AN ASSESSMENT OF THE SASAKAWA AFRICA

FUND FOR EXTENSION EDUCATION'S (SAFE)

TRAINING PROGRAM IN MALI: GRADUATES'

PERCEPTIONS OF THE TRAINING'S IMPACT AS

WELL AS OPPORTUNITIES AND CONSTRAINTS

RELATED TO SUPERVISED ENTERPRISE PROJECTS

(SEPs)

By

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CHAPTER I

INTRODUCTION

Human capital theory supports the idea that investment in people generates
economic benefits for individuals and their societies. Scholars found that nutrition,
health, and education are common areas of investment, but education has been revealed
to be the most important because it impacts the other two areas (Sweetland, 1996).
Investment in people's education is realized through formal, informal, and non-formal
settings, each of which allows people to be lifelong learners for the improvement of
health, nutrition, citizenship, and their overall quality of life (Sweetland). Moreover,
education is intended to develop and maintain the socio-economic capabilities of people
(Cornachione & Daugherty, 2008).

Education has been delivered in different fields, such as agricultural education
and Extension for the betterment of communities. The survival of most rural communities
depends on the development of agricultural activities (Vanclay, 2004). Maguire (2000)
claimed that the success of food production in most nations depended on agricultural
researchers, educators, and Extension workers to diffuse "technological findings" (p. 2)
to food producers. Moreover, in many countries, progress in agriculture was achieved
through Extension professionals who transferred the results of scientific research to
farmers (Macadam, 2000; Rogers, 2003).

In Sub-Saharan Africa (SSA), food security has become challenging because of the low educational level of human capital (Kroma, 2003a). Indeed, the lack of well-trained and qualified Extension educators has affected the progress of agriculture in SSA (Kroma, 2003a; Mutimba, Mangheni, & Matsiko, 2007; Owens, Zinnah, Annor-Frempong, & Obeng, 2001). However, Sweetland (1996) claimed that education leads to personal and national economic growth.

Aware of the insufficient quality of human capital in Extension programs in SSA, the Sasakawa Africa Fund for Extension Education (SAFE) was established by Sasakawa-Global 2000 (SG 2000). The aim of SAFE is to upgrade the skills of agricultural extensionists in Africa who are mid-career professionals. Its "imperatives are to 1) involve agricultural colleges and universities in the rural development process, and 2) strengthen the competencies of Extension workers in order to serve small farmers and meet their needs" (SAFE brochure, n.d., p. 1). To achieve these imperatives, Supervised Enterprise Projects (SEPs) have been a central practical training component of the SAFE program. The SEPs are whereby Extension educators develop and implement projects with farmers under the supervision of faculty from colleges and universities, as well as the educators' employers.

Between 1600 and 1776, the colonial period in America, apprenticeships were used to show adult learners how to solve problems and make decisions (Birkenholz, 1999). Apprenticeship is explained well by experiential learning theory, which is the conceptual basis of the SEPs approach. The SAFE training program's SEPs are a form of apprenticeship for the participants.

Knowles, in describing *andragogy*, explained that if adults have the ability, they can and will learn if motivated, if the learning objectives are clear, and if the individual's personal satisfaction is achieved (Kahler, Morgan, Holmes, & Bundy, 1985; Knowles & Klevins, 1982). John Dewey (as cited in Munoz & Munoz, 1998) affirmed that "all genuine education comes about through experience" (p. 6). Munoz and Munoz concluded from Dewey's posits that experience-based education may serve to clarify the type of experiences learners will encounter. Based on the principles that adults are lifelong learners and they learn better by doing and experiencing, SAFE initiated SEPs in its interventions in nine African countries (Zinnah & Mutimba, 1998).

The SAFE program began operating in Africa in 1992. SAFE extended its program to Mali in 2002. Thereafter, 150 mid-career Extension professionals were trained and have conducted supervised enterprise projects; 50 participants earned their diplomas in 2007 (Traoré, 2008). The SAFE program is assumed to be unique in Mali, because it is the first Extension education degree program in the country (Akeredolu, 2006; Traoré, 2008). However, it is important to assess the efforts and value of the *investment* made by the SAFE program. Therefore, SAFE's leaders and stakeholders have high expectations for using the findings of this study to make sound decisions regarding the future direction of the program. Changes may include the adoption of a more applicable curriculum, including the development of leadership skills, to meet the educational needs of mid-career Extension educators and their clientele in Mali (H. Knipsheer, personal communication, October, 2008).

Significance of the Study

The mission of Extension is to provide science-based information to populations to improve their quality of life. Extension educators play a key role in the exchange of this information between researchers and local communities. Some societies have not taken advantage of technological and scientific progress fully, because too often many research findings remain in the drawers of investigators (Matlon, Cantrell, King, & Benoit-Catin, 1984), especially in Africa.

The competence and performance of Extension educators are crucial for the success of Extension programs. It is important for societies to have qualified Extension educators who are capable of delivering scientific knowledge to their clients and then help the clients solve problems, including food production issues. Extension education is essential for the maintenance of food security in Sub-Saharan Africa (SSA). The SSA region alone employs around 100,000 Extension personnel, many who hold a low level of formal education, which is less than what is needed to fulfill their job duties and requirements (Davis, 2008; Kroma, 2003a; Mutimba, et al., 2007; Owens et al., 2001). The SAFE-initiated training to improve the job performance of mid-career Extension professionals includes Mali. However, the importance of assessing the training program's ultimate output, its graduates and outcomes (i.e., graduates' professional performance), to improve its impact in the future cannot be overstated.

Purpose of the Study

The purpose of this study was to assess graduates' perceptions of the Sasakawa Africa Fund for Extension Education (SAFE) training program in Mali regarding their training experiences and its impact on their professional practice. Graduates' views on

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aspects of the training that involved Supervised Enterprise Projects (SEPs) were emphasized. In addition, personal and professional characteristics of the graduates were described so that selected relationships could be examined. Findings will be used to assist in assessing the SAFE training program's effectiveness and determine if changes are needed in the future.

Research Questions

1. What were selected personal and professional characteristics of graduates of the SAFE training program?

2. What were the perceptions of SAFE training program graduates regarding their training experience and its impact on their professional practice?

3. Were selected personal and professional characteristics related to graduates' perceptions of the SAFE training program?

4. What were the SAFE training program graduates' views on various aspects of the training that involved SEPs?

5. What were the graduates' views on changes or improvements needed for SAFE training programs in the future?

Limitations of the Study

One limitation of this study was the geographical distance involved in data collection. The data collection phase required travel by the researcher to Mali to survey and interview SAFE participants. Because of Mali's size and underdeveloped transportation system, it was difficult to contact some of the SAFE program participants. Even though the researcher is a native Malian, who is knowledgeable of the official as well as relevant indigenous languages and cultures, if the study's participants did not

share information readily or respond to all questions truthfully the data could be biased or incomplete. Because of its specificity, i.e., assessment of the SAFE program in Mali, the researcher does not intend to generalize the findings to the general population of Extension professionals in Mali. Indeed, purposively selected participants provided the data for this study.

<p style="text-align:center">Assumptions of the Study</p>

The following assumptions were recognized for this study:

1. The Extension professionals were willing to share their perceptions about the SAFE training program, including aspects related to SEPs.

2. The educational program the mid-career Extension educators completed was relevant to their professional practice.

3. The mid-career Extension educators have used the knowledge and skills acquired through their participation in the SAFE training program as they interacted with clientele, including as it related to SEPs.

4. The researcher assumed that considering selected and contrasting factors would enrich the data and provide a more complete picture of the perceptions of SAFE graduates regarding applicability of the knowledge, attitudes, and skills acquired through the SAFE training program. Based on the characteristics which guided the purposeful sampling, the researcher also assumed that findings from the sampled areas were generalizable to SAFE graduates in the administrative regions of Mali not included in the study.

Definition of Terms

The following terms were used in this study:

1. Andragogy: In 1833, a German instructor, Alexander Kapp, first used the term; it was developed into the theory of adult education by the American educator, Malcom Knowles. "Andragogy is based on the Greek word *aner* with the stem *andra* meaning "man, not boy" or adult, and *agogus* meaning "leader of" (as cited in Holmes & Abington-Cooper, 2000, p. 51). Andragogy is the process of engaging adult learners in the structure of the learning experience (Knowles, 1962).

2. Assessment: "The assignment of observed numerical values to the indicators of a performance measurement framework which reflect current performance" (Mayeske, 1999, p. 11.6-1). In the present study, graduates' perceptions of the SAFE training were assessed by attributing a rating or ranking to aspects of their training or otherwise through various open-ended questions and their answers to semi-structured focus group interview questions.

3. Client/Clientele: "The party for which professional services are rendered. A person using the services of a social services agency" (*The American Heritage Dictionary of the English Language*, 2009).

4. Curriculum: "A curriculum is a written plan depicting the scope and arrangement of the projected educational program for a school" (Beauchamp, 1982, p. 25).

5. Economic livelihood: Means of support, subsistence (The *American Heritage® Dictionary of the English Language*, 2000. Updated in 2003); the financial means whereby one lives (*Collins Essential Thesaurus*, 2006). Activities and resources

used/required by households in generating income and providing for their basic needs (food, water, clothing) (J. Vitale, personal communication, June 11, 2010). Economic Livelihood is means of economic support or economic subsistence, economic support (price support, subsidy, endowment) (S. Henneberry, personal communication, June 11, 2010).

6. Evaluation: Michael Scriven, one of the founders of *evaluation*, indicated that there is no uniform definition and that there are nearly 60 different terms used for *evaluation* that might be applied depending on the context (as cited in Fitzpatrick, Sanders, & Worthen, 2004). These terms include adjudge, appraise, analyze, assess, critique, examine, grade, inspect, rate, rank, review, score, study, test and so on. Scriven defined evaluation as "judging the worth or merit of something" (as cited in Fitzpatrick et al., 2004, p. 5). Based on Scriven's definition, Fitzpatrick et al. defined *evaluation* accordingly:

> We concur that evaluation is determining the worth or merit of an evaluation object (whatever is evaluated). More broadly, we define *evaluation* as the identification, clarification, and application of defensible criteria to determine an evaluation object's value (worth or merit) in relation to those criteria. (p. 5)

The present study was an assessment of graduates' perceptions of the SAFE training program and was not intended to meet all criteria associated with many evaluation schemes.

7. Experiential learning: a) Experiential learning is defined as learning through the senses (Roberts, 2006); b) Houle (1980) explained experiential learning as

education that occurs through direct involvement in life events. Knowledge

generated from experiential learning comes from reflection on daily experiences.

8. Extension: Marsh and Pannell (as cited in Black, 2000), defined agricultural

extension broadly to include, "public and private sector activities relating to

technology transfer, education, attitude change, human resource development and

dissemination and collection of information" (p. 493).

9. Graduate: "Someone who has successfully completed their studies at a school,

college, or university to obtain a diploma or a degree by completing your studies

at a school, college, or university" (*Longman Advanced American Dictionary*,

2007, p. 701).

10. Impact: "The effect or influence that an event, situation, etc. has on someone or

something" (*Longman Advanced American Dictionary*, 2007, p. 805).

11. Leadership: Leadership is the process in which an individual influences members

of a group to achieve a common goal (Nahavandi, 2009).

12. Lifelong learning:

> Lifelong learning is not a privilege or a right, it is simply a necessity to
> anyone, young or old, who must live with the escalating pace of change in
> the family, on the job, in the community, and in the world-wide society.
> (as cited in Kahler et al., 1985, p. 4)

13. Mali: Officially the Republic of Mali, is a landlocked nation in West Africa. It is

the seventh largest country in Africa. It borders Algeria on the North, Niger on the

east, Burkina Faso and the Ivory Cost on the south, Guinea on the south-west, and

Senegal and Mauritania on the west. The official language is French. The country

is named after the hippopotamus; the name of the capital city, Bamako, comes

from the *Bamanakan* word meaning "crocodile swamp." Mali is divided into eight

administrative regions, Kayes, Koulikoro, Sikasso, Ségou, Mopti, Gao,

Toumbouctou, and Kidal, and the District of Bamako.

14. <u>Mid-career</u>: "A person was considered to be in mid-career if the person had

worked at least eight years in the occupation, with every two years in graduate

education counting as one year" (Neapolitan, 1980, p. 213). For this study, mid-

career professional was a rather large age range in years of experience for the

graduates who participated.

15. <u>Perception</u>: Personal inclination to disregard some things about a message,

emphasize others and put meanings together in one's own way. Predisposition of

individuals, which affect behavior (Lionberger & Gwin, 1991).

16. <u>Professional Development</u>:

> As those processes and activities designed to enhance the professional
>
> knowledge, skills, and attitudes of educators so that they might, in turn,
>
> improve learning of students. . . . It is an intentional, it is an on-going, and
>
> it is a systemic process. (Guskey, 2000, p. 16)

17. <u>Sasakawa Africa Fund for Extension Education (SAFE)</u>:

> The Sasakawa Africa Fund for Extension Education (SAFE) is a product
>
> of two development imperatives. One is to bring Africa's agricultural
>
> colleges and universities much more squarely into the rural development
>
> process, through the creation of new innovative continuing education

programs. The second is to expand and strengthen the skills of frontline agricultural and rural change workers to serve the needs of smallholder farm families. Agricultural advisory services are under increasing pressure to make a positive difference to the lives of smallholder farm families and the resource base they depend on. This pressure is creating new demands for agricultural education, not only in terms of appropriate curricula, but also in the mode of instruction. SAFE has taken the lead in developing responsive, custom-made agricultural education and rural leadership programs that reach out to an ever-changing mix of development professionals that work directly with rural people to improve their livelihoods (SAFE brochure, n.d., p .1) . . . . The pillars of the SAFE's initiative are the principles of: Lifelong learning, demand-driven curricula, student-centered experiential learning, and rural leadership development. (SAFE brochure, n.d., p. 2)

18. <u>Smallholder farmer</u>: An individual who gains subsistence from the land and, secondarily, that of his livestock. The farm corresponds, consequently, to an area of land used for essentially agricultural landscape formed mainly by cropped areas which are relatively small in size. A smallholder farmer's holdings represents "a series of fields developed by a group of family workers which cultivates at least one main communal field with which several secondary fields of varying size may or may not be associated having their own decision centre" (Coulibaly, 2003, p. 5).

19. Subsistence farming: "Production which gives immediate returns. That is production, from farms which are smaller yields little surplus and out of range of any intensification" (Coulibaly, 2003, p. 6).

20. Supervised Enterprise Projects (SEPs): "are the experiential learning portion of the Sasakawa Africa Fund for Extension Education training program" (Knipscheer, 1999, p. 67). SEPs are important elements of the SAFE training program and are organized into on-campus and off-campus activities. During school break internships, students start the process of the SEPs by identifying a problem and developing a proposal to prepare for the "off-campus period" (Mwangi, Chibwana, & Azerefegne, 2005, p. 9), and become familiar with the participative tools they are expected to use during post-training application with their clients. During the off-campus stage, academic staff, employers, clients, and students are involved in project implementation and evaluation. The off-campus SEPs are conducted during the last seven to eight months of the SAFE training program (Mwangi et al.).

Summary

Education is an investment which improves nutrition, health, and the quality of life overall of individuals and their societies. In Africa, the proper investment of resources to support educational endeavors is of paramount importance to the continent's future. This is supported by human capital theory (Sweetland, 1996). Many scholars consider education a lifelong learning process (e.g., Kahler et al., 1985 and Knowles & Klevins, 1982). Continuing education or in-service training was a capacity building strategy adopted by Sasakawa Global 2000, through the Sasakawa Africa Fund for

Extension Education (SAFE), to upgrade the performance of mid-career Extension

professionals in nine African countries, including Mali (SAFE brochure, n. d., p. 2).

Supervised Enterprise Projects (SEPs) represent an important element of the SAFE

training program because of their uniqueness to the Extension education system in Sub-

Saharan Africa. The SEPs are similar to apprenticeships and internships, which link

theory and practice and highlight learning by experience.

    For future improvement of the SAFE training program, it is necessary to assess

the perceptions of mid-career Extension educators who have completed the training,

especially regarding their views about its impact on their professional behaviors and

related impacts on their clients. That assessment was the purpose of this study.

CHAPTER II

REVIEW OF LITERATURE

The review of literature consists of six major sections and related subsections.
The first section provides a descriptive overview of adult education. The second section
discusses aspects of in-service education with special relevance to Extension
professionals. The third section describes the Sasakawa Africa Fund for Extension
Education's (SAFE) mid-career Extension educators' professional development program
and its core curriculum components. The fourth section highlights organization and
delivery of Supervised Enterprise Projects (SEPs), as a component of the SAFE training
program in Mali. The fifth section describes the conceptual/theoretical framework that
undergirded this study. The final section summarizes this chapter.

Purpose of the Study

The purpose of this study was to assess graduates' perceptions of the Sasakawa
Africa Fund for Extension Education (SAFE) training program in Mali regarding their
training experiences and its impact on their professional practice. Graduates' views on
aspects of the training that involved Supervised Enterprise Projects (SEPs) were
emphasized. In addition, personal and professional characteristics of the graduates were
described so that selected relationships could be examined. Findings will be used to assist
in evaluating the SAFE training program's effectiveness and determine if changes are
needed in the future.

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Research Questions

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Adult Education

Learning is defined as "small changes in behavior that result from experience or training" (*Longman Advanced American Dictionary*, 2007, p. 908). Crick, Broadfoot, and Claxton (2004) defined learning as a process in which individuals or groups acquired knowledge and skills to be able to do and understand something new. In the educational sphere, many theories have emerged about learning, but five have been relied on most commonly: behaviorism, cognitivism, humanist, social learning, and constructivism (Zinn, 2004).

Each theory adopted a particular definition of a learner, the role of the teacher, and the purpose of education. Because the theories identify which variables are critical in understanding the learning process, and thus integral to finding solutions to educational problems (Merriam & Caffarella, 1999; Zinn, 2004), they are of importance to educators.

Regardless of their preferred theoretical model, all well-informed people support education for children and youth (Kahler et al., 1985), but they should give credence to H. G. Wells' observation as well that, "It is not education of children that can save the world from destruction, it is the education of adults" (Kahler et al., 1985, p. 5).

Adults decide to further their education for specific reasons, including rapid changes, whereby old knowledge is altered and new adjustments are required, maintenance of education, or simply further opportunity for learning (Kahler et al., 1985). It has been shown that individuals can expect to lose 90% of their knowledge from school or college if they do not use it or review it regularly (Kahler et al., 1985). Analysis of adults' motives to further their education shows that learning is not a single event, but rather an ongoing process.

In comparing the act of *pedagogy* as applied to teaching children and adolescents to *andragogy* or adult education, Knowles (1962) indicated that the formal school system is more of a teacher-centered process. The teacher identifies the needs, develops the learning objectives, and does the planning. The instruction is more structured, with logical arrangement of subject matter, which, in turn, is organized into lesson units. The setting is formal, competitive, and authority-oriented; instructional activities are transmittal in nature and evaluation is done by the teacher (Kahler et al., 1985). The andragogical approach is rather different: the learning setting is informal, the learning process is more learner-centered and participation of learners is allowed in diagnosing needs, in formulating the objectives, and in planning. In addition, the learning activities are more inquiry–based, the power distance is very low or nonexistent, and evaluation is

a mutual process in which teachers and learners participate. Mutuality, respect for one another, and collaborative effort are the key identifiers of andragogy (Kahler et al., 1985).

Jean Piaget's theory on cognitive development, although focused on children, has some implications for adult education. Piaget presented four stages of cognitive development that described different ways of making sense, understanding, and constructing knowledge of the world (Marcotte, 2008; Merriam & Caffarella, 1999; Palincsar, 1990). In Piaget's view, the first stage is the sensory-motor stage which corresponds to instinctive impulse actions; the second stage is what he called the preoperational stage for the identification of existing substance in symbols and words; the third stage, concrete operational stage, is the period of understanding concepts and connection of ideas; and the final stage, the formal operational stage, is the more rationale, logical, systematic, and thus the apex of mature adult thought (Atherton, 2010; Merriam & Caffarella, 1999). Indeed, according to Knowles and Piaget, the adult age is the age of discernment and readiness to learn for solving real life or job-related problems. Adult education theory was used in this study because the participants were adult learners, i.e., mid-career Extension educators in Mali who completed the Sasakawa Africa Fund for Extension Education (SAFE) training program.

In-service Education for the Professional Development of Adult Learners

Abraham Maslow claimed that all human beings are in a continual process of fulfilling their needs in a hierarchical way. An individual's higher level needs appear when he or she perceives a sense of achievement, or the need for attention, knowledge, aesthetics, or self-actualization. Maslow explained that the satisfaction of one need drives another, and education enables people to fulfill their higher level needs (Francis &

Kritsonis, 2006). Scholars such as Intrator and Kunzman (2006) supported the importance of self-actualization for teachers' professional development, and proposed a reversal of Maslow's hierarchy of needs, i.e., the other needs should build upon self-actualization. Similarly, the success of a nation's Extension service relies on well-trained Extension professionals, and one way to improve their performance is through in-service education, which is also called professional development or the capacity building of personnel. Because one of the most important duties of Extension professionals is to make science-based information available to communities to improve the quality of life of their citizens, the educators should participate in professional development that is relevant and timely.

In-service education is defined as "education delivered in a structured setting that enables one to become more competent professionally" (Mincemoyer & Kelsey, 1999, p. 1). In-service education enables people to deal with problems affecting them and take advantage of opportunities opened to them (Roberts, 2007). Indeed, many organizations have short-, medium-, and long-term educational plans for their employees. According to Von Wright (1992), the steps individuals engage in during the learning process (i.e., metacognitive skills) include need identification, definition of learning outcomes, planning, and choice of appropriate learning strategies.

To meet the diverse needs of its employees, the Oklahoma Cooperative Extension Service (OCES), in fiscal year 2006, offered 117 in-service opportunities to staff members in its four program areas: Agriculture, Youth Development, Family and Consumer Sciences, and Community Development. Through this variety of educational programs, OCES intended to upgrade the competencies of its personnel to ensure the

provision of quality service to its clientele (OCES, 2009; J, Martin, personal communication, February 13, 2009). In-service education's premise regarding its usefulness as a systematic approach to improving human capacity was used as a conceptual basis for this study, which aimed to assess the effectiveness of the SAFE training program for mid-career Extension educators in Mali.

<center>*Competency Areas Required of Extension Educators*</center>

Since creation of the Cooperative Extension Service in the United States by the Smith-Lever Act in 1914, the competencies required to fulfill the jobs of Extension educators have evolved and taken on new dimensions with the modernization and expansion of its clients (Cooper & Graham, 2001). Klemme, Hausafus, and Shirer (2005) explained that, from 1914 to the past two decades, significant changes have taken place in the profiles of Extension's clients' lifestyles and socio-economic conditions. As a consequence, Extension staff members had to develop and update their own competencies, and then respond to the needs of their clientele. Indeed, in the United States, some of the factors affecting the development of Extension educators' competence needs include the following: 1) a change in society's lifestyles, 2) a decrease of the rural population and decline in the need for Extension educators' practical experience, and 3) the increased literacy rate of clientele, resulting in a need for more specialized Extension personnel in agriculture and family and consumer science (Cooper & Graham, 2001). In addition, with the promotion of youth programs and proliferation of volunteers, Extension educators are in charge of managing and educating volunteers, and assisting with 4-H members' activities (Cooper & Graham, 2001).

Cooper and Graham (2001) advocated that Extension professionals are cosmopolitan because they receive and provide information in many fields. They are the transmitters of new knowledge, requiring them to constantly develop their knowledge in those fields and keep abreast of change. For example, Deana Hildebrand (personal communication, January 21, 2009), an Extension specialist at Oklahoma State University, observed that the mastery of technical subject matter (e.g., nutrition) by Extension educators "on the ground," i.e., in-service, was essential to their successful performance.

In OCES, the core competencies and behaviors expected of all employees emphasizes service orientation, dependability, knowledge of the position, and quantity and quality of work (OCES, 2009). Through a case study, Cooper and Graham (2001) reported that the Cooperative Extension Service in Arkansas identified seven competency areas that Extension agents and supervisors needed to possess: 1) program planning, implementation, and evaluation; 2) public relations; 3) personal and professional development; 4) faculty/staff relations; 5) personal skills; 6) management responsibility; and 7) work habits. In Pennsylvania, technical subject matter, technical skills, program sharing and ideas, and process skills were the four competency areas that its Cooperative Extension Service focused on to identify the educational interests of staff and barriers to the success of in-service education delivery (Mincemoyer & Kelsey, 1999).

Regardless of the importance of in-service education and efforts of the Cooperative Extension Service to reach its goals and be successful, Mincemoyer and Kelsey (1999) identified a number of other issues related to successful Extension delivery. These issues were involvement of staff members in the planning process, timing conflicts, relevance of topics, and coverage of participants' needs. In addition, financial

resources were reported as being an issue for the participation of some county educators

with restricted resources (J. Martin, personal communication, February, 2009).

Information on the U.S. Cooperative Extension Service (CES) will be used in this study,

because of the attention it pays to the professional development of Extension educators

(Cooper & Graham, 2001; Mincemoyer & Kelsey, 1999), including mid-career

professionals. However, the use of this literature is mitigated by its relevance or

"applicability" vis-à-vis the content of Extension programming and delivery pertinent to

Extension educators and their clients in Mali.

   Competence of Extension Educators in Sub-Saharan Africa (SSA), Including Mali

   Owens, Zinnah, Annor-Frempong, and Obeng (2001) presented 16 selected

competencies that they identified as being "capital" to the job performance of Extension

educators in Sub-Saharan Africa. These competencies included "planning Extension

programs, working with farmer groups, communication, demonstration, group

discussions, audio visual, farm and home visits, teaching materials,

evaluation/monitoring, report writing, developing linkages, marketing, gender-related

projects, critical analysis, problem solving, and management/administration" (p. 3).

   In Africa, agricultural Extension educators working either for government or non

governmental organizations (NGOs) frequently possess relatively low levels of

education; this situation hinders agricultural productivity and food security (Mutimba,

2003; Owens et al., 2001). Davis and Place (2003) indicated that the *Training and Visits*

model established by the World Bank in East Africa had limited effectiveness as an

Extension services approach for poor farmers. Kroma (2003a) reported that the gap

between research findings and their adoption by small farmers and households in SSA

was due to a lack of interactive interpersonal relationships between stakeholders (i.e., farmers, Extension educators, researchers, NGOs, and communities).

In SSA, the service provider role of Extension educators should be enhanced to be more of a catalyst and facilitator of learning processes (Kroma, 2003a). In addition, Davis (2008) stated that, "Today's understanding of extension [in Africa] goes beyond technology transfer to facilitation; beyond training to education, and includes assisting farmer groups to form, dealing with marketing issues, and partnering with a broad range of service providers and other agencies" (p. 101). Mutimba et al. (2007) indicated the need for adequate pre-service and in-service training of Extension professionals for them to provide more effective services. Even though some aspects of agricultural education and training (AET) programs and practices were "borrowed" by African countries as part of their colonial heritage, implementation has not been sufficient enough to increase the quality of human capital adequately, to generate new knowledge and technologies, or to disseminate research-based information to communities (Akeredolu, 2008; Davis, 2008).

For African countries to overcome agricultural and Extension education related challenges, the realities of individual countries should be considered. When tailoring Extension educational programs, Kroma (2003a) stated, ". . . emerging realities at local levels will demand a more strategic extension, responsive to new complexities in community resource management and agriculture" (p. 48). Akeredolu (2008) stated that privatization of the Extension system in Mali should take into consideration factors such time, place, and audience to increase agricultural productivity.

Agricultural Extension in the Republic of Mali

Agricultural Extension began in Mali in 1928 under French colonial rule. To introduce animal traction and new plant species in traditional agriculture, the French agricultural service trained low level agricultural workers to teach farmers how to use new equipment such as the plow. In 1945, the ratio of Extension educator to farmers was one extensionist for every 20,000 to 30,000 farmers (University of Mali & *Direction Nationale de L'Appui au Monde Rural* [*DNAM*R], 2001). In 2001, *DNAMR* employed 1839 Extension educators in Mali (Chabi Aralamon, Cissé, & Famanta, 2000).

The insufficient training of Extension workers was one reason for the inefficiency of Mali's Agricultural Extension Service. No formal Extension training program existed in Mali prior to establishment of the SAFE program in 2002. This position was supported by Davis (2008) who stated that formal postsecondary agricultural education and training (AET) was initiated in Africa by the colonialists to reinforce the colonial administrative systems, and afterward to build free nations with no focus on agricultural education. Most workers learned Extension informally on the job; Extension staff members were sent on the ground with no pre-service training in facilitation and organization skills (as cited in Akeredolu, 2006). The economy of Mali is based mainly on agriculture and related activities. According to the *DNAMR,* for the economy to prosper and food security to be reached, an appropriate Extension education program should be developed and sustained with a national focus (as cited in Akeredolu, 2006).

For example, Akeredolu (2006) explained that in the Malian Educational Policy of 2000, it was important for higher education programs in Extension to collaborate with employers and communities to develop and/or improve the skills of trainees in the area of

community advisory. Akeredolu (2006) also noted that disparities existed in the education levels of researchers and Extension educators in Mali, which affected their collaboration related to the delivery of Extension services. Therefore, it was recommended to train both researchers and Extension educators at a similar educational level to facilitate the communication between them (as cited in Akeredolu, 2006). Compared to researchers, Extension educators have lower technical skills and less sophisticated methodological approaches. Akeredolou (2006) reported that the *DNAMR* demonstrated the need for Malian Extension workers to develop their communication and advisory skills to assist their clients more effectively. Moreover, Akeredolu (2006) stated that the *DNAMR* wished that, because of Mali's high Extension educator to farmers ratio, a more generalist professional development program for Extension workers existed to enable them to tackle a variety of issues more successfully.

To disseminate relevant information to their clients, Extension educators need both technical (i.e., production, processing, and marketing) and social skills (Swanson, 2008). Davis (2008) reported that one of the reasons SSA is not more innovative and responsive to the needs of agriculturists is that teaching and research have an intellectual perspective of science with less attention paid to behaviors and methods. According to Traoré (2008), to increase their knowledge of agricultural and related sciences, the professional development of Extension educators in Mali should include cooperative management, marketing, processing and storage, project management, as well as communications skills training.

Extension educators' competence alone is not enough for an Extension service to be successful. It is important for its leaders to understand that they should be open to

other support services such as research, education, input supply, and credit (i.e., interaction with financial institutions) (Traoré, 2008). A well defined agricultural policy, marketing network, farm-to-market roads, agro-processing and storage facilities, as well as communication and information technologies are also significant and essential. Therefore, Extension educators should have the ability to develop strong partnerships with other actors to complement their service in meeting the diverse needs of clients.

Challenges and Barriers Regarding the Delivery of In-Service Education to Extension Educators

A case study conducted by Pennsylvania State University's Cooperative Extension Service describing Extension educators' perceptions on in-service education revealed the following issues: insufficient content-depth, redundant information, and poor instructors (Mincemoyer & Kelsey, 1999). The Pennsylvania study also indicated time commitment (i.e., too much time away from the office), relevance of the education topics to their specific needs and local issues, and involvement of educators in the planning process were challenges to in-service education of Extension professionals (Mincemoyer & Kelsey, 1999). In another case study in Illinois regarding the reasons Extension personnel leave their jobs, Extension educators indicated that the lack of orientation and insufficient professional development were considerations (Manton & van Es, 1985).

Another challenge the U.S. Cooperative Extension Service has faced is how to best keep professionals updated in a changing global economy; indeed, the understanding of international issues should be added to the competency portfolio of Extension professionals, according to Rosson III and Sanders (1991). With an increasingly changing technological environment, Extension employees should follow the course of the world; moreover, education provides an opportunity to cope with those changes and improve an

individual's understanding (Ferrell, 2006). The need for high quality educational support and in-service education are some implications associated with the consideration of international issues in Extension programming (Rosson III & Sanders, 1991).

The change in training strategies from classical (i.e., short workshops or graduate classes) to more reflection-oriented practices, such as problem solving, peer observation, coaching, and feedback to training participants, was also identified as a challenge to in-service education for Extension professionals (Ferrell, 2006). Variability in the academic background of staff members during in-service training was a challenge at Alemaya University in Ethiopia (Mwangi et al., 2005). In the same Ethiopian study, participants recommended updated curriculum with courses on Agricultural Extension, and they recognized the need for qualified Extension staff to the success of Extension services (Mwangi et al., 2005).

The curriculum of the SAFE program in Ethiopia was not focused on producing specialists in one area but on the development of diverse skills to meet the multiple needs of farmers. The curriculum moved from specialization in agricultural, animal, and forestry sciences to a combination of special areas with social skills, self-efficacy, and communication skills emphasized (Mwangi et al., 2005). A key facet of that study included the impact of Supervised Enterprise Projects (SEPs), which are based on aspects of experiential learning, internships, and coaching by academic supervisors and employers, on the performance of Extension educators. Indeed, SEPs involve a variety of teaching methods considered appropriate for adult learners.

The SAFE Mid-career Extension Education Program

"Our entire continent remains at risk until African universities, in the context of a continental reawakening, regains its soul" (as cited in Leresche, n.d., p. 1). For Africa to *reawake*, it is essential for more investment to be made in higher education, especially in the agricultural sector. The process of higher education should include critical thinking— to develop creativity and agricultural problem-solving capacities of new graduates. Well trained agricultural graduates then would be expected to offer farmers sustainable solutions to their problems (Leresche, n.d., p. 1).

The improvement of agriculture and rural development depends on increasing capacity, skills, and leadership of Extension staff members. Several technical documents and reports revealed the insufficient agricultural scientific knowledge and communication skills of Extension educators in the countries of Sub Saharan Africa, including Mali. Sasakawa Africa Association (SAA) concluded that 85% of new Extension educators did not possess university degrees. In addition, SAA (2008) indicated that most Extension education relied on outdated curricula and had limited financial resources. These facts justified initiation of the SAFE training program in nine African countries.

The first aim of the SAFE program was to train mid-career Extension professionals holding certificates and diplomas in agriculture or related fields, which would better enable them to access leadership positions in Extension (SAA. 2008). Secondly, in selected African universities, SAFE aimed at updating Extension curricula and closely connecting university faculty members to the realities of African farmers. In essence, the program planning and delivery of SAFE was an interactive process of needs assessment, curriculum revision and updating with an emphasis on internships,

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networking with participants, educators, stakeholders, and farmers, as well as program evaluation and follow-up (SAA, 2008). To that end, the SAFE training program has delivered training to mid-career Extension professionals at the Diploma (two-year program) and Bachelor of Science (BSc) (four-year program) levels in the field of agricultural Extension and rural development (SAA, 2008).

In 1993 the SAFE program, with the support of Winrock International's Extension specialists, developed its first educational program for Extension workers at the University of Cape Coast in Ghana (SAFE, 2008). Between 1993 and 2001, the SAFE training program had extended to Sokoine University of Agriculture (Tanzania), Alemaya University of Agriculture (Ethiopia), Makerere University (Uganda), Polytechnic University of Bobo-Dioulasso (Burkina Faso), University of Bamako (Mali), Amadou Bello University (Nigeria), Bunda College of Agriculture (Malawi), and the University of Abomey-Calavi (Benin) (SAFE, 2008).

The support of SAA in these universities included funds for instruction and library reference supplies, curriculum development, field work, and research. Experiential learning that emphasized hands-on activities, problem-solving, and field-based enterprises (e.g., Supervised Enterprise Projects [SEPs]) was the basis of the SAFE educational program in these African countries (Kroma, 2003a; Mutimba et al., 2007; Owens et al., 2001). For instance, SEPs constituted innovative components of the SAFE's *Diploma and Bachelor of Science (BSc) Programs*. SAFE-Mali curriculum for mid-career Extension professional education comprised 14 courses with 32 topics and seven months of action research (i.e., students' SEPs) at the end of the program (SAFE, 2009). The curriculum includes 14 courses:

1. Knowledge of cultivated plants and domestic animals (160 hours of instruction)

2. Effects of climatic factors on rural production (80 hours of instruction)

3. Land and natural resources management (290 hours of instruction)

4. Techniques of rural production (370 hours of instruction)

5. Technology and processing of products (160 hours of instruction)

6. Agricultural Extension (200 hours of instruction)

7. Economic sciences (230 hours of instruction)

8. Computer sciences (100 hours of instruction)

9. Administration (100 hours of instruction)

10. Mechanization (150 hours of instruction)

11. Plant protection (270 hours of instruction)

12. Statistics (80 hours of instruction)

13. Rural legislation (100 hours of instruction)

14. Farm practices (100 hours of instruction). (SAFE, 2009)

The SAFE program is hosted by the Rural Polytechnic Institute/Education and Applied Research Institute (*Institut Polytechnique Rurale/Institut de Formation et de Recherche Appliquée* [*IPR/IFRA*]), and implemented by 93 full-time and 15 part-time faculty members. The *IPR/IFRA* has four departments: 1) Department of Education and Research of Agricultural Sciences and Techniques, 2) Department of Education and Research in Animal Sciences and Techniques, 3) Department of Education and Research in Water, Forestry, and Rural Engineering, and 4) Department of Education and Research in Economics and Social Sciences. The latter department is mostly in charge of the implementation of the SAFE program in Mali. Table 1 presents the faculty members who

were in charge of instruction at the Department of Education and Research in Economics and Social Sciences. Table 2 presents the numbers of SAFE training program participants by gender and class for the academic year 2006 to 2007.

Table 1

Faculty Members' Specializations at the Department of Education and Research in Economic and Social Sciences (Taken from Chabi Aralamon, Cissé, & Famanta, *2000)*

Faculty	Highest Degree Earned	Hierarchical Classification	Years of teaching at *IPR/IFRA*	Specialty
Kouyaté Souleymane	PhD	Professor	More than 10	Rural Economic
Coulibaly Kardigue	PhD	Associate Professor	More than 10	Philology
Mme Kanouté Assétou	MSc	Assistant	5	Rural Development
Diarra Soumaila	MSc	Assistant	More than 15	Agricultural Extension
Traoré Dioncouda	PhD	Assistant	3	Rural Sociology
Diarra M. Mamadou	MSc	Assistant	2	Agricultural Enterprise Management
Niafo Yaya	BSc	Assistant	4	Animal Production
Tamboura Belco	MSc	Assistant	More than 15	Economics, Sciences, and Management
Koné Moctar	PhD	Professor	More than 15	Extension

Table 2

*Class Level and Gender of the BSc students, SAFE/IPR/IFRA Training Program
(2006/2007) (Taken from Report of SAFE Staff Retreat, 2007)*

Classes	Number of Students		Total
	Male	Female	
1st year	18	2	20
2nd year	23	1	24
3rd year	20	4	24
4th year	18	5	23
Completer	14	1	15
Total	93	13	106
	(87.7%)	(12.3%)	

Organization and Delivery of Supervised Enterprise Projects (SEPs) for the
Development of SAFE Training Participants' Competencies

Other than content-driven, "seat time" instruction, another basis of the SAFE

professional development program includes Supervised Enterprise Projects (SEPs). The

SEPs are student-planned, independent, on site-projects. In tandem with the classroom

learning activities, the SEPs are organized collaboratively and conducted by participants,

employers, farmers, researchers, and educators to solve real-life problems of

agriculturists (Kroma, 2003b; Mutimba et al, 2007; Owens et al., 2001).

SEPs are a type of "sandwich" approach to education; they are implemented on-

site for a period of six to eight months. The SEPs are conducted in two phases and

include a research component: 1) after the first year of coursework, the SAFE training

participants return to their workplaces and identify the community's needs and choose

one need to develop as an Extension project proposal; 2) after three semesters of

academic activity at the university, trainees implement projects in their communities (i.e.,

primary locale of work) under the supervision of university faculty members and

employers. At the end of these projects, participants were expected to learn how to facilitate their community in solving their chosen problems and produce valuable, informative reports for national and internal use (Kroma, 2003b; Mutimba et al, 2007; Owens et al., 2001). The SEPs present several educational advantages but also some constraints.

According to Mwangi et al. (2005), the main constraints to the application of SEPs were related to supervision and funding. In this regard, Mwangi et al. formulated the following recommendations:

1. Participative planning of SEPs for a relevant identification of projects;

2. Multidisciplinary supervision of SEPs;

3. Establish detailed supervision work plan to ensure uniform supervision;

4. Require institutionalization of SEPs exhibition or open-door days with SEPs presentation pamphlets;

5. Include future research component in the SEPs reporting to ensure continuity in the research;

6. Formalize financial agreement support of SEPs with donors;

7. Identify appropriate communication channels to publish the findings and reports of SEPs to its diverse users. (p. iii)

Examples of SEPs; by project title, developed and implemented by past SAFE training participants in Mali include 1) Promotion of irrigated rice in the village of *Tassakane* (Tombouctou); 2) Increase of mango producers' revenues in *Dougakoro* through reconversion of harvesting technique; 3) Improvement of soil fertility and millet yield in *Bomboro* through the use of compost; 4) Contribution of gardening to improving

the living conditions of women in *Baboto* through the production of okra; 5)

Improvement of production, processing, preservation, and commercialization of okra: A

revenue source for women's association in *Daoussi-Djiké-Yaguiné*; 6) Improvement of

storage, processing, and commercialization of onions in the village of *Diamouténé*; 7)

Enhancement of agricultural productivity by the introduction of improved varieties in the

Sahel zone of Mali: Case of millet and sorghum in *Kéibane Soninké* (Nara); 8) Increase

of the yield of millet and sorghum by the use of compost in the village of *Faira* (Segou);

9) Promotion of rice NERICA by seed production in *Kouroumasso* (Sikasso); and 10)

Contribution to expand onion producers' revenue in Nara by the improvement of storage

techniques and the commercialization channels (*Cercle of Niono, Rural Commune of*

Diabaly).

Based on the objectives and curricula of the SAFE training program, the

researcher selected the following conceptual and theoretical framework to undergird her

study.

Conceptual/Theoretical Framework

Scholars use conceptual frameworks or theories to help support and explain their

assumptions and claims to universal truth (Doolittle & Camp, 1999). Argyris and Schön

(1974) explained that theories allow researchers to explain, predict or control events. The

conceptual framework underpinning this study was drawn from four relevant theories

related to the professional development of Extension professionals. These theories

include human capital theory, experiential learning, social constructivism, and self-

efficacy. The researcher posited that the professional development received by the SAFE

participants was supported by elements of human capital theory, which advocates the

individual and societal benefits of educational investment. Human capital theory asserts that education and training are the most relevant investments by a society and its actors.

The graduates' SEPs were conceived on the pillars of experiential learning, and they were implemented collaboratively under the supervision of university faculty and employers, as well as the involvement of farmers and other beneficiaries of the Extension educators' professional services. The social constructivism theory can also be applied to SEPs, because it explains how knowledge and skills are created based on experiences and social interactions. Self-efficacy supports this study because the SAFE training program aims at improving the skills of Extension educators, including attitudes and beliefs regarding their ability to perform professionally. Therefore, the study was framed using the lens of human capital theory, experiential learning, social constructivism, and self-efficacy. These theories support the argument for the importance of educational investment, how knowledge and skills are gained through real-life contexts and constructed socially to improve an individual's quality of life and his or her wider community.

Human Capital Theory

Believing the most valuable capital is that invested in human beings has its foundation in human capital theory (Cornachione & Daugherty, 2008). Human capital theory views the cost returns of education at individual, organizational, and national levels (Cornachione & Daugherty). Income, performance, productivity, and quality services are derived from the resources invested. Human capital theory advocates that education improves the economic capabilities of people; in other words, it is the *economics of education* (Sweetland, 1996).

The two tenets of human capital theory are 1) the nature of the educational input of society is both quantitative and qualitative, and 2) the development of abilities and skills require resources (Cornachione & Daugherty, 2008; Sweetland, 1996). Through formal, non-formal, and informal education, citizens improve their own and a society's quality of life. The educational investment confers human beings qualities that enable them to serve themselves and their social environments. Accordingly, many proponents of human capital theory have correlated occupational revenues with investments in education (Cornachione & Daugherty; Sweetland).

Human capital theory has endured since the 1960s because of its contextual and empirical aspects, but some have criticized it. For instance, scholars such as Fisher, advocated that human beings cannot be labeled as wealth and their abilities cannot be valued practically and accurately (as cited in Sweetland, 1996). Despite his critique, Fisher recognized in a larger sense that human beings constitute a form of capital in the production process of goods and services. In response to the position of human capital theory that the time and effort invested in education and training was driven by individual needs, Fevre, Rees, and Gorard (1999) argued that "self-investment will be recognized by employers who realize that the education and training they [i.e., employees] have undertaken has made them into more productive workers and are therefore prepared to pay them for higher wages" (p. 118). Despite these critics, Schultz asserted that education includes other investments such as "health facilities and services; on the job-training; formally organized education, study programs for adults; and migration of individuals and families to adjust to changing job opportunities" (as cited in Sweetland, 1996, pp. 348-349).

Human capital theory undergirds this study because it advocates that educational investments should be encouraged, which enables people to develop their talents, abilities, and skills for the benefits of society. Assessing, and to some extent evaluating, investment in the professional development of Extension educators by SAFE is but one example.

Experiential Learning

Experiential learning is defined as learning through the senses (Roberts, 2006) as opposed to rote-learning (Chan Cheung Ming, Fong Meng Soi, & Lau Wing No, 2003). For example, going to the zoo to observe and interact with the animals, rather than reading about them in a book, allows an individual to discover and experiment with knowledge firsthand instead of hearing or reading about others' experiences. In addition to personal experiences, David Kolb (1984), an American educational theorist, advocated that knowledge also can be gained continuously through active learning experiences. Kolb's work on experiential learning integrated Lewin's (1951) approach of action research and Dewey's views on reflective thought and action. The two central concepts of Kolb's experiential learning model are experience and reflection (Miettinen, 2000).

Moreover, Houle (1980) explained experiential learning as education that occurs through direct involvement in life events. Knowledge generated from experiential learning comes from reflection on daily experiences. Experiential learning occurs in different settings and through different forms, such as manual arts, physical education, excursions, internships, and group-based learning projects (Bourdeau, 2004; Chan Cheung Ming et al., 2003; Roberts, 2006).

Compared with academic learning (i.e., "classroom learning and theoretical learning"), experiential learning has many dimensions which lead to active involvement on the part of learners in real-life situations. These dimensions are "real experience, concrete experience, reflective thinking, observational learning, abstract conceptualization, risk and responsibility, active experimentation, and teacher-as-facilitator" (Knobloch, 2003, p. 25). Experience is explained as what individuals undergo in their lifetime. Experiential learning is not a new learning technique. It has been used formally in American agricultural education since the 1890s when "doing to learn" and "education through experience" philosophies became prevalent (Knobloch, 2003, p. 25).

The beliefs of John Dewey, Seaman Knapp, Rufus Stimson, and William Lancelot were used to conceive the pillars of experiential learning and to operationalize it in agricultural education (Knobloch, 2003). "Agricultural education is the studying of the principles and methods of teaching and learning as they pertain to agriculture" in both formal and non-formal educational settings (Knobloch, p. 26). Moreover, experiential learning was operationally defined as "learning in a real-life context that involves learners in doing tasks, solving problems, or conducting projects" (Knobloch, p. 26). Again, these categories, which can be thought of as pillars of experiential learning (Figure 1) were supported by the teachings and writings of Dewey, Knapp, Stimson, and Lancelot as well as other like-minded scholars (Knobloch, 2003).
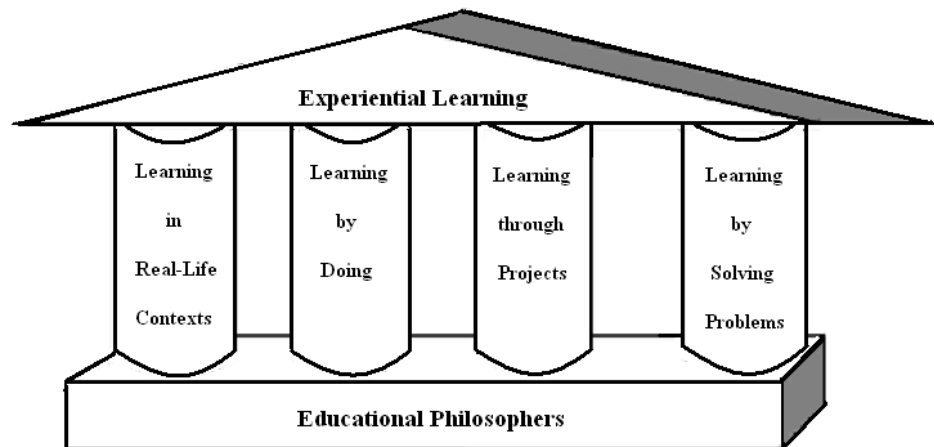
Figure 1. The Pillars of Experiential Learning in Agricultural Education
(Knobloch, 2003, p. 27)

John Dewey was credited for his belief in contextualized and applied education.

Dewey asserted that the pursuit of experience developed a learner's desire to learn

further. He stated that past accumulated experiences affect an individual's future (as cited

in Knobloch, 2003). But Dewey also argued that all experiences do not equate with *high*

value learning. For example, if the educational experience is not relevant, or is unpleasant

to the learner, he or she may misinterpret it.

An important stage of the experiential learning process is *learning by doing*

(Enfield, Schmitt-McQuitty, & Smith, 2007; Richardson, 1994). In 1903, Seaman

Knapp, known as the "father" of Agricultural Extension Education, used demonstrations

as practical and easy applications to help farmers solve agricultural problems

(Knobloch, 2003). Knapp's contribution to the pillars of experiential learning was

learning by doing. Moreover, an ancient Chinese proverb advocates that more learning

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happens by doing: "Tell me and I will forget, show me and I may remember, involve me and I will understand" (as cited in Hairston, 2004, p. 1).

The idea of learning through projects in agricultural education originated from Rufus Stimson who is known as the "father" of project-based learning in agriculture (Knobloch, 2003; Roberts & Harlin, 2007). Stimson believed that a combination of books, observation, and active participation in productive farming operations led to the development of skills and abilities. Stimson initiated the Supervised Farming method, which has evolved into today's Supervised Agricultural Experience (SAE), which is a cornerstone of the secondary agricultural education model followed in the United States (Talbert, Vaughn, & Croom, 2005).

Other researchers also asserted the importance of project-based learning. SAEs are somewhat akin to the SEPs that are part of the SAFE training program. For example, Ramsey and Edwards (2004) stated that non-formal learning activities, such as SAE, could have a positive impact on learner achievement. Retallick (2005) also reported the existence of a positive relationship between project-based learning and student achievement. From an epistemological view, project-based learning aligns with constructivism and experiential learning. But, Knobloch (2003) advocated that, "Although experiential learning in agriculture is associated with SAE, experiential learning is more than SAE methods. Experiential learning . . . involves learners in doing tasks, solving problems, or conducting projects" (p. 26).

Consequently, SAE projects are frequently classified into ownership, placement or cooperative, and improvement or skill development. Retallick (2003) proclaimed that, "SAE is characterized as agricultural-based, supervised, experience-centered, and

individualized to meet the needs of today's diverse student clientele" (p. 8). The SEPs, as operationalized by the SAFE training program, fall into the skill development class, which allows participants to help solve problems at a community level through a participatory approach.

Lancelot (1929) asserted that knowledge should be used in life situations and to solve problems, which forms the fourth pillar of experiential learning (Figure 1). Lancelot propounded that human intelligence serves to find creative solutions to problems comprised in any new situation or experience. Lancelot defined this capacity as "creative ability . . . the ability to plan, that is, to devise ways and means of accomplishing desired ends" (p. 123). Because of the social importance of creative ability, Lancelot advocated that schools should develop programs and conduct activities to enhance the creative ability of learners: for instance, "abilities to plan food . . . to manage the family finances . . . to plan for community improvement" (p. 125). He explained that creative ability is not innate because it consists of careful thinking and making inferences from known facts. Lancelot stated that creative thinking involves 1) alternative solutions and plans to reach the outcome, and 2) choice of a "best fit" solution. The development of SEPs or other Extension program planning should be based on the analysis and selection of alternative solutions for the identified needs or problems of communities.

William Lancelot (1929) defined a problem as a question "whose answer can be found only through thinking" (p. 144). He further classified problems into problems of concrete situation (applicable knowledge) and problems related to causality and general truth. In the process of developing and implementing SEPs, problems are identified and alternative solutions or hypotheses are tested to reach outcomes (ends). However, it

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should be noted that in the conduct of SEPs, participants use science or theory-based knowledge to solve applied problems. Lancelot stated that both classes of problems should be treated by students; so, the learners can acquire two problem solving skills. However, teachers must understand how and when the knowledge, which their pupils acquire, is used by people in everyday life to identify solutions to problems, consequently, making it valuable for learning purposes.

Macadam (1997) emphasized that, "Experiential learning was construed as a purposeful combination of experiencing, finding out, making sense, and taking action, and that the extent to which this process was understood by learners determines their ability to consciously guide the process" (p. 587). So, in terms of the implementation of experiential learning, the learner is engaged in a process, including goal setting, experimenting with a situation, reflecting on that experience, and planning new experiences. Ideally, learning takes place through this process (Enfield et al., 2007). This is also explained well by Kolb's Cycle of Experiential Learning (1984; Figure 2).
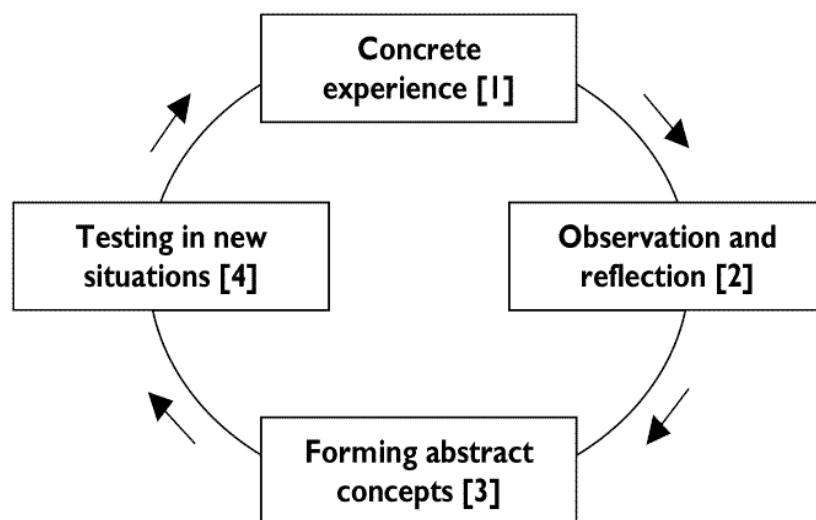
Figure 2. Kolb's Experiential Learning Cycle (Informal Education, 1996, 2005).

Enfield et al. (2007) reduced Kolb's Experiential Learning Cycle to three elements:

1) a 'concrete experience' where the learner is involved in an exploration, actually doing or performing an activity of some kind, 2) a 'reflection' stage whereby the learner shares reactions and observations publicly and processes the experience through discussion and analysis, and 3) and 'application' or 'conceptualization' phase that helps the learner deepen and broaden their understanding of a concept or situation by cementing their experience through generalizations and applications. (p. 1)

Social Constructivism

Another component of experiential learning can be the enhancement of learning through the learners' interaction with peers (Doolittle & Camp, 1999). Doolittle and Camp (1999) stated that, epistemologically, experiential learning aligns with constructivism, which means that learners construct knowledge from their experiences (both individual and social). Social constructivism underlines the social nature of knowledge.

Dewey (as cited in Munoz & Munoz, 1998), explained that continuity and interaction are essential principles for an experience to be educative. The continuity of experience is the ability of the learner to make the connection between the past, the present, and the future in the process of learning. Dewey also stated that one cannot gain experience in a void; "physical, social, economic, and historic" are factors that condition the development of experiential learning (as cited in Munoz & Munoz, 1998, p. 13).

Therefore, the act of learning is a shared rather than an individual experience, which supports establishing, nurturing, and developing SEPs in Mali's rural communities.

Supervised enterprise projects are appropriate examples of experiential learning because the learners are immersed in the practical activities of real-life situations, which allow them to learn and construct new knowledge. The SEPs are pragmatic endeavors which connect theory and practice; SEPs operationalize much of what constructivist theorists have proposed (Doolittle & Camp, 1999). The SEPs are realized through an interactive process between participants, faculty members, employers, stakeholders, and farmers (SAFE, 2009).

Sociological theorists posit that social factors affect people's decisions to engage in education and training (Cornachione & Daugherty, 2008; Fevre et al., 1999). Fevre et al. (1999) concluded that social interaction, in sustainable human networking, is an important source of knowledge and reflection. Dewey and Piaget argued that "knowledge is an internal construction of reality by the individual" (Merriam & Caffarrella, 1999, p. 264). Moreover, constructivism, in providing meaning to education and training, focuses on the individual's cognition as well as his or her social interaction (Merriam & Caffarrella, 1999; Zinn, 2004). A premise of constructivism is the creation of knowledge and meaning from learners' experiences (Roberts & Harlin, 2007). Constructivism relies on four tenets:

1. Knowledge is actively and cognitively accumulated by the individual;

2. Cognition is not fixed but adapted to situations and contexts;

3. Cognition helps organize and give meaning to our experience;

4. Knowledge derives from the interaction between biological, social, cultural, and linguistic sources. (Doolittle & Camp, 1999, p. 4)

A continuum of cognitive constructivism, radical constructivism, and social constructivism was developed based on these four tenets. Cognitive constructivism, at the extreme, deals with information processing and supports the position that the process of knowledge acquisition can be adapted to life situations. Radical constructivism, at the opposite end of the continuum, embraces the knowledge acquisition process as an individual endeavor, in which experience is mind-based and highly individualistic if not "particularistic." Radical constructivism explicates the internal nature of knowledge, whereas social constructivism supports the principles of knowledge as a social construct (Doolittle & Camp, 1999). Social interaction, verbal communication, and shared experiences build knowledge. The SEPs, as so named, are projects conducted by SAFE training participants, who are supervised by faculty members and employers, and with the involvement of farmers. The SEPs allow participants to link theory to practice in a collaborative process to create shared knowledge. The supervised and participative aspects of SEPs fit with the description of social constructivism. In addition, Navarro (2008) explained that through the analysis of agricultural project experiences over time, the successful development program undergoes involvement, collaboration, team work, and feedback from beneficiaries. The key is to give the power to stakeholders, to listen to them, and then "create social spaces for learning" (Navarro, 2008, p. 72). Supervised Enterprise Projects exemplify Navarro's contention.

Self-Efficacy

The final theoretical basis of this study was drawn from self-efficacy theory, i.e., an individual's perceived beliefs in his or her ability to organize and manage situations; moreover, the level of self-efficacy human beings possess influence their self-confidence and ability to act (Ajzen, 1991; Bandura, 1995). The ultimate aim of the SAFE training program is to upgrade the skills and overall professional attitudes of participants so they are better prepared to help their clients solve problems. Therefore, after completing their professional development, the SAFE training program graduates are expected to express high self-efficacy to address the many challenges facing their clientele. The self-efficacy of training participants, or, in other words, their levels of self-confidence to be effective change agents, is essential if the SAFE program is to reach its objectives. Determining the level of self-efficacy held by Extension educators who completed the SAFE training program could lead to understanding their behaviors and determination to face barriers and overcome obstacles. It was posited that the Extension educators who held high professional self-efficacy (e.g., perceived impact) could better facilitate change in the behaviors of their clientele.

Bandura (1995) explained that self-efficacy can be enhanced by successful experiences or lessened by those viewed as unsuccessful. In the process of conducting their SEPs, participants chose problem topics with some measure of confidence that they possessed the requisite knowledge and resources to conduct projects aimed at solving their clients' problems. The success of SEPs could impact the trainees' perceived self-efficacy and, consequently, catalyze their enthusiasm and ability for solving problems

approached collaboratively with their clients in the future. Certain factors, as explained by self-efficacy theorists (e.g., Ajzen, 1991 and Bandura, 1995), affect the success or failure of an individual's actions. The sources of efficacy beliefs include the following aspects or dimensions:

1) *Mastery experiences* are a function of cognitive ability and aptitudes, therefore, success requires persistent commitment and creativity to deal with life situations over time (Bandura, 1995). The SEPs process includes needs assessment, project proposal development, planning, fund raising, implementation, and evaluation. This extensive process, especially the sponsorship of projects, was a challenge identified in an evaluation study conducted by SAFE program managers in Ethiopia (Mwangi et al., 2005). However, Bandura (1995) explained that those individuals who overcome obstacles through continual effort have a resilient sense of self-efficacy.

2) *Vicarious experiences* are derived from observing and modeling similar situations. Competent role models inspire others to follow their path (Bandura, 1995). The SAFE training program encourages actors to network at national and international levels; therefore, their interaction creates knowledge, behavior, and vision exchange (Zinnah, Steele, & Mattocks, 1999).

3) *Social persuasion* is defined as external persuasion to convince other people to believe in their abilities to reach goals and then pushing them to produce great and sustainable labors to learn and succeed (Bandura, 1995). The role of supervisors in the SEPs is to guide trainees in the direction of self-improvement and achievement of goals. Duo and Bruening (2007) explained SEPs as a means of SAFE training participants learning how to solve similar problems they will be dealing with as Extension

professionals. During this process, based on experiential learning, participants use the knowledge and skills acquired through their academic course work to identify and reflect on problems in the communities they serve, develop and implement a research project, and propose solutions to the identified problems in collaboration with their clients, employers, and faculty mentors. It is assumed that the SEPs, implemented near the end of the SAFE training program, serve as models to assist graduates in solving other problems they encounter in the future.

4) *Physiological and emotional states*, such as stress, moods, fatigues, pains, are other factors that affect self-efficacy. However, positive moods and affective stimulation can boost self-efficacy (Bandura, 1995). So, the social learning environment and support provided by the SAFE program should have enhanced the self-confidence and ability of trainees to perform well and take appropriate actions to solve problems encountered when serving their clients.

Perceived behavioral control, a component of planned behavior theory, is closely related to self-efficacy (Ajzen, 1991). Perceived behavioral control is defined as a person's perceived ability to perform a behavior of interest with ease or difficulty. Ajzen (1991) asserted that perceived behavioral control coupled with behavioral intention can predict behavioral achievement. Therefore, in this study, the researcher assumed that the SAFE training participants' personal sense of behavioral control was related to their perceived professional performance, including its impact on their clients.

Summary

Knowles (1962), in describing andragogy, explained that adults had the ability to learn, and would, if certain conditions were satisfied, including motivation, clarity of learning objectives, and personal satisfaction (Kahler et al., 1985; Knowles & Klevins, 1982). In the 21st century, Extension professionals are required to develop their competencies to meet the needs of their clientele, including Extension educators in Sub-Saharan Africa who frequently serve impoverished and marginalized groups, e.g., smallholder and subsistence farmers. The success of Extension Services entails the professional development of their personnel, including technical competencies in multiple program areas as well as skills in leadership, communications, and administration. The competence areas most Extension Services strive to develop in their staff are diversified but in the main consist of subject matter expertise, process skills, interpersonal skills, program planning, implementation, and evaluation (Cooper & Graham, 2001; OCES, 2009; Traoré, 2008).

For this study, human capital, experiential learning, social constructivism, and self-efficacy served as the conceptual/theoretical framework for examining how mid-career Extension educators improved their professional practices through participation in the SAFE training program. Human capital theory supported the expectation that societal benefits would be derived from the education and training received by mid-career Extension educators, thus justifying the SAFE program's investment in the professional development of trainees in Mali. Experiential learning, social constructivism, and self-efficacy also illustrate the learning process and creation of professional competence sought by the SAFE training program. These theories provide insight into the intent of

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the program's learning approach, specifically the SEPs, based on the co-creation of knowledge between Extension educators and their clients (Navarro, 2008).

Participatory involvement of stakeholders and other actors is essential in the co-creation of useful knowledge (Navarro, 2008). To instill and perpetuate collaboration between stakeholders in decision-making and actions, Navarro explained that many models exist explicating three interrelated phases: planning, implementation, and evaluation. Several scholars asserted that the potential success of Extension is highly dependent on the professional development of Extension educators (Cooper & Graham, 2001; Kelsey & Pense, 2001; Navarro, 2008), which is a premise shared by providers of the SAFE training program.

Extension educators should be trained in the participative process of program development through stakeholder-driven and community-based learning projects, e.g., the SEPs. The practice of SEPs, as a training approach, further links theories to real-life situations or experiential learning opportunities and thereby uses experience as the practical prism through which knowledge is acquired and learning occurs (Kolb, 1984, Figure 2). The expectations and conditions created by the SAFE training program allowed the researcher to also use Bandura's self-efficacy theory, and aspects of Ajzen's related work, as an additional conceptual/theoretical plank for this study.

CHAPTER III

METHODOLOGY

The study is grounded on the assumption that the Extension professionals surveyed and interviewed had used the knowledge and skills acquired through their participation in the SAFE training program to serve their clients better. This chapter describes the methods selected and implemented to achieve the study's purpose and answer the related research questions.

This chapter is divided into seven sections: 1) purpose of the study, 2) research questions, 3) general research design, 4) population and sample, 5) Institutional Review Board protocol, 6) development and administration of instruments for data collection, 7) data collection and analysis procedures.

Purpose of the Study

The purpose of this study was to assess graduates' perceptions of the Sasakawa Africa Fund for Extension Education (SAFE) training program in Mali regarding their training experiences and its impact on their professional practice. Graduates' views on aspects of the training that involved Supervised Enterprise Projects (SEPs) were emphasized. In addition, personal and professional characteristics of the graduates were described so that selected relationships could be examined. Findings will be used to assist in evaluating the SAFE training program's effectiveness and determine if changes are needed in the future.

Research Questions

The study sought to answer five research questions:

1. What were selected personal and professional characteristics of graduates of the SAFE training program?

2. What were the perceptions of SAFE training program graduates regarding their training experience and its impact on their professional practice?

3. What were the SAFE training program graduates' views on various aspects of the training that involved SEPs?

4. Were selected personal and professional characteristics related to graduates' perceptions of the SAFE training program?

5. What were the graduates' views on changes or improvements needed for SAFE training programs in the future?

General Research Design

Following Creswell (2005), this research relied on a mixed methods approach. Creswell explained that a mixed methods design utilizes both quantitative and qualitative data collection schemes to answer research questions. The data collected, using mixed methods, is not a compilation of two distinct strands of quantitative and qualitative data, rather it is "merging, integrating, or embedding two strands" (Creswell, p. 552). With regard to the qualitative aspect of mixed methods, the researcher may spend an extended time period on site, and interact regularly with the people who are being studied (Leedy & Ormrod, 2005).

The present research aimed to assess the Sasakawa Africa Fund for Extension Education (SAFE) training program as perceived by its graduates. A mixed methods

design facilitated the researcher in assessing different facets of the SAFE training program and helped portray the interconnections between the program's curricula, the competencies acquired by SAFE training participants through the training, and graduates' application of those competencies in their jobs as Extension educators (i.e., perceived impact on clientele).

In this era of multitude of research designs, a mixed methods approach has become more popular in evaluation studies (D'Souza, 2003). Another rationale of the choice for mixed methods in assessing selected aspects of the SAFE training program was driven by Chen's theory (as cited by D'Souza, 2003). Chen recommended such methods when the evaluation required comprehensive and background information. Chen's evaluation theory relies on the comparison between expected outcomes and actual outcomes. Therefore, one will be able to make evaluative comments based on that comparison. The aim of the SAFE training program was to upgrade the skills of mid-career Extension professionals, so they could improve their service and meet clients' needs. A mixed methods research design allowed the researcher to collect both quantitative and qualitative data and gain a comprehensive understanding of the outcomes of the SAFE training program from the participants' (i.e., graduates') perspectives.

Creswell (2005) called for triangulation mixed methods when the quantitative descriptive approach and the qualitative aspect of a mixed methods design have equal value, and when both quantitative and qualitative data are collected simultaneously. In this study, a survey instrument was administered and semi-structured focus group interviews were conducted soon thereafter. Figure 3 shows the types of mixed methods

designs supported by Creswell, including the design followed in this study (i.e., I). As explained by Creswell, the quantitative and the qualitative findings are "merged" to form the researcher's interpretation and thus gain a fuller and more complete understanding of the phenomenon. An advantage of the triangulation mixed methods design is to benefit from the strong points of each method and counterbalance their weaknesses simultaneously.

I. Triangulation Mixed Methods Designs

QUAN (Data and Results) **+** QUAL (Data and Results)

Interpretation

III. Exploratory Mixed Method Designs

QUAL Data/ Results → quan Data/ Results

Building

Legend:
Box = data collection and results

Uppercase letters/lowercase letters = major emphasis, minor emphasis

Arrow = sequence + = concurrent or simultaneous

II. Explanatory Mixed Methods Designs

QUAN Data/ Results → qual Data/ Results

Follow-up

Figure 3. Types of mixed methods designs (Creswell, 2005, p. 514)

Population

The SAFE training program graduates were dispersed in the District of Bamako, the capitol city of Mali, and the eight administrative regions of the Republic of Mali, including Kayes, Koulikoro, Sikasso, Ségou, Mopti, Gao, Tombouctou, and Kidal (Figure 4). Most of the study's participants included SAFE training program graduates in the district of Bamako and seven of the eight administrative regions in Mali: Kayes,

Koulikoro, Sikasso, Ségou, Mopti, Tombouctou, and Kidal. The study participants were

Extension educators employed by the government of Mali. They included both males and

females who completed, between 2002 and 2009, the *Maitrise en Vulgarisation Agricole*

(MVA) of the SAFE training program. The program is equivalent to a Bachelor of

Science (BSc.) degree; it is an Agricultural Extension degree program essentially.

Figure 4. Map of Mali (Taken from *Atlas Jeune Afrique*, June 2009)

Sampling Procedure: Considerations, Assumptions, Decisions, and Procedures

An updated list of SAFE training program graduates in Mali was obtained from the SAFE coordinators; it constituted a working sampling frame for the study. Creswell (2005) defined purposeful sampling as the intentional selection of individuals or sites to better understand the phenomenon under investigation. Nine purposeful sampling strategies were described by Creswell (2005), including "extreme case sampling, typical sampling, theory or concept sampling, homogenous sampling, critical sampling, opportunistic sampling, confirming and disconfirming sampling, and maximal variation" (pp. 204-205).

In part of the survey portion of this study, opportunistic sampling was used to collect some of the data. As shown in Figure 4, Mali is a large country and the study participants were dispersed in numerous geographical locations. This situation was identified as one of the study's limitations; therefore, the researcher took advantage of the SAFE Graduates' Alumni Association Annual Conference to survey all the MVA graduates who participated in this meeting ($n = 23$). The conference participants came from seven different regions.

Creswell (2005) indicated that opportunistic sampling can follow a maximal variation sampling procedure. But, in the present study, the choice of opportunistic sampling was based mainly on convenient access to participants for the purpose of saving time and resources, as well as increasing the number of survey respondents. The survey instrument and the consent form were hand-delivered to the remainder of the sample, (i.e., graduates who did not attend the Alumni Conference) at their workplaces ($n = 27$).

Regarding the study's semi-structured focus group interviews, maximal variation was used for the selection of sites and opportunistic sampling for determining the participants who participated in the interview sessions. The maximal variation sampling procedure required that the researcher first identify characteristics of potential sites that displayed different dimensions or characteristics (Creswell, 2005). The selection of sites was based on the density of participants, agriculture and livestock activities, as well as geographical location. The researcher assumed that this selection procedure was appropriate to ensure a sufficient number of the SAFE training program's graduates comprised the focus groups. The researcher also assumed that by drawing participants from the District of Bamako and four of the eight regions would increase the likelihood of focus group participants being sufficiently representative of the larger population.

The choice of focus group participants from the District of Bamako and Koulikoro was because of these units high density of SAFE graduates (Coulibaly, 2003). The choice of Mopti was due to the importance of livestock and fishery in this region (Coulibaly). Gao, Tombouctou, and Kidal constitute remote Saharan desert regions in Mali (Pringle, 2006), but they are closer to Mopti than the other two regions and share livestock activity. Therefore, the researcher assumed that Mopti could represent the more remote regions of Mali.

The researcher perceived that contrasting factors between regions would enrich the data and provide a more complete picture of the perceptions of SAFE graduates regarding the phenomenon of interest. In addition, a female focus group was convened and interviewed to determine if gender differences might appear in their responses to the questions posed. Another rationale for interviewing the female group was to provide an

opportunity for women to speak freely without any influence or bias of men being present; it has been argued that some African women may be reticent to express themselves freely and candidly in the presence of men (Kabutha, 2007; Kiamba, 2008).

Based on the characteristics that guide purposeful sampling (Creswell, 2005), the researcher also assumed that findings from the locations described would be sufficiently generalizable to the other areas where SAFE graduates were located in Mali. For example, the District of Bamako as well as Sikasso and Ségou regions are very similar to the Koulikoro region regarding the importance of agricultural activities, and all are located in either the Sudan or Guinea zone (Coulibaly, 2003). In terms of livestock activities, the Mopti region shares similarities with the Kayes region, including the raising of cattle, sheep, and goats. The Tombouctou and Kidal regions present similarities because both are situated in the Saharan zone. Figure 5 shows the four ecological zones in Mali. Coulibaly described the four ecological zones and food production activities in each:

The Saharan Zone: The Saharan zone is extremely arid and desert with limited rainfall (0 to 250 mm annually). "The soil is sandy and stony with a poor water-retention capacity; therefore, crops cultivation is limited or only possible under special conditions. Livestock rearing, where it is possible, reigns without competition" (p. 8). Tombouctou and Kidal are located in the Saharan zone (Figure 5).

The Sahel Zone:

> Is also arid with sandy or Aeolian soils, but with higher rainfall ranging between 250 and 550 mm compared to the Saharan zone. This zone is characterized by a long dry season of 9 to 11 months. The major activity is

subsistence agriculture together with transhumant and itinerant livestock raising. (p. 8)

Mopti and Gao are in the Sahelian zone (Figure 5).

The Sudan Zone: "The Sudan zone is semi-arid to sub-humid. With a rainfall ranging from between 550 to 1,100 mm and ferruginous soils, the agricultural activities are more intensive and successful. Stock-rearing is more sedentary and integrated with crop production" (p. 8). Kayes, Koulikoro, Ségou, and Bamako are located in the Sudan zone (Figure 5).

The North Guinea Zone: "The climate is entirely sub-humid with a rainfall over 1,100 mm lasting five to seven months. Agricultural activities are most pronounced and most important with a focus on fruits and tubers production" (p. 8). Sikasso is the only region located in this Guinea zone which is a forest area (Figure 5).

So, because of the comparableness of "the region groups," as described, and that relationship to ensuring an acceptable level of sample representativeness, focus group participants were selected accordingly, excluding the all female group.

Map of the Main
Agro-ecological Zones
in Mali

■ Saharan Zone
■ Sahel Zone
■ Sudan Zone
■ North Guinea Zone
■ Internal Delta Zone
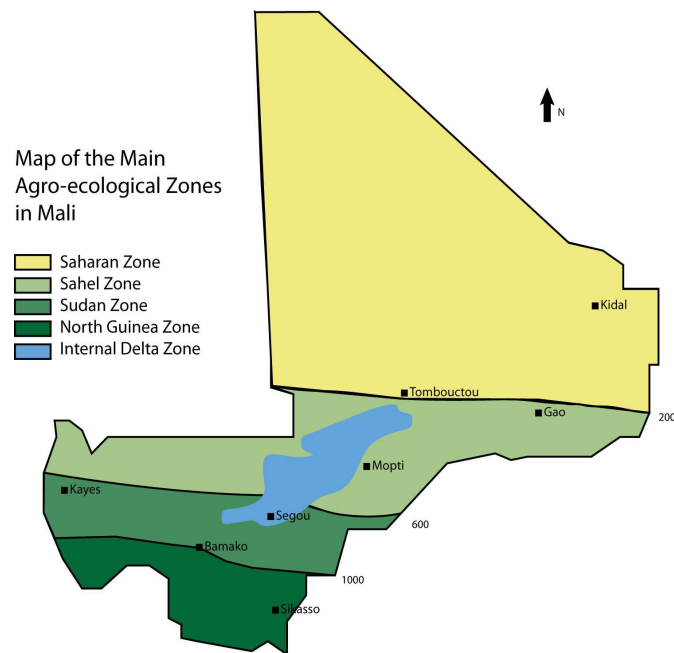
Figure 5. Organization and Delivery of Supervised Enterprise Projects (SEPs) for the Development of SAFE Training Participants' Competencies (Modified from Coulibaly, 2003, p. 9)

Institutional Review Board Protocol

In compliance with federal and state regulations in the United States for protecting the rights of human subjects involved in research activities, all research proposals must be reviewed and approved by the Institutional Review Board (IRB) of Oklahoma State University. The Office of Institutional Review Board (IRB) of Oklahoma State University approved the research study before its implementation (AG0935), and a copy of the IRB approval form (Appendix A) is appended in the appendices section of this dissertation.

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Development and Administration of Instruments for Data Collection

Development of the Survey Questionnaire

To develop the study's survey instrument (Appendix B), the following steps were followed:

- Views and ideas of the SAFE program coordinators were collected on what they wished to know about SAFE graduates' perceptions on their training. This was complemented by reviewing the literature on the SAFE training program (Akeredolu, 2006; Université du Mali & Direction Nationale de L'Appui au Monde Rural, 2001; Mutimba, 2003, SAFE, 2004, 2006c, 2007, 2008) to determine what has been reported by others on the topic as well as through personal communication with officials of SAFE. For example, an impact assessment tool was prepared by the management of the Sasakawa Africa Fund for Extension Education (Kabutha, 2007) that was used to conduct an impact study with female graduates of the training program at Haramaya University in Ethiopia (Kabutha). This instrument was used to inform the researcher about some of the important constructs that should be addressed in the present study.

- An initial draft instrument based on the study's purpose and research questions was developed that featured what stakeholders wished to know coupled with findings derived from the researcher's review of literature. In accordance with the study's five research questions, the survey instrument included items that described the SAFE graduates' views on their training, its impact on their clients' practices, as well as selected personal and professional characteristics (Appendix D).

- The survey instrument presented 77 items distributed in six major sections (Appendix D): Two basic types of measurement, categorical (nominal) and continuous scales (Creswell, 2005), were used to gather participants' responses to 66 items. The remaining 11 items were open-ended. The sections, types of items, and scales used follow:

  - Section 1: "The SAFE Training Program and Its Impact" had 41 items, including 35 ordinal scale items, one ranking item, and five open-ended questions.

  - Section 2: "Leading and Facilitating Supervised Enterprise Projects (SEPs)" had 15 items (all ordinal scale).

  - Section 3: "Satisfaction with the SAFE Training Program" contained six items including, two ordinal scale items and four open-ended questions.

  - Section 4: "Personal Characteristics" had five items, including three nominal scale items, one ordinal scale item, and one interval scale item.

  - Section 5: "Educational Backgrounds" had seven items, including three nominal scale items, one ordinal scale item, and three interval scale items.

  - Section 6: "Professional Categories Before and After the SAFE Training" had three items, including, one nominal scale item, and two open-ended questions.

- A panel of experts reviewed the draft instrument, including Winrock International's Senior Program Officer for Enterprise and Agriculture, the SAFE West Africa Coordinator, three faculty members in the Department of Agricultural Education, Communications, and Leadership, and one faculty member in the Department of

Agricultural Economics, Oklahoma State University, to ensure the instrument's content and face validity.

- The instrument initially developed in English was translated into French for its administration.

- The survey instrument was pilot-tested to establish its reliability (i.e., internal consistency) and face validity. The pilot test of the survey instrument was conducted with 12 participants from the District of Bamako, Koulikoro, and Sikasso regions. Those who participated in the pilot test were not included in the full study. The choice of these locations was based on their proximity to the researcher's administrative station (i.e., Bamako). Results of the pilot test were used to determine the internal consistency of the instrument (i.e., Cronbach's alpha) and make adjustments to the items if needed. Reliability estimates by construct, where appropriate, are presented in Table 3.

- Following the pilot test, two open-ended questions were reformulated and then the survey instrument was reviewed by selected members of the original panel of experts before it was duplicated and administered to the study's participants in Mali.

- After collection of the filled French version questionnaires, data were entered, analyzed, and reported in English.

Table 3

Items and Scales Used to Determine Reliability Estimates of Selected Constructs Found in the Survey Questionnaire

Participants perceptions of their clients' use of improved technologies or practices before and after training:

      Use of plant nutrient management: before SAFE training
        (3 items)
      Use of plant nutrient management: after SAFE training
        (3 items)
      Use of other improved inputs and practices: before training
        (7 items)
      Use of other improved inputs and practices: after training
        (7 items)

Scale: 1 = "None"; 2 = "A few"; 3 = "Some"; 4 = "Many"; 5 = "Nearly all"

Graduates' perceptions regarding importance of reasons for increased adoption of improved inputs and practices by their clients (7 items)

Scale: 1 = "No importance"; 2 = "Low importance"; 3 = "Average importance"; 4 = "Above average importance"; 5 = "Great importance"

Graduates' perceptions regarding extent of Extension services delivered annually before SAFE Training (4 items)

Scale: 1 = "None"; 2 = "1 to 5"; 3 = "6 to 10"; 4 = "11 to 15"; 5 = "16 or More"

Graduates' perceptions regarding extent of Extension services delivered annually after SAFE Training (4 items)

Scale: 1 = "None"; 2 = "1 to 5"; 3 = "6 to 10"; 4 = "11 to 15"; 5 = "16 or More"

Graduates' perceptions of their competence regarding the use of Supervised Enterprise Projects (SEPs) and frequency of using that training approach with clients (8 items)

Scale for competence: 1 = "Low competence"; 2 = "Some competence"; 3 = "Average competence"; 4 = "Above average competence"; 5 = "High competence"

Scale for frequency: 1 = "Never"; 2 = "Not very frequently"; 3 = "Sometimes"; 4 = "Frequently"; 5 = "Very frequently"

Table 3 continued

Items and Scales Used to Determine Reliability Estimates of Selected Constructs Found in the Survey Questionnaire

Graduates' perceptions regarding constraints related to implementing Supervised Enterprise Projects (SEPs) with their clients (7 items)

Scale: 1 = "No difficulty"; 2 = "Some difficulty"; 3 = "Average difficulty"; 4 = "High difficulty"; 5 = "Extreme difficulty"

Graduates' level of agreement regarding clients reasons for adoption of improved technologies and practices (7 items)

Scale: 1 = "Strongly disagree"; 2 = "Disagree"; 3 = "Uncertain"; 4 = "Agree"; 5 = "Strongly agree"

Table 4

Reliability Estimates of Selected Constructs Found in the Survey Questionnaire, Pilot Test Results

Items/Constructs	Cronbach's alpha reliability estimates
Graduates' perceptions of their clients' use of improved technologies or practices before and after training	
Use of plant and soil nutrient management: before SAFE training (3 items)	$\alpha = .825$
Use of plant and soil nutrient management: after SAFE training (3 items)	$\alpha = .839$
Use of other improved inputs and practices: before SAFE training (7 items)	$\alpha = .735$
Use of other improved inputs and practices: after SAFE training (7 items)	$\alpha = .893$
Graduates' perceptions regarding importance of reasons for increased adoption of improved inputs and practices by their clients (7 items)	$\alpha = .923$
Graduates' perceptions regarding extent of Extension services delivered annually before SAFE Training (4 items)	$\alpha = .836$
Graduates' perceptions regarding extent of Extension services delivered annually after SAFE Training (4 items)	$\alpha = .580$[a]
Graduates' perceptions of their competence regarding the use of Supervised Enterprise Projects (SEPs) and frequency of using that training approach with clients (8 items)	$\alpha = .756$

Table 4 continued

Reliability Estimates of Selected Constructs Found in the Survey Questionnaire, Pilot Test Results

Items/Constructs	Cronbach's alpha reliability estimates
Graduates' perceptions regarding constraints related to implementing Supervised Enterprise Projects (SEPs) with their clients (7 items)	α = .746
Graduates' level of agreement regarding clients' reasons for adoption of improved technologies and practices (7 items)*	α = .569[a]

*Note. The reliability estimate was determined *post-hoc* due the small number of pilot study participants who responded to these items.
[a]Caution should be taken when interpreting findings derived from this construct due to the low reliability estimate.

Development of the Semi-Structured Focus Group Interview Guide

Focus group was defined by Krueger and Casey (2000) as "carefully planned series of discussions designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment" (p. 5). Focus groups can be used for different purposes such as needs assessment, planning, and evaluation. Focus groups can assist in identifying and illuminating the way people experience a program: "What is happening in their [e.g., the SAFE training program graduates'] world that facilitators may not see from their own world view" (Larson, Grudens-Schuck, & Allen, 2004, p. 2). This is what the present study aimed to achieve, i.e., obtaining the opinions and views of participants, which justified the conducting of focus group interviews. Focus groups are not

recommended to assess the level of knowledge gained from a program or experience (Larson et al., 2004).

Creswell explained that focus group questions should be prepared carefully, which requires effort, reflection, and feedback from others. To fulfill this requirement and also ensure the content validity of the study's semi-structured interview guide, a draft of the questions was circulated among the abovementioned panel of experts for their review and feedback.

In light of the principles of semi-structured focus group interviews described and the study's purpose, the researcher asked three open-ended questions of the participants that focused on their experience with Supervised Enterprise Projects (SEPs) (Appendix E). The focus group interview questions were centered on participants' perceptions regarding 1) the positive impact of SEPs on their professional skills and practices, 2) the constraints related to conducting SEPs with their clients, and 3) improvements needed in the SEPs to improve the SAFE training program in the future.

Among the best practices for effective interviews, Creswell (2005) indicated that the use of probes was an appropriate technique. Probes are defined as subsequent questions to elicit more information. Therefore, by asking probing questions, the researcher will gain additional information as well as allow participants to clarify and elaborate on their answers during the interviews. Accordingly, the researcher collected additional information related to the initial interview questions and thereby gained a richer understanding of the phenomenon under study.

Data Collection

The survey instrument (Appendix B) and the semi-structured focus group interviews were used to collect both quantitative and qualitative data regarding the perceptions of SAFE graduates on aspects of training related to their professional practice. To follow the triangulation approach of the mixed methods design, the quantitative and qualitative data were collected simultaneously (or nearly so), because they held equal value (Creswell, 2005; Figure 3). In the present study, for practical reasons, administration of the survey instrument preceded the semi-structured focus group interviews. The focus group interview questions (Appendix C) were developed and the interviews conducted to gain a deeper understanding on a particular aspect of the SAFE training program, i.e., the SEPs.

In this study, the participants' responses were gathered using summated-rating response scales (i.e., "Likert-type") primarily, several Yes/No questions, as well as one ranking item, and open-ended questions (Appendix B). Four semi-structured focus group interviews followed the collection of the survey instruments. Regarding the conduct of the study's semi-structured focus group interviews, the guidelines provided by Krueger and Casey (2000) were followed: Participants were selected based on the geographical location of their workplace; the size of the focus group varied from three to seven participants; an open-trusting environment was created; and length of the interviews was between two and two and one-half hours in duration.

The researcher was the facilitator of each focus group interview. With the consent of participants, the entire interview was audio-taped, documented in a notebook, and then transcribed. The researcher cooperated with an assistant researcher who took notes while

the principal investigator facilitated the interviews. Because it was difficult for the researcher to focus on the discussion and record notes at the same time, this procedure was followed to reduce the likelihood of incomplete interview recordings occurring.

Administration of the Survey Instrument

A cover letter (Appendix D) was distributed to 10 of the participants' employers two weeks before administrating the instrument. This was done to encourage the graduates' participation in the study. The consent form (Appendix E) was signed by participants prior to administering the survey instrument. A form of opportunistic sampling was used (Creswell, 2005). A portion of the sample included graduates who participated in the SAFE Alumni Association Annual Conference, which was held December 7 and 8, 2009 at the Rural Polytechnic Institute/Education and Applied Research Institute (*Institut Polytechnique Rurale/Institut de Formation et de Recherche Appliquée* [*IPR/IFRA*]) in Katibougou (Koulikoro region), Mali. As indicated previously, the researcher was interested in the perceptions of the SAFE (*MVA*) graduates who came from various administrative regions of Mali and from the District of Bamako.

The survey instrument (Appendix B) was hand-delivered to improve the response rate. Warde (1990) reported that response rates are impacted by the procedure of data collection used. In general, a higher response rate may be achieved by more interaction between potential respondents and the people collecting data (Warde). Moreover, interpersonal communication channels are more effective in the Malian culture (Kanté, Dunkel, Williams, Magro, Traoré, & Camara, 2009). Also mailing services and Internet are either not accessible or reliable in Mali.

The researcher participated in mobilizing the SAFE graduates to participate in their Alumni Association Conference to increase the likelihood of high attendance. In addition, telephone calls were made to emphasize the importance of their participation in the study. As an incentive, participants' transportation costs to attend the conference were provided. Ninety-six participants attended the conference, including *MVA* graduates, *BTVA* graduates (*Brevet de Techicien en Vvulgarisation Agricole*, i.e., equivalent of a Diploma in Agricultural Extension), and current *MVA* students. The instrument (Appendix B) was provided to 23 participants on December 7, 2009. Participants completed and then returned the instruments to the researcher on December 8, 2009.

For those respondents ($n = 27$) who did not participate to the Alumni conference, the instrument (Appendix B) was hand-delivered to them at their workplaces to be completed and collected the following day by the researcher. Consent forms (Appendix E) were also included; these were signed by participants and returned to the researcher. For graduates in the Tombouctou region, who were unable to participate in the Alumni Association Conference, one of the conference attendees from this region hand-delivered the consent forms and instruments to three of his colleagues. Their completed instruments and signed consent forms were returned to the researcher two weeks later in a sealed envelope via bus transportation. In all, 50 instruments were completed and returned to the researcher.

During administration of the survey instrument (Appendix B), selected participants were informed about date and place of the semi-structured focus group interviews that were planned.

Conducting the Semi-Structured Focus Group Interviews

The researcher and her assistant conducted the focus group interviews. Four focus group interviews were held that included a total of 21 participants. The interviews took place in the capital city of each region: the focus group for participants in the region of Koulikoro (five including one female) was held in the capitol city of Bamako; the interview for the Mopti region (three male participants) was held in city of Sewaré (near the city of Mopti), and the interview of the District of Bamako participants (seven with one female) was held in the city of Bamako. Six women participated in the all-female focus group interview in the city of Bamako. An incentive was given to participants (i.e., a communal lunch) and they were reimbursed transportation and lodging costs for their participation in the focus group interviews. The focus group interviews included two mixed gender groups, one all-male group and, one all-female group.

The researcher followed the guidelines described by Creswell (2005) for conducting interviews:

- o Enhanced participation of all interviewees to collect shared views on the questions;
- o The researcher controlled the interview discussion;
- o To assure adequate recording of the questions and answers, the researcher used a directional microphone, which picked up sounds in all directions;
- o The researcher also took notes as a back-up solution to the breakdown of the audio tape recorder.
- o The interview was conducted in a quiet and suitable place;

- o The questions were posed in a planned order, but the researcher was flexible;

- o The researcher used probes to obtain additional information; and.

- o The researcher and co-researcher were courteous and professional during and at the end of the interview. (pp. 217-218)

Languages Used During Data Collection

Mali, a former French colony, uses French as the official language. Therefore, the survey instrument was translated into French by the Center of Languages (*Centre des Langues*) in Bamako, Mali. A second panel of experts ensured the content and face validity of the French version of the instrument. This panel included three SAFE officials (national and international SAFE coordinators) and two SAFE faculty members at the Rural Polytechnic Institute/Education and Applied Research Institute. The researcher, a Malian, is also a French speaker. The focus group interviews were conducted in French.

Data Analysis

Quantitative Data Analysis

Descriptive statistics, including frequencies, percentages, modes, means, standard deviations, mean differences, and correlation coefficients, were calculated for data derived from the survey instrument, where appropriate.

On the survey instrument, different types of response scales, including nominal, ordinal, and interval scale items were used to collect participants' responses. Participants were asked to check one option for each response item or, in the case of one item, rank six domains. Descriptive statistics were calculated using the Statistical Package for the Social Sciences (SPSS, version 16). For the summated-rating response scales used in the

survey instrument, i.e., five point, "Likert-type," the "real limits" were "1" = 1.00 to 1.49;

"2" = 1.50 to 2.49; "3" = 2.50 to 3.49; "4" = 3.50 to 4.49; "5" = 4.50 to 5.00.

Correlational analyses were conducted to describe the magnitude of selected

relationships. Creswell (2005) explained that, "Statistics can be challenging and that

calculating statistics is only one step in the process of analyzing data. The analysis also

involved preparing data for analysis, running the analysis, reporting results, and

discussing them" (p. 174). Based on Creswell's explanation, the study's quantitative data

analysis included the steps described in the following sections.

Preparation and Organization of Data before Analysis

The participants completed the survey instrument by hand. Accordingly, the

researcher hand-entered participants' responses into a SPSS data file.

Scoring Data and Creating a Score Book

The participants' responses were entered into a SPSS data file for analysis. A

numeric score (value) was assigned to each response category or choice. The following

codebook (see below) is an example of what was used for entering data correctly in the

SPSS data file.

Model of Codebook used for Entering Data in the Researcher's SPSS Data file

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Variable 1. ID: the identification number was assigned to each questionnaire according to the location of the participant: 101 to *n* participants from Kayes region; 201 to *n* participants from Koulikoro, 301 to *n* participants from Sikasso; 401 to *n* participants from Ségou; 501 to *n* participants from Mopti; 701 to *n* participants from Tombouctou; 801 to participant from Kidal; 901 to *n* participants from District of Bamako.

Variable 2. Geographical location of participant (administrative regions): 1 = Kayes; 2 = Koulikoro; 3 = Sikasso; 4 = Ségou; 5 = Mopti; 6 = Gao; 7 = Mopti; 8 = Kidal; 9 = District of Bamako

Variable 3. Change in clients practices: 1 = "No"; 2 = "Uncertain"; 3 = "Yes"

Variable 4. Impact of training domains on client's practices: 1 = "lowest impact"; 2 = "low impact"; 3 = "fair impact"; 4 = "moderate impact"; 5 = "high impact"; 6 = "highest impact"

Variable 5. Training's impact overall: 1 = "lowest impact"; 2 = "low impact"; 3 = "average impact"; 4 = "high impact"; 5 = "highest impact"

Data Entry

The data were entered in a SPSS spreadsheet with each row holding the responses for one subject and each column holding the information for one variable. The data were checked visually for missing scores.

Qualitative Data Analysis

Qualitative data analysis consisted of analyzing graduates' responses to open-ended questions found in the survey instrument and the transcripts (Appendices F and G) derived from semi-structured focus group interviews.

Analysis of Graduates' Answers to Open-Ended Questions: Participants' answers to open-ended questions on the survey instrument were analyzed for narrative meaning and compiled based on recurrent themes (Appendix F) (Creswell, 2005; Krueger, 1994).

Analysis of Semi-Structured Focus Group Interview Data (Appendix G): Krueger (1994) described thoroughly factors affecting the strategy for analyzing focus group data. He explained that in analyzing focus group data, the researcher should first reflect on the purpose of the study, and then the resources available, but to also consider the implications of the focus group questions which will affect the choice of a data analysis strategy. Four focus group data analysis strategies are available to researchers: transcript-based, audio tape-based, note-based, and memory-based analyses (Krueger, 1994). In the present study, the audio tape-based analysis was used to store data and then retrieve it for analysis. According to Krueger, the process of audio tape-based analysis involves the following steps:

> 1) gather audio tapes and field notes by category, 2) review field notes by category, 3) enter reduced transcript in computer, 4) look for emerging themes (by questions and then overall), 5) see what are left out and consider revision, 6) prepare the draft report, and begin with most important questions. (p. 157)

In reporting focus group interview results, Krueger (1994) discussed written, oral, or a combination of both forms. In this study, the researcher used the written format, which is typically narrative style. As explained by Krueger (1994), the narrative format uses quotes in addition to complete sentences. He stressed, the written report should be clear and logical. These criteria were considered in the final reporting of the focus group results. As stated already, in this triangulation mixed methods approach, the semi-structured focus group interview followed the survey instrument (Appendix B) portion of the study closely. By using the focus group interview method, the participants may have

provided a more in-depth understanding of their perceptions of the SAFE training

program, especially as it related to SEPs.

As described by Krueger (1994), the researcher's report of the interviews includes

a summary of themes or key points from the participants' discussion of three questions

(Appendix C) and their related recommendations for improving the SAFE training

program. Based on the guidelines provided by Krueger (1994), the researcher's summary

report (Appendix G) of the focus group interviews included the following components:

Introduction: This explained the purpose of the focus group interviews and

described the study participants as well as the locations where the focus group interviews

were conducted and the process followed.

Study findings: This describes the main problem or question the study addressed

and for which it was finding a solution or an answer (i.e., How effective was the SAFE

training program in terms of competence acquisition regarding the SEPs experience?

What difficulties and constraints did the SAFE training participants encounter in their

experience of SEPs? What should be the future direction of the SEPs component within

the SAFE training program in upgrading the skills of Extension educators, and thereafter

improving their services and ensuring food security in Mali? [Appendix C]). All repeated

themes and sub-themes, as described by Krueger (1994), which emerged during the semi-

structured focus group interviews, were reported.

As recommended by Creswell (2005), to cross-check the themes that emerged

from the transcripts and "validate the accuracy of the findings" (p. 253), the transcripts

and findings were sent to two outside qualitative researchers. One individual was from

the Women's Research Institute at Brigham Young University, Provo, Utah, and the

other was a faculty member in the Department of Agricultural Education, Communications and Leadership at Oklahoma State University, Stillwater. Creswell called this process "external audit" (p. 253). Their observations and recommendations were taken into consideration in editing findings derived from the focus group interviews.

Creswell also explained that accuracy of the findings could be checked through triangulation. He stated,

> The inquirer examines each information source and finds evidence to support a theme. This ensures that the study will be accurate because the information draws on multiple sources of information or individuals. In this way, it encourages the researcher to develop a report that is both accurate and credible. (p. 252)

The themes that emerged from the four interview transcripts were supported by the perceptions of the 21 SAFE graduates who participated in the semi-structured focus group interviews, which were conducted by the researcher (Creswell, 2005; Guba & Lincoln, 1989).

CHAPTER IV

FINDINGS

The findings include three major sections: findings of the study's survey questionnaire, findings of the semi-structured focus group interviews, and a comparison of quantitative and qualitative data findings regarding graduates perceptions on SEPs. Each section consists of several sub-sections:

The first section, findings of the survey questionnaire, presents 17 sub-sections: 1) selected personal and professional characteristics of study participants, 2) graduates' views on the SAFE training program and its impact, 3) perceptions of SAFE graduates on the number of clients adopting improved technologies or practices before and after training, 4) a comparison of graduates' "before" and "after" perceptions regarding their clients' use of plant and soil nutrient management practices, 5) a comparison of graduates "before" and "after" perceptions regarding their clients' use of other inputs and improved practices, 6) graduates' views on the importance of reasons for clients' increased adoption of improved inputs and practices, 7) graduates' level of agreement with selected aspects of the provision of extension services and their clients' increased adoption of improved technologies and practices,

8) delivery of extension services to clients and other stakeholders, 9) leading and facilitating Supervised Enterprise Projects (SEPs), 10) constraints ("difficulties") related to the implementation of Supervised Enterprise Projects (SEPs), 11) perceptions of participants about their satisfaction with the SAFE training program, 12) perceptions of participants about their willingness to encourage a colleague to participate in the safe training program, 13) perceptions of graduates on their reasons for joining the SAFE training program and its important aspects, 14) perceptions of graduates on improvements and changes needed in the SAFE training program, 15) perceptions of safe graduates on emerging training needs and modules that should be included in future safe training programs, 16) hierarchical job positions of SAFE graduates before and after SAFE training, 17) associations between selected personal and professional characteristics SAFE graduates, 18) relationships between graduates' selected personal and professional characteristics and their perceptions on aspects of the safe training program, and 19) relationships between selected graduates' perceptions on selected aspects of the SAFE training program.

The second section, findings derived from the semi-structured focus group interviews, includes three sub-sections: 1) introduction, 2) the themes, and 3) the account.

The third section compares quantitative and qualitative findings regarding the SAFE graduates' perceptions on their SEP experiences.

Purpose of the Study

The purpose of this study was to assess graduates' perceptions of the Sasakawa Africa Fund for Extension Education (SAFE) training program in Mali regarding their training experiences and its impact on their professional practice. Graduates' views on

aspects of the training that involved Supervised Enterprise Projects (SEPs) were emphasized. In addition, personal and professional characteristics of the graduates were described so that selected relationships could be examined. Findings will be used to assist in evaluating the SAFE training program's effectiveness and determine if changes are needed in the future.

The study sought to answer five research questions:

1. What were selected personal and professional characteristics of graduates of the SAFE training program?

2. What were the perceptions of SAFE training program graduates regarding their training experience and its impact on their professional practice?

3. What were the SAFE training program graduates' views on various aspects of the training that involved SEPs?

4. Were selected personal and professional characteristics related to graduates' perceptions of the SAFE training program?

5. What were the graduates' views on changes or improvements needed for SAFE training programs in the future?

Section One: Survey Findings

Selected Personal and Professional Characteristics of the Graduates

Based on the responses of 50 participants, it was found that 80% of SAFE

graduates were male and 20% female (Table 5). Table 6 indicates that the majority of

participants were in their late 40s (*mean* = 46.53; *mode* = 48). As indicated in Table 7,

most of the participants were married (93.9%) with a family size of seven to nine

members; and 92% were Muslim (Table 8).

Table 5

Gender Distribution of Study Participants

	f	*%*
Male	40	80.0
Female	10	20.0
Total	50	100.0

Table 6

Age of Study Participants

	N	*M*	*Mode*
Age	49*	46.53	48

*Note. One participant did not answer this question.

Table 7

Marital Status of Study Participants

	f	*%*
Single	2	4.1
Married	46	93.9
Widowed	1	2.0
Total	49	98.0*

Note. One participant did not answer this question.

Table 8

Participants' Religions

	f	*%*
Muslim	46	92.0
Christian	4	8.0
Total	50	100.0

The participants had substantive years of experience in Extension (*mean* = 16.69, *SD* = 8.39; *mode* = 23). Some of the participants had years of experience in fields other than Extension (*mean* = 9.78, *SD* = 7.67; *mode* = 2). Most of the study participants had completed their SAFE training two years earlier, i.e., in 2007 (Table 9).

Table 9

Additional Personal and Professional Characteristics of Study Participants

	N	*M*	*SD*	*Mode*
Number of years of experience in Extension	39*	16.69	8.39	23
Number of years of experience in fields other than Extension	23*	9.78	7.67	2
Years since completing SAFE training program	50	1.92	.78	2

*Note. Not all participants answered these questions.

Regarding the location of participants' service, it is shown in Table 10 that 12% of the SAFE graduates served in Kayes, the first administrative region of Mali; 26% served in Koulikoro, the second administrative region; 10% served in Sikasso, the third administrative region; 20% were posted in Ségou, the fourth administrative region; 8% served in Mopti, the fifth administrative region; 8% were in Tombouctou, the seventh

administrative region; 2% in Kidal, the eighth administrative region; and 14% served in

the District of Bamako, the capitol city of Mali (Table 10).

Table 10

Geographical Locations of Study Participants by Administrative Region

Region Name	Region #	*f*	*%*
Kayes	1	6	12.0
Koulikoro	2	13	26.0
Sikasso	3	5	10.0
Ségou	4	10	20.0
Mopti	5	4	8.0
Tombouctou	7	4	8.0
Kidal	8	1	2.0
District of Bamako	9	7	14.0
Total		50	100.0

Table 11 indicates that 70% of the participants entered the SAFE training program

with a Technician degree and 30% with a University Degree of Seignior Technician

(DUTS). Additionally, 72% had majored in Agriculture, 20% were graduates of Animal

Sciences, 2% had studied Forestry, and 4% were educated in other fields (Table 12).

Table 11

Study Participants' Level of Education at Entry into the SAFE Training Program

	f	*%*
Technician Degree*	35	70.0
University Degree of Seignior Technician (DUTS)*	15	30.0
Total	50	100.0

Note. "Technician" degree (pre high school degree ([*DEF* = nine years] + 4 years of post-secondary education); "DUTS" degree (high school degree [*BAC* = 12 years] + 2 years of post-secondary education)

Table 12

Study Participants' Major Specialization before Entering the SAFE Training Program

	f	*%*
Agriculture	36	72
Animal Sciences	10	20
Forestry	1	2
Other	2	4
Total	49	98.0*

Note. One participant did not answer this question.

Graduates' Views on the SAFE Training Program and Its Impact

The SAFE training program graduates were asked if they perceived that changes in their clients' practices could be attributed to the training they received: nearly two-thirds (66%) answered "Yes" and 6% were "Not sure" (Table 13).

Table 13

SAFE Graduates' Perceptions on Changes Observed in Their Clients' Practices Attributed to Their Training

	f	*%*
Yes	33	66.0
Not sure	3	6.0
No response	14	28
Total	50	100

Participants were also asked to indicate their perceptions of the SAFE training's impact on their overall competence as an Extension educator. Thirty-eight percent of the graduates reported that they perceived the training had the "highest impact" on their overall competence, 54% perceived a "high impact," and 8% perceived only an "average impact" had occurred (Table 14).

Table 14

Graduates' Perceptions of the SAFE Training's Impact on Their Overall Competence as Extension Educators

	f	*%*
Highest impact	19	38.0
High impact	27	54.0
Average impact	4	8.0
Low impact	0	0
Lowest impact	0	0
Total	50	100.0

Scale: 1 = "Lowest impact"; 2 = "Low impact"; 3 = "Average impact"; 4 = "High impact"; 5 = "Highest impact"

The study participants were asked to indicate their perceptions of the training's impact by ranking the impact of the six training domains. It was found that among the six main domains of training, "Extension education principles and methods" had the highest impact; 28 of the 50 participants (56%) ranked this domain the highest. Twenty-one of the 50 participants (42%) ranked "human relation skills" the highest. "Fundamental sciences" was ranked the highest by 13 of the 50 participants (26%) (Table 15). On the other hand,

"technical skills," "practical skills," and "administration, management, and leadership skills" were perceived by participants as having lower impact. These domains had the highest frequency of "lowest" and "low impact" rankings and the fewest participants who ranked them highly (Table 15).

Table 15

Frequencies and Percentages of Graduates' Rankings Regarding the Impact of Their SAFE Training by Domains (N = 50)

	Lowest impact	Low impact	Some impact	Moderate impact	High impact	Highest impact
Extension. ed. principles & methods	3 (6%)	3 (6%)	6 (12%)	7 (14%)	3 (6%)	28 (56%)
Human relation skills	2 (4%)	3 (6%)	4 (8%)	9 (18%)	11 (22%)	21 (42%)
Fundamental Sciences	7 (14%)	7 (14%)	3 (6%)	8 (16%)	12 (24%)	13 (26%)
Administration, management, leadership skills	12 (24%)	8 (16%)	5 (10%)	8 (16%)	9 (18%)	8 (16%)
Practical skills	10 (20%)	13 (26%)	10 (20%)	5 (10%)	5 (10%)	7 (14%)
Technical skills	17 (34%)	5 (10%)	14 (28%)	5 (10%)	4 (8%)	5 (10%)

Note. Due to respondents' inconsistencies in ranking these items, numbers and percentages were greater than 50 and 100% for some columns and less for others. Impact is measured by the relative numbers and percentages. Scale: 1 = "Lowest impact"; 2 = "Low impact"; 3 = "Some impact"; 4 = "Moderate impact"; 5 = "High impact"; 6 = "Highest impact"

The graduates were asked to explain on the survey's open-ended questions why they ranked a given domain the highest (Appendix F). Five themes emerged from their responses: 1) reasons related to rural development and improving productivity, 2) reasons related to their workplace and function, 3) reasons related to the competence and knowledge they acquired during the SAFE training, and 4) reasons related to the profession of Extension.

Reasons Related To Rural Development and Productivity: Participants stated that the domains improved the productivity of farmers and were central to rural development. The knowledge and competence they acquired from these domains enabled them to diagnose the real problems of producers and find participatory solutions to those problems working in tandem with their clients, which catalyzed their rural development initiatives generally.

Reasons Related To Their Workplace and Function: Participants ranked selected domains the highest because of a perceived relationship to their job function and workplace. The participants perceived they had evolved in their work roles. Participants also perceived that these domains were of great utility for their jobs and they made more changes in their workplaces subsequently. The domains were related to graduates' specialties but they perceived their effectiveness therein was limited before the SAFE training.

Reasons Related to the Competence and Knowledge They Acquired During the SAFE Training: Some of the study participants confessed that they had weaknesses in these domains and the training enabled them to meet some of their professional development needs. Other participants stated that the courses provided in the domains, such as animal sciences, plant sciences, rural environment, human relations, and communications,

increased their knowledge, improved their competence, and developed their experience in Extension further. Other graduates perceived that gaps in their initial backgrounds were filled and they were exposed to more versatile experiences.

Reasons Related to the Profession of Extension: The domains related to Extension as their profession were ranked higher because participants perceived improvement in their communication skills. They also expressed the importance of these domains for the professionalism of Extension educators. In addition, they argued for the importance of Extension, because the application of other domains is disseminated through it.

Participants expressed that the domains they ranked as having lower impact on their clients was because they did not observe any impact, or due to a lack of resources (e.g., computers and tractors), or the irrelevance of such domains, or that their SAFE training was not focused on those domains. Some participants indicated that because of time constraints they did not complete the courses provided in those domains. Few of the participants related the lower impact of these domains to the quality of teaching or the effectiveness of teachers who provided those courses. A few of the participants did not observe any impact associated with these domains on their clients' practices simply because they were not involved in Extension after their graduation from the SAFE training. Finally, some study participants asserted that the lower ranked domains were not practical.

Perceptions of SAFE Graduates on the Number of Clients Adopting Improved Technologies or Practices "Before" and "After" Their Training

The "real limits" of the scale used for the following interpretation were 1.00 to 1.49 = "None"; 1.50 to 2.49 = "A few"; 2.50 to 3.49 = "Some"; 3.50 to 4.49 = "Many"; 4.50 to 5.00 = "Nearly all." The training graduates perceived that more of their clients used chemical fertilizer after they received SAFE training (*mean* = 3.54, *SD* = 1.15; *mode* = 4) than did before the training (*mean* = 2.55, *SD* = 1.14; *mode* = 2) (Table 16). They perceived that their clients' use of compost increased as well: after training *mean* = 3.46, *SD* = 1.17; *mode* = 4 and before training, *mean* = 2.32, *SD* = .89; *mode* = 2. The graduates also perceived that more of their clients used green manure after they had received the SAFE training (*mean* = 2.30, *SD* = 1.27; *mode* = 1) than did before (*mean* = 1.55, *SD* = .90; *mode* = 1) (Table 16).

Table 16

Graduates' Perceptions on Their Clients' Use of Plant and Soil Nutrient Management Practices "Before" and "After" the Graduates' Receipt of SAFE Training

	Before SAFE Training				After SAFE Training			
	*N**	*M*	*SD*	*Mode*	*N**	*M*	*SD*	*Mode*
Chemical fertilizer	49	2.55	1.14	2	48	3.54	1.15	4
Compost	47	2.32	.89	2	48	3.46	1.17	4
Green manure	47	1.55	.90	1	40	2.30	1.27	1

*Note. Not all participants responded to these items.
          Scale: 1 = "None"; 2 = "A few"; 3 = "Some"; 4 = "Many"; 5 = "Nearly all"

The study found that more of the graduates' clients used improved seeds after their SAFE training (*mean* = 3.73, *SD* = 1.14; *mode* = 4) than did before the training (*mean* = 2.26, *SD* = .87; *mode* = 2). The study also found that training graduates perceived more clients used improved post-harvest technologies after their SAFE training (*mean* = 3.13, *SD* = 1.17; *mode* = 4) than did before the training (*mean* = 2.00, *SD* = .70; *mode* = 2). In addition, SAFE graduates perceived that more of their clients used improved pest management practices after their SAFE training (*mean* = 2.98, *SD* = 1.20; *mode* = 2) than did before the training (*mean* = 1.81, *SD* = .82; *mode* = 2) (Table 17).

The graduates also held the view that their clients used improved livestock feeding practices more after their SAFE training (*mean* = 3.15, *SD* = 1.33; *mode* = 4) than before the training (*mean* = 2.24, *SD* = .97; *mode* = 2). Additionally, the SAFE graduates perceived that more of their clients used improved breeds of livestock after their SAFE training (*mean* = 3.13, *SD* = 1.44; *mode* = 4) than did before the training (*mean* = 2.09, *SD* = .87; *mode* = 2) (Table 17). The study also showed that the graduates perceived more of their clients used improved bee keeping practices after the SAFE training (*mean* = 2.28, *SD* = 1.38; *mode* = 1) than did before the training (*mean* = 1.56, *SD* = .78; *mode* = 1). However, the graduates perceived "relatively" few clients used improved bee keeping practices even after the training. The results were similar for improved fisheries/aquaculture practices (Table 17).

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Table 17

Graduates' Perceptions on Their Clients' Use of Other Inputs and Improved Practices "Before" and "After" the Graduates' Receipt of SAFE Training

	Before SAFE Training				After SAFE Training			
	N*	*M*	*SD*	*Mode*	*N**	*M*	*SD*	*Mode*
Improv. seeds	47	2.26	.87	2	48	3.73	1.14	4
Improv. post-harvest techno.	46	2.00	.70	2	47	3.13	1.17	4
Improv. pest mgt. practices	48	1.81	.82	2	49	2.98	1.20	2
Improv. livestock feeding practices	46	2.24	.97	2	46	3.15	1.33	4
Improv. breeds of livestock	45	2.09	.87	2	45	3.13	1.44	4
Improv. bee keep.	41	1.56	.78	1	47	2.28	1.38	1
Improv. fisheries/ aqua. practices	45	1.47	.62	1	46	2.17	1.16	1

*Note. Not all participants responded to these items.
Scale: 1 = "None"; 2 = "A few"; 3 = "Some"; 4 = "Many"; 5 = "Nearly all"

A Comparison of Graduates' "Before" and "After" Perceptions
Regarding Their Clients' Use of Plant and Soil Nutrient Management Practices

Table 18 presents a comparison of graduates' perceptions regarding their clients' use of plant and soil nutrient management practices "before" and "after" the graduates had completed the SAFE training program. A paired (dependent) samples *t*-test was used to make the comparisons. Cohen's *d* was computed as a measure of effect size and to express the practical significance of the mean difference. The magnitude of effect sizes are considered small (*d* = .20), medium (*d* = .50), and large (*d* = .80) (Creswell, 2005; Hittleman & Simon, 2002).

Graduates' perceptions of their clients use of plant and soil nutrient management practices after they, the graduates, had completed the SAFE training program were significantly statistically different: use of chemical fertilizer before and after (*mean difference* = .958 , *SE* = .183, *t*(47) = 5.224, *p* = .000, *d* = .84), use of compost before and after SAFE training (*mean difference* = 1.106, *SE* = .123, *t*(46) = 9.028, *p* = .000, *d* = 1.07), use of green manure before and after SAFE training (*mean difference* = .761, *SE* = .136, *t*(45) = 5.589, *p* = .000, *d* = .68) (Table 18). The practical significance of these differences was substantial in all cases. The graduates perceived that more of their clients were using the plant and soil nutrient management practices after they, the graduates, had completed the SAFE training program.

Table 18

A Comparison of Graduates' "Before" and "After" Perceptions Regarding Their Clients' Use of Plant and Soil Nutrient Management Practices: Paired Samples t-Tests

Comparisons	M Diff.	SE	t	df	Sig.*	Cohen's d
Use of chem. fert. before training – Use of chem. fert. after training	.958	.183	5.224	47	.000	.84
Use of compost before training - Use of compost after training	1.106	.123	9.028	46	.000	1.07
Use of green manure before training - Use of green manure after training	.761	.136	5.589	45	.000	.68

Note. Significant difference if $p < .05$. Effect sizes: small ($d = .20$); medium ($d = .50$); large ($d = .80$) (Hittleman & Simon, 2002)

A Comparison of Graduates' "Before" and "After" Perceptions Regarding Their Clients' Use of Other Inputs and Improved Practices

Table 19 presents a comparison of graduates' perceptions regarding their clients' use of other inputs and improved practices: use of improved seeds before and after SAFE training (*mean difference* = 1.468, *SE* = .166, $t(46)$ = 8.835, p = .000, d = 1.42), use of improved pest management practices before and after SAFE training (*mean difference* = 1.167, *SE* = .150, $t(47)$ = 7.785, p = .000, d = 1.13), use of improved post-harvest technologies before and after SAFE training (*mean difference* = 1.174, *SE* = .143, $t(45)$ = 8.182, p = .000, d = 1.23), use of improved breeds of livestock before and after SAFE

training (*mean difference* = 1.044, *SE* = .193, $t(44)$ = 5.406, *p* = .000, *d* = .87), use of improved livestock feeding practices before and after SAFE training (*mean difference* = .844, *SE* = .193, $t(44)$ = 4.371, *p* = .000, *d* = .72), use of improved fisheries/aquaculture practices before and after SAFE training (*mean difference* = .636, *SE* = .134, $t(43)$ = 4.734, *p* = .000, *d* = .68), and use of improved bee keeping practices before and after SAFE training (*mean difference* = .641, *SE* = .178, $t(38)$ = 3.601, *p* = .001, *d* = .57).

Table 19

A Comparison of Graduates' "Before" and "After" Perceptions Regarding Their Clients' Use of Other Inputs and Improved Practices: Paired Samples t-Tests

Comparisons	*M Diff.*	*SE*	*t*	*df*	Sig.*	Cohen's *d*
Use of improv. seeds before training - Use of improv. seeds after training	1.468	.166	8.835	46	.000	1.42
Use of improv. pest. mgt. practices before training - Use of improv.pest mgt pract. After training	1.167	.150	7.785	47	.000	1.13
Use of improv. post-harvest techno. before training - Use of improv. post-harvest techno. after training	1.174	.143	8.182	45	.000	1.23
Use of improv. breeds of livestk. before training - Use of improv. breeds of livestk. after training	1.044	.193	5.406	44	.000	.87
Use of improv. livestock feeding pract. before training - Use of improv. livestock feeding pract. after training	.844	.193	4.371	44	.000	.72
Use of improv. fisheries/aqua. pract. before training - Use of improv. fisheries/aqua. pract. after training	.636	.134	4.734	43	.000	.68
Use of improv. bee keep. before training - Use of improv. bee keep. after training	.641	.178	3.601	38	.001	.57

Note. Significant difference if $p < .05$. Effect sizes: small ($d = .20$); medium ($d = .50$); large ($d = .80$) (Hittleman & Simon, 2002)

Graduates' Views on the Importance of Reasons for Clients' Increased Adoption of
Improved Inputs and Practices

The "real limits" of the scale used for the following interpretation were 1.00 to
1.49 = "No importance"; 1.50 to 2.49 = "Low importance"; 2.50 to 3.49 = "Average
importance"; 3.50 to 4.49 = "Above average importance"; 4.50 to 5.00 = "Great
importance." Regarding the adoption of improved inputs and practices by their clients,
SAFE graduates rated "improved Extension services" as having the most importance
(*mean* = 4.34, *SD* = .79; *mode* = 5), followed by "higher output prices to input costs"
(*mean* = 3.96, *SD* = 1.04, *mode* = 4), "increased input supply" (*mean* = 3.81, *SD* = 1.05;
mode = 4), and "NGOs (free or subsidized inputs)" (*mean* = 3.70, *SD* = 1.33; *mode* = 5)
(Table 20). All four items were in the range of "above average importance." The other
three items were perceived to hold "average importance" as reasons for increased
adoption of improved inputs and practices by clients: "improved access to credit" (*mean*
= 3.48, *SD* = 1.15; *mode* = 4), "improved marketing approaches" (*mean* = 3.19, *SD* =
1.02; *mode* = 3), and "improved infrastructure" (*mean* = 2.89, *SD* = 1.28; *mode* = 3) were
perceived to have nearer "average importance" (Table 20).

Table 20

SAFE Graduates' Perceptions Regarding Importance of Reasons for Increased Adoption of Improved Inputs and Practices by Their Clients

	*N**	*M*	*SD*	*Mode*
Improved Extension Services	47	4.34	.79	5
Higher output prices relative to input costs	45	3.96	1.04	4
Increased input supply	47	3.81	1.05	4
NGOs (free or subsidized inputs)	43	3.70	1.33	5
Improved access to credit	46	3.48	1.15	4
Improved marketing approaches	42	3.19	1.02	3
Improved infrastructure	46	2.89	1.28	3

Note. Not all participants responded to these items.
Scale: 1 = "No importance"; 2 = "Low importance"; 3 = "Average importance"; 4 = "Above average importance"; 5 = "Great importance"

Graduates' Level of Agreement with Selected Aspects of the Provision of Extension
Services and Their Clients' Increased Adoption of Improved Technologies and Practices

The study's participants were asked their level of agreement regarding possible reasons for clients' increased adoption of improved technologies and practices. The "real limits" of the scale used for the interpretation of the findings were 1.00 to 1.49 = "Strongly disagree"; 1.50 to 2.49 = "Disagree"; 2.50 to 3.49 = "Uncertain"; 3.50 to 4.49 = "Agree"; 4.50 to 5.00 = "Strongly agree."

It was found that the graduates "strongly agreed" regarding stronger "Extension-research linkages" (*mean* = 4.62, *SD* = .57; *mode* = 5) being a reason for increased adoption by their clients (Table 21). They "agreed" that other reasons, including "more effective Extension methods" which enabled additional assistance to farmers (*mean* = 4.44, *SD* = .68; *mode* = 5), the "availability of more Extension agents to reach more farmers" (*mean* = 4.33, *SD* = .80; *mode* = 5), "more effective organization and mobilization of farmers" (*mean* = 4.19, *SD* = .77; *mode* = 5), "increased professionalism in the Extension service" (*mean* = 4.06, *SD* = .91; *mode* = 5), "increased private sector Extension interaction" (*mean* = 3.96, *SD* = .95; *mode* = 4), and the role of "more female Extension officers" (*mean* = 3.60, *SD* = 1.00; *mode* = 4), were also factors that led to increased adoption (Table 21).

Table 21

SAFE Graduates' Level of Agreement Regarding Clients' Reasons for Adoption of Improved Technologies and Practices

	*N**	*M*	*SD*	*Mode*
Stronger research Extension linkages	45	4.62	.57	5
More effective Extension methods that enable more meaningful assistance to farmers	48	4.44	.68	5
More Extension agents to reach more farmers	48	4.33	.80	5
More effective organization and mobilization of farmers	47	4.19	.77	5
Increased professionalism in the Extension Service	48	4.06	.91	5
Increased private sector and Extension interaction	47	3.96	.95	4
More female Extension officers	48	3.60	1.00	4

Note. Not all participants responded to these items.
Scale: 1 = "Strongly disagree"; 2 = "Disagree"; 3 = "Uncertain"; 4 = "Agree"; 5 = "Strongly agree"

Delivery of Extension Services to Clients and Other Stakeholders

Table 22 presents participants' provision of various Extension services. Before the SAFE training, the number of demonstrations varied from "none" (indicated by 10% of participants) to "16 or more" (indicated by 28% of participants), with the most frequent number of demonstrations ranging from 6 to 10 (indicated by 30% of participants). After the SAFE training, the number of demonstrations varied from "none"

(indicated by 6% of participants) to "16 or more" indicated as the most frequent number of demonstrations conducted (48% of participants).

Before the SAFE training, the number of group discussions varied from "none" (indicated by 6% of participants) to "16 or more" being the most frequent range indicated by participants (34%). After the SAFE training, the range of group discussions varied from "none" (indicated by 2% of participants) to "16 or more" indicated as the most frequent number of group discussions led by graduates (42%) (Table 22).

Before the SAFE training, 56% of participants did not interact with commodity dealers; 24% interacted with a range of "1 to 5" dealers; 6% interacted with a range of "6 to 10" dealers; 4% interacted with range of "11 to 15" dealers, and 4% with "16 or more." After the training, 30% of participants did not interact with commodity dealers; 28% interacted with a range of "1 to 5" dealers; 22% interacted with a range of "6 to 10" dealers; 8% interacted with range of "11 to 15" dealers, and 6% interacted with "16 or more" dealers (Table 22).

Before the SAFE training, 48% of participants did not interact with traders; 22 % interacted with "1 to 5" traders; 10% interacted with "6 to 10" traders; 2% interacted with "11 to 15" traders, and 12% with "16 or more." After the training, 28% of participants did not interact with traders; 24% interacted with "1 to 5" traders; 18% interacted with "6 to 10" traders; 8% interacted with "11 to 15" traders; and 16% interacted with "16 or more" traders (Table 22).

Table 22

Comparison of Graduates' Perceptions Regarding the Frequency of Extension Services and Stakeholder Interactions Delivered Annually Before and After Their SAFE Training

	Before			After	
	f	*%*		*f*	*%*
Demonstrations					
None	5	10.0		3	6.0
1 to 5	12	24.0		6	12.0
6 to10	15	30.0		7	14.0
11 to 15	4	8.0		10	20.0
16 or more	14	28.0		24	48.0
Total	50	100.0		50	100.0
Group Discussions					
None	3	6.0		1	2.0
1 to 5	12	24.0		7	14.0
6 to10	9	18.0		8	16.0
11 to 15	6	12.0		10	20.0
16 or more	17	34.0		21	42.0
Total	47*	94.0		47*	94.0
Dealer Interactions					
None	28	56.0		15	30.0
1 to 5	12	24.0		14	28.0
6 to 10	3	6.0		11	22.0
11 to 15	2	4.0		4	8.0
16 or more	2	4.0		3	6.0
Total	47*	94.0		47*	94.0
Trader Interactions					
None	24	48.0		14	28.0
1 to 5	11	22.0		12	24.0
6 to 10	5	10.0		9	18.0
11 to 15	1	2.0		4	8.0
16 or more	6	12.0		8	16.0
Total	47*	94		47*	94.0

Note. Not all participants answered this question.

As presented in Table 23, the study participants indicated that the number of women clients they contacted annually varied from "none" (indicated by 8% of the participants) to "more than 100" (18% of participants), with the most frequent number of women clients contacted annually ranging from 1 to 20, as indicated by 32% of the participants.

Based on responses to three open-ended questions (Appendix F), participants expressed that the gender-related information provided to female clients was focused on their daily duties and personal interests. Information delivered to women was also related to their organizing into associations and cooperatives to increase the likelihood of accessing microloans. Accordingly, most SAFE graduates indicated that they disseminated information about microloan opportunities and management to women. The study participants affirmed that women were also interested in receiving information about poverty alleviation. As a result, the SAFE graduates shared information about income-generating activities, food processing, commercialization, and marketing. In addition, some participants reported that they provided information on literacy, gender issues, and health frequently.

The participants were asked if they interacted differently with female clients than males. The majority of participants did not list any significant differences; however, some participants reported they interacted differently with women because of cultural differences, or to "ease the mind" of the husbands of the married women. A few SAFE participants said they were more courteous and more patient with women, and also that they used different communication techniques with women. One of the participants explained that he went through the husbands to reach their wives.

Table 23

The Number of Women Clients Contacted by SAFE Graduates Annually for Service Delivery

Number of Women Contacted	*f*	*%*
None	4	8.0
1 to 20	16	32.0
21 to 40	7	14.0
41 to 60	5	10.0
61 to 80	5	10.0
81 to 100	4	8.0
More than 100	9	18.0
Total	50	100.0

Leading and Facilitating Supervised Enterprise Projects (SEPs)

Participants were asked to rate their leading and facilitating competencies (i.e., the pillars of experiential learning) regarding the conducting of SEPs with their clients. The "real limits" of the scale used for the interpretation of the findings were 1.00 to 1.49 = "Low competence"; 1.50 to 2.49 = "Some competence"; 2.50 to 3.49 = "Average competence"; 3.50 to 4.49 = "Above average competence"; 4.50 to 5.00 = "High competence." They rated their ability to use "problem solving" and "learning by doing" skills the highest; the respective means were 4.18 (*SD* = .73; *mode* = 4) and 4.16 (*SD* = .75*; mode* = 4), which reflected "above average competence" (Table 24). In addition, they rated their skills in "developing and implementing rural projects" (*mean* = 4.04, *SD*

= .71; *mode* = 4) and "learning in real-life contexts" (*mean* = 4.02, *SD* = .83; *mode* = 4) slightly lower, but still perceived their competence as "above average" (Table 24).

The participants were also asked to rate how frequently they used their leading and facilitating competencies when working with clients to implement SEPs (Table 24). The "real limits" of the scale used for the interpretation of the findings were 1.00 to 1.49 = "Never"; 1.50 to 2.49 = "Not very frequently"; 2.50 to 3.49 = "Sometimes"; 3.50 to 4.49 = "Frequently"; 4.50 to 5.00 = "Very frequently." The frequency of using the four competencies was rated as follows: "learning by doing" (*mean* = 4.22, *SD* = .74; *mode* = 3); competence to help clients "learn in real-life contexts" (*mean* = 4.14, *SD* = .68; *mode* = 3); "problem solving" (*mean* = 4.10, *SD* = .71; *mode* = 3); and ability in "developing and implementing rural projects" (*mean* = 4.06, *SD* = .80; *mode* = 3). The study's findings revealed that participants used the four competencies presented "frequently."

Table 24

SAFE Graduates' Perceptions of Their Competence Regarding the Use of Supervised Enterprise Projects (SEPs) and Frequency of Using That Training Approach with Clients

	Competence				Frequency			
	*N**	*M*	*SD*	*Mode*	*N**	*M*	*SD*	*Mode*
Rate your competence to help clients learn by using a problem solving approach	49	4.18	.73	4	49	4.10	.71	3
Rate your competence to use "learning by doing" practices	49	4.16	.75	4	49	4.22	.74	3
Rate your competence to help clients learn by developing and implementing rural projects	49	4.04	.71	4	49	4.06	.80	3
Rate your competence to help clients learn in real-life context	49	4.02	.83	4	49	4.14	.68	3

**Note*. Not all participants answered these questions.
Scale for Competence: 1 = "Low competence"; 2 = "Some competence"; 3 = "Average competence"; 4 = "Above average competence"; 5 = "High competence"
Scale for Frequency: "1 = "Never"; 2 = "Not very frequently"; 3 = "Sometimes"; 4 = "Frequently"; 5 = "Very frequently"

Constraints ("Difficulties") Related to the Implementation of Supervised Enterprise
Projects (SEPs)

The "real limits" of the scale used for the interpretation of the findings were 1.00 to 1.49 ="No difficulty"; 1.50 to 2.49 = "Some difficulty"; 2.50 to 3.49 = "Average difficulty"; 3.50 to 4.49 = "High difficulty"; 4.50 to 5.00 = "Extreme difficulty." The SAFE graduates perceived that cost was the most difficult constraint to overcome (*mean* = 3.24, *SD* = 1.09; *mode* = 3) when implementing SEPs with clients (Table 25). It was rated as presenting "average difficulty." Four factors, availability of infrastructure to implement SEPs (*mean* = 2.93, *SD* = 1.08; m*ode* = 3), time devoted to SEPs (*mean* = 2.72, *SD* = .97; *mode* = 2), access to experts to help develop SEPs (*mean* = 2.69, *SD* = 1.50; *mode* = 1), and freedom for women to implement SEPs (*mean* = 2.67, *SD* = 1.21; *mode* = 2), were also perceived to present "average difficulty" (Table 25). Decision-making regarding the SEPs (*mean* = 2.36, SD = .96; *mode* = 2), and the process of getting appropriate SEPs (*mean* = 2.27, *SD* = 1.05; *mode* = 3) were rated as representing "some difficulty" to overcome (Table 25).

Table 25

SAFE Graduates' Perceptions Regarding Constraints Related to Implementing
Supervised Enterprise Projects (SEPs) with Their Clients

	N	*M*	*SD*	*Mode*
Cost of SEPs	49*	3.24	1.09	3
Availability of infrastructure to implement SEPs	46*	2.93	1.08	3
Time devoted to SEPs	50	2.72	.97	2
Access to experts to help develop SEPs	49*	2.69	1.50	1
Freedom for women to implement SEPs	49*	2.67	1.21	2
Decision-making regarding SEPs	47*	2.36	.96	2
Process of getting appropriate SEPs	45*	2.27	1.05	3

Note. Not all participants answered this question.
Scale: 1 = "No difficulty"; 2 = "Some difficulty"; 3 = "Average difficulty";
4 = "High difficulty"; 5 = "Extreme difficulty"

Perceptions of Participants about Their Satisfaction with the SAFE Training Program

The "real limits" of the scale used for the interpretation of the satisfaction findings were 1.00 to 1.49 = "Highly dissatisfied"; 1.50 to 2.49 = "Dissatisfied"; 2.50 to 3.49 = "Neutral"; 3.50 to 4.49 = "Satisfied"; 4.50 to 5.00 = "Highly satisfied." The graduates were "satisfied" with their SAFE training (*mean* = 4.38, *SD* = 1.04, *mode* = 5) (Table 26).

Table 26

Graduates' Overall Level of Satisfaction with Their SAFE Training

	N	*M*	*SD*	*Mode*
Overall satisfaction with SAFE training program experience	50	4.38	1.04	5

Scale: 1 = "Highly dissatisfied"; 2 = "Dissatisfied"; 3 = "Neutral"; 4 = "Satisfied"; 5 = "Highly satisfied"

Perceptions of Participants about Their Willingness to Encourage a Colleague to Participate in the SAFE Training Program

The "real limits" of the scale used for the interpretation of the findings were 1.00 to 1.49 = "Definitely no"; 1.50 to 2.49 = "Probably no"; 2.50 to 3.49 = "Not sure"; 3.50 to 4.49 = "Probably yes"; 4.50 to 5.00 = "Definitely yes." The SAFE graduates were asked if they would encourage a colleague to participate in the SAFE training program. The participants' responses were overwhelmingly "definitely yes" (*mean* = 4.86, *SD* = .35; *mode* = 5) (Table 27).

Table 27

Graduates' Willingness to Encourage a Colleague to Participate in the SAFE Training Program

	N	M	SD	Mode
Would you encourage a colleague to participate in the SAFE training program?	50	4.86	.35	5

Scale: 1 = "Definitely no"; 2 = "Probably no"; 3 = "Not sure"; 4 = "Probably yes"; 5 = "Definitely yes"

Perceptions of Graduates on Their Reasons for Joining the SAFE Training Program and Its Important Aspects

The participants were asked via the survey instrument (Appendix B) to list in "order of priority" their reasons for joining the SAFE training program. A summary of the primary reasons or motivations that were listed included, personal satisfaction, promotion of change in rural areas, having a higher job position, building capacity, improvement of their relationships with others, the relevance of the SAFE training curriculum to their career and job function, and receiving more money as a direct benefit of a higher educational level. These were reasons the participants identified as holding the highest priority.

When the graduates were asked to express the most important aspect of their training they would share with colleagues who were considering participating in the SAFE training program, their responses revealed six themes: 1) capacity building in the Extension field, 2) knowledge acquired during their SAFE training, 3) job position changes and advanced educational level, 4) relationships built with others, 5) SEPs, and 6) the seriousness and reliability of the SAFE training program.

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1) *Capacity Building in the Extension Field*: As a reason for joining the SAFE program, most of the SAFE graduates confirmed that they would discuss capacity building in Extension (i.e., Extension program conception and implementation) with their colleagues.

2) *Knowledge Acquired During Their SAFE Training*: Social sciences, rural sociology, communications, technical competence, leadership/management, and problem solving skills were important aspects of the program they would share with colleagues.

3) *Job Position Changes and Advanced Educational Level*: The SAFE graduates indicated that they would discuss with their colleagues expectations for career advancement, i.e., attainment of a higher position and higher education level, as reasons for joining the SAFE program.

4) *Relationships Built With Others*: Participants indicated that they would discuss the relationships built with others as a result of the additional capacity they acquired regarding Extension programs, along with the additional knowledge they acquired in various aspects of the social sciences.

5) *Supervised Enterprise Projects (SEPs)*: This unique aspect of the SAFE training program is an important topic that the graduates would discuss with their colleagues. The study participants also indicated that SEP-related field trips were worth discussing with colleagues.

6) *Seriousness and Reliability of the SAFE Training Program*: The participants indicated that this aspect could be denoted by the program's teaching quality, in some cases, the quality of curriculum, the availability of teachers, and the diversity of its topics and modules.

The graduates emphasized the abovementioned aspects particularly.

Perceptions of Graduates on Improvements and Changes Needed in the SAFE
Training Program

The study participants indicated on the survey instrument that the following

improvements and changes were needed in the SAFE training program:

1. Include as a new course, add to an existing course, or increase trainees' access or exposure
    1.1. Elaboration and Implementation of projects
        1.1.1. Commercialization; Marketing
        1.1.2. Extend SEPs to one year
        1.1.3. Project development, analysis, and evaluation
    1.2. Fundamental Sciences
        1.2.1. Animal production; Animal Sciences
        1.2.2. Agro climatology
        1.2.3. Biology
        1.2.4. Environmental protection
    1.3. Research methodology; Statistics
    1.4. Social sciences; Sociology
        1.4.1. Audiovisual materials
        1.4.2. Communications
        1.4.3. Extension
        1.4.4. Leadership; Management; Human Resource Management
    1.5. Others
        1.5.1. Administrative writing
        1.5.2. Computers and related tools, including portables and the Internet
        1.5.3. Concept of sustainable development
        1.5.4. Economy
        1.5.5. English
        1.5.6. Extend SEPs to one year duration
        1.5.7. Family economics
        1.5.8. .Technical modules
2. Continuing education for the SAFE training program's teachers; in-service training for teachers; punctuality (of teachers)
3. Easy access to further education; provide in-service training; offer master's and doctoral degrees
4. Effective mechanisms for the recruitment of SAFE graduates into Extension
5. Employ *MVA* graduates as SAFE program trainers
6. Equip trainees with portable computers
7. Extend the SAFE program to include higher degrees if needed by the participant

8. Improve supervision during the practical phases of SAFE training
9. Improve learning conditions of trainees
10. Improve administration of the SAFE program
11. Improve involvement of governmental institutions in the SAFE program
12. Improve living conditions of participants in the dormitories
13. Increase the number of participants; improve selection process of participants generally; recruit more women in the program
14. Include exchange programs with other countries; field trips; outside classroom activities
15. Reinforce link between research and Extension
16. Promote LMD (Bachelor's-Master's-Doctorate) higher education reform
17. Lobby for recruitment of women as civil Extension workers; ease recruitment tests for women
18. More means/resources for SEPs; additional financial support for SAFE participants
19. More practices
20. More theories
21. Pay a stipend to participants during training
22. Promote the "Technological Village"
23. Provide scholarships for women trainees
24. Provide support materials for the courses
25. Remove the age limit for admission into the program
26. Respect for participants

Perceptions of SAFE Graduates on Emerging Training Needs and Modules That Should be Included in Future SAFE Training Programs

The study participants indicated on the survey instrument (Appendix B) that the following topics or courses be included in future SAFE training programs:

1. Agriculture/Botany/Hydrology/Irrigation
2. Aquaculture
3. Biotechnology
4. Biodiversity
5. Cooperation
6. Diagnosis and prophylaxis of animal diseases
7. English
8. French
9. Genetics/GMO
10. Marketing
11. Organic agriculture

12. Pastoralist training
13. Plant pathology
14. Psychology
15. Rural economy
16. Rural sociology
17. Soil sciences
18. Sustainable development
19. Topography
20. Tractor driving

Hierarchical Job Positions of SAFE Graduates Before and After SAFE Training

Nine study participants indicated that they held some form of a managerial or administrative position or title before their SAFE training, i.e., "head of sector," "deputy head," or "training manager." However, after having completed the training, 32 participants stated they held a managerial or administrative position or title.

Associations Between Selected Personal and Professional Characteristics of the SAFE Graduates

To examine associations between selected personal and professional characteristics of the SAFE graduates either phi or Cramer's *V* was calculated. If both variables were binominal, a phi coefficient was computed to describe the strength of association. In cases where at least one of the variables had more than three categories of response, Cramer's *V* was computed.

A significant association existed between gender and graduates' marital status (phi = .504, sig. 000). Of the two groups, only female graduates were "not married." All male graduates were married but nearly one-third of the female graduates indicated they were not (Table 28).

Table 28

Association of Gender and Graduates' Marital Status

Gender	Marital Status		Total	phi* sig.
	Not Married	Married		
Female	3	7	10	
Male	0	39	39	
Total	3	46	49	.504 .000

*Note. Phi ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship.
Phi = .10 (small effect size); phi = .30 (medium effect size); phi = .50 (large effect size (Green, Salkind, & Akey, 1997)

A significant association existed between a graduate's gender and his or her "educational level at entry in the SAFE program" (phi = .546, sig. = .000). More of the female graduates held a "DUTS" degree (high school degree [BAC = 12 years] + 2 years of post-secondary education) than did males, who held a "Technician" degree (pre high school degree [DEF = nine years] + 4 years of post-secondary education) predominantly at entry in the SAFE program (Table 29). About four-in-five males held only a "Technician" degree at that time.

Table 29

Association of Gender and Graduate's "Educational Level at Entry in SAFE Training Program"

Gender	Educational Level at Entry In SAFE Training Program		Total	phi* sig.
	Technician	DUTS		
Female	2	8	10	
Male	33	7	40	
Total	35	15	50	.546 .000

*Note. Phi ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship.
Phi = .10 (small effect size); phi = .30 (medium effect size); phi = .50 (large effect size) (Green, Salkind, & Akey, 1997)

A significant association was found between a SAFE graduates' gender and farm ownership (phi = .441, sig. = 002) (Table 30). Males were much more likely to indicate ownership.

Table 30

Association of Gender and Graduates Owning a Farm

Gender	Own a Farm		Total	<u>phi*</u> sig.
	No	Yes		
Female	9	1	10	
Male	14	26	40	
Total	23	27	50	<u>.441</u> .002

Note. Phi ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship.
Phi = .10 (small effect size); phi = .30 (medium effect size); phi = .50 (large effect size) (Green, Salkind, & Akey, 1997)

The association between gender and whether a graduate was "still an Extension educator" was significant as well (phi = .416, sig. = .003) (Table 31). One-half of the female graduates were no longer Extension educators but only one-in-ten males had left Extension as their profession.

Table 31

Association of Gender and Whether a Graduate was "Still an Extension Educator"

Gender	Still an Extension Educator		Total	phi* sig.
	No	Yes		
Female	5	5	10	
Male	4	36	40	
Total	9	41	50	.416 .003

*Note. Phi ranges in value from -1 to +1. Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship.
Phi = .10 (small effect size); phi = .30 (medium effect size); phi = .50 (large effect size) (Green, Salkind, & Akey, 1997)

A graduate's gender was also significantly associated with his or her "major before entering the SAFE training program" (Cramer's V =.419, sig = .035) (Table 32). Regardless of gender, graduates were much more likely to have majored in "Agriculture" as post-secondary students. However, five of the nine female graduates, who responded to this question, had majored in "Animal Sciences."

Table 32

Association of Gender and a Graduate's "Major before Entering the SAFE Training Program"

Gender	Major				Total	Cramer's V* sig.
	Agriculture	Animal Sciences	Forestry	Other		
Female	4	5	0	0	9	
Male	32	5	1	2	40	
Total	36	10	1	2	49	.419 .035

Note. Cramer's *V* ranges in value from -1 to +1
Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Cramer's *V* = .10 (small effect size); Cramer's *V* = .30 (medium effect size); Cramer's *V* = .50 (large effect size) (Green, Salkind, & Akey, 1997)

A significant association existed between whether a graduate was "still an Extension educator" and his or her major before entering the SAFE training program (Cramer's *V* =.480, sig. = 010) (Table 33). Nearly all of the graduates who indicated they had majored in "Agriculture" were practicing Extentionists. However, four-in-ten of the "Animal Sciences" majors had left Extension as their career field.

Table 33

Association of Whether "Still an Extension Educator" and Graduates' "Major before Entering the SAFE Training Program"

Still an Extension Educator	Major before Entering the SAFE Training Program				Total	Cramer's V sig.
	Agriculture	Animal Sciences	Forestry	Other		
No	3	4	1		8	
Yes	33	6	0	2	41	
Total	36	0	1	2	49	.480 .010

Note. Cramer's V ranges in value from -1 to +1
Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Cramer's V = .10 (small effect size); Cramer's V = .30 (medium effect size); Cramer's V = .50 (large effect size) (Green, Salkind, & Akey, 1997)

No significant association was found between graduates' "educational level at entry in the SAFE training program" and his or her "major before entering the SAFE training program" (Cramer's V = .194, sig. = .604) (Table 34). SAFE graduates of a particular major were not represented disproportionately in a higher (DUTS) or lower (Technician) educational level on entrance in the SAFE training program.

Table 34

Association of "Educational Level at Entry in the SAFE Training Program" and a Graduate's "Major before Entering the SAFE Training Program"

Educational Level	Major				Total	Cramer's V* sig.
	Agriculture	Animal Sciences	Forestry	Other		
Technician	26	6	1	2	35	
DUTS	10	4	0	0	14	
Total	36	10	1	2	49	.194 .604

Note. Cramer's V ranges in value from -1 to +1
Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Cramer's V = .10 (small effect size); Cramer's V = .30 (medium effect size); Cramer's V = .50 (large effect size) (Green, Salkind, & Akey, 1997)

A significant association existed between gender and a graduate's service location (Cramer's V = .512, sig. = .004) (Table 35). Most female graduates were located either in the region of Koulikoro or the District of Bamako, i.e., all but one. This association demonstrated that female participants were located disproportionately nearer the capitol city of Bamako than were male graduates.

Table 35

Association of Gender and a Graduate's Service Location

Gender	Service Location[a]				Total	Cramer's *V** sig.
	Tombouctou & Kidal	Mopti	Kayes, Sikasso, & Ségou	District of Bamako & Koulikoro		
Female	0	0	1	9	10	
Male	5	4	20	11	40	
Total	5	4	21	20	50	<u>.512</u> .004

*Note. Cramer's *V* ranges in value from -1 to +1
Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Cramer's *V* = .10 (small effect size); Cramer's *V* = .30 (medium effect size); Cramer's *V* = .50 (large effect size) (Green, Salkind, & Akey, 1997)
[a]Groupings of service locations were based on climatic and agronomic similarities as well as proximal distance from the capitol city of Bamako.

Relationships Between Graduates' Selected Personal and Professional Characteristics and Their Perceptions on Aspects of the SAFE Training Program.

The association between graduates' perceptions of "changes in clients' practices attributed to SAFE training" and their "service location" was not significant (Cramer's *V* = .378, sig. = .162) (Table 36). A graduate's service location in Mali was not associated with whether he or she perceived clients changed their practices after the graduate had completed SAFE training.

Table 36

Association of Graduates' Perceptions on "Changes in Clients' Practices Attributed to SAFE training" and Their Service Location

Changes in clients' practices	Service Location[a]				Total	Cramer's V* sig.
	Tombouctou & Kidal	Mopti	Kayes, Sikasso, & Ségou	District of Bamako & Koulikoro		
No	0	0	0	0	0	
Uncertain	0	0	3	0	3	
Yes	4	3	11	15	33	
Total	4	3	14	15	36	.378 .162

*Note. Cramer's V ranges in value from -1 to +1
Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Cramer's V = .10 (small effect size); Cramer's V = .30 (medium effect size); Cramer's V = .50 (large effect size) (Green, Salkind, & Akey, 1997)
[a]Groupings of service locations were based on climatic and agronomic similarities as well as proximal distance from the capitol city of Bamako.

The association between "still an Extension educator" and "overall satisfaction with SAFE training program experience" was not significant (Cramer's V = .352, sig. = .103) (Table 37). A graduate's commitment to the profession of Extension post-training was not associated with their "overall satisfaction" regarding the SAFE training program experience.

Table 37

Association of Whether a Graduate was "Still an Extension Educator" and Their "Overall Satisfaction with the SAFE Training Program Experience"

Still an Extension Educator	Overall Satisfaction					Total	Cramer *V* sig.
	Highly Dissatisfied	Dissatis-fied	Uncertain	Satis-fied	Highly Satisfied		
No	0	1	0	4	4	9	
Yes	3	0	0	12	26	41	
Total	3	1	0	16	30	50	.352 .103

Note. Cramer's *V* ranges in value from -1 to +1
Values near 0 indicate a very weak relationship, and values near 1 indicate a very strong relationship. Cramer's *V* = .10 (small effect size); Cramer's *V* = .30 (medium effect size); Cramer's *V* = .50 (large effect size) (Green, Salkind, & Akey, 1997)

Point biserial correlation coefficients were calculated to describe relationships between selected personal and professional characteristics of SAFE graduates, which were dichotomous and discrete (Field, 2005), and their perceptions of the training's overall impact and their overall satisfaction with the SAFE training. Davis's Conventions (as cited in Miller, 1994) were used to describe the magnitude of the correlation coefficients: "perfect" ($r_{pb} = 1$), "very high" ($r_{pb} = .70$ to .99), "substantial" ($r_{pb} = .50$ to .69), "moderate" ($r_{pb} = .30$ to .49), "low" ($r_{pb} = .10$ to .29), and "negligible" ($r_{pb} = .01$ to .09).

A negligible relationship between graduates' "overall satisfaction with the SAFE training program" and gender (r_{pb} = .058) was revealed. In other words, gender was not a "predictor" of satisfaction with the training (Table 38).

A negative and low relationship was found between "overall satisfaction with the SAFE training program" and graduates' "educational level at entry in the SAFE program" (r_{pb} = -.114). The graduates' level of satisfaction was not statistically significantly related to their level of education when they entered the SAFE training program (Table 38).

Negligible relationships existed between graduates' "overall satisfaction with the SAFE training program" and the variables "own a farm" (r_{pb} = .010) and "still an Extension educator" (r_{pb} = .071) (Table 38). Graduates' satisfaction with their SAFE training was not associated with farm ownership or staying in the profession of Extension after completing their SAFE training.

Table 38

Relationships* between Selected Personal and Professional Characteristics of Graduates and Their Perceptions on Overall Satisfaction with the SAFE Training Program Experience (N = 50)

	Overall Satisfaction	Sig.
Gender	.058	*ns*
Educational level at entry in the SAFE training program	-.114	*ns*
Own a farm	-.010	*ns*
Still an Extension educator	.071	*ns*

*Note. Point biserial correlation coefficient; one-tailed

When the same four independent variables mentioned immediately above—
gender, educational level at entrance into the SAFE training program, farm ownership,
and "still an Extension educator"— were correlated with graduates' perceptions of the
training's impact, all associations were low and positive or low and negative (Table 39).
None of the eight correlations were statistically significant ($p < .05$).

Table 39

Relationships* between Selected Personal and Professional Characteristics of Graduates
and Their Perceptions on the SAFE Training's Impact (N = 50)

	Changes in Clients' Practices	Sig.	Training's Impact on Overall Competence	Sig.
Gender	-.135	*ns*	.164	*ns*
Educational level at entry in the SAFE training program	.187	*ns*	.108	*ns*
Own a farm	-.135	*ns*	-.139	*ns*
Still an Extension educator	-.135	*ns*	-.111	*ns*

*Note. Point biserial correlation coefficient; one-tailed

Relationships Between Graduates' Selected Perceptions on Selected Aspects of
The SAFE Training

Additional correlation coefficients (i.e., Spearman Rank Order) were computed
between graduates' perceptions of changes in clients' behaviors attributed to their SAFE
training and clients' use of plant and soil nutrient management practices. A negligible
relationship was found between graduates' perceived "changes in clients' behaviors"

generally and their "use of improved plant and soil nutrient management practices" before the graduates' training ($r_s = .094$) (Table 40). On the other hand, a moderate, positive relationship was found between graduates' perceived "changes in clients' behaviors" generally and their "use of improved plant and soil nutrient management practices" after the graduates' training ($r_s = .383$) (Table 40). This relationship was significant at an alpha level of .05. In addition, a low, positive relationship was found between graduates' perceived "changes in clients' behaviors" generally and their "use of other improved inputs and practices" before their training ($r_s = .136$) (Table 40). However, a moderate, positive relationship existed between graduates' perceived "changes in clients' behaviors" generally and their "use of other improved inputs and practices" after the graduates' training ($r_s = .397$) (Table 41). This relationship was significant at an alpha level of .05.

Table 40

Relationships[a] between Graduates' Perceptions of Changes in Clients' Behaviors Attributed to Their SAFE Training and Clients' Use of Improved Plant and Soil Nutrient Management Practices

	"Before" Training	"After" Training
Changes in Clients behaviors ("generally")	.094	.383*

Note. Analysis based on composite scores for "Before" and "After" constructs.
[a]Spearman Rank Order Correlation Coefficient; *$p < .05$

Table 41

Relationships[a] between Graduates' Perceptions of Changes in Clients' Behaviors Attributed to Their SAFE Training and Clients' Use of Other Improved Practices and Technologies

	"Before" Training	"After" Training
Changes in Clients behaviors ("generally")	.136	.397*

Note. Analysis based on composite scores for "Before" and "After" constructs.
[a]Spearman Rank Order Correlation Coefficient; *$p < .05$

The correlational analysis between graduates' "overall satisfaction" with their SAFE training program experience and their willingness to encourage a colleague to participate in SAFE training revealed a low but positive statistically significant relationship ($r_s = .295$) (Table 42). This meant that the more satisfied participants were with their SAFE training, the more likely they were to encourage colleagues to participate in that training. This relationship was significant at an alpha level of .05.

Table 42

Relationship[a] between Graduates' Overall Satisfaction with Their SAFE Training Program Experience and Their Willingness to Encourage a Colleague to Participate

	Willingness to Encourage
Overall satisfaction	.295*

Note. [a]Spearman Rank Order Correlation Coefficient; *$p < .05$

Analyses of the associations between graduates' perceptions of the SAFE training program's impact on their overall competence and perceived ability to work with clients on Supervised Enterprise Projects (SEPs) and the frequency of using that competence revealed substantial ($r_s = .566$) and moderate ($r_s = .468$) positive relationships, respectively (Table 43). As graduates' perceptions of overall competence increased, so

did their perceived ability to work with clients to implement SEPs as well as the

frequency of doing that. This relationship was significant at an alpha level of .05.

Table 43

Relationships[a] between Graduates' Perceptions of the SAFE Training Program's Impact on Their Overall Competence and Perceived Ability to, as well as Frequency of, Working with Clients on Supervised Enterprise Projects (SEPs).

	Competence Regarding SEPs	Frequency of Using Competence
Program's impact on graduates' overall competence	.566*	.468*

Note. [a]Spearman Rank Order Correlation Coefficient; *$p < .05$*

Section Two

Findings Derived from the Semi-Structured Focus Group Interviews of SAFE Graduates

Krueger and Casey (2000) described a focus group as a "carefully planned series of discussions designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment" (p. 5). Focus groups can be used for a variety of purposes, such as needs assessment, planning, and evaluation. Focus groups can assist in identifying and illuminating the way people experience a program. For instance, the present study aimed to describe the perceptions of SAFE training program graduates on their Supervised Enterprise Projects (SEPs) experience.

In light of the principles of semi-structured focus group interviews described by Krueger and Casey (2000), the researcher asked three open-ended questions to the participants (Appendix F). According to Creswell (2005), effective interviewing strategies include the use of probes that are subsequent questions asked to elicit more information. Therefore, by also asking probing questions, the researcher gained additional information allowing participants to clarify and elaborate on their answers during the focus group interviews.

In the present study, audio tape-based analysis was used to store data and then retrieve it for analysis. The process of audio tape-based analysis involved the following steps, as described by Krueger (1994):

1) Audio tapes and interviewers' notes were gathered and labeled by category;

2) The interviewers' notes were reviewed by category;

3) The audio tapes were transcribed and typed by the researcher on a computer;

4) The emerging themes were identified by questions and then overall;

5) The themes were broken down into sub-themes; and

6) An account is written with some quotes in addition to complete sentences.

The following sub-sections provide a summary of the findings related to the perceptions of the SAFE graduates on their experience with SEPs.

Sub-Section One: Introduction

The purpose of the focus group interviews was to collect in-depth information on the perceptions of SAFE training program graduates, regarding their experience with SEPs. The focus group interviews were conducted in the District of Bamako and in three regions (Koulikoro, Ségou, and Mopti) with two mixed gender groups, one male group, and a female group. Participants were invited to meet at their convenience in a meeting room at their workplace. The researcher and research assistant asked questions, recorded answers, and took notes. The participants volunteered to respond freely if they had an answer to a question and related probes. The interviews lasted two hours on average. The account of the interviews was based on the transcripts derived from the audio recordings and interviewers' notes, which were organized into themes.

Sub-Section Two: The Themes

The main questions framing this portion of the study were as follows: 1) How effective was the SAFE training program in terms of competence acquisition with the SEPs experience? 2) What difficulties and constraints did the SAFE training participants encounter in their experience with SEPs? and 3) What should be the future direction of the SEPs component within the SAFE training program in upgrading the skills of Extension educators, and thereafter improving their services and ensuring food security in Mali?

Based on the above questions, three main themes and numerous sub-themes emerged from the four semi-structured focus group interviews: 1) Competence developed as a result of the experience with SEPS, 2) Constraints and difficulties encountered with SEPS, and 3) Improvements needed in the SAFE program for trainees' SEPs to succeed.

1) *Competence developed with the experience of SEPS:* The competencies developed by the graduates in their SEPs experience included project conception and setup, fund raising, use of a participative approach, listening capacity, communication skills, analytic and synthesis skills, as well as critical thinking.

2) *Constraints and difficulties encountered with the SEPs:* The perceived constraints and difficulties that SAFE graduates expressed included financial support, effectiveness of supervisors, organization of supervision, diverse purposes of SEPs, time devoted to SEPs, diversity and scope of the projects, standard format for writing theses and project reports, definition of conditions for implementing SEPs, and follow-up of initiated projects.

3) *Improvements needed to succeed in the SEPS*: The graduates' recommendations for improving the SEPs component for future SAFE training included getting support from funding agencies/donors, obtaining the commitment of employers in supporting SEPs, creation of government funds for the support of SEPs, separation of SEPs from the research required to complete the degree, follow-up of initiated SEPs, reinforcement of the capacity of supervisors in the process, empowering the Association of Malian Agricultural Extensionists (AMVA) to play the role of "mediator" or lobbyist for the support of Extension education, and expanding the financial support to the entire SAFE training cycle.

Sub-Section Three: The Account

The account was based on three main themes and related sub-themes.

Competence Developed in the Experience of SEPs: The SAFE graduates reported developing competence in various areas due to their SEP experiences; participants affirmed that the SEPs had an enormous importance that cannot be easily evaluated. The SEPs were conceptualized with the purpose of helping trainees understand diverse approaches to empowering their clients to solve local problems.

Project conception and setup skills: Most of the interview participants revealed that their skills in setting up projects had developed. Some of them were initiated into project elaboration before their SAFE training, but they used a different format. Nevertheless, they all recognized that their experience with SEPs was more effective, and it enhanced their prior knowledge, as stated by one of the participants:

> Before our SAFE training, everyone used to develop projects. But, during our SAFE training we were able to point out our mistakes and the holes in the techniques of the project's elaboration we used to use. We learned factors to consider when writing projects, such as the target public, the funding agency, etc.

The project conception tools that participants acquired in their SAFE training were useful because they applied them in their daily work and functions at their workplace. They learned the steps and components involved in rural project set up. The SEPs contributed a great deal to improving the daily practice of project conception in their workplaces. Participants stated that most of them were expected to conceptualize projects once they held leadership positions, such as head of a section or division. As a result of their training, participants recognized that the experience of SEPs had improved their skills in project conception positively.

Fund raising: Most participants learned how to raise money to finance the implementation of their projects. This was an important requirement for many of the participants in conceptualizing their projects.

Listening capacity: Participants developed listening skills which allowed them to value the knowledge that farmers shared with them. Listening is a critical skill they learned in the SAFE training and will serve as a foundation for all of their extension work. One of the participants stated,

> Even if we have updated knowledge, at the beginning of our activities with the farmers we should put our knowledge aside and listen to them, and then discover what they know first. Farmers have some knowledge; they tell us their knowledge, we need to take advantage of that knowledge and we should organize their knowledge in different stages and in a good way of applying it.

The same participant asserted further:

> Through my SAFE training, I learned about this approach of listening to the farmers, and fully recognizing that they have indigenous knowledge. Each time if you address a topic to farmers, let them explain what they know.

Communication skills: Most participants perceived that their communication skills, both oral and written, improved due to their SEPs experience. The focus group participants recognized the importance of interpersonal communication skills in their work environment, especially with farmers, employers, and colleagues. The graduates emphasized that communication skills are important aspects of extension work. A participant stated,

> When you go to a village, the way the Extension professional intervenes is different from the way another professional from a different field intervenes. We really experienced this and we saw this difference. The farmers are more comfortable with an Extension professional because of his way to approach them, his way to behave with them and listen to them.

The SAFE training also equipped graduates with communication skills that they used to gain the confidence of their immediate superiors. In another way, they used these skills to change the reasoning or position of their colleagues on some issues. More important, their writing skills also improved in the areas of developing research proposals and producing project reports. They expressed that the mastery of these communication tools during their SEPs experience made them recognized experts in their workplaces.

Analytical, synthesis, and critical thinking skills: The SAFE graduates asserted that the analytical and synthesis skills they acquired were valuable in helping rural people solve their problems. For instance, using a participative approach to solve farmers' problems helped the graduates develop higher order thinking skills.

Participative approach skills: The participative approach, i.e., the involvement of all actors in project set up was well understood by the SAFE graduates. This approach constituted a tool they continued to apply in their job functions after the training. During the SAFE training, participants were given analysis and synthesis tools, which developed their capacity to approach the farmers and to partner and collaborate with farmers more efficiently. Using a holistic approach, these tools also helped graduates to identify and analyze farmers' problems, propose solutions to these problems, prioritize solutions, and decide on which projects to implement. One participant stated,

> I think this is an outcome of the *MVA*. For example, in the past I was in charge of Agriculture Production in a Sector; I confess I did not have the abilities to do what I was supposed to do. I certainly had some participative analysis tools, and I did receive some short training for the use of these tools. But, deepening these abilities and capabilities was due to my SAFE training, and I can say that we are considered as experts in the use of these tools now, this because of the *MVA*.

The participative approach enabled rural populations to strengthen their capacity and take a leadership role in the development of their communities. To that end, a graduate stated,

> For example, when the Mangoes Processing Plant of Yanfoila visited us this year, we told the farmers to constitute a cooperative, but before arriving at this level, they should organize themselves at a lower level. We told them to create the foundation, and when the partners will be here, we will be catalysts to initiate partnerships between them. If we reached this experience, it is because of what we have learned, and this experience allowed us to make farmers change their behaviors and attitudes toward innovations, and to meet their objectives and goals. What I am saying is at the same time subjective and objective. We may not be able to do a quantitative assessment, but in qualitative terms we can analyze it.

Another graduate confirmed that the participative approach reinforced the capacity of their clients. For example, they were able to find appropriate technologies to solve their problems, such as mixing compost with chemical fertilizers to increase crop yields, which, in turn, reduced expenses and improved revenues. Another focus group participant provided a specific example of how capacity building occurred from his work with a group of women in western Mali:

> The women I worked with learned to conceptualize their own project. They are not shy to knock on a door if they needed to find funds. They learned that one can often succeed, but if you fail you must accept it.

A third example was a project initiated in a *rural commune*, where the chief of the village pursued the project initiated in his village, i.e., new projects were established and incorporated into their annual development plans. The graduate who did his internship in that commune shared the following impact:

> After my internship, the chief of the village continued to lobby to get funding for the continuation of this project and initiated others. For example, I helped develop another project requested by the mayor of the

commune; the people themselves looked for funds and this project
continued after me.

Although the participative approach generally helped build the capacity of SAFE

graduates and their clients, on a few occasions, certain groups were not enthusiastic about

continuing the initiated projects. This was the experience of one graduate with a project

involving the mobility of extension:

> For who knows the Malian administration, you are working here today,
> but, tomorrow you can be sent 100 km away from where you are. The
> person who is going to replace you will not care about what you have left,
> it is not his problem.

Another graduate added:

> In my case, I used to serve in Kangaba before my SAFE training, after my
> training I was sent to Dangassa, a different area. It was not possible for me
> to follow up on this project.

All focus group participants reported acquiring and developing some competence

in various domains of their SAFE training, but they also encountered some challenges in

the development, implementation, and evaluation of SEPs.

Constraints and Difficulties Encountered with SEPs: The participants identified several

difficulties as it related to the SAFE training program:

Financial support: The focus group interviews revealed that the lack of financial

support was a major hindrance. With the exception of the first two classes of the SAFE

training program, participants either struggled to have the projects funded by financial

institutions, or in extreme cases, had to use their own money to fund projects. (The World

Bank provided funding that supported the earlier classes). One graduate reported that,

> At the beginning of the SAFE program, those who were the first and
> second classes received support in order to conduct actions in the villages.

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This assistance disappeared with time maybe because the SAFE honored its engagement and the government institutions were unable to pay for their contributions. The assistance allocated to SEPs' implementation was around 120,000 FCFA [equivalent to $220 USD] at its start; this was then reduced by half, and finally was stopped. As a consequence, many students in subsequent classes supported personally their projects.

The graduates assumed that because most SAFE training participants were civil workers, the program administrators understood they could get support from their employers to implement the SEPs. As explained by the interview participants, some of the SEPs were supported by employers, but this was not the case for everyone. A shared experience by most participants was articulated by the following statement:

To tell the truth, the SAFE program was a success in terms of the academy, but at the same time a burden, in terms of expenses. If we used our own money to support projects, this means that we played another role. Instead of being helpers we became funders or donors. We mounted projects and we were forced to implement them. We were required to find funds.

The focus group participants recognized the value of being involved in village life, but it is costly, especially if you are an adult with social responsibilities. Moving between the family and the village brought on additional expenditures such as transportation, food, and accommodation. Because of the socio-economic situation of the trainees, they expressed that the SEP component of the SAFE training program would not be as effective without the provision of funding. For example,

But, what we are proposing is so that the current and prospective students won't go through the struggle we went through, in terms of resource shortage. As you must know, we were category B, meaning with a low salary, sometimes we were faced with the unexpected family expenses and at the same time had to cover school expenses. It was tough for us. For these reasons, if there is a possibility to get, even a little scholarship for the students throughout the SAFE training period, this will help them a lot to focus on school and some motivation to continue. If there are ways to improve this situation, we hope the training outcomes will be greater. The social conditions of the SAFE participants are in such a state

that the SAFE training managers should consider them when planning future programs.

In addition, as trainees the graduates needed to work on topics that were relevant to villagers' lives and problems. For this reason, graduates reported they needed assistance to implement these SEPs or they would risk losing the confidence of their clients. Accordingly, a participant said,

> The villagers have always said, they come all the time to interrogate us and there is nothing after that [it stops there].

Supporting the position that financial support was a barrier to benefiting fully from the experience of SEPs, focus group participants raised the following questions:

> Should we stop at the stage of developing projects and say, 'I developed a project and this is a [valid outcome] from my SAFE training experience?' 'Should we agree with the fact that the project was developed and submitted to funding agencies was an achievement?' 'Should we agree that being present or not, after me, someone else can follow-up this project?' 'Could the Commune include this project in its annual action plan and implement the project after the student had left?'

Graduates reported that, from the perspective of the SAFE training program administrators, it was expected that they would return to the same village and eventually continue to work on the same project. Unfortunately, this was not the case for all of them. In addition to the issue of external financial support for SEPs, another difficulty was the quality of supervision the students received during implementation of their SEPs.

Effectiveness of supervisors and organization of supervision: Participants described the process involved in the SEPs, which included preparing the monograph, identifying problems with local populations, and developing SEPs in concert with locals based on their means and resources. The focus group participants explained that

supervision during the implementation of SEPs was planned and conducted by SAFE

academic staff as well as their employers. The employers were informed about what their

employees were doing in the SAFE training program, but were not deeply involved in

their work in the field, nor did they have a clear understanding of the SEP approach.

After describing the process of SEPs and the supervision related to it, graduates

perceived that some of the *IPR/IFRA* faculty members who were not actively involved in

teaching the SAFE trainees did not understand their training process generally, and the

SEPs specifically. The SAFE graduates asserted that they needed specialized supervision

compared to the other students. Most of the participants complained about the unequal or

"unbalanced" knowledge of supervisors regarding the "spirit" or intent of the SAFE

training program and the research methodology graduates used in implementing their

projects. For example, a participant said,

> Our employers and also most of the professors who were not involved in
> the MVA did not understand this approach. This is why during the defense
> of our theses, we encountered many problems with some professors
> because they did not understand the approach we used with the SEPs.

Another graduate stated,

> When they constituted supervision teams, it was not evident that all the
> members of the supervision team understood the tools. All the supervisors
> do not master the research methodology we used in SEPs. Most
> supervisors do not know the different steps or components of research
> methodology.

Moreover, other graduates indicated that a few supervisors behaved as inspectors

rather than helpers and advisors. Some of the participants' statements indicated that the

supervision they received was not appreciated. The evaluation process of SEPs was also

considered overly rigorous and not done uniformly for all trainees. One focus group

participant expressed the following grievance,

> Instead of helping us, supervisors were destroying us.

> Another graduate said,

> Reduce the rigor in the evaluation of SEPs. The supervisors should come
> as advisors and help us find solutions to the problems we encountered on
> the ground, instead of coming as policemen.

Diverse purposes of SEPs: The SAFE graduates also indicated that the SEPs were used

for multiple purposes, including increasing the practice of problem solving skills,

opportunities for project-based learning, and the development of participative approaches

skills of the participants while empowering their clients concurrently. In addition to the

competence development aspects, participants said they were required to use SEPs as a

research activity from which results would be compiled to write a thesis. Their

combination of capacity building and the requirement to produce a thesis, both related to

SEPs, was found to be relevant if financial support for the SEPs was not a constraint.

However, some participants were at risk of repeating their final year because they

could not get funds, or the nature of their projects did not allow them to produce results in

time to write their theses. For example, in one extreme case, a student was unable to

defend his thesis because the student's graduate committee contended it was not valid

without the inclusion of findings. Even though that individual worked hard, he could not

meet the deadlines of the thesis defense. Some participants wondered if the SEPs should

be focused on the main problems of their clients, or on projects that might be realistic in

the time frame allocated. One graduate contended that,

> Where the problem exists is the requirement to present the results at the thesis defense. There are projects which can be implemented, and you get the results immediately. There are others which take a long time before you get the results; in this case, the student is in trouble if he/she cannot present findings/results of the project at the thesis defense. If one needs to continue his/her project after graduation, it will be a problem with the judges at the defense.

Time devoted to SEPs: Graduates indicated that another difficulty was the benchmark for getting results after implementing or conducting their projects. Some of them asserted that the six- to eight-month period in which to get results after introducing innovations in a community was too short.

Diversity and scope of the projects (irrelevant topics): The scope of the projects presented a different form of difficulty faced by some graduates. The scope of the participative diagnostic approach was not clearly specified. In the opinion of some graduates, although the SEP topics were selected using a participative approach, they should focus more on agricultural issues. Because farmers have a vast array of problems, graduates expressed that they probably were unable to handle all of them. Although they recognized that an Extension professional should be a generalist, topics for SEPs should be related to farms, forestry, and rural engineering, as well as other problems with an agricultural focus. Therefore, it was the graduates' position that infrastructure and health-related issues should not be considered in selecting SEPs.

Standard format for writing theses and project reports: Another important difficulty, which was mostly related to the quality and effectiveness of supervisors, was the writing and reporting format of research findings. Participants reported that the terminologies used in writing reports were also sources of controversy. For example,

some professors or advisors proposed different terms referring to the same thing (bibliography, literature review, references, etc.).

The order of presenting the information in the theses was another topic of debate among supervisors and students. For example, some said the literature review should be in the appendices, others said it was an important part of the thesis and should appear in the body of the manuscript. Regarding research methodology, the former SAFE training participants used different reporting styles. They explained that this created a difficult situation and pushed them to speculate on which research style to use from one class to another. The SAFE graduates reported that to find a solution to this issue, the program's administrators invited some guest speakers from France to teach a course on research methodology, but this did not help; everyone brought a different theory, and the issue became more complicated.

Definition of conditions for implementing SEPs: The graduates said that no written assignment or instructions about the implementation of SEPs existed.

Follow up of initiated projects: The focus group participants indicated that some projects were abandoned due to departure of the Extension educator who initiated them. This situation presented another level of difficulty that should be explored because of the importance of outcomes derived from graduates' SEPs. Participants proposed that financial support be assured for the continuation of "abandoned" projects.

Improvements needed In the SAFE training program for SEPs to succeed: The study participants expressed that SEPs constituted good initiatives and important components of the SAFE training program, but they require some restructuring. The participants said that feasible alternatives existed for improving SEPs for future SAFE training.

Get support from funding agencies/donors: A source of financial support could be on-going projects (programs) at local, national, and international levels. These projects' leaders should be informed of the value of SEPs and sensitized to their initiatives. The graduates all agree that it is compulsory to find financial support for trainees to conduct SEPs properly. One of the study participants observed:

> We need to be frank; we should not veil our face. In my opinion, if the SAFE program has a weakness, it is the lack of financial support for the SEPs. As someone already indicated, what the first class benefited, the second class did not, and so on. It is a very difficult situation. A poor student with low income is unable to support the SEP. We need to have funding agencies or donors especially for the support of the SEPs. This way, SAFE will get support measures for the SEPs.

Obtain commitment of employers in supporting SEPs: Participants assumed that employers and their ministries should contribute financially to the training of their employees. Ways should be found to make that a reality, such as lobbying and the provision of workshops.

Creation of government funds for the support of SEPs: The graduates proposed to generate government funds for the support of SEPs, which would include the cost related to project implementation and supervision. They assumed that such funds could be hosted by the National Direction of Agriculture (*DNA*) and managed collaboratively with *IPR/IFRA*. A steering committee, which might include a representative of the SAFE alumni association (*AMVA*), could assist in the selection of projects to be supported by government funds.

Separation of SEPs from the research requirement for completing the MVA degree: The graduates suggested the thesis research should be separated from trainees' SEPs, and that students be allowed to choose topics which do not involve a lot of struggle

for fund raising, to fulfill the degree requirement. Another alternative the graduates proposed was to stop at the project elaboration stage, i.e., the presentation of a project proposal would be sufficient for the degree requirement.

Empower Association of Malian Agricultural Extensionists (AMVA): Graduates suggested that "reinforcement" of the alumni association (*AMVA*) was needed so that its members could serve as mediators or lobbyists in supporting Extension education in Mali. They perceived that their association could be strong in the future and might provide scholarships to students in the field of Extension. To this end, a graduate said,

> We are also on our way to becoming an association, I mean a very strong association, and our association should fight so that Agricultural Extension would be supported in Mali. Our association is going to be a pressure group on decision makers to support Agricultural Extension development. If our association, which is growing, could work hard to have government institutions and NGOs support Agricultural Extension, this is going to help. I am not saying to support our association, but to support Agricultural Extension Education in Mali.

Reinforce capacity of supervisors in the SEPs aspect of the training: The graduates proposed that all supervisors be involved in the academic portion of the SAFE training program to gain a better understanding of the approach and its processes. The supervisors should be trained in research methodology and scientific writing to update their knowledge and skills. Then, supervisors should agree on a uniform writing format or style to be followed by their students when developing reports and theses.

Section Three

Comparison of Quantitative and Qualitative Findings Regarding SAFE Graduates'
Perceptions on Supervised Enterprise Projects (SEPs)

This section compares the study's survey findings with results derived from its

semi-structured focus group interviews as related to SEPs. The researcher identified three

comparison areas in which to triangulate (Creswell, 2005; see Figure 3) the two strands

of findings to further assess and compare the SAFE graduates' perceptions. Accordingly,

this analysis was intended to expose and illustrate points of "similarity" or confirmation

between the two measures of graduates' perceptions regarding their experiences with

SEPs, as well as highlight differences or "contradictions" that may have emerged. Either

outcome would enhance and deepen the researcher's understanding of the phenomenon

under study. The comparison areas are 1) competence acquired in the development and

implementation of SEPs, 2) constraints ("difficulties") encountered in the development,

implementation, and reporting of SEPs, and 3) improvements needed for trainees to

succeed in their SEPs.

Competence Participants Developed Through Their SEP Experiences

In the survey, participants rated their leading and facilitating competencies (i.e.,

the pillars of experiential learning) regarding the conduct of SEPs with their clients.

Participants perceived that their "problem solving" and "learning by doing" skills were

the highest. In addition, the survey findings showed that participants *perceived they*

possessed, as result of their SAFE training, skills related to "developing and

implementing rural projects" and "learning in real-life contexts" (i.e., pillars of

experiential learning). The survey findings also showed that participants were using these experiential learning skills frequently to lead and facilitate SEPs with their clients.

In the focus group interviews, participants confirmed findings of the quantitative analysis. The qualitative findings, based on graduates' responses to an open-ended question, revealed more detail about the competence graduates' perceived they acquired through their SEPs experience. The aim of the SEPs was to build capacity of Extension educators in using experiential skills in their job roles and empower their clients to solve local problems concurrently. In the interviews, participants reported having gained an array of competencies including, 1) skills and tools in developing rural projects; 2) interpersonal communication skills to establish relationships with clients, partners, employers, supervisors, and faculty members to conduct the SEPs, including negotiation skills, as well as advanced writing skills in reporting their activities; 3) listening skills throughout the participatory needs assessment process; and 4) higher order thinking skills, including analysis, evaluation, and synthesis. The skills were developed during the participatory process of identifying and helping farmers solve their problems.

In the survey as well as the focus group interviews, participants reported acquiring and developing competence that they perceived made them more effective in their workplaces. Moreover, substantial "agreement" or "confirmation" arose regarding their views on the role of SEPs vis-à-vis their professional development.

Constraints ("Difficulties") Related to the Implementation of Supervised Enterprise Projects (SEPs)

In the survey findings, cost of SEPs was rated the most difficult constraint to overcome. This was confirmed in the focus group interviews by graduates, who expressed even more emphasis on the financial difficulties associated with implementing

SEPs, i.e., it was a burden for most of the SAFE trainees. Some reasons related to this difficulty, as noted by the focus group participants, included, the status of students in the eyes of funding agencies, the eight-month time frame set for the conduct of SEPs, and the scope and importance of the problem, as identified by clients. However, in the survey findings, factors such as availability of infrastructure to implement SEPs, time devoted to SEPs, access to experts to help develop SEPs, freedom for women to implement SEPs, decision-making regarding SEPs, and the process of getting appropriate SEPs were not perceived as major areas of difficulty by the graduates (*mean* ≤ 3; see Table 25). The focus group interviewees did not mention any difficulties in this regard either.

Moreover, in the focus group interviews, supervision was emphasized, in addition to the financial support issue, as a handicap to the success of SEPs. Supervision was perceived by participants as controlling or "inspecting" instead of coaching and facilitating. In addition, the interview participants reported the ineffectiveness of some supervisors and their insufficient understanding of the SEP process and the SAFE training program's "spirit" in general. The lack of involvement of SAFE trainees' employers in the SEP process and the dearth of financial resources also undermined the success of SEPs, according to the focus group participants.

Another perceived handicap to the success of SEPs was the lack of follow-up, if the Extension educator was transferred from that location. They maintained that the seminal question was, "were the local communities empowered enough to take the leadership of their projects?" The focus group interview participants also indicated that the lack of a standard writing style or manual to be followed by SAFE trainees in reporting the results of their SEPs was problematic.

Improvements Needed for Trainees to Succeed in Their SEPs

Regarding how to improve the SEP experience, the survey findings revealed needed changes, such as extending the time frame for implementing SEPs to one year, alleviate problems related to supervision, improve effectiveness of the administration of the SAFE training program, involve more governmental institutions in managing the training program as well as improve communication thereof, promote exchange programs with other countries including field trips and inter-country activities, reinforce links between research institutions and Extension, raise more financial resources to support SEPs, including promotion of the "Technological Village." (An example of the latter was a micro food processing unit established for hands-on learning activities on "value-addition" to local foods. The products such as fruit juice, jam, syrup, and dried fruits were produced and sold to the local university community to recover the costs of investment in the process.)

Some of the proposed improvements expressed by participants in responses to related open-ended questions in the survey instrument were confirmed and expanded on by the focus group participants. They proposed several improvements: accessibility to financial support for SEPs from government agencies, linking SEPs to existing projects at local, national, and international levels; uncouple the thesis research from the SEPs as a requirement for earning the *MVA* degree, "reinforcement" (or support) of the SAFE alumni association (*AMVA*), which could play an important role in raising money for the support of trainees' SEPs, changes in faculty who supervise the SEPs, including professional development of supervisors and increasing their motivation to accomplish supervisory tasks.

Triangulating the study's findings, whether derived empirically or otherwise, was an attempt to understand the graduates' views on a primal aspect of their SAFE training experience with more clarity. An aim of triangulation is to provide more in-depth understanding of the phenomenon being investigated; this act of analysis and interpretation aided the researcher in achieving the study's purpose.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, IMPLICATIONS AND DISCUSSION

This chapter includes five major sections: summary, conclusions, recommendations, implications and discussion, and major contributions of the study. Each section consists of several sub-sections:

The first section, summary, presents eight sub-sections: purpose of the study, research questions, significance of the study, population and sample, research design, data collection, data analysis, and findings. The second section, conclusions, includes an analysis of the findings regarding the study's five research questions. The third section, recommendations, presents the recommendations for future research and future practice. The fourth section, implications and discussion, speculates on selected aspects of researcher's conclusions. The fifth section identifies major contributions of this study to theory, literature, and practice.

Summary

Purpose of the Study

The purpose of this study was to assess graduates' perceptions of the Sasakawa Africa Fund for Extension Education (SAFE) training program in Mali regarding their training experiences and its impact on their professional practice. Graduates' views on aspects of the training that involved Supervised Enterprise Projects (SEPs) were emphasized. In addition, personal and professional characteristics of the graduates were described so that selected relationships could be examined. Findings will be used to assist in evaluating the SAFE training program's effectiveness and determine if changes are needed in the future.

Research Questions

1. What were selected personal and professional characteristics of graduates of the SAFE training program?

2. What were the perceptions of SAFE training program graduates regarding their training experience and its impact on their professional practice?

3. Were selected personal and professional characteristics related to graduates' perceptions of the SAFE training program?

4. What were the SAFE training program graduates' views on various aspects of the training that involved SEPs?

5. What were the graduates' views on changes or improvements needed for SAFE training programs in the future?

Significance of the Study

Qualified Extension educators are needed to fulfill their mission, i.e., the dissemination of science-based information to populations to improve their quality of life

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(Kroma, 2003b; Mutimba et al., 2007.; Owens et al., 2001). Approximately 100,000 Extension personnel are employed in Sub-Saharan Africa (SSA); but many have low levels of formal education (Kroma, 2003a; Mutimba et al., 2007; Owens et al., 2001). The insufficient number of Extension educators who are well trained in SSA hinders food production and consequently the attainment of food security (Davis, 2008; Kroma, 2003; Mutimba et al., 2007; Owens et al., 2001). Aware of this challenge, the Sassakawa Africa Fund for Extension Education (SAFE) was initiated in nine African countries including Mali (West Africa). The aim of SAFE is to initiate training that will improve the job performance of mid-career Extension professionals. The SAFE training program was established in Mali in 2002. SAFE's stakeholders commissioned an assessment of the performance and outputs (i.e., graduates) of their program to make sound decisions regarding its future.

Population and Sample

The population of this study was the mid-career Extension educators who completed the SAFE training program in Mali. The graduates were dispersed in the District of Bamako, the capitol city of Mali, and the eight administrative regions of the Republic of Mali (Figure 4). A purposeful sampling procedure was used (Creswell, 2005). The sample included both males and females who completed, between 2002 and 2009, the *Maitrise en Vulgarisation Agricole (MVA)* degree, which is the SAFE training program.

An opportunistic sampling procedure was followed (Creswell, 2005) to administer the survey instrument during the SAFE Graduates' Alumni Association Annual Conference ($n = 23$). The instrument was hand-delivered to the remainder of the sample at their workplaces, i.e., graduates who did not attend the Alumni Conference ($n = 27$).

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For the semi-structured focus group interviews, maximal variation, that required the identification of sites presenting different dimensions such as density of participants, agriculture and livestock activities, as well as geographical location was followed (Creswell, 2005). Two regions (Koulikoro and Mopti) and the District of Bamako fulfilled these selection criteria (Figure 5). The researcher perceived that contrasting factors between regions would enrich the data and provide a more complete picture of the perceptions of SAFE graduates regarding their training. In addition, a female focus group was convened and interviewed to determine if gender differences would appear in their responses to the questions posed. This group provided an opportunity for women to share their views without men being present (Kiamba, 2008).

Research Design

A mixed methods research design allowed the researcher to collect quantitative and qualitative data describing graduates' perceptions on the SAFE training program. Triangulation mixed methods is an approach in which the quantitative and qualitative aspects have equal value (Creswell, 2005; see Figure 3, I.). In this study, the qualitative data collections, i.e., focus group interviews, were made several days after the survey portion of the study.
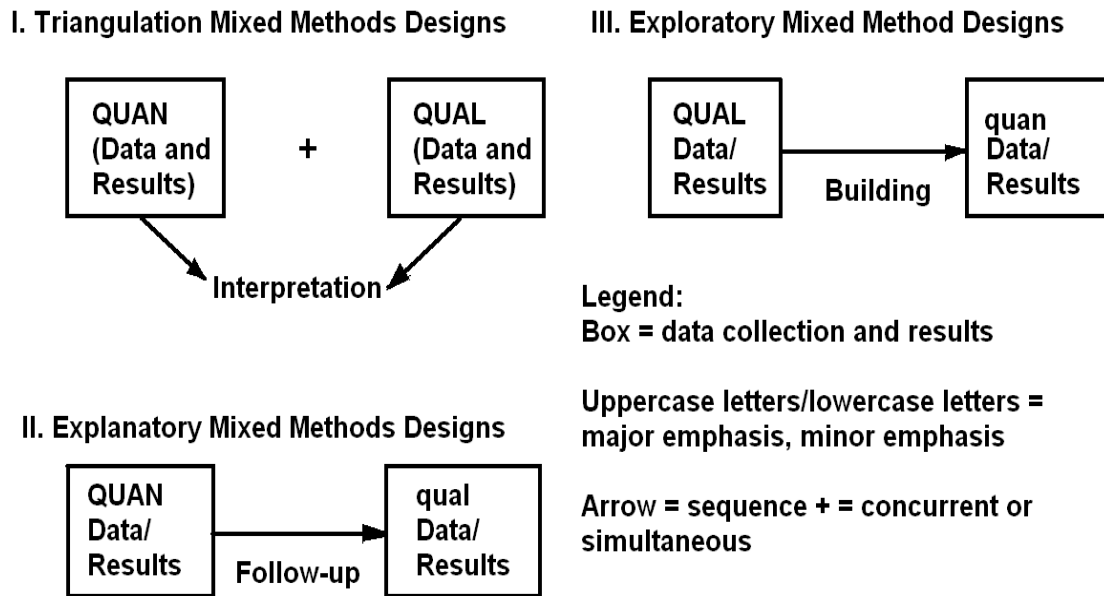
Figure 3. Types of mixed methods designs (Creswell, 2005, p. 514)

Data Collection

The survey instrument (Appendix B) and the semi-structured focus group interviews (Appendix C) were used to collect the perceptions of SAFE graduates on aspects of training related to their professional practices. Per the survey instrument, graduates' responses were gathered using summated-rating response scales (i.e., "Likert-type") primarily, several Yes/No questions, as well as one ranking item, and open-ended questions. The instruments were first developed in English and then translated into French. A French version of the survey questionnaire was administered and the focus group interviews were also conducted in French.

A pilot test was conducted on both instruments before their use with the sample. Subsequently, a few questions were reworded slightly to improve clarity of the survey instrument; none of the focus group questions were modified. Four semi-structured focus

group interviews followed the collection of the survey instruments. The researcher audio tape-recorded interviewees' responses and discussion during the focus group interview sessions.

Data Analysis

Quantitative Data Analysis

*D*escriptive statistics, including frequencies, percentages, modes, means, standard deviations, and mean differences were computed using the Statistical Package for the Social Sciences (SPSS, version 16). In addition, correlational analyses were conducted to describe selected associations and relationships between personal and professional characteristics of graduates and their perceptions on the SAFE training.

Qualitative Data Analysis

Graduates' responses to open-ended questions (Appendix F) found on the survey instrument and the transcripts (Appendix G) derived from semi-structured focus group interviews were analyzed for narrative meaning and compiled based on recurrent themes (Creswell, 2005; Krueger, 1994). The researcher examined each information source and found evidence to support a theme. This ensured that the study was accurate and credible because the information was drawn from multiple sources of information or individuals (Creswell, 2005). The themes that emerged from the four interview transcripts were supported by the perceptions of the 21 SAFE graduates who participated in the semi-structured focus group interviews.

Findings

Survey and semi-structured focus group interview findings contributed to answering the five research questions of this study, as summarized below:

Research Question #1

What were selected personal and professional characteristics of graduates of the SAFE training program?

Eighty percent of the survey respondents were male (Table 5). Many of the participants were in their late forties; their average age was approaching 47 (Table 6). Nearly all participants were married and Muslim (Tables 7 & 8). Participants averaged 17 years of experience in Extension (Table 9), and were serving in seven of the eight administrative regions of Mali and in the District of Bamako (Table 10). Seventy percent of participants entered the SAFE training program with a Technician degree; 30% held a University Degree of Seignior Technician (DUTS) on entrance (Table 11). Seven-in-ten had majored or "specialized" in Agriculture during their post-secondary schooling before the SAFE training (Table 12).

Research Question #2

What were the perceptions of SAFE training program graduates regarding their training experience and its impact on their professional practice?

The SAFE graduates perceived, as outcomes of their training, improvements in their professional competence, their job category, and in their clients' practices.

Professional Competence

Nearly all participants perceived that the training had a significant impact on their overall competence (Table 14). They perceived that "Extension education principles and methods," "human relation skills," and "fundamental sciences" were the training domains that prepared them to help their clients most (Table 15). Through their answers to an open-ended question, the graduates indicated that the knowledge they acquired in these domains increased their effectiveness as Extension professionals and satisfied their training needs. With the knowledge gained, they were more prepared to diagnose and participate in solving their clients' problems.

Job Category Advancement

All of the graduates were upgraded to an advanced job category (from category B to A, the highest) after completing the SAFE training. Some of graduates were appointed to upper hierarchical positions or given new responsibilities; however, a few held the same or equivalent positions as before the SAFE training.

Impact on Clients

Nearly two-thirds of the graduates indicated they observed changes in their clients' practices that they attributed to their, i.e., the graduates', SAFE training (Table 13). The changes observed were grouped into two types. The first type of perceived change was the number of clients who adopted improved technologies or practices "before" versus "after" the graduates' receipt of SAFE training. The graduates perceived that more of their clients used improved plant and soil nutrient management practices (Table 16) and other improved inputs and practices after the SAFE training (Table 17).

Paired samples *t*-Tests revealed that graduates' perceptions of their clients' use of improved practices increased significantly post-training (Tables 18 & 19).

The participants observed that, improved "Extension services," "higher output prices compared to input costs," "increased input supply," and "NGOs free or subsidized inputs" were also important reasons (i.e., "above average") for the increased adoption of new methods by their clients (Table 20). The participants also indicated that "improved access to credit," "improved marketing approaches," and "improved infrastructure" bore "average importance" as reasons for increased adoption of new methods by their clients (Table 20).

In addition, the graduates strongly agreed that "stronger Extension-research linkages" (Table 21) played a role in increased adoption of improved practices by their clients. The graduates "agreed" that "more effective Extension methods" enabling additional assistance to farmers, "the availability of more Extension agents," and "more effective organization and mobilization of farmers" also served to increase the adoption of new methods. Graduates agreed that "increased professionalism in the Extension service," "increased private sector Extension interaction," and "more female Extension officers" were additional reasons for the adoption of improved practices by clients (Table 21).

Regarding graduates' perceptions of their delivery of "Extension services," they indicated delivering more demonstrations to, and guiding more discussions with, clients following their SAFE training (Table 22). Interactions with dealers and traders also increased, but less so. In so far as gender-related service delivery to clients, graduates indicated they informed and trained a range of one to 20 women per year most frequently

(Table 23). Women were trained how to form associations or cooperatives, and how to access and manage microloans. Other topics for which graduates provided information to women included poverty alleviation, income-generating activities, food processing, commercialization and marketing, literacy, gender issues, and health.

<u>Research Question #3</u>

Were the selected personal and professional characteristics related to graduates' perceptions of the SAFE training program?

The findings related to this question were grouped into three categories: 1) associations between graduates' selected personal and professional characteristics, 2) relationships between graduates' personal and professional characteristics and their perceptions on selected aspects of the SAFE training program, and 3) relationships between graduates' perceptions on selected aspects of the SAFE training.

Associations Between Selected Personal and Professional Characteristics of the SAFE Graduates

Seven significant associations between selected personal and professional characteristics of graduates were revealed:

- A significant association existed between gender and a graduate's marital status. Male graduates were more likely to be married (Table 28).

- Gender and "educational level at entry in the SAFE program" were significantly associated. Proportionately, female graduates were much more likely to have held a "DUTS" than males at entry in the SAFE program (Table 29).

- A significant association existed between gender and "ownership of a farm" (Table 30). Males indicated more ownership of land than did women.

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- A significant association existed between gender and whether a graduate was "still an Extension educator" (Table 31). Proportionately, more male graduates were still Extension educators; one-half of the female graduates were no longer Extension educators at the time of the study.

- Gender was significantly associated with graduates' "major before entering the SAFE training program" (Table 32). Before their entry to the SAFE training program, more women had majored in "Animal Sciences" proportionately than males. Males had majored in "Agriculture" primarily.

- A significant association existed between a graduate's current status as "still an Extension educator" and his or her "major before entering the SAFE training program" (Table 33). Almost all of the graduates who majored in "Agriculture" were still Extension educators but nearly one-half of the "Animal Sciences" majors had left Extension.

- A significant association was also found between gender and a "graduate's service location" (Table 35). Most female graduates were located in the region of Koulikoro and the District of Bamako, but males were widely dispersed throughout Mali.

The other three associations tested were not significant (Tables 34, 36, & 37).

Relationships Between Graduates' Personal and Professional Characteristics and Their Perceptions on Selected Aspects of the SAFE Training Program

Point biserial correlations between selected dichotomous and discrete variables, such as gender and farm ownership, and graduates' perceptions on their overall satisfaction with the SAFE training program, or with the training's impact on their overall competence, or changes in clients' practices were not significant (Tables 38 & 39).

Relationships Between Graduates' Perceptions on Selected Aspects of The SAFE
Training Program

Graduates' perceived that the variable "changes in clients' behaviors" was significantly related to their clients' "use of improved plant and soil nutrient management practices" and with their "use of other improved inputs and practices" after graduates' completion of the SAFE training (Tables 40 & 41). A significant relationship also existed between graduates' overall satisfaction with their SAFE training program experience and their willingness to encourage a colleague to participate in SAFE training (Table 42). Graduates' perceived overall competence, as a result of the SAFE training, was also significantly related to their ability to conduct SEPs (Table 43).

Research Question #4

What were the SAFE training program graduates' views on various aspects of the training that involved Supervised Enterprise Projects (SEPs)?

Three main aspects were identified via survey findings and focus group interview results regarding graduates' views on their SEPs experience: 1) competence acquired, 2) "difficulties" encountered, and 3) improvements needed to succeed in conducting SEPs.

Competence Participants Developed Through Their SEP Experiences

The competencies graduates perceived they acquired included skills related to experiential learning (Table 24), participative needs assessment processes and tools, project development and evaluation, communication, and fund raising. Other competencies that graduates perceived they acquired were listening skills, higher order thinking skills, and facilitation skills. These skills were also perceived as having helped

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empower graduates' clients to take on leadership roles to resolve problems they identified during their SEP experiences.

Constraints ("Difficulties") Related to the Implementation of Supervised Enterprise Projects (SEPs)

In both survey and focus group interview findings, the cost of SEPs and fund raising to implement them were the most difficult constraints to overcome. Through questions asked in the focus group interviews, participants provided arguments on how the assurance of funding was the cornerstone of successful SEPs. Time devoted to SEPs was another constraint graduates mentioned in both survey responses and focus group interviews. In the focus group interviews, participants indicated that, based on the scope and complexity of many SEPs, the six to eight month time frame was too short to develop, implement, and evaluate a rural project.

One significant constraint mentioned only in the focus group interviews was the supervision of SEPs. In the interviews, participants viewed supervision as more controlling than coaching. In addition, the interviewees perceived that supervisors did not have a uniform understanding of SAFE in general and SEPs in particular. Therefore, most of them reported being unhappy with this aspect of the training program. The focus group participants perceived their employers also had limited understanding of the SEPs process and their level of involvement was not effective, which contradicted the graduates' understanding when they entered the SAFE training program.

Follow-up of initiated SEPs was another handicap if the Extension educator was transferred to another location. Lack of a standard writing style or manual to be followed by SAFE trainees in reporting the results of their SEPs was problematic, as well as the two-fold purpose of the SEPs, i.e., solving a problem in a village as a condition for

earning their degree. Therefore, participants argued that, because problems differed significantly, the uncertainty of funding for SEPs, and time frame being dependent on a project's scope and nature, the requirement to conduct a "successful" SEP should be reevaluated for "fairness" and practicality vis-à-vis earning a degree through the SAFE program.

Improvements Needed for the Success of SEPs

The findings revealed eight primary changes were needed to improve the SEP experience:

- Extend the time frame for SEPs to one year;

- Improve effectiveness of the administration of the SAFE training program;

- Reinforce collaboration with governmental institutions to support SEPs;

- Promote regional exchanges;

- Provide professional development for SAFE faculty members;

- Initiate professional development of training supervisors, especially regarding their motivation to fulfill tasks related to SEPs;

- Link SEPs to on-going projects at local, national, and international levels;

- Uncouple the thesis research from the SEPs as a requirement for earning the *MVA* degree; and

- "Reinforcement" (i.e., support) of the SAFE graduates' alumni association (*AMVA*).

Research Question #5

What were the graduates' views on general changes or improvements needed for

SAFE training programs in the future?

The participants perceived that the following improvements and changes were

needed in the SAFE training program:

- Increase instructional hours generally and "reinforce" (improve) existing courses
  (e.g., social sciences and sociology; research methodology and statistics; project
  development, analysis, and evaluation; fundamental sciences; computer sciences;
  and concept of sustainable development), as well as incorporate new courses in
  other domains, and provide enhanced course materials;

- Provide more means and resources for the implementation and supervision of
  SEPs (detailed above);

- Reinforce networking among participants and former graduates in the nine
  countries where SAFE training has occurred;

- Improve the teaching and learning conditions of all SAFE participants, trainees as
  well as teachers.

Conclusions

The analysis of findings regarding each of the study's research questions formed a basis for the conclusions offered by the researcher:

Research Question #1

What were selected personal and professional characteristics of graduates of the SAFE training program?

Based on the findings of this study, it was concluded that most of the SAFE graduates were male. The graduates tended to be mature adults (≥ 46 years of age; Table 6) who had substantial experience as Extension educators (*mean* = 17 years; Table 9). Nearly all of the graduates were married and identified themselves as Muslim. At entrance into the SAFE training program, most of the graduates had earned a "Technician" degree (pre high school degree [*DEF* = nine years] + 4 years of post-secondary education), and it was likely to be in Agriculture. The responding sample included graduates drawn from the District of Bamako and seven of the eight administrative regions of Mali. So, the sample was geographically diverse.

Research Question #2

What were the perceptions of SAFE training program graduates regarding their training experience and its impact on their professional practice?

Based on both quantitative and qualitative findings of the study, graduates perceived that the SAFE training upgraded their skills and empowered rural clients to make changes in their practices. The graduates perceived that SAFE training curriculum enabled them to develop their professional competence and performance and thus serve their clients better. Other researchers (Akeredolu, 2006; Duo & Bruening., 2007;

Kabutha, 2007; Mwangi et al., 2005; Owens et al., 2001) reported that a majority of SAFE graduates in their studies, including Mali, Ghana, and Ethiopia, had also recognized the contribution of SAFE training in improving their professional performance.

The training domains the graduates perceived had the highest impact on their clients' practices were "Extension education principles and methods," "human relation skills," and "fundamental sciences." So, it was concluded that these training domains made the most impact on graduates' professional practices. This was supported by the graduates' perceptions that their clients' use of plant and soil nutrient management and other improved inputs and practices increased after graduates had completed the SAFE training. So, the researcher concluded that graduates applied their advanced knowledge and skills to make positive changes in clients' practices. This conclusion is in agreement with SAFE's program assessment in Ethiopia and Ghana (Kabutha, 2007; Owens et al., 2001).

The graduates also perceived that they delivered more service to their clients after the training than they did before, including more demonstrations and group discussions. The graduates served on average a range of one to 20 female clients annually, with information about topics ranging from associations and cooperatives to gender and health issues. It was concluded that the SAFE training enabled graduates to provide more services to their clients and consider gender differences in regards to clients' information needs. This conclusion was supported by Owens et al. (2001), from results obtained in Ghana. Their analysis found "highly significant [differences between] pre and post training job performance competencies" (Owens et al., 2001, p. 4). The 16 selected

competencies that Owens et al. identified as being "capital" to the job performance of Extension educators in Sub-Saharan Africa also included demonstrations and group discussions.

The graduates perceived that changes in their clients' practices and the services they provided to clients were also affected by other important factors, e.g., "improved Extension services." They also perceived that "improved access to credit," "improved marketing," and "improved infrastructure" were reasons for increased adoption by clients, but less "important" than the other factors. So, it was concluded that not only were upgrading skills of Extension educators and improving the delivery of services needed to make changes in clients' practices, but supporting measures should be associated or complementary as well.

The graduates "strongly agreed" that "stronger Extension-research linkages" was the main reason for clients' increased adoption of improved technologies and practices. Graduates "agreed" that other reasons, e.g., more effective Extension methods, also played a role. So, graduates perceived that the success of Extension services depended on these factors as well as those considered important if the behaviors of clients are to be impacted positively. This conclusion is in accordance with Kroma (2003a) who reported that the low adoption of research results by small farmers in SSA was due to insufficient interpersonal relationships between Extension educators, researchers, NGOs, and community members, i.e., the lack of effective communication.

A majority of participants were "satisfied" with their SAFE training, which was also concluded by Akeredolu (2006) in a case study involving SAFE graduates in Mali. The graduates' expectations may have been met because their stated reasons for joining

the SAFE training program mirrored what they found to be its most important aspects. These aspects included capacity building in the Extension field, knowledge acquisition, achieving an advanced educational level, job position changes, relationships built with others, the SEP experience, as well as the seriousness and reliability of the SAFE program generally.

Research Question #3

Were the selected personal and professional characteristics related to graduates' perceptions of the SAFE training program?

In light of various significant associations found between selected personal and professional characteristics, it was concluded that gender differences were apparent in graduates' marital status, educational level at entry in the SAFE program and major of study, farm ownership, retention in Extension, and service location. The female graduates were more educated when they entered the SAFE training program, they served nearer the SAFE training program site, and they were more likely to have left Extension as a career. On the other hand, a majority of the male graduates majored in Agriculture, reported owning a farm, and they served in various regions of the country. A significant association existed between "still an Extension educator" and "major before entering the SAFE training program." The majority of male graduates were likely to have stayed in Extension. A significant relationship between gender and graduates' overall satisfaction with their SAFE training was not found.

Additional correlational analyses between graduates' personal and professional characteristics and perceptions on selected aspects of the SAFE training indicated that no significant relationships existed (Tables 38 & 39).

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Based on other correlational analyses, it was concluded that graduates'
satisfaction with the SAFE training was a significant factor regarding their willingness to
encourage a colleague to participate in the SAFE training program. In addition, it was
concluded that the SAFE training had a "cumulative effect" on the graduates' perceptions
regarding changes in clients' behaviors "generally" and selected "after" training
behavioral changes. The graduates' perceived overall competence as a result of the SAFE
training and their performance with SEPs was also significantly related. To that end, it
was concluded that graduates' perceptions of their acquisition of overall competence
could be a predictor of their perceived competence to work successfully with clients on
SEPs.

Research Question #4

What were the SAFE training program graduates' views on various aspects of the
training that involved Supervised Enterprise Projects (SEPs)?

In both survey and focus group interview findings, the SAFE graduates' responses
concerning SEPs dealt with the competence they acquired and the constraints they faced
in this component of their training. It was concluded that SEPs were opportunities for
graduates to develop an array of competencies. The SEPs were also opportunities for
SAFE faculty, trainees, and the trainees' employers to use participative approaches with
farmers in finding solutions to rural problems. In addition, the SEP process represented
opportunities for the graduates to use various learning approaches and exert leadership
skills in mobilizing resources to solve rural problems as a team. However, the graduates
perceived this process was not well understood by all team members involved in

developing and implementing SEPs, i.e., SAFE supervisors and graduates' employers, in

some instances.

Furthermore, difficulties such as financial support, knowledge and practices of

supervisors, involvement and support of employers, clarity about policies and

expectations for conducting and reporting on SEPs were challenges expressed by

graduates regarding their experience. The issue of financial support to conduct SEPs was

also discussed regarding SAFE training experiences in Ghana and Ethiopia (Knipsheer,

1999; Mwangi et al., 2005). The reporting of SEP-related research findings was a

challenge for SAFE graduate students in Ethiopia as well (Kabutha, 2007; Tefera,

Tegegne, & Hoekstra, 2009).

<u>Research Question #5</u>

What were the graduates' views on changes or improvements needed for SAFE

training programs in the future?

The SAFE graduates perceived that several improvements and changes were

needed to enhance the future outlook of the SAFE training programs in Mali, including

an increase in hours of instruction and the bolstering of existing courses, as well as the

incorporation of new courses and course materials. So, it was concluded that, based on

the experience of these graduates of the training program, the SAFE curriculum needed to

be reviewed and updated. Based on graduates' perceived constraints related to SEPs, the

researcher concluded that the SEP experiences needed systematic financial support, more

effective supervision, as well as networking and collaboration with governmental and

nongovernmental agencies and other potential funding sources. Moreover, reinforcement

of the SAFE graduates' alumni association and promotion of exchange programs with

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SAFE participants and graduates in other countries should be explored. Similar

recommendations were formulated by other practitioners and researchers who studied

challenges related to the SEP component of the SAFE training program (e.g., Knipscheer,

1999 and Mwangi et al., 2005).

Recommendations

Based on the conclusions derived from this study, recommendations for future research and practice follow:

Recommendations for Future Research

- Graduates reported that, after their SAFE training program, they were able to impact their clients' farming practices. For triangulation purposes, the researcher recommends that clients' perceptions be assessed regarding the SAFE graduates' impact on their practices. Then, comparisons can be made, and any inconsistencies that may emerge be explored.

- Graduates described issues related to supervision of their SEPs. So, to gain a more complete understanding of these issues, perceptions of the SAFE training program's supervisors and faculty members about their experiences supervising trainees' SEPs should be assessed.

- An investigation should be conducted to understand the reasons why SAFE training graduates leave Extension as their career field.

- Research should be conducted to understand factors affecting the participation of women in the SAFE training program. Similar recommendations were formulated by Kabutha (2007).

- The feasibility of developing distance learning courses for the SAFE training program should be explored.

- The researcher collected additional data which are not presented in this dissertation; findings derived from that data should be analyzed and reported to SAFE officials and more widely.

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Recommendations for Future Practice

- Based on a less than desirable retention rate of SAFE graduates in Extension, the researcher recommends that a way be found to retain more graduates. The recruitment process should be examined to ensure that the selection of SAFE trainees is being conducted effectively. Individuals who are likely to stay in Extension after completing their training should be considered a priority for recruitment.

- The relationship between graduates' satisfaction with their training and their willingness to encourage peers to enroll in the SAFE program was evident. So, the researcher recommends that SAFE increase its support for the graduates' alumni association. Alumni could assist in promoting and sustaining the SAFE program in Mali.

- The value and uniqueness of the SEPs in upgrading graduates' competencies and empowering their clients were recognized by all participants; therefore, the researcher recommends that SEPs be maintained in the SAFE training program. However, the perceived constraints that the graduates associated with conducting successful SEPs, such as effective supervision, provision of funds, and effective communication, should be considered holistically. All SAFE stakeholders should be given a voice about how to mitigate or even extinguish constraints that the SAFE graduates identified.

- Opportunities regarding micro-lending should be explored to support the trainees' SEPs. To that end, trainees should secure the commitment of beneficiaries (i.e., their clients) to endorse the contracts with microloan agencies to guarantee the repayment of loans.

- Based on graduates' perceptions of the SAFE training courses, the researcher recommends that the training curriculum be reviewed and revisions and improvements be made as deemed necessary. SAFE officials should be responsive to new and emerging professional development needs of mid-career Extension educators in Mali. A similar recommendation was formulated by Mutimba (2003).

- Regarding the low number of female clients served annually by the graduates and considering the high female population in most rural areas of Mali, as well as the role women play in food production, the researcher recommends that Extension leaders develop policies and undertake actions so that more Extension services reach women in Mali.

- The study's findings revealed that women were not well represented in the SAFE training program. So, the researcher recommends that SAFE officials develop strategies to recruit more female trainees. A similar recommendation was proffered by Kabutha (2007).

- The graduates perceived a "disconnect" or insufficient involvement and commitment of their employers to their SAFE training program, especially to the SEPs. To address this shortcoming, the researcher recommends that SAFE officials organize an annual workshop to inform employers about SAFE's expectations and address any concerns they may have. That may be the appropriate opportunity for SAFE officials, trainees, and employers to develop a "contract" or memorandum of understanding (MOU) delineating collaboratively their mutual roles, responsibilities, and expectations. Similar recommendations were offered by other practitioners and researchers who

examined the SAFE training program in SSA (e.g., Knipscheer, 1999, Mutimba, 2003, and Mwangi et al., 2005).

- Based on the role that selected governmental institutions and nongovernmental agencies could play in nurturing and sustaining the SAFE training program in Mali, these actors should be lobbied to gain their support of the program. A similar recommendation was put forth by Deola (1999).

- SAFE training faculty, select trainee participants, and related stakeholders, including select program graduates, should participate in a "futuring conference" on SAFE's mission and vision for the training of mid-career Extension educators in Mali.

- A writing style manual should be adopted for use by the trainees as well as SAFE faculty and supervisors. All reporting standards should be regulated by that manual.

- An advisory committee should be constituted to make recommendations and provide advice regarding the well being and future direction of the SAFE training program in Mali.

Implications and Discussion

This section points out the major implications drawn from the study's conclusions and discusses selected "lessons learned" as well as how these lessons relate to the overall goal of SAFE in Mali and SSA generally. In this section, the researcher also discusses the challenges, as perceived by SAFE graduates, especially regarding SEPs and their supervision. Furthermore, a discussion about the retention of female graduates in Extension is presented.

The graduates perceived that SAFE training curriculum enabled them to develop professional competence and it improved their overall performance; thus, they served their clients better. This finding led the researcher to conclude that the SAFE training program reached its goal of upgrading the skills of mid-career Extension educators in Mali so they could enhance agricultural production and the quality of life of rural clients. However, does it mean that the training areas, "Extension education principles and methods," "human relation skills," and "fundamental sciences," as reported by graduates, are the most important subjects for inclusion in SAFE training curriculum going forward?

SAFE's aim, as stipulated in its official documents, is to provide leadership to ensure that their training program remains farmer-focused (SAFE Brochure, n.d.). So, should it be inferred that the SAFE program is a success story in Mali, mainly because of graduates' perceived impact of the training's role in their professional development and effect on their clients' behaviors? Even though these findings were supported by other studies conducted in SSA, including Mali (e.g., Akeredolu, 2006, Duo & Bruening., 2007, Kabutha, 2007, Mwangi et al., 2005, Owens et al., 2001), should not the views of clients be considered as well? The training's impact was implied strongly by findings of this study. However, the perceptions of the ultimate "end users" of the SAFE program—

the farmers—should be analyzed. The "triangulated" understanding this analysis would

provide holds the potential for amplifying our understanding of this phenomenon.

Conversely, participants perceived that the "technical skills," "practical skills,"

and "administration, management, and leadership skills" training they received, had a

lesser impact on their clients. Graduates perceptions in this regard may imply the

following: Were the courses provided in these domains sufficiently responsive or relevant

to trainees' and, by extension, their clients' needs? Were the courses taught effectively?

Did post-training application problems emerge that hindered graduates in using their

knowledge and skills in these areas? These questions warrant additional study by officials

of the SAFE training program or their designee.

Regarding graduates' views on their SEPs experience, this study supported

the findings of another SAFE evaluation (i.e., Mwangi et al., 2005) and also the

reflections of some SAFE officials (e.g., Knipscheer, 1999). The SEPs were

perceived by graduates as unique in the higher education program at the "College

of Agriculture" in Mali (i.e., *IPR/IFRA*); it is what made their SAFE training

innovative. However, as with any innovation, before being adopted substantially, it

may undergo barriers to its adoption and related challenges (Rogers, 2003). This

study provided some evidence of that.

Perhaps, the positive aspect of SEPs was that they were competence-

driven; as a result, graduates recognized having developed useful skills, including

rural project development, interpersonal communication, writing, listening, and

higher order thinking. In 1999, based on experiences of the SAFE training program

in Ethiopia and Ghana, officials questioned if the graduates at that time were

learning the correct skills through their SEP experiences. To that end, Knipscheer (1999) stated,

> In our short experience with SEPs in Ghana and Ethiopia, we should ask if these students have really learned the right skills. It is my impression that teaching staff still over-emphasizes on the technology side of the SEPs and do not sufficiently address the process-oriented skills such as the stimulation of farmers' participation, the conduct of participatory rapid appraisal, and community involvement. Feedback and evaluation of leadership skills seems completely lacking . . . . We identified essential skills such as listening, organizational, problem solving skills . . . . (p. 67)

The findings of this study revealed that the SAFE graduates in Mali perceived possessing most of the skills Knipscheer indicated as desirable for mid-career Extension educators to learn through conducting SEPs. One graduate indicated, "Through my SAFE training I learned how this approach of listening to the farmers, and fully recognizing that they have indigenous knowledge. When you address a topic to farmers, you should let them explain what they know." Another participant stated,

> For example, when the Mangoes Processing Plant of Yanfoila visited us this year, we told the farmers to establish a cooperative, but before reaching this level, they should organize themselves at a lower level. We told them to create the foundation, and when the partners will be here, we will be catalysts to initiate partnerships between them. If we reached this experience, it is because of what we have learned, and this experience

allowed us to make farmers change their behaviors and attitudes toward

innovations, and to meet their objectives and goals. What I am saying is at

the same time subjective and objective. We may not be able to do a

quantitative assessment, but in qualitative terms we can analyze it.

These statements imply that the SAFE graduates who participated in this study

were prepared to meet the expectations of the SAFE training program as change agents in

regards to Knipsheer's (1999) concerns. Concurrently, the graduates were highly satisfied

with their SAFE training and perceived that they possessed sufficient ability to conduct

SEPs with their clients.

The study also supported Bandura's posit regarding self-efficacy (1995) and what

others have said about the role of social constructivism or co-creation of knowledge (e.g.,

Doolittle & Camp, 1999 and Navarro, 2008). The graduates perceived that they had

confidence in their ability to make positive changes in their clients' behaviors by using

participative approaches to develop rural projects (i.e., SEPs) to solve problems. But,

Bandura also posited that possessing a high level of self-efficacy was not enough; i.e.,

self-efficacy can be enhanced with successful experiences or lessened by unsuccessful

experiences (Bandura, 1995). Does this imply that the graduates who were challenged by

the implementation of SEPs would have the ability to perform SEPs with ease in the

future? Will they possess what Ajzen (1991) called "perceived behavioral control." If the

level of self-efficacy can be lessened with unsuccessful experiences, then, it is even more

important that SAFE's officials and stakeholders support graduates to reduce challenges

associated with conducting SEPs successfully. Understandably, this requires a "balance."

Without some level of challenge or difficulty and the need for initiatives and self-directed decision-making as well as risk-taking, the trainees may experience little growth.

Graduates perceived two main constraints to conducting successful SEPs, which were insufficient financial support and ineffective supervision. Regarding financial support, graduates proposed assistance from their employers and raising funds from other sources. Their recommendations aligned with Deola's (1999) conclusion about SEPs:

> To lay a solid foundation for sustainability of the program, in-country institutional arrangements should be put into place right from the conceptualization of the training program to its implementation. . . . funds to run the program, especially the off-campus SEPs component; flexibility on the part of the host university or college in designing a responsive curriculum without compromising its academic requirements; bringing on board other relevant partners, including individuals, government ministries and agencies, the private sector, and NGOs, that may be interested in the program. (p. 70)

Deola maintained that partnering with other stakeholders is an essential solution to supporting SEPs. This position was supported by the present study. If SEPs represent the "backbone" of the SAFE training program, then, such partnerships with funding agencies and other interested donors may be essential for sustainability of the training program in Mali.

Another important finding of this study was the rather low participation of female trainees in the SAFE program. After observing a similar situation, Kabutha (2007) reported on the reasons for low participation of women in the SAFE training program in

Ethiopia. The reasons included cultural stereotypes, women's lack of self-efficacy when competing with men in a classroom setting, inaccessibility to information, and the social responsibilities of women such as family care and community social pressures. Based on the findings of this study, it could be inferred that reasons for the low level of female participation in the SAFE training were similar to what Kabutha asserted. However, neither empirical or interpretive evidence derived from this study is sufficient enough to draw that conclusion with high confidence.

In 1987, the reflections of Lelle and Holt pointed out that, although women played a central role in the food production chain through their involvement in subsistence agriculture in developing countries, many development programs did not consider their specific needs. This "deficit of education" led to lack of recognition of women's roles, failures to address their special development needs, and less than adequate support to integrate them into agricultural development programs. If opportunities to receive increased education were provided to women, this could help alleviate poverty and enhance their well-being in developing countries (Jivetti, 2007; Lelle & Holt, 1987; Winrock International, 2000).

Lelle and Holt also posited that for women to have access to education, progressive strategies should be developed such as "have[ing] less social restrictions placed upon them [so that they] may be more easily recruited to participate in innovative programs" (p. 38). In this study, women constituted the "not married" participants; based on Lelle's and Holt's claim, perhaps, the lessened family responsibilities of these participants made their participation in the SAFE training program possible. It was also revealed that most of the female participants had their service locations near the SAFE

training site. This implies that the closer women were to the training center, the more likely they were to participate in the training. Distance between home and training site may have been of more concern to the female participants who had significant family obligations. The implication of this finding is that SAFE should consider instituting its training in other agricultural colleges or learning centers in Mali, such as the forthcoming University of Ségou, to encourage more female participation.

The supervision of SEPs was indicated as a concern by many graduates in terms of regularity, shared vision of SAFE's training approach, report writing expectations, and the rigor of evaluations. To that end, Amend (1970) claimed that supervision should be "motivating not controlling" (p. 17). The lack of collaboration between members of the supervision team, as indicated by SAFE participants, was also an issue in Ethiopia (Mwangi et al., 2005). So, from the graduates' point of view, effective supervision strategies regarding SEP experiences were lacking in the SAFE training program in these two countries. If some "best practices" or exemplars exist in Mali, or even in other countries where SAFE operates, SAFE officials should initiate workshops where those experiences can be shared.

Another important aspect of this study was the retention of graduates in Extension after completion of the SAFE program. Manton and van Es (1985) studied the reasons why Extension agents in Illinois resigned their positions. They reported that the majority of individuals resigned because of "opportunities for advancement, professional growth, and better salary benefit" (p. 3). But dissatisfaction was not likely to be a reason for Agricultural Extension educators to leave their profession, according to Manton and van Es. So, is it inevitable that a portion of the SAFE graduates, even some who may be

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highly satisfied with their training, will leave Extension as a career (Manton & van Es, 1985)? But could it be that because most of the graduates were assigned to new responsibilities or leadership positions or they had new opportunities outside Extension, some opted to leave? This question warrants additional inquiry.

In summary, based on the positive outcomes of the SAFE training in upgrading the skills of mid-career Extension educators in Mali, and considering the usefulness of the SEPs component of the SAFE curriculum, the program has been a success in Mali, as perceived by its graduates. However, the perceived challenges or shortcomings reported by graduates should be addressed to increase the likelihood of the SAFE program being sustained in Mali. This implies the need for communication, collaboration, and commitment among all SAFE stakeholders to meet the training needs of future participants. Accordingly, future SAFE graduates would be prepared to deliver the Extension services that Mali's rural citizens need and deserve.

Major Contributions of this Study

Contribution to Theory

Self-efficacy was one of the components of the conceptual/theoretical framework used to support this study. According to Bandura (1995), self-efficacy is an individual's level of self-confidence or perceived beliefs in his or her ability to accomplish a task, role, or act. The ultimate aim (i.e., outcome) of the SAFE training program is to upgrade the skills and overall professional attitudes of its participants so they are better prepared to help their clients solve problems. The findings of this study revealed that, after completing their professional development program, the SAFE graduates expressed high self-efficacy in using participative approaches in their work with clients. This study provided a concrete example of self-efficacy theory in a real-life context, i.e., SAFE graduates' perceptions of their ability to serve clients that they associated with the training, as well as the "resiliency" they expressed when overcoming constraints to reach their goals.

An additional contribution to theory was the triangulation mixed methods design (Creswell, 2005) used in this study as an approach to cross check the information collected and strengthen the findings that were derived. Triangulating the survey and focus group interview findings enabled the researcher to gain a more in-depth understanding of the perceptions of mid-career Extension educators on their SAFE training experience. The research design used also allowed the researcher to link theory and practice in shedding light on the opportunities the SAFE training offered its participants, the difficulties they encountered, and finally

to provide suggestions for improvements needed in future SAFE training programs
in Mali.

Contribution to Literature

Since 1993, the SAFE training program has been established in nine African
countries. From its establishment in Mali in 2002 to the present time, only rather limited
assessments were conducted, especially on participants' experiences with SEPs.
Therefore, this study served to inform SAFE officials about the training's primary output,
its graduates. Furthermore, SAFE officials can gain some measure of the training
programs' "outcomes" (Hoffman & Grabowski, 2004) based on graduates' perceptions of
their impact on clients' behaviors. So, this study's findings will assist in guiding SAFE
officials as they design future training programs. The study's research design, its data
collection and analysis methods, and its findings based on triangulating sources of
information is somewhat unique compared to similar studies conducted in other SAFE
countries (e.g., Duo & Bruening., 2007, Kabutha, 2007, Mwangi et al., 2005, Owens et
al., 2001).

The findings revealed conclusions and recommendations which support and even
complement existing information about the accomplishments and challenges of the SAFE
training program. Other researchers as well as practitioners may draw on aspects of this
study when planning future studies and designing similar training programs. This study
revealed that graduates benefited through job advancement and higher salaries, as well as
perceived that their training helped solve some of their client's problems. So, human
capital theory, i.e., education is an important investment in people which generates
economic benefits (Sweetland, 1996), was supported by the results of this study.

Moreover, the findings of this study can be used for comparison purposes with future studies in the SAFE training network.

Contribution to Practice

The guidelines set by the SAFE officials for recruiting should be transparent and followed closely in the selection of prospective trainees. Information sessions for potential recruits should be planned and implemented regularly. Based on the importance of SAFE's stakeholders working in concert, SAFE officials should identify potential national and international partners and gain their support for the program in tangible ways. Moreover, SAFE officials should be diligent in securing formal commitments of all employers in agreeing to assist their employees during the training and increasing the likelihood of graduates retention in Extension after graduation.

The SEPs are a unique and important component of the SAFE training program. SEPs are supported by experiential learning theory, in which skills such as "learning in real-life contexts," "problems solving," "learning by doing," and "learning through projects" are expected to be acquired and mastered by trainees. Proper supervision of the SEPs by faculty members coupled with the involvement of employers designed to support trainees as they work with clients to "co-create" solutions (Navarro, 2008) to problems is the epitome of social constructivism at work (Doolittle & Camp, 1999). The potential multiplier effects for creation of "societal good" are enormous. So, to better leverage this potential, SEPs, even if they must be "down-sized," should be incorporated into the professional development of aspiring Extension educators at the Diploma and Bachelor of Science degree levels in Mali and other developing nations. Moreover, with the provision of resources and effective supervision, SEPs should constitute a model to follow in agricultural education at all levels.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211.

Akeredolu, M. (2006, March). Improving the competence of agricultural extension in Mali: The SAFE programme of the University of Mali. *Paper presented at the APEN international conference, Beechworth, Victoria, Australia.* Retrieved from http://www.wordreference.com/fren/intervenir

Akeredolu, M. (2008, March). Private sector involvement in agricultural extension service delivery in Mali: Views and constraints from the pilot phase. *Paper presented at the annual meeting of the Association for International Agricultural and Extension Educatio*n, EARTH University, Costa Rica.

Amend, E. H. (1970). Supervision: Motivating not controlling. *Journal of Extension, Winter*, 17-24. Retrieved from http://www.joe.org/joe/1970winter/1970-4-a2.pdf

Argyris, C., & Schön, D. A. (1974). *Theory in practice: Increasing professional effectiveness*. San Francisco, CA: Jossey-Bass.

Atherton, J. S. (2010). Learning and teaching: Piaget's developmental theory. Author. Retrieved from http://www.learningandteaching.info/learning/piaget.htm

Bandura, A. (1995). *Self-efficacy in changing societies*. Cambridge, UK: Cambridge University Press.

Beauchamp, G. A. (1982). Curriculum theory: Meaning, development, and use. *Theory Into Practice*, *21*(1), 23-27.

Birkenholz, R. J. (1999). *Effective adult learning*. Danville, IL: Interstate Publishers, Inc.

Black, A. W. (2000). Extension theory and practice: A review. *Australian Journal of Experimental Agriculture*, *40*, 493-502.

Bourdeau, V. D. (2004). 4-H experiential education: A model for 4-H science as inquiry. *Journal of Extension, 42*(5). Retrieved from http://www.joe.org/joe/2004october/tt3.php

Chabi Aralamon, F. C., Cissé, B., & Famanta, M. (2000, April). Evaluation des besoins pour la mise enplace d'un programme de formation diplômante en vulgarisation agricole au Mali. Ministère du Développement Rural au Mali, Université du Mali, Sasakawa Africa Association, Winrock International (Eds.), Bamako, Mali.

Chan Cheung Ming, A., Fong Meng Soi, F., & Lau Wing No, H. (2003). Service learning among university students through working with South Asian children. *International Journal of Learning*, *10*, 2942-2948.

Collins Essential Thesaurus (2nd ed.). (2006). HarperCollins Publishers. Retrieved from http://www.thefreedictionary.com/livelihood

Cooper, A. W., & Graham, D. L. (2001). Competencies needed to be successful county agents and county supervisors. *Journal of Extension, 39*(1), 1-11. Retrieved from http://www.joe.org/joe/2001february/rb3html

Cornachione, E., & Daugherty, J. (2008). National HRD and investment in human capital: Opportunity costs of U.S. postsecondary education. U.S. Department of Education, Educational Resources Information Center (ERIC) (Ed.). Retrieved from http://www.eric.ed.gov/PDFS/ED501649.pdf

Coulibaly, A (2003). Country profile/forage resource profiles. Food and Agriculture Organization of the United Nations (Ed.). Retrieved from http://www.fao.org/ag/AGP/AGPC/doc/Counprof/Mali/mali.ht

Creswell, J. W. (2005). *Education research: Planning, conducting, and evaluating quantitative and qualitative research.* Columbus, OH: Merrill Prentice Hall.

Crick, R. D., Broadfoot, P., & Claxton, G. (2004). Developing an effective lifelong learning inventory: The ELLI project's assessment for learning. *Assessment in Education: Principles, Policy & Practice*, *11*(3), 247-272.

Davis, K. E. (2008). Extension in sub-Saharan Africa: Overview and assessment of past and current models and prospects. *Paper presented at the annual meeting of the Association for International Agricultural and Extension Educatio*n, EARTH University, Costa Rica.

Davis, K., & Place, N. T. (2003). Non-governmental organizations as an important actor in agricultural extension in semiarid East Africa. *Journal of International Agricultural and Extension Education*, *10*(1), 31-36.

Deola, N. (1999). Implications of the workshop for country-specific "SAFE" programs. In S. A. Breth (Ed.), *Innovative extension education in Africa* (pp. 69-71). Mexico City, Mexico: Sasakawa Africa Association.

Doolittle, P. E., & Camp, W. G. (1999). Constructivism: The career and technical education perspective. *Journal of Vocational and Technical Education, 16*(1). Retrieved from http://scholar.lib.vt.edu/ejournals/JVTE/v16n1/doolittle.html

D'Souza, A. J. (2003). *An evaluation of a residential learning community using Tinto's model of institutional departure.* Unpublished doctoral dissertation, Oklahoma State University, Stillwater.

Duo, S. N., & Bruening, T. (2007). Assessment of the Sasakawa Africa Fund for Extension Education in Ghana. *Journal of International Agricultural and Extension Education, 14*(1), 5-13.

Enfield, R. P., Schmitt-McQuitty, L., & Smith, M. H. (2007). The development and evaluation of experiential learning workshops for 4-H volunteers. *Journal of Extension*, *45*(1), 1-9. Retrieved from http://www.joe.org/joe/2007february/a2.php

Ferrell, C. C. (2006). *Assessment of the professional development needs of Oklahoma Cooperative Extension county staff.* Unpublished doctoral dissertation, Oklahoma State University, Stillwater.

Fevre, R., Rees, G., & Gorard, S. (1999). Some sociological alternatives to human capital theory and their implications for research on post-compulsory education and training. *Journal of Education and Work*, *12*(2), 117-140.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). Thousands Oaks, CA:
SAGE Publications.

Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2004). *Program evaluation:
Alternative approaches and practical guidelines* (3rd ed.). New York. NY:
Pearson Education Inc.

Francis, N. H., & Kritsonis, A. W. (2006). A brief analysis of Abraham Maslow's
original writing of self-actualizing people: A study of psychological health.
National Journal of Publishing and Mentoring Doctoral Student Research, 3(1),
1-7. Retrieved from http://www.eric.ed.gov/PDFS/ED501708.pdf

Green, S. B., Salkind, N. J., & Akey, T. M. (1997). *Using SPSS for windows: Analyzing
and understanding data*. Upper Saddle River, NJ: Prentice Hall, Inc.

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park, CA:
Sage. Retrieved from http://books.google.com/books

Gusky, T. R. (2000). *Evaluating professional development*. Thousand Oak, CA: Gorwin
Press Inc., Sage Publications. Retrieved from http://books.google.com

Hairston, J. E. (2004). Identifying what 4-H'ers learn from community service-learning
projects. *Journal of Extension*, *42*(1). Retrieved from http//www.joe.org/
joe/2004february/rb4.shtml

Hittleman, D. R., & Simon, A. J. (2002). *Interpreting educational research: An
introduction for consumers of research* (3rd ed.). Columbus, OH: Merrill Prentice
Hall.

Hoffman, B., & Grabowski, B. (2004). Smith Lever 3(d) extension evaluation and
outcome reporting—a scorecard to assist federal program leaders. *Journal of*

Extension, *42*(6), 1-12. Retrieved from

http://www.joe.org/joe/2004december/a1.php

Holmes, G., & Abington-Cooper, M. (2000). Learning styles and learning spaces:

Enhancing experiential learning in higher education. *Academy of Management*

Learning and Education, 4(2), 193-212. Retrieved from

http://scholar.lib.vt.edu/ejournals/JOTS/Summer-Fall-2000/holmes.html

Houle, C. O. (1980). *Continuing learning in the professions*. San Francisco, CA: Jossey-

Bass.

Informal education. (1996, 2005). Encyclopaedia, Archives, *David A. Kolb on*

experiential learning [On-line]. Retrieved from http://www.infed.org

Intrator, S. M., & Kunzman, R. (2006). Starting with the soul. *Educational Leadership*,

63(6), 38-42.

Jivetti, B. A. (2007). *Improving the livelihoods of women in the developing world:*

Selected perceptions of women's self-help groups in Western Kenya. Unpublished

master's thesis, Oklahoma State University, Stillwater.

Kabutha, C. (2007). Impact of women graduates of the BSc training agricultural

extension programme for mid-career professionals—Haramaya University, Ethiopia

(Workshop Report), Addis Ababa, Ethiopia. Retrieved from http://www.safe-

africa.com/Women_graduates_worshop_report_May_2007.pdf

Kahler, A. A., Morgan, B., Holmes, G. E., & Bundy, C. E. (1985*). Methods in adult*

education (4th ed.). Danville, IL: The Interstate Printer & Publishers, Inc.

Kanté, A., Dunkel, F., Williams, A., Magro, S., Traoré, H., & Camara, A. (2009, May).

Communicating agricultural and health-related information in low literacy

communities: A case study of villagers served by the Bougoula Commune in Mali. *Paper presented at the annual meeting of the Association for International Agricultural and Extension Educatio*n, San Juan, Puerto Rico.

Kelsey, K. D., & Pense, S.L. (2001). Gathering stakeholder input for setting research priorities at the land grant university: A pilot study. *Journal of Southern Agricultural Education Research, 51*(1), 215-227.

Kiamba, J. M. (2008). Women and leadership positions: Social and cultural barriers to success. In *Women's activism for gender equality in Africa*, Wagadu, volume 6. Retrieved from http://appweb.cortland.edu/ojs/index.php/Wagadu/article/

Klemme, D., Hausafus, C. O., & Shirer, K. (2005). Extension staff response to increased programming for at-risk audiences. *Journal of Extension, 43*(1), 1-9. Retrieved from http://www.joe.org/joe/2005february/a6.php

Knipscheer, H. (1999). Reflections on the working group reports. In S. A. Breth (Ed.), *Innovative extension education in Africa* (pp. 66-68). Mexico City, Mexico: Sasakawa-Global 2000.

Knobloch, N. A. (2003). Is experiential learning authentic? *Journal of Agricultural Education, 44*(4), 22-34.

Knowles, M. S. (1962). *The adult education movement in the United States*. New York, NY: Holt, Rinehart and Winston, Inc.

Knowles, M. S., & Klevins, C. (1982). Historical and philosophical perspectives. In C. Klevins, *Materials and methods in adult education* (pp. 15-32). Los Angeles, CA: Klevens Publications, Inc.

Kolb, D. A. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Kroma, M. M. (2003a). Participation and social learning: Supporting farmer innovation in Central Ghana. *Journal of International Agricultural and Extension Education*, *10*(1), 43-49.

Kroma, M. M. (2003b). Reshaping extension education curricula for 21st century agricultural development in sub-Saharan Africa. *Paper presented at the 19th annual conference of the Association for International Agricultural and Extension Educatio*n, Raleigh, North Carolina, USA.

Krueger R. A. (1994). *Focus Groups: A practical guide for applied research.* Thousand Oaks, CA: Sage Publications.

Krueger, R., & Casey, M. A. (2000). *Focus groups: A practical guide for applied research* (3rd ed.). Thousand Oaks, CA: Sage.

Lancelot, W. H. (1929). *Handbook of teaching skills,* New York. NY: Wiley.

Larson, K., Grudens-Schuck, N., & Allen, B. L. (2004). Can you call it a focus group? Ames, IA: Iowa State University Extension. Retrieved from http//www.extension.iastate.edu/Publications/PM1969A.pdf

Leedy, P. D., & Ormrod, J. E. (2005). *Practical research: Planning and designing* (8th ed.). Columbus, OH: Pearson Merrill Prentice Hall.

Lelle, M. A., & Holt, B. A. (1987). Agricultural education: Key to providing broader opportunities for third world women in production agriculture. *The Journal of the American Association of Teacher Educators in Agriculture, 28*(4), 32-39.

Leresche, K. M. (Compiler.) (n.d). Higher education networks relevant to agriculture in Africa. Retrieved from http://www.iln-africa.net/uploads/documents/resource/HE_networks_Muir-Leresche.pdf

Lewin, K. (1951). *Field theory in social science*. New York, NY: Harper and Brothers
Publishers.

Lionberger, H. F., & Gwin, P. H. (1991). *Technology transfer: From researchers . . . to
users.* Columbia, MO: University of Missouri Extension.

Longman Advanced American Dictionary (2nd ed.). (2007). The dictionary for academic
success. Essex, England: Pearson Education Limited.

Macadam, R. D. (1997, November). A personal history of extension in Australia. *Paper
presented at the 2nd Australia-Pacific extension conference. Albury, 1*, 634-643.
Albury, Australia: Australia Pacific Extension Network.

Macadam, R. D. (2000). From pushing production inputs to empowering the community:
A case study in the transformation of an extension agency. *Australian Journal of
Experimental Agriculture, 4,* 585-594.

Maguire, C. J. (2000, September). Agricultural education in Africa: Managing change.
Paper presented at the Sasakawa Africa Association workshop, Accra, Ghana.

Manton, L. N., & van Es, J. C. (1985). Why do extension agents resign? *Journal of
Extension, 23*(3), 1-6. Retrieved from http://www.joe.org/joe/1985fall/a4.php

Marcotte, J. (2008). Quebec's adult educational settings: Potential turning points for
emerging adults? Identifying barriers to evidence-based interventions. *Canadian
Journal of Educational Administration and Policy*, (77). U.S. Department of
Education, Educational Resources Information Center (ERIC) (Ed.). Retrieved from
http://www.eric.ed.gov/PDFS/EJ807085.pdf

Matlon, P., Cantrell, R., King, D., & Benoit-Catin, M. (1984). Coming full circle:
Participation in the development of technology. International Development Research

Center, Ottawa, Canada. Retrieved from http://idl-

bnc.idrc.ca/dspace/bitstream/10625/20630/1/57390_p119-124.pdf

Mayeske, G. W. (1999). *Performance measurement & management: A partnership

approach*. Cooperative State Research, Education and Extension Service, United

States Department of Agriculture, Washington, DC.

Merriam, S. B., & Caffarrella, R. (1999). *Learning in adulthood: A comprehensive guide*

(pp. 248-269). San Francisco, CA: Jossey-Bass, A Wiley Company.

Miettinen, R. (2000). The concept of experiential learning and John Dewey's theory of

reflective thought and action. *International Journal of Lifelong Education*, *19*(1), 54-

72.

Miller, L. E. (1994). Correlations: Description or inference? *Journal of Agricultural

Education*, *35*(1), 5-7.

Mincemoyer, C. C., & Kelsey, T. W. (1999). Assessing in-service education: Identifying

barriers to success. *Journal of Extension, 37*(2), 1-7.

Munoz, M. D., & Munoz, M. A. (1998). John Dewey on democracy, education,

experience, and communication: Implications for adult education in developing

democratic organizations. U.S. Department of Education, Educational Resources

Information Center (ERIC) (Ed.). Retrieved from

http://www.eric.ed.gov/PDFS/ED464262.pdf

Mutimba, J. (2003, April). Sasakawa Africa Fund for Extension Education (SAFE)

experiences with training of mid-career extension professionals in Africa. *Paper

presented at the ANAE symposium on tertiary agricultural education, ICRAF*,

Nairobi, Kenya.

Mutimba, J., Mangheni, M. N., & Matsiko, F. B. (2007). The shift from public to private contract agricultural extension system: Educational implications of policy reforms in Uganda. In M. N. Mangheni (Ed.), *Experiences, innovations and issues in agricultural extension in Uganda: lessons and prospects* (pp. 87-104). Kampala, Uganda: Fountain Publishers.

Mwangi, J. G., Chibwana, C., & Azerefegne, F. (2005). Report of an external evaluation of the BSc program for mid-career extension professionals at Alemaya University, Ethiopia. Sakawa Africa Fund for Extension Education (Ed.). Addis Ababa, Ethiopia: SAFE. Retrieved from http://www.safe-africa.com/External_Evaluation_Alemaya_final_report.pdf

Nahavandi, A. (2009). *The art and science of leadership* (5th ed.*).* New Jersey, NJ*:* Pearson Education, Inc.

Navarro, M. (2008). On the path to sustainable agricultural development: Enhancing agent's contribution. *The International Journal of Environmental, Cultural, Economic and Social Sustainability, 4*(3), 71-77.

Neapolitan, J. (1980). Occupational change in mid-career: An exploratory investigation. *Journal of Vocational Behavior, 16*, 212-225.

Oklahoma Cooperative Extension Service (OCES). (2009). Performance review and professional development: Extension county educators, area specialists & district program specialists. Division of Agricultural Sciences and Natural Resources, Oklahoma State University, Stillwater. Retrieved from http://download.dasnr.okstate.edu

Owens, M. E., Zinnah, M. M., Annor-Frempong, F., & Obeng, A. S. (2001). Tertiary

education for mid-career level extension: Ghana case study. Sustainaible

Development Department (SD), Food and Agriculture Organization (FAO) of the

United Nations, Accra, Ghana.

Palincsar, A. S. (1990). Providing the context for intentional learning. *Remedial and

Special Education*, *11*, 36-39.

Pringle, R. (2006). Democratization in Mali: Putting history to work. *Peaceworks* (58).

Washington, DC: United States Institute of Peace. Retrieved from

http://www.usip.org/print/ resources/democratization-mali-putting-history-work

Ramsey, J. W., & Edwards, M. C. (2004). Informal learning in science: Does agricultural

education have a role? *Journal of Southern Agricultural Education Research*,

54(1), 86-99.

Retallick, M. S. (2003, May-June). Reframing SAE: The tricycle principle. *The

Agricultural Education Magazine, 75*(6), 8-9.

Retallick, M. S. (2005). The connection between supervised agricultural experiences

(SAE) and academic success in agricultural education. Indiapolis, IN: National

FFA Organization. Retrieved from

http://www.pte.idaho.gov/Agriculture/SAEHandbook/

Richardson, (1994). Learning best through experience. *Journal of Extension*, *32*(2).

Retrieved from http//www.joe.org/joe/1994august/a6.html

Roberts, K. (2007). How can you attribute when you don't know what to look for? *Paper presented at the conference of the Australian Evaluation Society* (AES), Canberra, Australia. Retrieved from

http://www.aes.asn.au/conferences/2007/Papers/Kate%20Roberts.pdf

Roberts, T. G. (2006). A philosophical examination of experiential learning theory for agricultural educators. *Journal of Agricultural Education, 47*(1), 17-29.

Roberts, T. G., & Harlin, J. F. (2007). The project method in agricultural education: Then and now. *Journal of Agricultural Education, 48*(3), 46-56.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.

Rosson, C. P., III, & Sanders, L. D. (1991). International programming issues for Extension education. *Journal of Extension, 29*(2), 1-5. Retrieved from

http://www.joe.org/joe/1991summer/a5.php

Sasakawa Africa Association (SAA). (2008). About Sasakawa Africa Fund for Extension Education. Author. Retrieved from http://www.saa-tokyo.org/english/safe/

Sasakawa Africa Fund for Extension Education (SAFE). (n.d.). Brochure. Author. Retrieved from http://www.safe-africa.com/brochure.html

Sasakawa Africa Fund for Extension Education (SAFE). (2004, April). Report of staff retreat. Author. Bamako, Mali.

Sasakawa Africa Fund for Extension Education (SAFE). (2006a). About SAFE [Online Forum]. Author. Retrieved from http://www.safe-africa.com/events_safe.html

Sasakawa Africa Fund for Extension Education (SAFE). (2006b). Capability statement. Author. Retrieved from http://www.safe-africa.com/capability_statement.html

Sasakawa Africa Fund for Extension Education (SAFE). (2006c). About Sasakawa Africa

    Fund for Extension Education: Supervised enterprise projects (SEPs). Author.

    Retrieved from http://www.safe-africa.com/seps

Sasakawa Africa Fund for Extension Education (SAFE). (2007, February). Report of staff

    retreat. Addis Ababa, Ethiopia: Author.

Sasakawa Africa Fund for Extension Education (SAFE). (2008). About Sasakawa Africa

    Fund for Extension Education. Author. Retrieved from http://www.saa-

    tokyo.org/english/aboutsaa/

Sasakawa Africa Fund for Extension Education (SAFE). (2009). Programmes de

    formation du cycle de maitrise en vulgarisation agricole. Author. Retrieved from

    http://www.safe-africa.com/Programmes_MVA.pdf

Swanson, B. E. (2008). *Global review of good agricultural extension and advisory*

    service practices. Food and Agriculture Organization of the United Nations (Ed.).

    Rome, Italy. Retrieved from http://www.prolinnova.net/Downloadable_files/

    Global%20Review%20of%20Good%20Agri%20FAO%202008.pdf

Sweetland, S. R. (1996). Human capital theory: Foundations of a field of inquiry. *Review*

    of Educational Research, *66*(3), 341-359.

Talbert, B. A., Vaughn, R., & Croom, D. B. (2005). *Foundations of agricultural*

    education. Catlin, IL: Professional Educators Publications, Inc.

Tefera, T. L., Tegegne, A., & Hoekstra, D. (2009, November). Linking graduate research

    to market-oriented agricultural development: IPMS experience with Ethiopian higher

    learning institutions. *Paper presented at the meeting of the 5th International*

    Conference on Ethiopian Development Studies, Alemaya University, Ethiopia.

The American Heritage Dictionary of the English Language (4th ed.). (2000, updated in

2003). Retrieved from http://www.thefreedictionay.com/livelihood

The American Heritage Dictionary of the English Language (4th ed.). (2009). Retrieved

from http://dictionary.reference.com/browse/client

Traoré, A. C. (2008). Potential roles and contributions of alternative extension service

providers in Mali. Bamako, Mali: Direction Nationale de L'Agriculture.

Université du Mali & Direction Nationale de L'Appui au Monde Rural. (2001). Dossier

technique place d'un programme de formation diplômante en vulgarisation

agricole au Mali. Ministère du Développement Rural au Mali. Ministère de

L'Education, Ministère du Développement Rural au Mali (Eds.), Bamako, Mali.

Vanclay, F. (2004). Social principles for agricultural extension to assist in the promotion

of natural resource management. *Australian Journal of Experimental Agriculture*,

44(3), 213-222.

Von Wright, J. (1992). Reflections on reflection. *Learning and Instruction*, (2), 59-68.

Warde, W. D. (1990). *Sampling methods*. Unpublished book, Department of Statistics,

Oklahoma State University, Stillwater.

Winrock International: African women leaders in agriculture and the environment in the

AWLAE program. (2000, December). Final report to U.S. Agency for

International Development. Retrieved from

http://pdf.usaid.gov/pdf_docs/PDABS921.pdf

Zinn, L. M. (2004). Exploring your philosophical orientation. In M. W. Galbraith (Ed.),

Adult learning methods: A guide for effective learning (3rd ed.) (pp. 39-74).

Malabar, FL: Krieger Publishing Company.

Zinnah, M. M., & Mutimba, J. K. (1998, September). An overview of the SAFE

   programme for training mid-career agricultural extension staff in Africa and the

   critical role of the supervised experience/enterprise projects (SEPs). *Paper*

   presented at the meeting of a strategic supervised experience/enterprise projects

   (SEPs) component of the SAFE initiative at selected African universities, Sokoine

   University of Agriculture, Morogoro, Tanzania.

Zinnah, M. M., Steele, R. E., & Mattocks , D. M. (1999). From margin to mainstream:

   Revitalization of agricultural extension curricula in universities and colleges in

   sub-Saharan Africa. From "Training for Agricultural and Rural Development"

   (Food and Agriculture Organization [FAO] of the United Nations, 1998). Rome,

   Italy: Sustainable Development Department (SD) dimensions, FAO. Retrieved

   from http://www.fao.org/sd/EXdirect/EXan0027.htm

APPPENDICES

APPENDIX A

Institutional Review Board Approval

Oklahoma State University Institutional Review Board

Date:	Friday, October 30, 2009
IRB Application No	AG0935
Proposal Title:	An Evaluation of the Sasakawa Africa Fund for Extension Education (SAFE) Professional Development Program in Maili: Graduates' Perceptions of Opportunities and Constraints Related to their Implementation of SAFE Training and Use of Supervised Enterprise
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved   Protocol Expires: 10/29/2010

Principal
Assa Kante   Michael Craig Edwards
21 N. Univ. Place Apt. 6   448 Ag Hall
Stillwater, OK 74075   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia Kennison, Chair
Institutional Review Board

APPENDIX B
Survey Instrument

Survey Instrument

Key items to assess the professional development of mid-career Extension educators who are graduates of the SAFE training program in Mali.

1. The SAFE Training Program and Its Impact

1.1 Generally, have you observed changes in clients' practices that you attribute to the
SAFE training you received? (**Circle**)   Yes   Not Sure   No

You received SAFE training in six primary agricultural and social sciences domains. It was intended that training in these domains prepared you to help clients improve their productivity. Please, rank the six domains from **Highest (1) to Lowest (6)** for their __impact__ on your professional practice regarding improvements in client productivity.

1.2 **Ranking:**   **1 = Highest Impact,**   **2 = High Impact,**   **3 = Above Average Impact,**
                       4 = Average Impact,   **6 = Lowest Impact**

____   Fundamental sciences knowledge (examples: knowledge of cultivated plants and domestic animals)

____   Human relations skills (examples: communication, creating professional relationships)

____   Administration, management, and leadership skills (example: leadership in agriculture)

____   Practical skills (examples: making and using visual aids, program planning and evaluation, implementing SEPs)

____   Technical skills (examples: mechanization; computer skills)

____   Extension education principles and methods (examples: study of different Extension systems, teaching adults, management of Extension service)

1.3 Briefly explain <u>why</u> you ranked a given domain the highest.

_____
_____
_____

1.4 Briefly explain <u>why</u> you ranked a given domain the lowest.

_____
_____
_____

1.5 On a scale of **1 to 5, indicate the training's impact on your competence overall** when interacting with clients professionally, **mark only one**:

Lowest Impact		↔		Highest Impact
↓	↓	↓	↓	↓
1	2	3	4	5

Approximately, how many of your clients have adopted the following technologies or practices? (Please, use the scale provided below.)

	Before SAFE training					After SAFE training				
	None	A few	Some	Many	Nearly all	None	A few	Some	Many	Nearly all
Use of plant nutrient management practices: 1.6 Chemical fertilizer 1.7 Compost 1.8 Green Manure 1.9 Others (specify)_____	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

	Before SAFE training					After SAFE training				
	None	A few	Some	Many	Nearly all	None	A few	Some	Many	Nearly all
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1.10 Use of improved seeds	1	2	3	4	5	1	2	3	4	5
1.11 Use of improved pest management practices	1	2	3	4	5	1	2	3	4	5
1.12 Use of improved post-harvest technologies	1	2	3	4	5	1	2	3	4	5
1.13 Use of improved breeds of livestock (including poultry)	1	2	3	4	5	1	2	3	4	5
1.14 Use of improved livestock feeding practices	1	2	3	4	5	1	2	3	4	5
1.15 Use of improved fisheries/ aquaculture practices	1	2	3	4	5	1	2	3	4	5
1.16 Use of improved be keeping practices	1	2	3	4	5	1	2	3	4	5
1.17 Others (specify):___	1	2	3	4	5	1	2	3	4	5

For those clients who have adopted improved inputs/practices since you completed the SAFE training, **rate the importance** of the following reasons for increased adoption. Please, use the **1 to 5** scale provided below.

	No Importance ↓	Low Importance ↓	Average Importance ↓	Above Average Importance ↓	Great Importance ↓
1.18 Improved infrastructure (e.g., transport)	1	2	3	4	4
1.19 Higher output prices relative to input costs	1	2	3	4	4
1.20 Improved marketing approaches	1	2	3	4	4
1.21 Improved access to credit	1	2	3	4	4
1.22 Increased input supply	1	2	3	4	4
1.23 NGOs (free or subsidized inputs)	1	2	3	4	4
1.24 Improved Extension services	1	2	3	4	4
1.25 Other reasons (specify)_____	1	2	3	4	4

Regarding the provision of Extension Services and the **increased adoption** of improved technologies and practices by your clients, indicate your **level of agreement** with the following possible reasons. Please, use the **1 to 5** scale provided below.

	Strongly Disagree ↓	Disagree ↓	Uncertain ↓	Agree ↓	Strongly Agree ↓
1.26 More Extension agents to reach more farmers	1	2	3	4	4
1.27 More effective Extension methods that enable more meaningful assistance to farmers	1	2	3	4	4
1.28 More effective organization and mobilization of farmers (e.g., inputs and outputs, marketing groups, credit and savings groups)	1	2	3	4	4
1.29 Stronger research-Extension linkages	1	2	3	4	4
1.30 Increased professionalism in the Extension service (e.g., less involvement of staff in non-Extension tasks)	1	2	3	4	4
1.31 Increased private sector and Extension interaction	1	2	3	4	4
1.32 More female Extension officers	1	2	3	4	4
1.33 Other reasons for increased adoption (specify)_____	1	2	3	4	4

	Before SAFE training					After SAFE training				
	None	1-5	6-10	11-15	16 or more	None	1-5	6-10	11-15	16 or more
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1.34 How many demonstrations did/do you conduct/ monitor yearly?	1	2	3	4	5	1	2	3	4	5
1.35 How many group discussions did/do you lead yearly?	1	2	3	4	5	1	2	3	4	5
1.36 How many input dealers did/do you interact with yearly?	1	2	3	4	5	1	2	3	4	5
1.37 How many traders (commodity buyers) did/do you interact with yearly?	1	2	3	4	5	1	2	3	4	5

1.38 Annually, for every 100 client contacts you make, how many are with women?

None   1 to 20   21 to 40   41 to 60   61 to 80   81 to 100   More than 100

1.39 What kind of information do you provide to women <u>most frequently</u>?

_____
_____
_____

1.40 How do you interact differently with female clients than males? (**Leave blank if not applicable**.)

_____
_____
_____

1.41 What do you do <u>most differently</u> depending on a client's gender? (**Leave blank if not applicable**.)

_____
_____
_____

2. Leading and Facilitating Supervised Enterprise Projects (SEPs)

2. A. Because you conducted SEPs as a practical component of the SAFE training, we wish to learn more about your experience with SEPs and how you use that knowledge <u>when working with clients</u>. Please, use the **1 to 5** scales provided below.

2.1 How do you rate your competence to help clients **learn in real-life contexts**?

Low Competence	Some Competence	Average competence	Above Average Competence	High Competence
1	2	3	4	5

2.2 How frequently do you use **learning in real-life contexts** with clients?

Never	Not very frequently	Sometimes	Frequently	Very frequently
1	2	3	4	5

2.3 How do you rate your competence to use **"learning by doing" practices** when working with clients?

Low Competence	Some Competence	Average competence	Above Average Competence	High Competence
1	2	3	4	5

2.4 How frequently do you use **"learning by doing" practices** with clients?

Never	Not very frequently	Sometimes	Frequently	Very frequently
1	2	3	4	5

2.5 How do you rate your competence to help clients learn by **using a problem solving approach**?

Low Competence	Some Competence	Average competence	Above Average Competence	High Competence
1	2	3	4	5

2.6 How frequently do you use a **problem solving approach** with clients?

Never	Not very frequently	Sometimes	Frequently	Very frequently
1	2	3	4	5

2.7 How do you rate your competence to help clients learn by **developing and implementing rural projects**?

Low Competence	Some Competence	Average competence	Above Average Competence	High Competence
1	2	3	4	5

2.8 How frequently do you use **project development and implementation** with clients?

Never	Not very frequently	Sometimes	Frequently	Very frequently
1	2	3	4	5

2. B. When implementing SEPs with clients, **how difficult** are the following factors to overcome? Please, use the **1 to 5** rating scale provided below. **Leave blank any item which is not applicable.**

	No Difficulty	Some Difficulty	Average Difficulty	High Difficulty	Extreme Difficulty
2.9 Cost of the SEP	1	2	3	4	4
2.10 Time devoted to the SEP	1	2	3	4	4
2.11 Decision-making regarding the SEP	1	2	3	4	4
2.12 Freedom for women to implement the SEP	1	2	3	4	4
2.13 Availability of infrastructure to implement the SEP	1	2	3	4	4
2.14 Process of getting appropriate the SEP	1	2	3	4	4
2.15 Access to experts to help develop the SEP	1	2	3	4	4
	1	2	3	4	4

3. <u>Satisfaction with the SAFE Training Program</u>

3.1 How satisfied overall are you with your SAFE training program experience? (**Mark only one response**)

    1 = Highly Dissatisfied   2 = Dissatisfied   3 = Neutral

    4 = Satisfied   5 = Highly Satisfied

3.2 In order of priority, list your primary reasons for joining the SAFE training program?

Highest a) _____

b) _____

c) _____

d) _____

Lowest e) _____

3.3 Would you encourage a colleague to participate in the SAFE training program? (**Mark only one response**)

    Definitely No   Probably No   Not Sure   Probably Yes   Definitely Yes

3.4 What is the most important aspect of the SAFE training program you would discuss with a colleague who was considering participating in the program?

_____
_____
_____

3.5 In order of priority, what needs to be improved or changed in the SAFE training program?
Highest a) _____
        b) _____
        c) _____
        d) _____
Lowest e) _____

3.6 In order of priority, list new and emerging training needs that should be included in future SAFE training programs.

Highest a) _____
        b) _____
        c) _____
        d) _____
 Lowest e) _____

4. Personal Characteristics

4.1 What is your gender?   Male   Female

4.2 What is your age? _____

4.3 What is your marital status? (**Mark only one category**)

  Single   Married   Divorced   Separated   Widowed

4.4 Including yourself, how large is your family? (**Mark only one range**)

  1 to 3   4 to 6   7 to 9   10 to12   More than 12   Other (specify) _____

4.5 What is your Religion?   Muslim   Christian   Other (specify) _____

4.6 Where do you serve? (**Mark one):**
 1 = Kayes, 2 = Koulikoro, 3 = Sikasso, 4 = Ségou, 5 = Mopti, 6 = Gao, 7 = Tombouctou, 8 = Kidal, 9 = District of Bamako

5. Educational Background

5.1 What was your highest level of education when entering SAFE training? (**Mark the level that applies best**)

          Secondary level (DEF: degree of fundamental studies)
          High School Baccalaureate level (non-degree)
          High School Baccalaureate degree
           University Degree of Seignior Technician (DUTS)
          Bachelor of Science (College Degree)
          Other (specify) _____

5.2 Have you received **other** professional or vocational training? (**Circle**)   Yes   No

    If yes, specify_____

5.3 What was your major area of study? (**Mark only one response**)

   Agriculture   Animal Sciences   Forestry   Economics Other (specify) ___

5.4 Indicate your years of professional experience in Extension_____

5.5 Indicate your years of experience in fields other than Extension_____

5.6 In which year did you complete the SAFE training? _____

5.7 Do you have your own farm**? (Circle**)   Yes   No

If yes, describe what you do _____
_____
_____

6. <u>Professional Category Before and After the SAFE training</u>

6.1 What was your hierarchical position in Extension before SAFE training?

_____

6.2. If your category has changed, what is your hierarchical position now?

_____

6.3 Are you still working as an Extension educator? (**Circle**)   Yes   No

If no, describe your current job? _____
_____
_____
_____

Thank you very much for completing this questionnaire!!!

APPENDIX C
Semi-Structured Focus Group Interview Guide

Guide for Semi-Structured Focus Group Interviews

1. How has your experience with Supervised Enterprise Projects (SEPs)

   positively impacted your professional skills and practices?

2. What constraints have you encountered when implementing aspects of SEPs

   with your clients?

3. How could the SEPs portion of the SAFE training be improved to better meet

   your needs as an Extension educator?

APPENDIX D

Cover Letter

October…, 2009

Mme NDiaye Assa Kante student at

Department of Agricultural Education, Communications, and Leadership

Oklahma State Stillwater, OK 74078-6032

Dear…,

The Department of Agricultural Education, Communications, and Leadership at

Oklahoma State University is interested in identifying your perceptions of the impact of

the Sasakawa Africa Fund for Extension Education (SAFE) program on the upgrading of

the skills of Extension agents. The aim is to provide information about the success of the

program to SAFE administrators and stakeholders for the future decision-making. We

would appreciate your cooperation in participation in this survey and focus-group

interviews.

We realize that your schedule is busy and your time is valuable. However, we hope that

your participation in this study will be helpful in evaluating the SAFE program in Mali.

Thank you in advance for your participation. If you have questions about the study, you

can contact me.

Yours truly,

Assa Kante

APPENDIX E

Informed Consent Form

Project Title:

An assessment of the Sasakawa Africa Fund for Extension Education's (SAFE) training

program in Mali: graduates' perceptions of the training's impact as well as opportunities

and constraints related to Supervised Enterprise Projects (SEPs)

Investigators:

Assa Kante, M.S., Agricultural Education, Graduate Student Researcher

M. Craig Edwards, Ph.D., Agricultural Education, Professor

Purpose:

The purpose of this study was to assess graduates' perceptions of the Sasakawa Africa

Fund for Extension Education (SAFE) training program in Mali regarding their training

experiences and its impact on their professional practice. Graduates' views on aspects of

the training that involved Supervised Enterprise Projects (SEPs) were emphasized. In

addition, personal and professional characteristics of the graduates were described so that

selected relationships could be examined. Findings will be used to assist in evaluating the

SAFE training program's effectiveness and determine if changes are needed in the future.

Procedures:

Your participation in the study will involve filling a survey instrument and participating

in a semi-structured focus group interview. You will be given a day to fill the survey

instrument at your convenience. It is estimated that completing the survey instrument will

take about one hour. The semi-structured focus group interview would involve you and

up to six of your SAFE training program peers. The focus group interviews will be audio-

taped and hand written notes of the interview will be taken.

Risks and Benefits of Participation:

There are no known risks associated with this study which are greater than those ordinarily encountered in daily life. There are no expected personal benefits to you either.

Confidentiality:

The data will be collected anonymously. You <u>will not</u> place your name or other identifying information on the survey instrument. The survey instruments will be kept in a safe to which only the researcher will know the combination. Data collected and analyzed will be stored on the researcher's personal computer which is accessible only to her. The computer's password is protected and can be accessed only by the researcher. In any sort of report the researcher may publish, she will not include any information that would make it possible to identify an individual study participant, i.e., all data will be grouped and summarized for reporting purposes. Participant data and other information related to the study will be kept by the researcher up to two years for the purpose of analysis and reporting. Thereafter, it will be destroyed.

Compensation:

There is not any compensation or payment for your involvement in this study. However, your transport and lodging expenses related to participating in the semi-structured focus group interview would be paid, assuming your participation required travel. A communal lunch will be served following the focus group interviews.

Contacts:

Assa Kante, M.S., Graduate Student, Department of Agricultural Education, Communications, and Leadership, 545 Agricultural Hall, Oklahoma State University, Stillwater, OK 74078, USA; Tel# 405.744.8084; FAX# 405.744.5176; e-mail:

assa.kante@okstate.edu; or in Mali at Institut D'Economie Rurale, Rue Mohamed V,

Telephone: + 223 2021 2606 or + 223 2072 5741; or M. Craig Edwards, Ph.D., Professor,

Department of Agricultural Education, Communications, and Leadership, 448

Agricultural Hall, Oklahoma State University, Stillwater OK 74078, USA; Tel#

405.744.8141; FAX# 405.744.5176; e-mail: craig.edwards@okstate.edu

If you have questions about your rights as a research volunteer, you may contact Dr.

Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, USA; Tel#

405.744.3377 or e-mail: irb@okstate.edu

You can contact the researcher in Mali to confirm your participation in the study:

Assa Kante, Institut D'Economie Rurale, Rue Mohamed V, Tel#: + 223 2021 2606 or +

223 2072 5741

Participant Rights:

Your participation in the study is voluntary and you can choose to withdraw at any time.

No detrimental effects or reprisals are associated with opting not to participate in this

study.

Signatures:

I have read and fully understand the consent form. I sign it freely and voluntarily. A

copy of this form has been given to me.

_____   _____

Signature of Participant   Date

I certify that I have personally explained this document before requesting that the

participant sign it.

_____   _____

Signature of Researcher   Date

APPENDIX F
Transcript of Open-Ended Questions from the Survey Instrument

1.3 Briefly explain <u>why</u> you ranked a given domain the highest.

101: It is in this domain that I work a lot with Malian producers, considering their levels of education and mechanization, which are in such a category that this domain is more convenient to improve their productivity.

102: I ranked four domains number 1 (highest) because I evolve in these domains as an Extension professional in my workplace, and I have realized the real impact of these domains.

103: These domains are the highest because they made the most changes in the work area.

104: I applied research on small animals. I am the general secretary of the association o f Extension graduates, and I am in frequent contact with people.

105: The domain I ranked the highest is the master piece of Extension program

106: These domains were ranked the highest because they are the foundation of our SAFE training and the daily basis of our profession

201: Before the SAFE training, I had weaknesses in administration, management, and leadership. My expectations were met even in communication and writing reports.

202: For every activity, you need to contact the administration for the knowledge of the rural environment and make the inventory.

203: The domains ranked the highest had positive responses in terms of competence acquisition which allows us to face the resolution of our clients' problems.

204: Agricultural Extension is my specialty.

205: Because the training I received ended up to a great change in my knowledge as well as in my daily activities, I mean intellectually and socially.

206: Because we received a great experience in this domain, as we were taught by a

highly experienced professor. The accumulation of these experiences has allowed me to teach these courses in the "Agro-Sylvo-Pastoral" School in Dioila.

207: As a basic Extension agent, this training helped upgrade my knowledge.

208: I have background training in animal sciences. During the SAFE training I received some training in plant sciences, which already explain the advantages I got.

209: Because of the other domains will be disseminated through Extension education.

223: In Extension, to be understood, the main weapon is communication.

224: I realized the importance of plants and the importance of communication

225: Because I developed some competence in this domain

226: Because of today's diverse responsibilities we have been assuming.

301: The competence in human relation is the highest domain because this is where I had deficiency. Presently the knowledge I have acquired in this domain has allowed me to manage people under my responsibility.

302: I ranked four domains the highest because it is in these domains that I am evolving on the ground in direct contact with the beneficiaries in order to improve their productivity.

303: With the science courses I was able to get the needed knowledge to evolve in this domain.

304: Being the son of a farmer, I have loved Extension. The training at the Agricultural Training Center, the Technician Degree at IPR Katibougou, and then this training has given me the advantage to better my knowledge and master the subject matter.

401: Because man is at the center of all development

Knowing the cultivated ecosystem, productive social system, and communicating (with exchange of ideas).

402: Because these principles have been dynamized with the evolution of rural areas and the integration of various development parameters

403: Because we received more knowledge in these domains

404: This domain was limiting my activities before the training

405: Since my gradation, I have been running an Extension program. Human resource management is my daily duty.

406: This is the daily of our professional life; this is why I ranked it the highest

407: I ranked fundamental sciences the highest, because the training allowed me to better master science, which is essential for a good conduct of Extension activities

408: This is the backbone of my education. All this knowledge is based on the improvement of productivity and production

409: Because food security is managed by the government and the populations, therefore we need a good leadership and governance, that is agricultural leadership

411: Extension principles and methods allowed me to have a wide knowledge in these domains.

501: This domain allowed me to diagnose the real problems of producers. Usually, it is the people who propose solutions to their problems.

502: I ranked this domain the highest because I have been involved in Extension, as an agricultural advisor, since my graduation from the SAFE program. I take care of the introduction of new farming techniques for rice and cowpea.

503:    This domain was ranked the highest because we target an adult audience; therefore we need to know Extension systems.

504:    Since graduation from the SAFE program until now, I have been doing only Extension with gardeners and GIPD. I have been working with the administration for just the activity reports

701:    Because I was interested in this domain in which I had weaknesses

702:    It allowed me to acquire a higher competence in Extension and learn how to communicate my message without hurting the target people so that they would have a good understanding, bring about a positive change.

703:    Because this domain helped in my function after the SAFE training

704:    Since my graduation from the SAFE program, this is what I have been doing more and better as a job

801:    As a result of this training, I easily create relationships and communicate. My experience has increased to a point that people referred to me as model to follow

901:    These point were of great utility for my job function

902:    The knowledge in fundamental sciences and the knowledge of domestic animals were the domains I ranked the highest because I am a veterinary by profession and I love animals.

903:    The foundation of any development is communication, without it anything work. To run a project very well you need to communicate with the beneficiaries of that project. All human and professional relations need communication.

904:    Communication is an essential tool for the Extension agent and it eases interpersonal and interprofessional relations.

905:    I ranked this domain the highest because I believe the job of Extension gives me

        an opportunity to be useful for the society and economic success of the country.

        Communication enables people to understand each other.

906:    The competence in human relations was ranked the highest because the success

        and failure of Extension work depend on human relations between farmers and

        between farmers and the Extension agents.

907:    The competence in human relation ease adults training (focal point of Extension)

1.4 Briefly explain <u>why</u> you ranked a given domain the lowest.

101:    Because mechanization of agricultural is very well advanced in Mali and the use

        of computing is scarce.

102:    I ranked tow domains 6 (lowest) because I have not observed any impact in these

        areas.

103:    These are ranked the lowest because I have not observed any change for the

        moment and also the situation does not exist in my work area.

104:    I am not a full time educator, but I do short training for Extension agents who are

        in the fields, especially in technical domain of livestock.

105:    The domain I ranked the lowest is only basic knowledge.

106:    Our training was not focused on these domains, and they are not always part of

        our daily activities

201:    The knowledge of the plant was already an achievement for me, but the one on

        the domestic animals was very important, but time constraints did not allow us to

        complete the program

202:    Application is not often.

203: The domains ranked the lowest are due to the environment. After the training, access to computer and materials was a difficulty.

204: Farmers do not have access to computer and cannot afford to buy tractors.

205: This part of the training was the most incomplete

206: Since my graduation, I have not had the chance to coordinate, plan, and evaluate specific programs.

207: Leadership had the lowest impact because our leadership knowledge has not been improved.

208: Competence in administration, but any management and leadership course was provided; therefore we need to improve in this area.

209: We can work without computer, even though it is a good tool

223: The computer was insufficient

224: I don't know anything about leadership.

226: The function we are exercising does not allow to be permanently with producers and we are not involved in administration and management.

301: Mechanization had the lowest impact because this module was too short and without practice.

302: I ranked two domains the lowest because in terms of productivity of beneficiaries, the impact (use) of computer is very limited.

303: The computer course was taught in academic conditions, which did allow the students to understand or like it. The professor was not respectful in regards to students. Based on the current provision of the computer course, I could not tell

that I would not understand the class, but the lack of pedagogy of the teacher would not allow any student to understand anything.

402: The computer and mechanization courses should be extended and be more practical than theoretical. The Extension agent should learn how to manipulate machines, drive tractors because he is more and more involved in the equipment of producers.

403: Because the domains ranked the lowest should be reinforced

404: Practical activities gave me solid notions

405: Does not apply to my position

406: I ranked some domains the lowest, but this does not mean they are not important. They are parts of a whole

407: I ranked technical competences the lowest, because I have not had the chance to apply the examples given in the questionnaire.

408: Mechanization is a whole specialization. Regarding computer, you need to have access to a computer all the time.

409: One needs to have information and a mastery of agricultural mechanization

411: I have little knowledge in these domains especially in the use of audio-visual materials

501: The diversity of fundamental sciences is a way that they have to master especially in the field of Extension. The Extension agent should have permanent contact with research in order to propose solutions.

501: I ranked mechanization the lowest because it is not very well developed and computer facilities almost do not exist

503: This domain was ranked the lowest because we do not have machines and computer at our disposal

504: Absence of computers

701: The course on mechanization was purely theoretical, and not practical. Regarding the computer course, it just stops at A B C.

702: This knowledge exists already, even producers possess it from generation to generation, and therefore we complete each other

703: Because it has proved relevant in my function after the SAFE training

704: I don't have any experience in administration

801: These domains were ranked the lowest because some responsibilities of Extension agents should be placed at a higher level.

901: Time allocated to this domain is limited

902: The practical competence and development of visual aids are domains that I have not used because at my workplace we seldom use them

903: Lean how to be organized

904: The SAFE program should reinforce modules such as knowledge of animals

905: I ranked this domain the lowest because we did have enough hours in the computer course.

906: Fundamental sciences domain was ranked the last because I already have knowledge in this domain before the SAFE training. It was not relevant to me.

907: In rural areas the use of computer does count much

1.39 What kind of information do you provide to women **most frequently**?

101: To be organized in an association or cooperatives in order to create income

generating activities, and also be able to have access to loans with the micro-finance institutions or banks.

102: Information about marketing and commercialization of garden products

103: Organization around an activity. How to better manage their activities What to do to better produce (production and processing techniques)

104: Organization into female groups; emerging female leadership; training in an associative life

105: Seeding techniques; purification technique; use of herbicides on garden products food products

106: Information related to their activities such as cereals' bank, commercialization, gardening, management of mills, and management of small animals husbandry.

201: Cultural calendar; utilization of selected seeds; organization into groups; diversification of activities with income generating activities inserted

202: Agricultural production

203: Creation of rural organizations; preservation/conservation/processing techniques of products; marketing techniques and commercialization

204: They need to be in cooperative so that they will be able to have access to loans.

205: Be permanent actors on the side of men for the common fight.

206: Information, awareness campaign, and training in production, processing, conditioning, and preservation of agricultural products; and above all their organization.

207: The adoption of new technologies, to work together, get access to loans

208: Cooperative spirit, communication between women, improved practices, fund raising.

209: Gardening techniques

223: Does not apply to me

224: No difference

225: Women's development and polygamy issues

226: Processing of fruits and vegetables

301: Organization of women into cooperatives and associations are the information we provide to women.

302: I have been working with the seeds producers' cooperative. I am in the phase of sensitizing women to be members of this cooperative.

303: As far as women are concerned, we ask them to be organized around income generating activities. For the purpose of value-adding, we ask women to focus more food product processing.

304: GIPD training.

401: How to produce organic fertilizer; impact of literacy in life

402: Participation to agricultural production as much as they can; reinforcement of their technical capacities in poultry production, saving-loans, literacy

403: Organization, management

404: Extending the farming activities to processing, commercialization, and management

405: Gardening, processing, rice production, small loans, poultry farming, and shea butter production

406:     A good organization in order to participate in developmental activities

408:     Their effective involvement in production and commercialization activities

409:     Good management of cereals; information on HIV/AIDS

411:     Information on the production and use of compost; techniques of production, preservation, and commercialization of vegetables

501:     Organization, leadership, loans, hay, animal feed

502:     This information is about the price of inputs, gardening, processing and preservation of onions, tomatoes, and the intensive rice production system.

503:     Information about loans and seed production

504:     Information on loans, GIPD methods

701:     The possibility for them to be involved in agricultural management

702:     Income generating activities and gardening

703:     Gardening activities and income generating activities

704 :   Associative management, gardening techniques, rice production techniques

801:     In Kidal, because of the customs, women are not very well involved in activities. But, we contact them for commercialization of products. With the development of food development channels, they can be involved more in the future.

901:     Female leadership, gender and natural resource management, women and HIV/AIDS

902:     Improved technologies and new practices

903:     No difference

904:     Involvement in the decision-making process, grouping, training and information

905:    Call their attention, create interest, develop the desire, develop conviction, push to

         decision, guide to decision, and guide to action. Persuasion leads to result.

         Information concern improved preservation and processing techniques of onions.

906:    Information to help them understand the place of women in the family, the

         village, and the African society. In sum, their position as pillar of the society and

         development

907:    We teach them how to be group in order to fight against poverty.

1.40 How do you interact differently with female clients than males? (Leave blank if not applicable.)

101:    No

102:    Yes

104:    The approach is different from males to females according the customs of the area

202:    The traditional customs make the relationship with women different from what

         with men

203:    No difference

205:    No, all our activities on the ground are based on equality of participation (males

         and females)

206:    No, when I make collaborative, partnership, and friendships equally with men and

         women.

207:    As an Extension professional, you should not make any difference between men

         and women.

208:    The relationships are the same

209: The interaction is different with women because their customs make them more

reluctant.

223: No difference

224: No difference

225: Yes, because I am the coordinator of women's associations

226: No

302: The relationship is different from men to women. As a matter of fact I do not deal

with women.

402: No

403: No difference

404: The relationships are first established with men and then with women. The

relationships stay the same

405: No, it is only work relationship, supervisor- supervisee

408: They are treated equally

501: No

502: No

503: No

504: No

801: I can't compare I can't interact with women.

901: Strategically yes

904: Identical

905: The relationships are different. Everyone is involved in the meetings so that our

objectives won't be neutralized with women we used to work with.

906:   With a woman it is different, because she is someone's wife. For this reason I work women only they are in groups in order to create the confidence between me and the men.

1.41 What do you do <u>most differently</u> depending on a client's gender? (Leave blank if not applicable.)

102:   I am more courteous with women than with men. I encourage women because they work harder than men.

103**:**   More patience with women than men

106:   More patience with women than men

202:   During information meetings, women rely on their husbands.

203:   We don't 'make a difference between men and women, and we deal with mixed groups.

205:   Nothing

206:   Beneficiaries either at individual or group levels are treated according to their resources, competence level, and the environment in which they are.

209:   Most of the time, we go through husbands, using the joke relationship to reach the women because of cultural norms and customs.

226:   All what we do concerns both sexes

402:   Adaptation

404:   With men we can talk about many things, but with women the topics are targeted.

405:   Do their best to increase their revenue in order to meet the family 'needs

502:   None

503:   None

504:    None

901:    Land tenure and management

905:    When we identify problems we do separate men and women in different groups

and then we gather them as one mix group to prioritize problems in the village as a

whole.

906:    The weaker sex is always favored; do not focus on this approach so that the other

social layers are disadvantaged.

3.2 In order of priority, list your primary reasons for joining the SAFE training program?

101
Highest a) have a great experience in Extension
        b) help producers to improve their lives
        c) change job category as a civil worker
        d) be able to conceptualize in the domain of Extension
Lowest e) be capable of leading Extension programs

102

a) for my own conviction

b) help populations improve their living conditions

103

  a) change of job category
  b) required knowledge
  c) communication
  d) relation

104

  a) help to promote rural world
  b) improve the living environment
  c) improve the technical competence in Extension
  d) Promote in hierarchical position and participate in decision making
  e) Participate and conceptualize appropriate technologies in the rural world

105

    a) Sociology
    b) Extension
    c) Communication
    d) Commercialization

106

    a) bring research close to producers
    b) Explain more to producers the new farming techniques
    c) Help producers have access to loans (especially women)
    d) An awareness and a more modern training

201

Highest a) improve communication skills
       b) Increase income
       c) Develop and manage projects
       d) Develop management and leadership skills in agriculture
Lowest e) improve computer skills

202

    a) Love the field of Extension
    b) The love of being on the ground
    c) Improve my level of education
    d) Ambition of responsibility
    e) Improvement of living environment

203

    a) Improvement of technical performance
    b) Improvement of leadership skills
    c) Acquisition of communication and organization skills
    d) -
    e) Computer

204

    a) change job category
    b) increased knowledge in Extension
    c) social change

205

a) have a level of education allowing me to better serve the rural people
b) earn a degree to improve my career
c) change job status

206
a) increase my educational level
b) help develop producers
c) better organize the rural people
d) solve at least a problem in one village in Mali

207
a) increased knowledge in Extension
b) Access to hierarchy
c) Possibility to work in other Extension agencies

208
a) improve my knowledge in Extension
b) access to category A
c) work in all Extension areas

209
a) the SAFE program requires participative approach with the rural population
b) the way the practical component is conducted from the 1st to 4th year
c) the SAFE program helps to write a good document
d) the SAFE training program improves trainees' communication skills
e) the SAFE training program helps any specialist to disseminate innovations in his/her fields

223
a) to increase my educational level
b) to change job category

224
a) To improve my knowledge
b) Change job category

225
a) More knowledge
b) Increase of salary (pay check)

226
a) Knowledge to conceptualize and implement a SEP
b) Knowledge of social sciences
c) Competence in human relations

301
a) improve human relation
b) develop critical mind (thinking)

c) improve technical level

d) leadership

e) communication

302

a) improve my technical and practical knowledge

b) help producers improve their productivity

c) organize beneficiaries to be professionals

d) reinforce capacity of production

e) keep listening to beneficiaries

303

a) develop expertise on the ground

b) improve communication skills

c) improve my academic background

d) develop my listening capacity

e) improve living conditions

304

a) access to advanced category

b) improve my professional knowledge

c) better help producers

401

a) Improve thinking and analysis capacities

b) Improve productivity of rural population

402

a) Manage my professional career

b) Improve my knowledge

c) Adapt to new Extension techniques

d) Participate in the development of my country

403

a) capacity reinforcement

b) improvement of living conditions

404

a) increase my technical competence

b) be more performant in my activities

405

a) reinforce knowledge

b) better master the daily responsibilities

c) increase job status

406

a) capacity reinforcement

b) improvement of living conditions

    c) assume responsibility positions

407
    a) access to higher educational level
    b) master the good production techniques
    c) be capable of helping farmers
    d) accomplish with ease the activities I am in charge of
    e) take advantage of the accessibility to a higher job status

408
    a) have means to obtain a Master's and Doctor's degrees
    b) reinforce my knowledge
    c) increase production and productivity
    d) reduce poverty of producers
    e) contribute to the development of the nation

409
    a) be at a higher conception position
    b) good communication (competence in human relations)
    c) Agricultural leadership with capital A
    d) Program planning and evaluation
    e) Knowledge in fundamental sciences

411
    a) Reinforcement of my agricultural Extension competence
    b) Improvement of my social status
    c) Diversification of my technical competence
    d) Creation of relationships
    e) Supervised internship

501
    a) Knowledge of rural population
    b) Knowledge of Extension system
    c) Knowledge in human relation and leadership
    d) Organization of rural population

502
    a) Get education to learn new Extension techniques
    b) Gain new competence in order to be more efficient on the ground
    c) Train farmers in new technologies
    d) Change social status
    e) Acquire communication techniques

503
    a) Obtain in-depth knowledge of Extension methods
    b) Acquire knowledge of communication techniques
    c) Gain competence to find collaborative solutions to farmers problems

d) Improve farmers' life style

504

a) Gain increased knowledge in Extension
b) Obtain increase problem-solving level
c) Change my social status
d) Increase negotiation skills

701

a) Improve university curriculum
b) Improve my competence (knowledge)
c) Improve human relations

702

a) The degree earned
b) Education level improved
c) Standing of life improved
d) Respect and consideration
e) Position occupied

703

a) In order to bring a positive change in the practices of farmers
b) Create a good communication system and appropriate leadership
c) Be able to use computer
d) Improve my living conditions

704

a) Acquisition of new knowledge
b) Improve standing of life
c) Extending period of employment before retirement

801

a) Mastery of appropriate technologies
b) In order to be a valuable and competent senior executive
c) To meet the needs of producers
d) In order to be a facilitator
e) Personal need

901

a) Since the beginning of my career I have always evolved in this process and it has given to reinforce my competence
b) Access to higher job category
c) Polyvalence

902

a) Adoption of technologies (use of improved seeds)

b) Promotion of female leadership

c) Improvement of rural populations' conditions

d) Fight against poverty

903

a) To gain a higher capacity for analysis and conceptualization

b) Help farmers to participate to their own development

c) Learn how to communicate efficiently and be understood

d) Serve marginalized women through Extension

e) Gain a higher level of general knowledge

904

a) Improve status

b) Improve technical competence

c) Improve living conditions

d) Improve living and working conditions of rural populations (women)

e) Participation to decision-making process without forgetting women

905

a) Change category status to A

b) Develop technologies and techniques to meet the needs of rural women

c) Create income generating activities

d) Reinforce technical and organizational capacities of poor rural women

906

a) Gain higher competence in Extension

b) Be among the decision makers of rural populations

c) Accessibility to the cost of the SAFE training

d) The proximity of the training site allowing to be in contact with the natural environment

e) Be much more useful for rural people

907

a) be in contact with rural populations

b) inform the rural populations

c) help rural people to fight against poverty

3.4 What is the most important aspect of the SAFE training program you would discuss with a colleague who was considering participating in the program?

101:    Extension program conception aspects
Knowledge in the domain of social sciences

Specialization in agricultural Extension

Job category change and access to responsibility position

102:    Knowledge in social sciences

103:    Adequate training allowing to solve rural problems and how to deal with them

104:    Learning communication

Extension techniques

Need of increasing productivity through Extension

105: Communication

106:    Rural sociology

Extension as technique for development

201:    Live with farmers to understand them better

Identify their problems and find solutions together

202: The SEP

203:    Improvement of technical aspects for advisory support to clients

Explanation of the concept of SEP; its advantages in finding solutions to

constraints related to development.

204:    The seriousness and reliability about the SAFE training program.

The availability of teachers

Education is always a *plus* in human life

205:   The mastery of job tools the Extension professional needs.

206:    The quality of the theoretical component of teaching

The quality of the practical component of teaching (SEP)

Field trips during the SAFE training

207:    The field work and theoretical coursework

209: The SAFE training program covers all the domains related to rural development such as agriculture, rural engineering, forestry, livestock, and social sciences, etc.

223: I will tell him/her to get education then discover rural world (knowledge of the MARP).

224: Communication

To be in contact with farmers

225: The component SEP and elaboration of projects.

226: Extension principles and methods

Conception of SEPs

Technical competence

301: Improve comprehension level of rural population

302: Improved knowledge in social sciences

Professional category change and capacity building in project elaboration and the implementation of various program activities.

303: Knowledge of social sciences and life in community

304: Sociology

SEP

Enterprise management

Extension

401: Implication of beneficiaries in finding solutions to their problems

402: The new Extension approaches in a new educational framework

403: Sociology and Extension

404: Sacrifice, be collaborative, team work, willing to learn. Explore documentation after the classes. Be available.

405: Program content, the voluntary participation of students

406: The most important aspects of the training are sociology and Extension

407: The mastery of technical, social, and economic activities of the program.

In short, the polyvalence of the program.

408: The fullness (richness) of the program regarding the subject matters taught

It is a background to be able to continue one's education (Master and Doctor)

409: Competence in administration, management and leadership: agricultural leadership

411: Diversity and richness of the modules taught, such as Extension and rural sociology

501: The knowledge of rural population, participative methods for development

502: The knowledge acquired in agricultural Extension (principles, communication, and adult education).

503: In-depth knowledge of Extension, in order to help farmers solve their problems

504: In-depth knowledge in Extension and the mastery of computers

701: Management and leadership

702: Increasing overall competence and degree level

703: Communication and interpersonal relations

704: Study of social sciences

701: Management and leadership

702: Increasing overall competence and degree level

703: Communication and interpersonal relations

704: Study of social sciences

801: It is the practical component (stage) that allows students to apply their knowledge with the farmers.

901: Polyvalence

902: Discuss with colleagues issues related to rural development

903: The most aspects by order of importance are communication, sociology, and Extension.

904: The quality of the training, the seriousness and time devoted to the SAFE program at IPR/IFRA.
The communication and the SEPs methodologies and approaches make the difference with of other University training programs.

905: The most important aspect of the SAFE training program I would discuss with a colleague is to conduce to enroll in the program in order to increase the number of

women SAFE graduates in BTVA as well as MVA. Encourage the candidature of women during the selection of participants.

906: The SEPs are the most important aspect to me to be discussed with someone who is willing to join the SAFE training program.

907: Update the technological innovation level of rural populations

3.5 In order of priority, what needs to be improved or changed in the SAFE training program?

101
Highest a) improve the program and extend the hours allocated to computing courses
      b) give more hours to social science courses
      c) give more means to SEPs
      d) Put in place a financial structure to support the projects established by the trainees
Lowest e)
102

a) sociology

b) increase the number of participants

103

a) inter-countries exchange programs

104

a) Reinforce the capacity of learners according to their initial backgrounds

b) Training in leadership

c) Possibility of extending the Extension education for those who express the need

105
a) Exchange programs (Field trips)
b) Practice
c) Theories
d) Computing

106

a) Agricultural Extension subject matter

b) Administrative writing

c) Computing

252

d) Statistic

e) Animal production

201

a) Statistics and computer

b) Development and use of audio-visual materials

c) Knowledge of domestic animals

d) Agricultural leadership and management

202

a) Rural sociology

b) Management of agricultural enterprises

c) Commercialization of agricultural products

d) computer

203

a) Concept of sustainable development

b) Project analysis

c) Computer knowledge, access and programming

d) Environmental protection

204

a) Economy

b) Documents in Extension

c) Increase the resources for the practical component of the SAFE training program
(for the SEP)

205

a) The performance of educators

b) Assiduity and regularity of teachers

206

a) Improve the field trips

b) Improve the conditions of trainees during the practical stage.

c) Improve teaching conditions at IPR/IFRA

207

    a) leadership

    b) management of enterprise

208

a) Leadership training

b) Animal science courses in 2nd, 3rd, and 4th years of the SAFE training program.

209

    a) Improve field trips
    b) Multiply field trips
    c) Improve the living conditions of trainees
    d) Provide means of transportation during the implementation of the practical component of the SAFE program
    e) Provide computer tools such laptop to trainees

223

    a) Find funding for our projects
    b) Follow-up (monitor) trainees on the ground during the practical phase.

224

    a) Follow-up of projects
    b) funding

225

Continuing education

226

    a) organize pedagogical trips (field trips)
    b) reinforce knowledge in social sciences

301

    a) Improve practice time

    b) Continuing training for teachers

    c) Good conduct of the selection process

    d) Increase credit hours for social sciences

    e) Organize pedagogical time outside classroom activities

302

    a) Improve outside classroom activities.

303

    a) The content of social science courses

    b) Increase the hours for human resource management

c) Develop computer course

d) Develop research methodology course

304

    a) The SAFE training participants are adult learners, who need to be respected.

    b) Documentation in Extension and all domains taught

    c) The animal sciences course is too technical (theoretical) for an Extension agent.

401

    a) Training modules which meet the program's needs

    b) Financial support to trainees

402

    a) Practical components of agricultural sciences and techniques

    b) Surveys on the ground

    c) Family economics

    d) Farm research test

403

    a) Increase hours of livestock modules

404

    a) Documentation

    b) Computer and learn more soft wares

    c) Add other modules

    d) Reinforce statistics courses

405

    a) Exchange visit

    b) English courses

406

    a) English course

409

    a) Improve study trips

    b) Field trips (school outing)

    c) Facilitate access to higher educational programs (Master)

    d) Provide internship (stage) allowance

    e) Improve Internet connections for information search

411

    a) English training

    b) Information materials

    c) Support students during the internship (stage)

    d) Revise the credit hours of each module

    e) School break internships

501

    a) Regular supervision of students on the ground
    b) Extending SEP to one year
    c) Have frequent outside school programs (pedagogical outing, field trips)

502

    a) Agricultural Extension

    b) Sociology

    c) Agro-Climatology

    d) Biology

    e) Statistics

503

    a) Agro-climatology

    b) Extension

    c) Sociology

    d) Computer

    e) Statistics

504

    a) Biology

    b) Computer

    c) Sociology

    d) Climatology

    e) Extension

701

    a) promote more practical training
    b) improve the competence of professors (teachers)
    c) improve the administration of the SAFE program
    d) Find scholarships for students

702

   a) More hours for computer courses

   b) More hours for human resource management

   c) More hours for communication courses

   d) Classes for English

   e) Courses for administrative French

703

   a) Improve the Agricultural Extension program

   b) Improve the social research program

   c) Change the system of enterprise creation to funding of enterprises

   d) Improve project development program (elaboration)

   e) Improve computer course

704

   a) Reinforce statistics

   b) Improve internships

801

   a) More support for the internship (practical component)

   b) Revise the participation and improve the involvement of the following institutions in the SAFE program: DNPIA, DVSV,

901

   a) The internship (stage)

   b)

   c)

   d)

   e) Computer course

902

   a) Improve lodging conditions

   b) Improve cafeteria

   c) Documentation

   d) Find support for transportation

   e) Find support for internship

903

    a) Program monitoring and evaluation

    b) Sociology

    c) Communication

    d) Reinforce Extension

904

    a) English course

    b) Technical modules for the SAFE first year training

905

    a) Find concrete ways to increase the number of women in the SAFE program

    b) Lobby the government to provide government job opportunities to female graduates with no hiring contest or test

    c) Encourage the candidature of women to get scholarships

    d) Establish a positive and performant Extension mechanism with an appropriate employment of SAFE graduates

906

    a) the communication course should be improved

    b) the audio-visual course should extended and improved

    c) the funding of internship should be revitalized

    d) English course should be valued

907

    a) Improve the practices and pedagogical outing

3.6 In order of priority, list new and emerging training needs that should be included in future SAFE training programs.

101
Highest a) topography
       b) use of computer and soft wares
       c) establish a program on the study of cooperation
       d) establish a program on rural economy
Lowest e) establish a program on marketing

102
   a) easy access to education

   b) remove the age limit for admission in the SAFE training program

   c) accept to move directly from BTVA to MVA

   d) accept to move directly from MVA to a Masters' degree

103
   a) Inter-country visit programs

104
   a) Rural economy
   b) Rural sociology
   c) Agro-economy
   d) Link research- Extension

201
Highest a) biotechnology
   a) Apiculture
   b) Aquaculture
   c) Organic agriculture (knowledge of bio-pesticides)
Lowest e) diagnosis and prophylaxis of animal diseases

203
a) sustainable development

b) project analysis

c) computer knowledge, access and programming

d) biodiversity

204
   a) Economy

205
   a) Facilitate direct access of BTVA graduates to MVA
   b) Soil sciences
   c) English

206
   a) Pay stipend to trainees during the training
   b) Equip trainees with laptop computers
   c) Reinforce the production capacity of the "technological village" and employ MVA graduates there.

207
   a) Doctoral program

208
   a) Masters' doctor's degrees

209
   a) Improve training in computer sciences
   b) Improve conditions of trainees
   c) Pay time during the practical phase
   d) Provide scholarship to trainees
   e) Pay for brochures and documents needed by trainees.

223
   a) Elaborate project
   b) Project funding raising

224
   a) Elaboration of project
   b) Funding of project

225
   a) Marketing

226
   a) Introduce new modules such as psychology
   b) English

301

   a) Administration

   b) Human resource management

401

   a) Agrarian system

   b) Agricultural sectors in West Africa

402

   a) Aquaculture

   b) Literacy in communication techniques

   c) Computer

   d) Tractor driving

403

   a) English

404

   a) project analysis

   b) institutional communication

   c) reinforce marketing

405

   a) English courses

406

   a)

   b) Advisory in media-related communication

408

   a) Master in Extension

   b) Doctor in Extension

409

   a) pastoralist training

   b) English course

411
  a) English
  b) Tractor driving on the ground
  c) Management of agricultural enterprises
  d) Agricultural product processing
  e) French

502
  a) English
  b) Topography
  c) Food technology
  d) Mechanization
  e) Botanic

503
  a) English
  b) Topography
  c) Mechanization
  d) Hydrology
  e) Plant Sciences

504
  a) Genetics
  b) Topography
  c) Mechanization
  d) Irrigation
  e) Plant pathology

701
  a) Knowledge of GMO (OGM)
  b) L-M-D

703
  a) Spoken and written English
  b) Practical sessions
  c) Reinforce computer course
  d) Environmental management (GIPD)
  e) Personnel management

801
   a) Continuing education for graduates
   b) Follow-up graduates for a continued improvement
   c) Insertion in the program of a module on pastoralism (pastoral management)

901
a) Sociology
b) Forestry sciences

902
   a) Enrollment of more women
   b) Improvement of living conditions in the dormitory
   c) Improvement of internship conditions
   d) Follow-up SAFE graduates

903
   a) Include psychology
   b) Extension and communication
   c) Program/project monitoring and evaluation
   d) Analysis of projects and programs

904
   a) Incorporate English courses
   b) Allow those entering with the DUTS have access the modules of the first year of
      the SAFE training program
   c) Supervise the SEPs
   d) Collaborate with NGO to fund SEPs

905
   a) Distance learning
   b) Short training
   c) Certification
   d) Contribution of employers in distance learning

906
   a) Functional literacy (write and read local languages)
   b) Include marketing course for the advertisement of products

907
   a) Organize the practical component of the SAFE program in groups.

5.7 If yes, describe what you do

101: I produce sorghum, maize, peanut, and cowpea. Before seeding I plough my field. I don't use chemical fertilizer. I use organic fertilizer and seed treatment products and selected seeds

102: After the plough, I participate in seeding and weeding of rice. I supervise the harvesting and bagging activities.

103: I cultivate cowpea, corn, okra, sesame, and peanut. I collaborate with the research institution in doing trials for newly introduced seeds.

104: I cultivate sorghum, cowpea, and peanut using improved agricultural techniques

105: This year I cultivated rice (1/4 Ha), corn (1/2 Ha), and peanut (0.2 h=Ha)

106: Livestock (sheep, poultry)

201: No

202: Yes, a field for demonstration of new practices

203: Yes, application of technological packages learned during the SAFE training.

204: No

205: Yes, I used improved rice production techniques, new rice varieties (pluvial rice).

206: Yes, I do gardening, meaning the production of potatoes, for which I am the facilitator in the "Dioila cercle" for the dissemination of this commodity. I am presently the main supplier of potatoe seeds in the "Dioila cercle." I work with Gardeners' Union there, the local Agricultural Chamber, and the sectors of "OHVN" of Koulikoro, Gouani, and the Italian project ISCOS in Sikasso.

225: Yes, I do gardening, livestock, agriculture and poultry farming

226: Yes, I produce rice

303: I grow maize, cowpea, and vegetables.

401: Rice production

402: In my own field I do compartmenting diversification agriculture. I also use selected seeds with organic fertilizer very well decomposed. I used little chemical fertilizer.

404: Plough with animal traction, transplanting, chemical fertilization, follow-up, harvesting, threshing, storage for consumption.

405: I do rice production with controlled submersion at Office du Niger and with total mastery of water at Office du Niger

408: Rice production

409: Every year I produce compost that I use in my rice field

501: Hay farming of cowpea: an improved variety is used; application of farming techniques according to a worksheet generated by the Research Institution; harvesting at the beginning of the fructification stage; and safe storage.

504: We are in PPIV, installation of nursery; apply FO on plots, plowing, transplanting, deep dressing of manure, weeding, irrigation, application of first top dressing fertilizer, application second top dressing fertilizer, follow-up and maintenance of the field, harvesting, threshing, bagging, transportation, and storage. The yield is 8 tons/ha.

701:    Program

   1) Budget

   2) Execution: use of inputs, soil preparation, sowing nursery, maintenance,
spreading fertilizer, irrigation, transplanting, maintenance (irrigation, weeding,
fertilizer spreading), safekeeping, harvesting, packaging, and storage.

703:    I cultivate rice using a total mastery technique on an irrigated perimeter in Daye,
in the urban Commune of Tombouctou.

901:    Rice production

906:    I have a field of 1 ha, in which I cultivate corn, rice (NERICA variety). I also
have 0.25 hectare family garden

6.1 What was your hierarchical position in Extension before SAFE training?

101:    Head of sector (a sector covers an administrative rural commune)

102:    In charge of Extension

103:    Head of sector

104:    Head of animal production section

105:    Field worker

106:    Ordinary agent

201:    Basic (grassroots) polyvalent Extension agent

202:    Basic (grassroots) Extension agent

203:    Supervisor and deputy head of sector

204:    Basic agent

205:    Interim head under-sector

206:   I train potatoes producers in production and conservation technique with NGO (AMATEVI) in Sikasso.

207:   Head section of garden products

208:   Head section value-added, processing, and commercialization of agricultural products.

209:   Lower position

223:   Supervision and coaching students

224:   Supervision and coaching students

225:   Supervision and coaching of students

226:   Message transmission agent, rural advisor

301:   Basic Extension agent

302:   Before training, I was deputy head of antenna (representation)

303:   Head under sector in Cinzana, Ségou

304:   Moderator at Local Delegation of the Chamber of Agriculture

401:   Head of antenna (representation)

402:   Head (AER) agriculture

403:   Head of antenna (representation)

404:   In charge of infrastructure and equipment

405:   In charge of technical operations (Deputy Head Zone)

406:   In charge of Environment

407:   Superior technician in agriculture

408:   Polyvalent agricultural advisor

409:   Head of central antenna (representation)

411:    Head of agricultural antenna (representation)

501:    Advisor of farmers' associations at the local level

502:    Head of Agriculture Antenna (at the Commune level)

503:    In command of Agricultural Sector

703:    Head Advisory Support Antenna

704:    Second in command of Agricultural Sector

801:    In charge of agricultural production (district level)

901:    In charge of Communication at the Division of Training and Communication of
        the National Direction of Water and Forests in Bamako.

902:    Head Section

903:    In charge women's activities

904:    Training manager

905:    Library manager at IPR/IFRA

906:    I was head of Antenna Advisory Support for Landscaping and Rural Equipment
        (ACAER: *Aménagement Equipement Rural*)

907:    I was working under command and receiving assignments from a superior

6.2. If your category has changed, what is your hierarchical position now?

101:    Agricultural counselor in Yelimané sector

102:    Occupy the same position

103:    Still head of sector

104:    Researcher on small animals

105:    Head of sector

106:    In charge of pastoral resources

201:     In charge of statistics, monitoring and evaluation

202:     Head of Sector of Rural Development (SDR)

203:     Head of sector

204:     Deputy Head of sector

205:     Head under-sector

207:     In charge of monitoring and evaluation

209:     In charge of agricultural production and deputy head sector

208:     In charge of animal commodities

223:     No change, supervision and coaching of students

224:     No promotion, supervision and coaching of students

225:     Teacher of secondary education

226:     Conception of SEPs, counselor

301:     In charge of programs

302:     No change

303:     Head sector agriculture inYorosso

304:     Technical advisor at the Chamber of Agriculture

402:     Agricultural Advisor

403:     In charge of Poultry Farming

404:     In charge of monitoring-evaluation at the DRA Ségou

405:     Head zone at Office Riz Segou

406:     Head section promotion of plant products processing and preservation

407:     In charge of phytosanitary control

408:     Training manager and moderator for rural populations

409: Head local service for animal production and industries

501: Head of the Division of Animal Production and Industry at the Regional Direction of Agriculture

502: Agricultural advisor at the Division of Agricultural Extension

503: In charge of dry and irrigated crops. Representative of PAFISEM

504: In charge of "Production" in the sector

701: Head of Division

702: Head Agricultural Sector

703: Head Division Agricultural and Extension Advisory

704: Project Coordinator (Millennium Villages Toya Tombouctou)

801: Deputy Regional Director

901: Head Section Communication

902: Head of Division Production and Avian Health

903: Programs manager at the "*Cellule de Planification et de Statisques*"

904: Responsible for Gender and Development Section

905: Extension teacher CAA Samanko

906: Coordinator of Agricultural Perimeters in Prison Administration (DNAPES)

907: Now, I propose my own plan of work

6.3 Have you always worked as Extension agent? Yes or No

201: No

223: No

225: No

901: No

906: No

If no, describe your work before

101**:**   I was a trainer in the Agricultural Training Center (CAA) of Samé.

104:    I used to work in improving production and productivity of small animals.

Improvement animal productions for the betterment of productivity in rural areas

201:    I was the training and mechanization manager in the Center for Studies and

Experimentation in Machinery for ODR agents and farmers.

223:    Supervision and coaching students

225:    Supervision and coaching of students at IPR/Bamako

901:    Training-facilitator

906:    Supervision of minors in prison, women in prison

APPENDIX G
Transcript of Semi-Structured Focus Group Interviews

Koulikoro Region

Question 1: How has your experience with Supervised Enterprise Projects (SEPs) positively impacted your professional skills and practices?

MED: As far I am concerned, first of all the SEPs have been very useful for us. We talked about this approach before. We were given analysis and synthesis tools during our training. So, now our analytic and synthesis skills have developed, meaning our capacity to approach the farmers, how to develop partnership and participation with them, how to collaborate with farmers in identifying and analyzing their problems; they propose solutions to their problems; prioritize solutions to their problems and see together what we can implement. I think this is an outcome of the MVA. For example, in the past I was in charge of Agriculture Production in a Sector; I confess I did not have the abilities to do what I was supposed to do. I certainly had some participative analysis tools, and I did receive some short training for the use of these tools. But, deepening these abilities and capabilities was due to my SAFE training, and I can say that we are considered as experts in the use of these tools now, this because of the MVA. This allowed me to help villagers with whom I did my internship. These populations were producing rice, using the diagnostic and all we have learned I helped them increase the yield of their rice production; the yields of rice were around 3 tons/ha, and when I was leaving the yields were at 5 tons/ha.

Probe: What did you do to arrive at this result?

MED: I noted that the chemical fertilizers were expensive; because of the over uses of the soils, the soils were impoverished. The quantity of chemical fertilizer applied was not

enough to cover the needs of plants and leave remnants in the soils for future cultures. There was an impoverishment of the soils, and this was a crucial problem there. The solutions I proposed were the use of organic-mineral fertilizer. Because they do not have financial means to afford the needed quantity of chemical fertilizer, then we started making compost. We were taking this compost to the fields in addition to the quantity of chemical fertilizer they used to apply. This improved the structure and even the texture of the soils. Regarding the following two years, some farmers said to me they did even use the chemical fertilizer the second year. The "after effect" of the combined compost-chemical fertilizer boosted the yields. The five tons represented the average yield; some plots yielded over 5 tons. It is because of the SEPs that we arrived at this result; I used some critical thinking skills to see how we can help these populations solve this problem at hand.

MED: What I want to add is that I have been appreciated also by hierarchical superiors, as a matter of fact I have been appointed as a "Head of Sector," and before my SAFE training I was only in charge of agriculture production, at a lower position.

Question 2: What constraints have you encountered when implementing aspects of SEPs with your clients?

SANG: I was a "Robot," this means I was just receiving orders to do what was planned. The situation was like the Caporal giving orders to soldiers. We were just executants of what was planned by others. We were told to go sensitize populations; the theme being already defined, you go to the villages and you explain the theme to the villagers, as dictated by your boss. The farmers perceived us as "messengers." A messenger is one who transmits the message, he does not have time to think; he does not give his/her

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opinion on things and, they are dictated. So the training we have received helped us to think, reflect, discuss with farmers and take into consideration their problems. Discuss with farmers about their perceived solutions to their problems, and then find definitive or alternative solutions to those problems. I developed competence in organization of farmers, because this is what I am doing now as a job. I am not involved in demonstrations on the ground, but organizational aspects of rural populations. We are trying to sensitize populations to move forward and make a comparison between new technologies and traditional ones, by letting them the relative advantages of innovations. We are telling the farmers, organize yourselves and we believe know it will work. So, it is working. For example, when the Mangoes Processing Plant of Yanfoila visited us this year, we told the farmers to constitute a cooperative, but before arriving at this level, they should organize themselves at a lower level. We told them to create the foundation, and when the partners will be here, we will be catalysts to initiate partnerships between them. If we reached this experience, it is because of what we have learned, and this experience allowed us to make farmers change their behaviors and attitudes toward innovations, and to meet their objectives and goals. What I am saying is at the same time subjective and objective. We may not be able to do a quantitative assessment, but in qualitative terms we can analyze it.

Probe: As a result of your SEPs experience, what competence have you developed?

SANG: first of all, analysis of problems when the problem is posed, capacity for reflection, critical thinking, and self-critique to see your strength and weaknesses

Probe: Can the others complete what has been said?

SANG: I remember, some students selected projects they could not complete in the time allocated to implement the SEPs.

AK's case, for example, was very delicate. The judges at his thesis defense were about to have him repeat the year. Some judges expressed that a thesis research with no results was not valid. He worked very well, but he could not wait for the results of his research before the thesis defense period, this was his problem.

My advice is, when we select projects, they have to be feasible in the timeframe allocated. If one needs to continue after graduation, it will be a problem with the judges at the defense.

Probe (Co-researcher): Can other students continue what has been started?

FOM: If you want to introduce innovations in two villages, it will be too early to evaluate these innovations in a year's time. If a student starts with the first parts of the projects, others should continue.

Probe: If I understood the concept of SEPs, the students should be familiar with the cycle of a project from its elaboration, to its implementation, and finally its evaluation. If one student starts and another finishes, I don't see how the student will be able to gain the competence in all the stages involved in a project cycle. If I have understood, one of the requirements is to select project(s) in areas where you used to work; I mean the villages or clients you used to serve before your SAFE training.

ROY: In my case, I used to serve in Kangaba before my SAFE training, after my training I was sent to Dangassa, a different area. It was not possible for me to follow up this project.

MED: In my case, I used to work in the Gao region. I did my thesis research in a village located at 27 km from Ansongo. Asongo is 100 km from Gao. Now, where I serve is 1000 km from there; I am in Koulikoro. Where the problem exists is the requirement to present the results at the thesis defense. There are projects which can be implemented, and you get the results immediately. There are others which take a long time before you get the results; in this case the student is in trouble if he/she cannot present findings/results of the project at the thesis defense. As I indicated, the example of this student, who was about to repeat the year because he could not present his project results because of its nature. Fortunately for him, his advisor was present, he explained, and supported him. This advisor assured the judges that the results would be inserted into the thesis before the student turned in the final version.

Since we were too concerned about the *after project*, if there would be a financial support for each project, somebody should be able to continue after the departure of the student who initiated it.

SANG: There was no money. How do people work on projects without financial support? For who knows the Malian administration, you are working here today, but, tomorrow you can be sent 100 km away from where you are. The person who is going to replace you will not care about what you have left, it is not his problem.

Question 3: How could the SEPs portion of the SAFE training be improved to better meet your needs as an Extension educator?

Probe: How can we improve the SEPs?

SANG: Funding, focus on supervision, create funds for rural development which will support the SEPs. The raised fund will be hosted at DNA. For this purpose, create a

management and project analysis committee including IPR, SAFE Coordination, and why not a representative of our association (AMVA). This committee will be in charge of analyzing the projects one by one before their implementation and assure there are enough funds to cover them. This will help a lot of current students.

ROY: This was proposed before, when we were at school, but it was not followed-up.

SANG: What I would like to add on top of funding the projects is that the students need financial support during their internship (during the SEPs implementation). Because we rely on our salary.

FOM: During our SEPs we used to even buy note books with our own money.

MED: The first female SAFE participants were supported by Winrock International and they did not have any financial concerns. Mrs. M helped them a lot. But, the males did not, there was segregation.

FOM: It is only the females from the first two years SAFE classes who profited from this assistance from Winrock, not the third and subsequent classes. The classes were not treated equally.

SANG: The conditions of students during their studies should be improved materially and financially. I remembered, one time we were pushed out of the classroom because we owed three months rent at the dormitory.

MED: I have a reaction to the issue, in my understanding; this was not supposed to be addressed here. To be honest, we were told at the beginning that the SAFE did its best to improve the living conditions of students in the dormitory. The DER/IPR kindly asked each of us to symbolically contribute at the extent of 2000 FCFA ($ 4 equivalent) for the maintenance of the rooms for our own comfort and that of the future generation. At that

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time, we agreed with this proposition, since then, we do honor our engagement. The leadership found a way to punish those who were behind in their payment of their rent. We were forced to recognize all the benefits we got from the improvement of the living conditions in the dormitory. We were able to have group work sessions in a room designated for that. We were eating together after contributing up to 10 000 FCA ($20 equivalent) each month. We were able to make photocopies with a monthly contribution of 1 000 FCA ($ 2 equivalent). These are some good things from SAFE we need to recognize.

If you can ask the SAFE leaders to help with some of those expenses, this will good.

SANG: We were also paying yearly 50 000 FCA ($100 equivalent) for enrollment. To tell the truth, the SAFE program was a success in terms of the academy, but at the same time a burden, in terms of expenses.

Probe: What has been the benefit of the investment now?

MED: Sincerely, we can say that we suffered during the training, but today we have to thank GOD. Our salaries have increased because of an increased job category (from B to A). Our knowledge has improved as well as our job position. Thanks GOD the outcomes from the SAFE training have been positive.

But, what we are proposing is so that the current and prospective students won't go through the struggle we went through, in terms of resource shortage. As you must know, we were category B, meaning with a low salary, sometimes we were faced with the unexpected family expenses and at the same time had to cover school expenses. It was tough for us. For these reasons, if there is a possibility to get, even a little scholarship for the students throughout the SAFE training period; this will help them a lot to focus on

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school and some motivation to continue. If there are ways to improve this situation, we hope the training outcomes will be greater. The social conditions of the SAFE participants are in such a state that the SAFE training managers should consider them when planning future programs.

District of Bamako

Question 1: How has your experience with Supervised Enterprise Projects (SEPs) positively impacted your professional skills and practices?

FOO: I think this question has been treated in the questionnaire.

Probe: Yes, we repeated the question here to have in-depth understanding of the SEPs

FOO: Even this morning, we talked about that. In our workplace we work with responsible and educated people. It is necessary to have competence to be able to accomplish our job properly. As a result of our SAFE training, we were able to develop our competence. For example, I have been using the "Logic Framework" we learned to use in our training program. I use this "Logic Framework" in the conception of projects because I am in charge of program evaluation at institution. My work requires enormous planning and programming. So, our training was beneficial because we get we acquired the knowledge that has helped us to do what we are supposed to do.

EFO: For what concerns me, I would say that SAFE wanted to train polyvalent Extension agents. During the conception and implementation of the SEPs, we have received diverse competence in "giving and receiving." As graduates, we developed competence in terms of approaches, but we also observed at the local level (rural level), that beneficiaries also gained some knowledge. Working in the field of "Water and

Forestry," I like to confess that I gained some knowledge from rural populations during this internship. During the internship the rural populations changed some of our ways of doing things. For example, in terms of marketing, the populations proposed a way of displaying "wood packs" to make them more appealing to customers. As a result, these populations were getting crowds of customers, certainly because their customers feel that they were making a difference. We as technicians advised them to display 1 m^3 of woods for sale, they added an attraction element to what we taught them, and it helped the sale of more woods. I learned from the populations this new way of displaying, that I can disseminate to other populations in other zones. I would like to say the internships certainly had an impact on SAFE graduates' ways of working, as well as on the populations with whom we interacted. This is also what IB was trying to convey when he said he developed things so that the workforce will be valued through the transfer of competence. I think this was a good thing. With my interactions with populations, "Water and Forestry," I gained some knowledge of livestock, which I continue to disseminate to others.

Probe: Any other ideas?

UKO: The way the SAFE program was conceptualized, it provided multiple experiences for students. How, when we go to villages, during the internship, we stay, eat and sleep with populations, and enact like them; we do this conduct during the entire cycle. This allows us to learn more about the knowledge of farmers. We start our work with the knowledge of farmers. We should not come only with technicalities. We need to recognize the farmers' knowledge. Through this recognition we know that the farmer has some knowledge. Our work should be based on that knowledge. We should base our

work on what they already know. We should come to a village if we are ignorant. When you address the topic, the farmer will explain all he/she knows about it. Even if we have updated knowledge, at the beginning of our activities with the farmers we should put our knowledge aside and listen to them, and then discover that what they know first. Farmers have some knowledge; they tell us their knowledge, we need take advantage of that knowledge and we should organize their knowledge in different stages and in a good way of applying it. This what the farmers are lacking, helping them in organizing their ideas for useful application. Through my SAFE training I learned how this approach of listening to the farmers, and fully recognizing that they have indigenous knowledge. Each time if you address a topic to farmers, let them explain what they know.

Through the knowledge we acquired in Extension, we were able to listen to farmers. During the four years of the SAFE training program, we used to interact with farmers, eat together; we went to their farms together, we had meetings together. This high interaction with farmers is favored by Extension principles, not in other domains. In other domains, the knowledge comes from top down. If the farmer is convinced, he will adopt the new techniques. I believe farmers' knowledge needs to be valued. All the Extension professionals recognized that farmers have some knowledge.

IAD: The SEPs have an enormous importance we cannot evaluate. The SEPs were conceptualized for students so that they would understand many things, even approaches. Many of the approaches we have been implementing in different workplaces are due to the SEPs. The SEPs helped to master and understand rural populations and to know how work with them.

EFO: We can say that the idea of SEPs has had an importance and an impact. The SEPs are unique, if we compare them to other types of regular internships which are not supervised. In regular internships, the student has an advisor, in this case the student has to look for the advisor when he/she needs to, and it stops there. What we understood from the supervision in Extension (with the SEPs), the supervisor comes to see you and observes what you are doing in the project and how you are doing it. They direct you, tell you to continue when you are on track, or advise you if there issues that come out if errors have been made. The SEPs had an impact because of the supervised approach; they are different from ordinary internships. In ordinary internships, the student is sent to an institution for six months, and at the end he should bring a report, with no connection to the academic faculty.

FYS: When you met the female group, we were satisfied.

FEK:: I did my internship in agriculture, even though I work for the courthouse. In essence, what I did was to make available to prisoners what I learned at IPR/IFRA Katibougou. I recognize that the approach has changed, it really changed. This helped me to be competent at my department; presently there is no need to look for assistance from an external expert to do what needs to be done in the prisons now. This is what the General Director of Prisons understood, some days ago; he called for my wise advice to get additional funds to cover some planned agricultural activities in the prisons. Since we have some cowsheds in the prisons, we asked those having a great number of animals to bring some, so we can sell and satisfy the financial needs indicated by the director. These are ways of work we learned in IPR/IFRA Katibougou. In one way we use them to

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convince and get the confidence from our hierarchical superiors, in another way we use them to change the reasoning of the agents who work with us.

Probe: You have said that the approach has changed. So, what was the approach before, and what is it now?

FEK:: The approach, as I said before is that, the prison is just prison.

Probe: Not only in the prison, but in general

FEK: I did my internship in Kassela on the dairy product. One day I went to the Commune of Baguineda for personal issues, and was approached by of the Secretary General of Commune, who confessed that my SEP report helped them establish the dairy shop. The President of the Republic of Mali inaugurated. This indicates that somewhere there was a change in the way of doing things. This work was conducted under the same scope as that which was done by my classmates in IPR/IFRA Katibougou. My field of work is a little bit more specific.

Probe: We talked about projects; did you use to elaborate projects before your SAFE training? During the SAFE training you elaborated some projects; did this exercise develop your competence?

FOO: this is what I talked about earlier. I talked about the conception of projects. During our fourth year of the SAFE training program, we are required to develop a project. It is also required that the project be funded. For a project to be funded, it has to be reliable and seriously conceptualized. The serious conception of projects was derived from the competence we developed in IPR/IFRA Katibougou, which means the know-how and the transmission of the know-how. The SEPs contributed to a great deal to improve our daily practice of project conception in our workplace. We are all expected to conceptualize

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projects, if you are head of a section or division. As far as I am concerned, I recognized that the exercise of the SEPs has positively improved my skills in project conception.

Probe: What have you developed as competence during the implementation of the SEPs. If I talk about competence I am referring to three elements: knowledge, tactile skills, and behavior (feeling). So what has changed or improved in your competence?

<u>FOO</u>: I will give an example. It was a time when it was impossible to do prospection in the reproduction zones of the North of Mali. My advisor for my SEP required setting up a program to collect information on locusts in a zone where it was difficult to find locusts or even reach there. I did that. Before my SAFE training, I confess I would not be able to do that. I was a technician with a low education level at the national Direction of Agriculture in Koulikoro; during this period I attempted to develop some projects on plant protection. I remember that someone looked at one of those projects and he laughed at me because of the poor quality of this project document. If I had received this training at IPR/IFRA Katibougou; I would not have the skills to accomplish what I did in my internship. The project I worked on for my SEPs was a national project which was funded up to 7 000 000 FCFA. We trained some agents in Kidal to help us collect information. This is just to tell you a little bit what we learned during the SEPs' implementation.

Probe: Can everyone share his/her perceptions about this point? The competence you have developed with SEPs.

<u>EFO</u>: Before our SAFE training, everyone used to develop projects. But, during our SAFE training we were able to point out our mistakes and the holes in the techniques of the project's elaboration we used to use. We learned factors to consider when writing

projects, such as the target public, the funding agency, etc. For example, if you would like to submit a project to FEM, we need to know what the format and style required by the FEM. If you want to submit a project to Switzerland; you need to understand what content and format they want. Today, if we were asked to conceptualize projects we would consider those elements. In addition, we were given strategies on how to write a good and persuasive motivation letter.

FEK: For me, the SEPs have been a "plus" in the SAFE training program. We need to know the destination of your project, once you know the destination, and you will know the terms they look like. What term to use, what sections to insert or remove. To be sincere, if there is a "plus," it is the SEPs.

Probe: Who else wants to add something to what has been said? You need to expand on the SEPs because Winrock assumed that they are aspects of your training that need to be evaluated.

EFO: Yes, if they must remain in the curriculum of Extension education, then they are really important. A particular focus should be on SEPs. In our case, we were asked to elaborate projects and even look for funding for their implementation. The search for funding was a problem for many. But, if we were not able to get funding, were we sure our projects were well written? This is needs to be verified. There was a time some of us did not even want Mrs. M to look at our projects. In some cases, students inserted rubrics for their projects to receive funding from their sponsors. In my case, I struggled to elaborate my projects; some other students made changes that enabled them to get funding. After improving their projects, some students who had fund promises in the implementation period of their SEPs, finally got funds after their graduation. We as men were not supported by Winrock. Winrock cares only about women.

LOD: I would like to say something about the conception of the SEPs; they are an important innovation compared to the methods of writing projects. The methodology is similar and, I can say, universal. In the SAFE program, we learned how to develop projects, learned how to get funds, and learned how to implement the projects. This is new. I believe, it is the only training in which students have to do all these activities. I would say that the close relationship I have with Mrs. M rooted from my SEP, which was implemented in Kayes. She went to Kayes in the intention to have me repeat the fourth year of my training. She came in the night around 10 PM and she told me "Mr. LOD, I decided that you will repeat this fourth year because you have not accomplished

anything." I had a topic on poultry breeding. The next morning she did not listen to me and she wouldn't even let me translate for her. She said to me, "Show me the henhouses, the breeds, the women with whom you worked." I opened the henhouses, I directed her to the women' association; she talked to them. It was concrete, I did not lie. Afterwards, she said, "Congratulations. You implemented your projects as designed, you know the sources." I invited the beneficiaries to meet representative of Belgium Embassy; they started lobbying for support their project. The association was dynamic enough to run their project and they continue running it today. Presently, I am not anymore involved in such activity in rural development. After my graduation, I have been working with the National Research Institution (IER). We have been trained by the SAFE and in turn, we have trained a great majority of people. The women I worked with learned to conceptualize their own project. They are not shy to knock on a door if they need to find funds. They learned that one can often succeed, but if you fail you must accept it.

In terms of writing, what interests me and serves me well is research methodology because when you do research you need to know how to develop project justification, literature review, methodology, and findings. You need go through this process or you will not succeed. We already acquired such knowledge at IPR/IFRA. I am wondering if the former IPR/IFRA graduates before the SAFE program received skills in this approach to writing projects. Because if you look at the old reports or theses of IPR past graduates you will realize that they did not master the process of research methodology, except for the students who did their internship in research institutions.

Regarding the research methodology, the former SAFE participants used different reporting styles. This created a difficult situation and pushed us to wonder which research

style to use from one class to another. To find a solution to this issue, they even invited some guest speakers from France to teach a course on research methodology, but this did not help, everyone brought a different theory, and it was more complicated.

EFO: Presently, some institutions ask for the help of Extension staffs (SAFE graduates) to help their students write their theses.

LOD: Yes, this is true, when I was conducting my SEP in rural sector of Kayes, the staff there seemed not to know the research methodology style I was using. It was new to them. I was forced to ask for the expertise of the researchers of the section at the research institute working on "small ruminant," and they assisted me in writing my thesis.

Question 2: What constraints have you encountered when implementing aspects of SEPs with your clients?

LOD: All the supervisors do not master the research methodology we used in SEPs. Most supervisors do not know the different steps or components of research methodology.

Probe: What did the supervisors not understand exactly?

LOD: After the implementation of the SEPs, the components involved in the writing the report such as, literature review, methodology, findings, and conclusions. What they did not understand exactly is the sequence of writing the elements of the thesis that we were required to follow.

Probe: If I have understood, the professors from IPR and your employers took part in the supervision. Did any of those supervisors understand the required style of writing?

LOD: It was not all of the professors who did not understand the writing style. How many students were we? How many regions were we operating in? We were in between

8-9 regions. When they constitute supervision teams, it was not evident that all the members of the supervision team understood the tools. Maybe some people were selected to be supervision team members with no rigorous selection criteria. I believe maybe just to complete the number of supervision members expected in a team. In a team there might only one or two people who master the research methodology.

Probe: What you described is about writing your thesis. How about the implementation of the projects?

LOD: There was no problem regarding the implementation of the projects.

IAD: We started first of all by making the monograph of the village. After the monograph, we conducted participative diagnostic in the village. During the participative diagnostic, we identified the problems. After the analysis of the problems, we prioritized the problems of the village. We selected the most important problem and we conducted a "thematic diagnostic." It was with the thematic diagnostic that we elaborated the project. But, this reasoning or approach was not well understood in the "Production."

Probe: Are you talking about your employers?

IAD: Yes our employers and also most of the professors who were not involved in the MVA did not understand this approach. This is why during the defense of our theses; we encountered many problems with some professors because they did not understand the approach we used with the SEPs. We started collecting data with the monograph. We worked on the project which was based on the problem that was identified in a participative way. The project was developed with the population in accordance to their means and resources.

EFO: We faced some problems with the presentation (format) of the theses. The terms used were also sources of controversies. For example, some professors or advisors proposed different terms referring to the same thing (bibliography, literature review, references, etc.). Some professors said the literature review should be in the appendices, others said it is an important part of the thesis and should not be in the appendices. There was total confusion. Now, what we believe in Extension is that when someone who went to the fields and collected a lot of data, did a thorough literature review, and extracted important documentary information is willing to present the literature in the body of his/her thesis, some would say it should be in the appendices. We were confused about what to follow. I think the Extension agent should be above all these problems. The important things to do are to elaborate projects and implement those projects, even if there is no external financial support, he should use his salary for this purpose. If he does not do that this means that he/she wasted his/her time. This means that some classmates used they own money to support their projects. Maybe it was because we knew that we were civil workers and we could support our projects.

Probe: If you used their own money in the project, was your intention to help populations or to complete your studies?

EFO: This was one reason. If we used our own money to support projects, this means that we played another role. Instead of being helpers we became funders or donors. We mounted projects and we were forced to implement them. We were required to find funds. Should we stop at the stage of developing projects and say "I developed a project and this is a result from my SAFE training experience." Should we agree with the fact that the project was developed and submitted to fund agencies was an achievement?

Should we agree that being present or not, after me, someone else can follow-up this project? Or the Commune can even include this project in its PDC (annual action plan) and implement the project after the student had left. But, it was estimated that the student returned to the same village and eventually continued to work on the same project. Unfortunately, this was not the case for all of us. In my case, being in the field of forestry, I did my internship in the domain of agriculture on a cross-cutting topic that any Extension agent is able to do. This was a good initiative for me as well as for the institution where I did my internship because I brought new ideas which the agriculturists did not understand at the beginning, but down the road they found them useful. I want to confess that I supported personally my project because I did not get any financial support for my project. I used my own money to buy the seeds and implement my project. My supervisors found that I got concrete results on the ground, but the most rewarding about my project was that many other people were interested in applying for it. After my graduation, I was able to insert this project in the PDC of the Commune where I conducted my SEP. After my internship, the chief of the village continued to lobby to get funding for the continuation of this project and initiate others. For example, I helped develop another project requested by the Mayor of the Commune; the people themselves looked for funds and this project continued after me.

UKO: I would like to clarify that the supervision of an Extension student is different from the supervision of an ordinary student. For supervisors to understand the SAFE training approach, it is necessary that all the supervisors be involved in the academic program of the SAFE participants. Our employers were informed about what we were doing, but they were not deeply involved in what we were doing on the field. Therefore,

they did not master SEPs' approach. The training of an Extension agent from the beginning to the thesis defense is a process. The faculty involved in this training program might understand this process. But, the staff in the field is not much involved in our training and therefore does not care to follow this process. Our employers are more used to receiving general students who do not follow a specific style of work. What they do is just to gather some documentation, collect some data, and write a report to complete their training. In our case it is different. We need to go to the village and discuss with villagers. The ways of introducing the Extension professionals are not the same as those of simple engineers. When we go to the village, we see how to introduce ourselves to the villagers? This is a step. How to get into the village. The contacts to make, who should we contact? All these should be respected. Afterwards, we need to meet. We have to plan when we meet the villagers and then we have to plan and prepare meetings. All these are steps in our process to be followed. This process continues from 1 to 4 years. At the end of the fourth year, the students are familiar with what is going on in that village. During this experience, he/she is able to collect substantial information, through direct observations without asking villagers. When the students come back from the internship, the professors who are involved in the SAFE program can understand the process of their internship. But, it has to be noted that not all IPR/IFRA faculty members are involved in the SAFE training program. As a matter of fact, during the thesis defense the judges are selected based on their knowledge and involvement in this SEPs process. If an outside professor comes in, he/she won't be able to land with the SEPs concept. All we do is linked to each other. For example, what we started the first year was followed up to the fourth year. This is why most of the external supervisors were not able to understand

what we were doing, except those who were involved in the SAFE program and who mastered the approach and the methodology we were using. In some cases, supervision being a team work, some inexperienced supervisors observed the experienced ones and then learned and updated their knowledge; but on the other hand, some did not put that effort to understand the approach of the SEPs. At the defense of the thesis, the supervisors who did not fully understand the SEPs approach were like just auditors because their contribution was minimal in the discussion. Some of such inexperienced supervisors very often asked questions that denoted their lack of knowledge of the SEPs' approach.

Another aspect I would like to talk about is: When you go to a village, the way the Extension professional intervenes is different from the way another professional from a different field intervenes. We really experienced this and we saw this difference. The farmers are more comfortable with an Extension professional because of his way to approach them, his way to behave with them and listen to them. These are important aspects in Extension. When you go to the village, you have to give the floor to the farmers as long as possible and listen to them. In comparing the professionals in other fields when they want to intervene in a village, they want to do all in one day and leave the same day, meaning that they want to choose the partners, explain the problems, and plan the activities. You see how their approach is different from ours.

Probe: To summarize what you have described, what difficulties have you encountered in two or three words?

UKO: The difficulties I encountered were that at the beginning of the SAFE training program the things were not clear enough.

Probe: When you say things, what are you referring to?

UKO: It was requested that all the students found their funds to support their projects. We understood things like this.

Probe: Were projects' implementation conditions and procedures documented?

UKO: No. There was no written assignment or instructions about the implementation of the SEPs. The students were forced to use their own resources and money to implement the SEPs. Another difficulty was that the scope of the participative diagnostic was not specified. In my understanding, since we are in Agricultural Extension, our focus should be on agriculture. When you ask the farmers to identify their problems, they will propose all kinds of problems we were unable to handle. Therefore, they talked about infrastructure and health problems, which were not our area of specialization. Though I recognize that an Extension agent should identify all kinds of problems in a village together with villagers, when it comes to prioritize the problems, we must focus on agricultural related problems; I mean problems regarding farms, forestry, and rural engineering, etc. These are problems which arose in our training. At the present time, some understanding and solutions have been initiated. Most of those questions have been clarified.

EFO: What we should not forget is the support for the SEPs. I mean the financial support. At the beginning of the SAFE program, those who were the first and second classes received support in order to conduct actions in the villages. This assistance disappeared with time maybe because the SAFE honored its engagement and the government institutions were unable to pay for their contributions. The assistance allocated to SEPs' implementation was around 120, 000 FCA ($220 equivalent) at its

start; this was then reduced by half, and finally was stopped. As a consequence, many students in subsequent classes supported personally their projects. Sometimes, it was assumed that most SAFE participants were civil workers and they could get support from their own employers to implement their SEPs. Those who were lucky had their SEPs supported by their employers and this was not the case for all.

Probe: In summary, was the financial support of the SEPs a problem for you?

EFO: Yes.

FEK: It is not only the financial support, but the coverage of the SEPs.

Probe: What is the difference between financial support and coverage?

FEK: Coverage means supporting measures. I mean when you send your students to the village to choose their topic based on participative diagnostic. He/she will come back with an urgent problem of the farmers. If there were no consequent supporting measures to help solve this problem, the return of this student to the village will be difficult. A simple agent in another field can be sent to a village to collect data with no big care about the interpersonal relationships. But I, as an Extension agent, need to follow the tradition in contacting first the head of the village, the associations' leaders such as women's group, youth group, and others. You are forced to follow the African tradition; I mean to bring cola nuts, tobacco, or other small gifts to elderly as a strategy to get their support.

EFO: To support what he said, students from other field might come to a village with their topics, do their research, which are sometimes not linked to the life of the villagers. But we as Extension education students, we need to work on topics that are related to the villagers' life. This is why it is important to get some assistance to implement these SEPs;

otherwise we lose the confidence of the populations. The villagers have always said

"They come all the time to interrogate us and there is nothing after that (it stops there)."

Question 3: How could the SEPs portion of the SAFE training be improved to better meet your needs as an Extension educator?

FEK: In my opinion the SEPs cannot work without funding agencies to support the financial aspect of the SEPs. This is inevitably needed because the Malian civil worker does not have sufficient resources; he/she is forced to run all the ways around to cover his/her family expenses. So, when he/she undertakes training, this takes extra expenses. In addition, he/she should work on a ground he/she does not master. The students are obliged to go through difficult situations to complete their training. I remember a farmer was teasing me because of the "joke relationship" we have. He said to me: "Hey, Mr. DE, do you have something for us today? If not, we don't have your time; I am asking if you have some money for us." In another instance, the chief of the village proposed to pay for the time of the people who will help in doing the monograph of their territory, because of the hard work involved in it. We were supposed to walk 17 km and they were not ready to do that unless I buy gas for their motorcycle. I did not have money to satisfy that request. You can judge: if you don't have money, you won't be able to implement your research. It is compulsory to find financial support for the SEPs. We need to be franc; we should not veil our face. In my opinion if the SAFE program has a weakness, it is the lack of financial support for the SEPs. As someone already indicated, what the first class benefited, the second class did not, and so on. It is a very a difficult situation. A poor student with low income is unable to support the SEP. We need to have funding agencies

or donors especially for the support of the SEPs. This way, SAFE will get support measures for the SEPs.

Another source of support can be other external on-going projects (programs) at local, national, and international levels. These projects' leaders should be sensitized in getting their support to the SEPs. The leaders of these external projects should have an open-mind and therefore understand that what we, SAFE students, are doing is for the benefit of our nation. It is for the entire nation. We need to have official funding agencies for the support of the SEPs. If we need to do the "from door to door" to find funders, why bother? This is very tiresome.

EFO: Maybe, we are in an administrative stranglehold process that we need to follow. This is different from those who come directly with a problem and conduct their internship; I mean the classic, I come with my theme; I collect my data and leave. I don't need to stay in the village for 3 or 6 months. But we are in a process in which every year you need to stay in a village at least one, two, or three months and follow that process. We are in such an administrative iron grip that brings a difficulty we strive to overcome. If we were given a theme to research in a village and go only in the fourth year, it will be finished. But if we have to go every year to the village, we will tire the populations by always asking them questions; go out and follow the process obligatorily; this is what is bothering us. For this reason, we are asking the financial support. Otherwise, it can be different if we just have to go with our themes and apply them. This classic method might have certainly some steps to follow such as collecting data on the ground, which can be done in 15 days; if the student is done with his research on the ground, he can do the literature review and it is finished. You see, this is different.

UKO: What I would like to add is that being with villagers in a village is a good Extension approach, but it is costly. To be honest it has a cost. When you go back and forth to the village, as head of family, you are obligated to be between your family and the village, and then transportation will cost a lot of money. On top of that, accommodation in the village is not as easier as it used to be in past. Today's villagers are different from the ones in the past. There are many things which have changed in the villages. A villager used to host a guest (foreigner) for one, two, and three months. Presently, they don't have enough to eat. So, when we are on the ground we need to contribute to the meal provision. If the program could think about that, this will be good. I spent seven months on the ground, I used to come visit my family every weekend and return Monday morning. I supported myself during this period and I did not get with any institutional support; I used to pay monthly 5000 FCA ($10 equivalent) to my host family for the foods they used to provide me. This was not a lot of money; it was symbolic to show them that I am aware of the increased living cost. It was impossible for me to eat free in my host family for seven months.

For the project we developed, even if there is funding, the funders cannot support all the budget lines of the project. Say, they will not support all the expenses. They are mostly interested in what directly affect the villagers. If it is for materials, they are ready to help; if it is training they are ready to accompany you. Researchers' transportation and food are not always taken in consideration. When you have a motorcycle, say, you have problem such as running out of gas. If the SAFE program can think of that, this will be good. We need to recognize that staying in a village is very good. Someone who stays six months

with farmers is more aware of how to approach farmers than someone who does not do that.

FEK:: I would like to give an example in my case. The first night I stayed in the village, after presenting the porridge for breakfast to the head of my host family, the cook said to him "there is no sugar and there is no money to buy some." You being the guest, it was your first night; how would you react? It is my duty to pay the sugar. This day, I only had 500 FCFA ($1 equivalent), so I gave it to the cook to buy sugar for the breakfast. That's it I did not have more money. How would I survive there without money? I was forced to go back home the same day. I borrowed money from some friends nearby for my transportation to reach home to get more resources for my stay in this village. There are situations when you do not have "support measures," it is not going to work; one might have a will, but you just cannot take any action.

LOD: The SEPs constitute a good initiative, but they require remodeling; otherwise we might lose them in the long run. They are important in the SAFE training. They are feasible alternatives. We are presently 3 to 4 classes of graduates on the ground; we are not saying we are more competent than the professors, but we have the most "Know how" regarding the SEPs. Out of the four graduates' group there are at least two or four in each region who master the SEPs. Why not let the former SAFE graduates on the ground supervise the one conducting their SEPs? Mobilizing a group of supervisors is costly.

Why the Extension service should not include the SEPs in their annual budget? This should be done the same way as other budget lines. This is better; this way we don't have

to worry about projects' funding. This way the students are taken care of the government's initiation of the SEPs.

Probe: I thought this was the initial idea of the SEPs

EFO: Yes. The SEPs were supported by PASAOP and the PASAOP ended. Because PASAOP ended, there is no other support; therefore the employers should take care of the funding of the SEPs.

Probe: I think it is not always advised to count on external support. What can be done at the local level to insure the financial support of the SEPs? Why not take this theme for your annual conference next year?

EFO: Yes. This is what we need to think about and discuss. We need to find a powerful system to solve this problem.

In terms of improvement, I think that it is possible to contact employers and ask for their contribution. If they accept to send their employees to the training, they also have to accept sharing the cost of that training because they are the ones harvesting the fruits of the training efforts. Up to now, all the employers do not share the same vision regarding this training. In my understanding, there is a great lobbying needed for the participation of these institutions in funding the SEPs. If we consider the case of my workplace, this SAFE graduate is presently the only specialist in Extension, and he is well demanded by other services. As a matter of fact, his service helped in his institution. The same SAFE graduate is doing a tremendous good job. All the departments which accepted to send their agents for training should consequently accept to share the costs of that training.

I think this debate has already been going on at a higher hierarchical level. I remember, when the PASAOP ended, the leaders of IPR/IFRA assembled different directions around

a meeting to talk about funding Extension education as a whole. We are not informed about the outcomes of that meeting, but we propose that the reflection continues on the financial support of this training.

If we consider the notion of "competence transfer," IPR/IFRA in Katibougou transferred some competence to SAFE participants; in turn we have been transferring the competence we have received to other Extensions agents on the ground. If they could take the former SAFE graduates as coaches or supervisors of current participants, as MSY indicated before. Even more if we could teach Extension in other schools; this could be a good opportunity to increase the Extension agents in the country. I know I am capable of teaching the BTVA program participants in Samanko, as well as teaching at the center of Tabakoro. I will do my best to see that Extension could be well understood in these schools, as a way of sustaining what we learned in IPP/IFRA Katibougou.

Probe: Do you have other thoughts?

EFO: We need to take financial support as discussion theme next year during our general assembly. This means, discuss the issue with some national directions. We need to start this discussion in a decentralized way; this means to start doing that one structure at a time. We can start with the Direction of Agriculture and ask the staff how they anticipate funding Agricultural Extension education? We then go to the Direction of Water and Forestry and ask how they would like to take care of the funding of Agricultural Extension? Regarding the Direction of Livestock, we will discuss the same thing. At the end, we can organize a national forum on the issue: Support for Extension Education.

FYS: What will be the theme of the discussion? Problematic of Funding of Agricultural Extension Education.

UKO: As the seignior has said, it is better to contact the Ministries.

UKO: Regarding the funding, it is better to contact Ministries involved in Extension because the Ministries are the ones developing policies. We need to lobby and have a discussion with them about the means of getting funding.

FYS: Do you know why the funding stopped? Because Mrs. M was very dynamic and she used to knock at the doors to find support. With what she was gaining from Winrock and the two Ministries, she has helped students. Last year she was getting ready to leave and she could not take care of this aspect. This year there was nothing.

LOD: In my opinion, the reason for the lack of financial support is only because PSAOP ended. In almost all the structures there was some money given by PASAOP and designated only to support the SEPs. With the ending of PASAOP, there is no more money, the structures cannot do anything, and even if Mrs M was here she would not be able to correct the situation. In my view the support to SEPs should be planned in the national budget.

FYS: Even if PASAOP ended, but the 2 ministries still exist. It does not hurt to ask them.

LOD: Since you are with the coordinator you have to ask him.

UKO: I think that we need to approach the Ministries because they have a training component. I noticed that they have trained some staff in private institutions and some of those institutions are not even recognized by the Government. I believe that all departments affiliated to Ministries recognized that they need at least one Extension professional in their staff. At the ministerial level, it was required to appoint an Extension professional as a member of the cabinet in order to help develop agricultural policies. We need to fight at the level of the Ministries. When the Ministries will give their approval,

the regional directions will follow with, no problem. There is no need to contact the directions directly.

FYS: What is the problem? The problem is that we just say what needs to be done, but nobody is doing what should be done.

Probe: Do you mean we need to link words to actions?

EFO: I will say that we have a hope, we are growing and the number Extension professionals is growing. We are also on our way to becoming an association, I mean a very strong association, and our association should fight so that Agriculture Extension would be supported in Mali. Our association is going to be a pressure group on decision makers to support Agricultural Extension development. If our association, which is growing, could work hard to have government institutions and NGOs support Agricultural Extension, this is going to help. I am not saying to support our association, but to support Agricultural Extension Education in Mali. In general each institution has a training component, but the training centers are not supported by institutions. Because, institutions need to understand what Agricultural Extension is about. For example, the center of Tabacoro is directly affiliated with the national direction, and supported by the government, and every year there is an annual budget allocated to this center. If the SAFE programs, including MVA and BTA, were understood by Ministries, therefore, they would understand that their graduates would be very effective and useful for them. Then, they can decide to invest funds in these programs. If they do not understand what Extension is all about, they will not support it. We need to let people know that we, as Extension professionals, are important. Let us try to go this way and see.

IAD: I would like to understand something. Are you talking about funding Agricultural Extension or funding the SEPs?

Probe: We are talking about the SEPs specifically, because they are the most difficult aspects indicated.

IAD: If you talk about funding Agricultural Extension Education, this is the area of the government, but, as far as SEPs are concerned, I don't think you will be able to get government funding for the SEPs. In my opinion, you cannot force the national directions to support the SEPs. This will never be possible, even if it happens, it will be a temporary action, which will never be sustainable. I think the DER (Studies and Research Department at IPR/IFRA) should look for funds and means to support the SEPs. At IPR/IFRA, the "Technological Village" generates funds. I think the DER should be creative in generating income, such as the "Technological Village," to support those who are at their 4th year in supporting the SEPs. If we assume that the SEPs should be supported by other institutions, I don't think this will ever happen.

FYS: This is what I wanted to say.

LOD: I do not agree with DIA, why the DER? The DER does not cover only Extension Education, why it should find funding for us only?

IAD: If I say DER I am referring to the Extension section of the DER.

LOD: Some of the faculty members are against Extension students because they feel that Extension students are treated as "Super Students." Even when I used to interact with some professors during meetings, I was told that we consider ourselves as "Super Students." This day I replied that "If we are considered *Super Students* because we have the competence to be designated so." This Mrs. M was delighted by my reply. I am sure

there is a training component in each department (in Ministries), there is money for training, and if we could mobilize these training funds, they would help solve some of the problems.

EFO: What I want to say regarding this issue is that there has been an opening for this degree program to be hosted by IPR/IFRA. We have been favored because this training program was not available in Mali, people used to access them abroad. So, we professionals have been favored to receive this training right here, what is remaining now is to strengthen our association. Our association should be a weapon for the DER to support the SEPs. We can lobby government and non-government agencies to raise funding for the DER to take care of the new SAFE participants.

LOD: There was a debate about this topic among different ministerial institutions to see if each institution should fund its employees participating in the SAFE program, or if they should create a common fund to support the SAFE program. Some argued that some structures have more participants than others, and it was not possible for them to contribute to the same extent in the common fund.

IAD: Apart from DNA, I don't see any other government institution grasping the importance of the SAFE program.

LOD: This not real, I know the money is not coming from the DNA

IAD: I am working for the General Direction of Forestry; I know the importance of Agricultural Extension is not perceived there. There are many Extension agents walking around with nothing to do.

FYS: we need, as an association, to contribute personally and take this contribution to the two ministries (Agriculture and Education) to ask for assistance.

FOO: I am very optimistic regarding this program; we should not be worried at this moment. I note that the evaluation came a little late, several years after the SAFE program's establishment; it should have started at its beginning, during, and at the end of our training. But, this is not a problem, all we have been discussing regarding capacity building and the funding of the SEPs. We have to recognize it is not easy. As the colleagues have proposed that the government agencies should contribute, in my opinion this is a matter political will. If it is political will, we need to discuss with politicians about ways to support for the SAFE program. When MSY talked about personal contributions from our association's members, I don't think this a sustainable approach. The only sustainable way I see to convince politicians to consider and support the SAFE program. We need to go through a solid base, I mean a political way, sensitize politicians; we still have time because there are coming generations. I know the SEPs are very important. I myself had encountered a problem when implementing the SEP. We were a group of three when we went to the first village; the villagers asked us if we had money to support our stay. But, with the communication skills we learned we were able to be hosted free in that village, so this is an advantage of the training. As far as what cash is concerned, we need political support.

LOD: I do not agree with those who have proposed to use the contributions of the association members to support the SEPs. The resources gathered by the association should be used for its functioning. What the association needs to do is lobby government, non-government agencies and institutions to raise funds and support the SEPs. If it is true we have learned Extension, we should be able to convince our superiors.

Mopti Region

How has your experience with Supervised Enterprise Projects (SEPs) positively impacted your professional skills and practices?

#1: It helped me develop my skills in communication and organization of rural populations.

Before the SAFE training, setting up a project was a problem for me. But, presently I have developed the skills of setting up projects. Since my graduation, I have developed a number of projects. I got funding for one of them for a total cost of 13 000 FCFA. We have learned in our SAFE training that all the steps and approaches involved in setting up a project.

#2: I developed some skills in lobbying.

Probe: Are you saying that you needed lobbying skills in the process of SEPs?

#2: Yes, we need to explain our project and convince the funding agencies about the viability of your project in order to generate his or her interest.

Probe: Do you have any other ideas or responses to add?

What constraints have you encountered when implementing aspects of SEPs with your clients?

#1: I did not particularly encounter a major difficulty with my SEP. Because, before I started my SAFE training, I used to work with an NGO, I knew their objectives and interests. Therefore, after the participative problem identification, we proceeded to the prioritization of problems in this village. The problem # 1 was pearl millet infestation by insects and onion processing techniques for value added as the second problem. Solutions were found to the first problem by other institutions; therefore what remained was the

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concern of women in mastering the drying technique of onions. The NGO partner, I mentioned earlier, equipped women with processing materials, which was the topic of my SEP. This project has continued even this year.

Probe: This means that there was no follow-up issue of this project after your graduation.

#1: No, because the supporting NGO is located in this village and the group of women continued to work with them directly.

Probe: Do you encounter problem in accessing specialists or experts?

#1: That was not a problem. The food scientist professor at IPR/IFRA was called out to give advice when needed. Access could have been a problem, but with the support of the Food Technology professor at IPR/IFRA, I did not encounter any problem. The availability of this professor to respond to all technical questions we asked was capital to the mastery of the technique. In addition, two collaborators who used to work in Bandiagara on onion processing project were helpful for giving technical guidance if we have questions for them.

Probe: Have you ever had any problems with supervision?

#1: The supervision team helped only one time, so that is a problem.

#2: The main constraint was supervision, because the village where I conducted my SEP was not easily accessible. When supervisors came in Mopti, they could not go to this village. They stayed in the city of Mopti, and I came and met them and we discussed. The second time they were supposed to visit me, they could not come, and I was forced to travel and meet with them in Katibougou with my documents.

Probe: Regarding the finance, did you encounter any difficulty?

#2: Yes, there were some difficulties, because up to now, I have not received back the remaining of my internship allowance which was supposed to be 75 000 FCFA, and I only got 50 000 FCFA.

Probe: How about the cost of your SEP?

#2: Regarding the cost of my SEP, it has to be recognized that it was a very big project. It was about landscaping of some rice production areas. I mounted the project, and it was funded by the project "Rice Initiatives" after my internship. During my internship, I submitted the project to the Canadian Embassy, but I did succeed to get funding there. It was after my graduation that "Rice Initiatives" project funded the SEP.

Probe: Are you saying that you developed the project but you were not able to implement it?

#2: Yes, I was not able to implement it.

#3: I did my internship at IPR/IFRA. I was approached by some staff members to develop SEP on rice NERICA. The problem I encountered was to find an experimentation plot. The plot reserved for this project was rented to private people. The plot given to implement this project was not suitable for the production of NERICA; consequently the results were not satisfactory. This situation caused some conflicts among leaders at IPR/Katibougou, which were peacefully managed later.

The second problem I faced was the problem of supervision. Those students who conducted their SEPs at IPR/IFRA Katibougou where supervisors were mostly located, supervision was too much for us, the first team came when we had not started our work, therefore they graded all of us poorly, and this really affected our overall grade. It also reduced the rigor in evaluation of SEPs. The supervisors should come as advisors and

help us find solutions to the problems we encountered on the ground, instead of coming as policemen.

Probe: In this case, who was your target population?

#3: I did my SEP on rice seed production at IPR/IFRA Katibougou.

Probe: Does that mean that you worked with farmers?

#3: I did not work with farmers for the rice seed production, but I did my school break internships in a village here in Mopti. At the last minute, two of our classmates were retained to work on this project.

How could the SEPs portion of the SAFE training be improved to better meet your needs as an Extension educator?

#2: The internship allowance that existed before stopped. Providing internship allowance will help a lot, because trainees could conduct their SEPs in areas which are difficult to access. It is very difficult for those students to move around.

#3: The sites are difficult to access, therefore it is important to consider the specificity of areas. Depending on the locations, some students who are located nearer the Koulikoro, started the implementation of their SEPs before the fourth year of the training cycle. Others started their SEPs at the end of the fourth year because they were very far from the training center. If the SAFE training managers do not take into consideration the SEPs implementation locations, it is unfair that everyone should be treated equally.

#3: They need to take into account the specificity of each area regarding the development and implementation of SEPs. The SAFE administrators treat equally all participants and are unfair.

 # 1: Improve the lobbying with partners. Find solutions to transportation of supervisors in none accessible areas, as well as communication with students. Supervision is major problem, thus solutions should be found to that end. The supervisors should be on ground where the SEPs are being implemented.

Probe: How about the employers? Do they participate in the supervision?

#2: No, they do not participate.

Probe: It is indicated in the SAFE official documents that employers must be part of the supervision team.

#3: When the members of supervision members come, they find a guide [another employee] in our workplace to help them locate where the SEP is implemented. There is anyone nominated in our workplace to be truly involved in the supervision of our SEPs.

 # 2: What is in the text is not what is practiced. It is important that students' advisors traveled and observed what we are doing. Students are left on their own in some areas.

Female Group

Has your experience with Supervised Enterprise Projects (SEPs) positively impacted your professional skills and practices? How?

FOM: this training enabled me to be appointed at a higher position in my workplace, as responsible for monitoring and evaluation of programs in the service of Extension at regional direction of agriculture in Koulikoro. During my internship, I had the opportunity to collaborate with an NGO, in a District (*cercle*) of Koulikoro region, Sindo. The work we do together is on commercialization of onion. The NGO assisted ten producers including three women. This collaboration continues until now. I worked in 3 villages. Even after my training I still follow up the populations with whom I worked during my internship, to see how they are advancing in this gardening project, which is focused on commercialization. The training I received helped me a lot to understand how to work with rural populations, especially rural women. In the areas I covered during my internship, I analyzed the needs of women, developed approaches to help them through training and advice, with the productivity of their garden products.

Probe: Since you work with men and women, have you encountered any problems when working with people?

SOM: I am involved in a program which covers three main components: training, livestock, and research. Regarding these components, the main constraints I faced were: first of all with the training service providers, we don't think they work as we wish. This directly impacted the results. We are interested in seeing concrete results on the ground. Regarding the livestock component, we faced some difficulty in collaborating with our male clients. The male clients think that we as international institution have money to buy

animals in the scope of that program. Regarding women, we notice that the decision always belongs to men as far as they are concerned. The last word belongs to men. In some areas, working with women is difficult because of cultural norms. For instance in March, women cannot be out to conduct any work in Kolokani areas. March is the time when some traditional myths take place and women are not supposed to observe these ceremonies (komo). If they do, it can cost them their lives. This is a serious handicap. In addition, in areas such as Nara extending to the border of Mauritania, perceptions and mindset of populations are little problems we also face. These populations are used to get their food supply in Bamako. We used to face some problem when they were asked to focus on local food production. But, they begin to understand that development starts at local level.

Sometimes when we want to conduct some gardening activities, we are faced with the labor problems. Women in such areas are not strong enough to conduct all the gardening activities, or some women need to have the approval of their husband to undertake such activities. So, we are forced to collaborate with men, even if women are our target populations. My SAFE training helped me develop my skill in understanding clients, approaching them, and working with them.

Probe: Are you saying that the training was a plus in your job.

FOM: The training improved my competence tremendously. Kor: I would like to say that this training has helped me a lot. The first year of training we did the monograph (inventory) of a village. The second year we conducted participative needs assessment in order to identify a priority problem in that village. To be frank, I have never used this approach before my SAFE training. For my SEPs, I chose a village in Ségou region,

conducted the monograph and identified a problem with the populations. The problem identified was about the processing of shea butter. Therefore, I worked with women in this village on how to produce efficiently shea butter. As we were taught in class, an Extension agent should never work or make decision alone as related to identifying or finding rural problems. Together with the group of women in this village, we looked for money to conduct the project on the introduction of a "press" for shea butter extraction. Before the set-up and funding of the project, I helped women organize into a formal association; we did this formalization process together. We went to Bamako and met the administration in charge of it, did the entire paper work together, then got a proper official document which recognized their association in Mali (récépissé). With this official document, the association was more credible and we got funding to implement the project. With that money, the members of the association were able to buy shea butter processing equipments. In the process of conducting the SEP, I was able to put myself in the shoes of these women, for me to understand them better. The approach I used to communicate with this group of women was an application of the lessons learnt in our SAFE training. The problem I encountered with this group was that they wanted to use the money to solve another problem (e.g., buy a cereal grinder), but with the skills of communication I learned in my SAFE training, I raised their awareness that if they did, they will lose the trust of the supporting agency. This will close the doors for future collaboration. I convinced them to stick on the priority problem identified in the participative need assessment, as a shared priority for the village. But, the women were really attached to this idea of cereal grinder, I thought of another lesson we learned in our SAFE training, update the diagnostic. Through critical thinking, I thought we could

include the cereal mill in the shea butter processing equipments they got funds for. The rationale for buying a grinder is that there is a grinding step in the shea butter processing, and the same mill can be used for both purposes. Therefore, the diagnostic was updated within the same problem. The skills I used to face this issue include; communication and "situational problem solving" with this group of women.

The success of this project some years later encouraged the same partner to support another project on "fonio" in this village.

Probe: What did you learn through the SEPs?

ROK: I learned to apply most of what I learned in class. Through the SEPs, the methodological approach, participative approach, and communication strategies were put into practices. In the village where I worked, the chief of village had a high esteem for women. He said to me "if you help women, you will help our entire community. In this village women are respected and their needs were among the priorities in the participative need assessment. Some of the male villagers were, on the other hand, reluctant to the innovation we were introducing, the shea butter press. It was only on the day of the demonstration they were convinced of the value of the innovation in the shea butter processing.

SOM: As they mentioned, we all went through the same process, I mean, we did monograph the first year, the second year participative need assessment. At the stage of need assessment, we used the MARP tool to identify problems, then together with populations prioritized the problems and proposed alternative solutions. The priority problem was developed into a project that we referred to as SEP.

Probe: During the prioritization of needs in a village, did you encounter any gender related difficulty in selecting a project?

FOM: Most definitely! Sometimes men or women, or the youth want their gender related problem to be prioritized.

ROK: We have to be grateful to those who developed these tools. The approach has started its integration in the behavior of rural people, which can be observed during the discussion with them. The Extension educator cannot anymore make the decision for them, the populations are strong enough to tell what they need and not to be told and this is an advantage of the participative approach.

SOM: In my case I was able to organize women.

FYS: The training helped improve my communication skills and to better understand the training methods. It also helped meto be respected and taken more seriously at my workplace by my colleagues and bosses. I was able to talk in front the public with no fear and no shyness to express myself, this is very important for my career.

GAH: I am very happy with my training. Before the SAFE training, I was not confident in myself about how to work in rural areas. The rural communities are complicated and it is difficult to understand them if you don't have the proper training. During our school break internship, I learned how to behave with rural populations. If I have said that the SAFE training helped me, it is because the population in the village, where I did my SEPs was very difficult to communicate with. When I chose this village for my school break-internship (stage de vacances), some colleagues discouraged me to continue that. But I persevered and stayed there and succeed in communicating with the population properly. The first time when I wanted to introduce the objective of my visit to the chief of the

village, he did not pay much attention to me. My colleagues told me that I should choose a different village, because this was a village where men failed to collaborate and they assumed a woman could not succeed to work with these populations because of their high reluctance. I went four times and explained the same thing to the chief of the village; he finally gathered men, women, and youth in the village and asked them to collaborate with me. This was how I was able to interact with the population in this village. After my introduction in the village, I talked to different small groups of women and youth; afterward they adhered to my initiative and found it useful for their community. Then, I started to raise their awareness about issues concerning their community. When I started my work in this village, the population was not organized. I helped women to form an association. Together we developed their project and looked for money. Every time I visit the donors or funding agencies, I go with two or more representatives of the women association, for them to understand the process.

The important competence I developed in my SEP development and implementation includes the following: how to convince populations, how to listen to populations, be perseverant, be patient, raise funds, organize women around income generating activities, and manage their savings KOS: We all used the same procedures for the monograph and problems diagnostics. But, the characters of people and problems are not the same. I am saying that because I have encountered a major difficulty in the first village I chose. The populations in this village were reluctant to outsiders and innovations, thus it was impossible to work with them. Every time I made an appointment to see the group of women in the village, the chief of the village used to set a date, so when I came, they postponed the meeting, and this was repeated several times. At the beginning of my

intervention in this village, I feared to report to the supervisors this problem I was facing in this village, because I was thinking that they would say that I was lazy and I did not want to work. I waited until the supervisors came to visit me in this village; then they discovered the reluctance of these populations. Consequently, they advised me to select another village; otherwise I won't be able to present any result at the end of my internship.

KOS: I worked with women on processing dried onions. We were assisted by the professionals of the food processing laboratory at IER (Institute for Rural Economics). Women in the village were trained on the techniques of drying onions. Getting the funds for my SEP was not a problem, because I had a financial support from WI. I helped women build a storage facility for their onions, because this was the first step in the processing. After storage, the onions should be dried using a solar drier. WI helped women in this village have access to the storage and drying facilities. Regarding the practical competence, I acquired competence in evaluation. Consequently, after graduation I was involved in the evaluation of MVA and BTVA students. Presently I am teaching the first year in the BTVA program in Samanko. I believe, little by little I will build up and consolidate the skills I acquired in our MVA training program.

Probe: During the implementation of the onion processing project with women, what competence did you develop?

KOS: I developed competence in drying onions.

Probe: To summarize what you described in your SEP, did you develop partnership skills with others? did you problem diagnostic techniques and communication skills to get assistance of external specialists and experts?

SOM: I worked with 120 women in a village for the commercialization of garden products. My interaction with women enhanced my skills in participative diagnostics, commercialization techniques, raising funds, and partnership with specialized services among others. WI supported my project. I also learned how to improve quality of garden products, quality norms and standards.

FOM: analysis skills (is there more explanation to this one?)

ROK: The training favored connections with institutions and people. Even if I am not involved in Extension work directly, I can still use most of the skills I acquired in my SAFE training. As you know, the training covered a large range of subject matters. Extension is a whole. I believe a well-trained Extension professional is able to work on many agricultural development areas. It is a matter of improving and updating what you learned and applying it to any agricultural sector. I now work in a government institution focused on monitoring and evaluation of agricultural projects. In this government entity, we usually work with senior civil workers, because they have experience. Our job is to treat high level government policy documents and make sound decisions. But, I do not look down at myself, because I am confident in the skills I acquired in my SAFE training. To be able do my job effectively, I always ask for the coaching of my senior colleagues in applying what I learned from the MVA program. I am doing well, because I sometimes receive compliments from my colleagues.

FYS: I have not been involved directly with populations after my graduation. I am a member of the academic faculty at IPR/IFRA. But, the period of time I interacted with populations in my SEP process strengthened my interpersonal communication skills.

Now, I am more open   and I have more confidence in communicating with people at any level. With the higher level of my job category I see other faculty members as peers now.

Probe: Did you all advance in your job position or category?

All participants: Yes, we were promoted in our job category and some were given new responsibilities.

FYS: The salaries have increased for all of us. The SAFE program made a big change, especially in our communication skills.

FOM: Our competence in sociology and communication has improved. The core courses of the SAFE training program are Extension, sociology, and communication.

Question 2: What constraints have you encountered when implementing aspects of SEPs with your clients?

Probe (co-researcher): We defined constraint (i.e., climatic hazard) is a problem with no immediate solution but we can elaborate alternative solutions to minimize its effects. On the other hand, a problem has always a solution.

Probe (principal researcher): if the word constraint is confusing, we can use the word difficulty.

Probe (co-researcher): Difficulty and problem can be used interchangeably.

FYS: One cannot work with rural people without encountering difficulty, especially when villagers see educated people they always look at us just coming to ask them questions and never show up again. Because this is the image many educated people in rural areas have left, this is what rural people say: "they come and identify their problems and do not follow up with solutions." Therefore the rural people lack confidence and trust in what we come for, even if we have good intentions and faith towards them. Now all

intellectual people who come to the village have problems to be trusted and accepted. This affected me also.

ROK: Funding is a major difficulty in the process of SEPs.

FOM: Introduction into the social system is another aspect of difficulty.

Probe: Why is hard to   get funds? Is it because the partners do not trust you or is it because you don't know where to go and knock on the right door? What is the problem?

SOM: The first difficulty arises from our status as students. When we approach a partner as a student, are we credible enough to catch the attention of the partner? This is a first question we need to factor in.

I propose that WI be at the front to look for the funds, because they will look more credible than a student.

Probe: You are saying that status as students is not in favor to getting funds for your projects.

FYS: The behavior of the villagers counts also. Many projects get funding in villages, but they are not implemented. People take money and they do not give any report on how the funds are used. The funds are used for all other purposes, but its initial purpose. This is another aspect of the problem.

Probe: Let's look at appropriate solution to each problem related to the support of projects. Regarding the issue of credibility in the eyes of donors of financial partners, are you proposing that WI serves as a cover for fund raising?

SOM: In the past, IPR/IFRA was asked to market the SAFE program and conduct some fund raising to support the SAFE program, through action research. But, for the former classes, WI volunteered to support projects developed by female participants. Another

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alternative was to involve the beneficiaries in the process of fund raising. All activities in the SEPs development and implementation should be done for and with the villagers.

ROK: Exactly, this is the aspect I wanted to point out. In my case, I was able help the women group get fund for their project. I knew, alone, I would not be able to realize that without the involvement of women themselves. As I said earlier, women and I used to go together in the presentation and submission of their project to the funding agencies. One time, the partner went to the village to see what was going on there and interacted with other members of women's association. I would say again, alone, I would not be credible to get the funds. The involvement of beneficiaries in the process is very important to gain credibility and trust of the partners.

Probe: In the document of the SAFE, it is stipulated that the SEPs are participative and collaborative processes from need assessment or problem identification to their implementation. Beneficiaries, faculty members, and employers all should be along with the student in the entire process. Is it applied, I mean practiced.

FYS: Yes, we do all the process together, except for, in many cases, the fund raising.

SOM: In the SEP process I developed, I raised the awareness of beneficiaries about the implication of each step in that process and involved them at each stage. The rationale for involving the beneficiaries is for the continuity and the sustainability of such actions with me or without me as a facilitator. If populations are involved, they are able to auto-manage their problems, therefore they become more empowered for future actions. Every time we had to meet with partners, representatives of steering committee used to come with me. Even after graduation, I started other activities with the same group such as training on food processing. This training project was submitted to FAFPA for

funding, after me the training provided to the group of women by the "Technological Village" team at IPR/IFRA. As a summary, beneficiaries have to be involved in the process of SEPs to achieve the goals of SEPs.

ROK: This is very true. Even partners are more flexible and sensitive to the presence of beneficiaries in the process. Participation of beneficiaries is really important.

Probe: Were beneficiaries involved in fund raising in your cases?

FOM: It all depends on classes. We are three classes represented here.

FYS: I raised funds alone.

ROK: Populations cannot get funds alone, they need a facilitator in the process, and this is the role we played.

SOM: It is recommended that follow-up strategies be proposed and initiated. I may start a project and later unable to continue it because of unexpected or uncontrolled factors. Those follow-up strategies should enable someone else to continue the initiated projects. Always going in the same order of thinking, the SAFE program did treat the classes the same way. The first two were well treated, but the last two did not get any support. This situation is really frustrating. The enthusiasm when the SAFE program first started decreased slowly.

What I am saying is not engaging anyone else but myself, I am just sharing a personal view on the SEPs. This training did not continue the way it started. This is why there are some breakdowns. The first and second classes were accompanied, but, with the third class there was some breakdown. In the admission rules, there was a written document saying that the student should at each school break stay in the a village for the four or three years of MVA training depending on the degree at entry at IPR. For those who

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entered with the DUTS, they started the MVA with those who were in the second year; therefore they only had three years in the MVA program instead of four years for those who entered with the technician degree.

The strategies of SEPs have changed, every year the villagers are acquainted with new faces asking the same questions, the villagers are bored now, and this limited collaboration with them. Instead of one MVA student working in one village until the end of his or her program before sending another, students come and go, and this entitles loss of credibility as Msy said before. In some case there was a lack of continuity or follow-up when one student leaves the village, who is going to follow –up.

Another aspect is supervision, some classes were supervised, and others were not. For instance, those who are defending in December 2009 did not receive any supervision; it is the same for who will finish in February 2010. Frankly, it is not working. The third class received only two supervisions, but the subsequent classes did receive a single supervision.

Question 3: How could the SEPs portion of the SAFE training be improved to better meet your needs as an Extension educator?

FYS: Create resource by generating activities.

SOM: Involve women at each decision and management level of the SAFE training program. Women keep a good image of MM because she did her best to run the SAFE program effectively. She has the acknowledgement and support of the female graduates. In our understanding, we need to make sure, as alumni; the sustainability of SAFE in Mali is secured. We know if we work together, we will make it. We need to initiate and maintain good relationships with partners.

FYS: The few resource-generating activities in katibougou should be effectively managed and they can generate resources to support the SEPs. Women should be involved in this management for more transparence. We need more female faculty members.

SOM: Female graduates should meet once a while to discuss issues and initiatives related to the participation of more women in the SAFE training program. IPR/IFRA should include supervision in their annual budget line. Ministries should be reminded for the support of the SEPs.

GAH: The text and guidelines regarding the SEPs should be reviewed, because they cannot be equally executed by all the students. It is required in these texts that every student returns every year during the school break period to the original workplace and starts the process of the SEP. For instance, some students who are in the northern part of Mali, Gao, Tombouctou, and Kidal could not afford to fulfill this requirement. Some came with their family in Koulikoro, because they could not leave their families far away for three to four years.

FYS: I do not agree with that, if men decide to go back to school, it is their responsibility to support their families and at the same time fulfill the SAFE requirements. Civil workers were encouraged to enroll in the SAFE program; therefore, all participants knew their situation before their entry in the program. They should make sound budget planning for taking care of their families. We women were a little advantaged by WI with the provision of scholarships at the beginning of the SAFE program. Family issue is not a priority; I think the main problem today is supervision.

SOM: As FYS just said, if we make propositions, they need to be feasible. We cannot like a thing and its opposite. If all the SAFE participants should come with their families

and stayed in Bamako and Koulikoro, and because of financial constraints they cannot return to their original workplace to conduct SEPs, as a commitment at their admission in the program, how can the SAFE program benefit the entire country? If we continue this way, how will the remote areas be served? Let's think about it. Finance is a problem, but deciding to go back to school is a choice. In the SAFE brochure, all the training conditions were described; if you decide to enroll in the program you should honor your commitment.

GAH: The school break internship of 30-45 is a burden for those who are far away from Katibougou. Alternative solutions should be found.

ROK: In my viewpoint requiring participant to go back to their original workplace is a good thing, because this will help solve problems in those areas. The program participants should cover the entire country.

FOM: In summary, the following problems are crucial:

1. Follow-up of project
2. Assistance for supervision

VITA

Assa KANTÉ

Candidate for the Degree of

Doctor of Philosophy

Thesis: AN ASSESSMENT OF THE SASAKAWA AFRICA FUND FOR
EXTENSION EDUCATION'S (SAFE) TRAINING PROGRAM IN MALI:
GRADUATES' PERCEPTIONS OF THE TRAINING'S IMPACT AS WELL
AS OPPORTUNITIES AND CONSTRAINTS RELATED TO SUPERVISED
ENTERPRISE PROJECTS (SEPs)

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Title of Study: AN ASSESSMENT OF THE SASAKAWA AFRICA FUND FOR
EXTENSION EDUCATION'S (SAFE) TRAINING PROGRAM IN
MALI: GRADUATES' PERCEPTIONS OF THE TRAINING'S
IMPACT AS WELL AS OPPORTUNITIES AND CONSTRAINTS
RELATED TO SUPERVISED ENTERPRISE PROJECTS (SEPs)

Pages in Study: 327   Candidate for the Degree of Doctor of Philosophy

Major Field: Agricultural Education

Scope and Method of Study: The sample for this descriptive study included 50 mid-career Extension professionals who had completed the Sasakawa Africa Fund for Extension Education (SAFE) training program in the Republic of Mali (West Africa). The study assessed perceptions of SAFE graduates regarding the training's impact on their professional performance and related behaviors of the graduates' clients. The study followed a triangulation mixed methods design (Creswell, 2005), which included using a survey instrument and conducting semi-structured focus group interviews to collect data.

Findings and Conclusions: Most of the study participants were Muslim males who averaged nearly 47 years of age and 17 years of experience in Extension. Participants served in seven of the eight administrative regions of Mali and in the District of Bamako. Seven-in-ten participants had entered the SAFE training program with a Technician degree and specialization in Agriculture. Participants perceived the training had a significant impact on their overall professional competence, and that the knowledge they acquired increased their effectiveness and satisfied their training needs. All of the graduates were upgraded to an advanced job category after completing the training. Nearly two-thirds indicated they observed changes in their clients' practices attributed to the SAFE training. Significant associations and relationships ($p < .05$) between selected personal and professional characteristics of graduates, between their characteristics and selected perceptions, as well as between their selected perceptions were revealed. Male graduates were significantly more likely to still be Extension educators. In addition, graduates overall satisfaction with their SAFE training experience was significantly related to their willingness to encourage a colleague to participate in the training. Qualitative findings revealed that the graduates' experiences with Supervised Enterprise Projects (SEPs) overall was positive and useful. However, some issues and concerns regarding SEPs emerged, including cost, supervision, as well as standards regarding project reporting and thesis writing.

ADVISER'S APPROVAL: Michael Craig Edwards