the context of rural Giriama communities, adult educators and development workers in other contexts would benefit from including such considerations in the programs. Gender is a concern worldwide and in sectors other than agriculture. The implications of gender in each unique context and all aspects of life must be considered as educators and development workers plan and implement programs. Additionally, although informal learning has historically received relatively scant attention in the field of adult education, worldwide much of the knowledge used in daily human life is learned through informal means. Knowledge learned informally embraces virtually all aspects of life, including agriculture but also such concerns as healthcare, childrearing, environmental care, job skills, and religion to mention just a few. Educators of all varieties and in all contexts would do well to consider anew the processes used in this ubiquitous learning and to incorporate them into program planning and implementation.

Suggestions for Future Research

In reflecting on this study and its goal to understand how local knowledge is constructed, I have identified several suggestions for future studies on this topic. The first is a suggestion that future research more fully document and understand the educative function of oral literature for adults in rural Giriama communities. This study has identified oral literature as an important means of learning local knowledge. It has been noted that just a few proverbs, riddles, and songs were collected and analyzed and that these are but the tip of the iceberg. A future study that collects more of this oral literature and analyzes it more fully would increase the understanding of its educative function. Potential questions to be considered in this research would be if this

literature is holistic in scope or if it is limited in the topics covered. Research could also explore the impact of modernity on oral literature—has increased school attendance affected the educative role of oral literature in society? Does reproducing oral literature on the written page or recorded it on CDs have the same impact as face-to-face exchanges? No doubt, oral literature is an important force in Giriama society but additional research is needed to understand more fully its current and future educative function.

A second suggestion is that research be conducted in order to increase our understanding of the impact of age on local knowledge construction. Prior to beginning this study, I had anticipated that age would likely be a significant factor shaping the construction of local agricultural knowledge. However, this did not prove to be the case. Participants did not mention paying particular attention to the farms of older farmers, seeking out older farmers for consultations, or indicate that obtaining the approval of the elders of the homestead of their farming practices was important. Despite this, in Giriama society elders are routinely deferred to and highly respected. Elders are sought out when family or relationship issues need to be resolved. Additionally, Safari, in his comments on conferring with respected people, mentioned age as contributing to increased respect. With this background, I suggest that there is more to be learned about the impact of age on local knowledge construction. Perhaps age is a more significant force in some areas of life than in others. Perhaps increased Westernization, with the West's preoccupation with youth, is eroding the influence of the elderly in Giriama society. Providing increased understanding of such issues will increase educators awareness of the informal process used in constructing local knowledge.

Moving beyond the Giriama context, additional research could explore local knowledge construction in other contexts. Such research could explore local knowledge construction in

other rural contexts on the African continent as well as other locations. In addition, further research could explore local knowledge construction in urban communities, particularly those that have retained their ethnic identity.

Other areas of exploration could include aspects of local knowledge construction other than agriculture. In order to focus the study, agricultural knowledge was targeted but local knowledges touches on all aspects of life and a more complete understanding would be gained by exploring other aspects of local knowledge construction.

Chapter Summary

This final chapter has endeavored to provide some concluding thoughts generated by the study. The motivation for this study emanated from my experience as a development worker in this part of Kenya. That experience left me wondering if the knowledge I sought to introduce was truly helpful knowledge to the Giriama people and if my approach had encouraged or discouraged effective appraisal of this new knowledge's usefulness by the farmers I wanted to influence. In retrospect, I was attempting to reshape Giriama local knowledge but had little understanding of the nature of this knowledge base. In order to fill this gap in my knowledge as well as in the literature, this study endeavored to understand how adults construct and disseminate local agricultural knowledge in a rural community in coastal Kenya among the Giriama ethnic group.

Presented in this chapter are four conclusions prompted by findings of the study. It was concluded that: (a) modernization is a pervasive force that shapes the construction of local knowledge, (b) local knowledge construction is strongly shaped by gender, (c) local knowledge construction is an informal process, and (d) ensuring community survival is the principal motivation shaping the construction of local knowledge. In addition to these conclusions,

implications for the practice of adult education in communities such as Mudzi were described. The first implication was that gender must be considered by adult educators as they plan and implement interventions. The second implication was that interventions that utilize and build on informal methods are likely to be most effective and using such methods may facilitate community evaluation of proposed interventions. Finally, as additional research in this area is needed, suggestions for future research were made. It was suggested that future studies should attempt to more fully document and understand the educative function of oral literature for adults in rural Giriama communities. Another suggestion was that further research to understand the impact of age on local knowledge construction was needed. A further suggestion was that future research could move beyond the Giriama context and consider other contexts in which local knowledge is being constructed. A final suggestion was that research could be conducted in areas other than the agricultural aspect of life.

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