AN EVALUATION OF THE JIMMA AGRICULTURAL TECHNICAL SCHOOL PROGRAM, JIMMA, ETHIOPIA, BASED UPON A STUDY OF JIMMA GRADUATES

By

IRVIN ELDIE SIEGENTHALER

Bachelor of Science
Oklahoma State University
Stillwater, Oklahoma
1950

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1954

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Thesis Approved:

Everett D. Edington
Thesis Adviser

Robert R. Price

L. A. Parcher

Wayne W. Huffine

John E. Lusk

A. B. Boyd
Dean of the Graduate School

PREFACE

The establishment of agricultural education institutions in Ethiopia has been a tremendous challenge to both Ethiopian and American personnel. Much of the effort involved in this endeavor has been in the initiation of the instructional, research, and extension programs so vital to agricultural education. Few, if any, of these programs existed in an operational form prior to 1952. The Jimma Agricultural Technical School, Kaffa Province, Jimma, Ethiopia, formed the nucleus from which the agricultural educational programs for Ethiopia could grow.

For the improvement of institutions designed to contribute to agricultural education in Ethiopia, it is necessary to evaluate the various programs in meeting their objectives. Since Jimma has played a vital role in providing agriculturally trained young men for other agricultural institutions in Ethiopia, it would be the logical place to begin the evaluation of agricultural education programs in Ethiopia.

In order to establish effective programs of instruction, educators need to be familiar with the personal characteristics as well as the needs of the group being instructed. It is the purpose of this study, therefore, to determine if certain background characteristics, such as tribe and home province, are associated with graduates' opinions of the training they received and their post-high school success in agricultural college. It is hoped the findings will be helpful to those in Ethiopia interested in agricultural education to have a better understanding of

those whom they now serve and hope to serve in the future.

I would like to express indebtedness to Dr. Everett Edington, chairman of my committee; Professor Emeritus, C. L. Angerer; Dr. Robert Price, Head of the Department of Agricultural Education at Oklahoma State University; Dr. Loris Parcher; Dr. Wayne Huffine; and Dr. John Susky for their advice, guidance, and criticisms in this study. A special indebtedness is acknowledged to Professor Jack Campbell of the Oklahoma State University English Department and former English instructor at Jimma for his help and suggestions with the manuscript.

Appreciation is also expressed to the following: the former graduates from Jimma responding to the survey, who in many instances made concerted effort under diverse conditions to return the survey schedules; the Oklahoma State Ethiopian contract program for providing transportation and other assistance; the office staff at Jimma Agricultural Technical School and Haile Selassie I University College of Agriculture; and Dr. L. F. Miller, Dean of Agriculture, for office records at the agricultural college and other records from which basic data for this study were obtained.

Also, I am indebted to the American Universities Research Program of the Agricultural Development Council, Inc. for providing the necessary funds to complete this study.

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CHAPTER I

INTRODUCTION

Among the first Technical Assistance Programs to develop after Congress signed the "Point Four" legislation was Oklahoma State University's program in Ethiopia. President Truman's fourth point in his inaugural address in January, 1949, expressed a vital concern for the need of many underdeveloped countries in the free world for assistance in matters of health, education, and economic development. Truman called for a "bold new program making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas."[1]

The State Department requested colleges and universities of the United States to assist in providing the government with technicians and administrative staff to carry out this part of Technical Assistance programs. President Truman appointed Dr. Henry G. Bennett, late president of the then Oklahoma Agricultural and Mechanical College, as the first director of the "Point Four" Program. Prior to this appointment in April, 1950, His Imperial Majesty, Haile Selassie I, invited Dr. Bennett to Ethiopia to give advice in establishing an agricultural college. Thus it is evident that Dr. Bennett's interest in Ethiopia's educational challenge developed before he could have had any assurance of a personal

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[1]Charles P. Schleicher, "Point Four Program," The World Book Encyclopedia (1963), XIV, p. 530.

opportunity to direct the development of such a program.[2] President Truman signed the "Point Four Program" into law June 5, 1950.

The agreement that became the working plan and legal basis for the agricultural education program was signed in Addis Ababa, Ethiopia, June 16, 1951, by representatives of the Ethiopian government and the American government. An excerpt from this agreement indicates the purpose of the mission of the Oklahoma State University technicians in Ethiopia:

> Article I
>
> "Pursuant to the request of the Imperial Ethiopian Government and in accordance with the General Agreement for Technical Cooperation between Ethiopia and the United States of America, signed at Addis Ababa on June 16, 1951, there shall be initiated a cooperative program in Agricultural and Mechanical Arts education governed by the terms and conditions of said general agreement and designed to aid the efforts of the Ethiopian people to use their agricultural and other resources more effectively and thereby to improve their standard of living."[3]

Prior to this agreement there had been no agricultural instruction in Ethiopia that would offer the formal training needed for the development of Ethiopian agriculture. Therefore, officials of both countries recognized an urgent need to establish a secondary school to serve as a foundation and complementary institution to the Agricultural College. Officials also mutually agreed that Ethiopia needed technicians trained

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[2] Joseph S. Vandiver, "Background Information on the Oklahoma State University I.C.A. Contract in Ethiopia" (Unpub. report on file in Oklahoma State University I.C.A. Contract Office, Stillwater, Oklahoma, 1960), p. 2.

[3] The Agriculture of Ethiopia, U.S.A. Operation Mission to Ethiopia Publication prepared by Technicians of Oklahoma State University developing an Agriculture Educational Program under contract with the U.S. International Cooperation Administration in agreement with the Imperial Ethiopian Government, Vol. 1, (Stillwater, Oklahoma, January 1954), pp. 1-3.

in agriculture to serve as agricultural extension agents, as coffee board agents, and as leaders in other similar development programs under plan; hence a secondary school agreement became a part of the college agreement. Excerpts from this agreement state:

> Article I
>
> The purpose of this agreement is for a cooperative program in agriculture and mechanical arts education. A plan for the development and operation of two agricultural secondary schools of the same type to be determined hereafter, and in connection with the foregoing, to prepare interfacilities for beginning the Agricultural College Program.
>
> Article II
>
> There shall be established under the supervision and administration of the Minister of Education of the Imperial Government of Ethiopia two Agricultural Secondary Schools, one to be located at Jimma and the other at Bishoftu. Each school offers courses of study for the training of agricultural technicians. The Ministry of Education, with advice and assistance of the Ministry of Agriculture and the President and staff of the Imperial Ethiopian Agricultural College, shall develop and approve curricula for the schools and direct the educational program.[4]

In October, 1951, Oklahoma State University entered a contract with the State Department to establish an Agricultural Education program for Ethiopia and to furnish technicians and administrative staff to start the college. At that time, Dr. Bennett stated, "The proposed Ethiopian College of Agriculture will be the center of our national development program for that country and might become the big factor in solving the food shortage for the Middle East."[5] The initial agreement, signed May 16, 1952, gave Oklahoma State University the responsibility for developing a system of Agricultural Education in Ethiopia based on the

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[4] Ibid.

[5] Vandiver, p. 3.

model of an American land-grant institution.

The Agricultural Technical School at Jimma proceeded as planned, but the proposed secondary school at Bishoftu did not develop.

> The primary objectives of the Jimma Agricultural Technical School are two-fold in nature: (1) to provide students with educational opportunities in agriculture so they may terminate their formal education at the end of high school and enter into farming or an agriculture related occupation with a degree of proficiency; (2) to provide students with educational preparation to continue their formal education in agricultural institutions of higher learning with some assurance of success.[6]

The first classes at Jimma started in October, 1952. The administration assigned the students to the four high school classes on the basis of their preparation, and the first class of 19 members graduated in the spring of 1953. These 19 members became the freshman class the following year in the Imperial Ethiopian A & M College, and thus the proposed institution of so many months of previous planning became a reality.

The Oklahoma State University program in Ethiopia is but a small segment of the total foreign aid program in operation in the world today; the program is, however, an important one to the foreign aid technical assistance idea. The Oklahoma State University program in Ethiopia was one of the first programs of its kind and is unique in many respects. The Oklahoma State University contract is assisting Ethiopia to initiate a program for higher education in agriculture including agricultural research and extension. Contract personnel are currently employed in these activities at the Jimma School, Bishoftu Central Experiment Station,

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[6] Quarterly Report, Jimma Agricultural Technical School, (Jimma, Ethiopia, January, 1962), p. 2.

and the Imperial Ethiopian Agricultural and Mechanical Arts College of the Haile Selassie I University (formerly the Imperial Ethiopian College of Agricultural and Mechanical Arts).

The program at the Jimma School has been in operation since August, 1952. The student body is selected from eighth grade graduates scoring in the upper ten or fifteen percentile of the Ministry of Education leaving examination and represent most of the fourteen provinces in Ethiopia. Therefore, the students at Jimma come from differing ethnic, cultural, and religious backgrounds. They may speak different languages and have other varying personal characteristics arising from their backgrounds. Many graduates have gone into farming or agriculturally related occupations directly upon completing high school, others have completed college and are now employed in agriculturally related occupations, while a number are presently enrolled in college. The graduates are now in a position to look back upon their high school training and offer their opinions as to its value to them in their present occupation or educational pursuits.

Statement of the Problem

Ethiopia is in critical need of trained people to assist in planning, implementing and maintaining strongly functional programs for social and economic development. Agriculture will play a major role in bringing about the prosperity needed for such development programs. Other schools similar to the Jimma School are needed to supply additional agriculturally trained people to assist in the expansion of agricultural development in Ethiopia. Jimma, up to now, is the only school of its kind in Ethiopia. Representatives of the two governments, when initiating the original

agreement, indicated that expansion of such training was one of the goals of the agricultural institution. Before undertaking or even planning such an expansion of the Jimma program, however, it is obviously necessary to evaluate the effectiveness of the program in meeting its stated objectives. A critical study of the post-high school performances of graduates should go far toward substantiating validity of the program.

The principal problem of such a research study is to ascertain whether or not differences exist with regard to tribe and home province between groups of graduates now engaged in various post-high school pursuits.

Need for Study

Evaluation for the improvement of student selection, of instruction, of guidance programs, and of the testing of broad educational objectives is one of the major problems of education.

As increased emphasis is centered on the need for providing agricultural education to rural people in Ethiopia, attention is focused on the obligation of educators to improve the quality and quantity of educational offerings. One of the accepted methods of improving functional educational programs is to examine the personal characteristics of individuals composing the group.

A study of the graduates from the Jimma School will provide occupational and employment status records that can be useful to Ethiopian government officials in planning long range developmental programs for the country. Also, such a study should provide information of value for revision of the present curriculum as well as the development of other similar schools in Ethiopia.

Many factors which may contribute to the selection by Jimma graduates of various post-high school pursuits are not presently known. The findings of the study may reveal the personal background characteristics of graduates as they pertain to their participation in various educational or occupational areas after graduation.

The findings of such a study should provide both Ethiopian and American educators interested in Agricultural Education for Ethiopia's youth with a better understanding of the student body served and stimulate desire for further service by extending educational services in the future.

Scope of the Study

An evaluation study of the Jimma graduates will determine, through collected and analyzed data, association that may exist between certain selected personal characteristics, the performance of graduates in various post-high school pursuits, and their opinions of the training they received at Jimma. The listed background characteristics are not the only measuring devices but are the more important ones.

The scope of the study includes only the graduates from the Jimma School during the first ten years of its operation. This limitation reduces the sample size to a maximum of three hundred fifty-eight graduates. Information from students who dropped out or who were dismissed before high school graduation is not a part of the study.

Limitations of the Study

One of the major limitations of the study is the language barrier that exists between the researcher and students. Although English is

the second official language of Ethiopia and is the classroom language at the Jimma School, the extent of comprehension of verbal and written expressions imposes an uncontrollable variable.

Students continuing their higher education in foreign countries other than the United States may not wish to cooperate in the study due to restrictions imposed by the host country. Another limitation is that many provinces in Ethiopia lack normal lines of communication. Some areas are virtually impossible to reach by mail or other conventional means of communication.

The spoken and written opinions given by respondents are verbal expressions and, therfore, do not necessarily reflect the true opinions. Further, any particular response may be somewhat different now from what it might be at a later date, an inherent characteristics in most opinion studies.

Admittedly, these limitations are restrictive, but not sufficiently unreliable to invalidate the results of the study.

Definition of Terms

The term "point Four" is synonymous with "Technical Assistance." The program has had several different names. The current name is Agency for International Development (A.I.D.). The terms all refer to the sharing of skills and knowledge by the United States Government with underdeveloped countries, both by our sending technicians to those countries and their sending people to be trained in the United States.[7]

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[7]Bruce Kendall, Jere McGaffey and Ruth McGaffey, Editors; Complete Handbook on Foreign Aid (Chicago, Illinois, 1962), p. 22.

The term "Participant Country" refers to the country that requests technical assistance from the United States Government and signs an agreement with the United States Government or its contract representatives.

The term "Practical Work Program" at the Jimma School is an in-service student training program. It is an integral part of the overall training plan and is the phase of training requiring student participation in work assignments from the various departments of the school. This in-service training gives the students (1) a well rounded concept of sound agricultural practices, (2) training in leadership, and (3) a sense of responsibility for the success of both the experimental and practical farm work carried on by the Jimma School Experiment Station.[8]

The term "Agricultural Block Courses" is nine-week intensive introductory courses in the various fields of agriculture in the following areas: agronomy, including coffee production and horticulture; soils; animal husbandry; farm shop; farm mechanics; and farm management. These major areas include 16 instructional subdivisions taught in Agriculture I, II, III, and IV. All students graduating from the Jimma School are agriculture majors.[9]

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[8] Mimeograph School Bulletin, Jimma Agricultural Technical School, Jimma, Ethiopia, 1962, p. 12.

[9] Ibid., p. 7-8.

CHAPTER II

REVIEW OF LITERATURE

Establishing and maintaining effective Agricultural Education institutions in Ethiopia mandates a continuing program of evaluation. Since the Jimma School was the first school established as a part of the Oklahoma State University and the Ethiopian Government's cooperative efforts to provide institutions in Agricultural Education, the Jimma School would be the logical place to begin an evaluative study.

The Ethiopian and American educators working at Jimma are aware that students coming to the Agricultural Technical School present an extremely varied background. The students are generally older than western students entering at the same grade level and have often developed particular attitude and beliefs and acquired definite varied basic values and appreciations from home backgrounds prior to arrival.

Lipsky reported that

> Ethiopia has been called an ethnic museum, and this is in many ways an apt description. An estimated total of seventy languages and over two hundred dialects are spoken. The peoples of Ethiopia profess two major faiths and subscribe to a multitude of widely differing local religious systems. The peoples are further distinguished by separate origins, histories, and political organization; by variations in physical appearance, dress, and customs; and by diverse self-identification and loyalty.[10]

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[10]George A. Lipsky, et al., Survey of World Cultures: Ethiopia, Its People, Its Society, Its Culture (New Haven, Connecticut, 1962), p. 34.

In establishing a philosophical viewpoint on an evaluation program, the educator must have or gain a thorough knowledge of the student and the services the school will provide in an attempt to produce a changed individual. Cochran expressed a viewpoint that

> The starting point of evaluation of a program of agricultural education must be the student and his attitudes, whether he be high school or adult farmer. How can he be motivated? What changes occur as a result of instruction?[11]

Related Studies and Investigations

Numerous studies made in relation to evaluation of agricultural education programs include various levels of instruction: secondary schools; junior colleges; colleges; and universities--catering to a clientele of students enrolled in all day classes, young farmer groups, adult farmer groups, or people enrolled in continuing agricultural education in institutions of higher learning. Most of the studies are survey and opinion investigations pertaining to local situations in a rather restricted geographical area. Very few evaluation studies conducted in agriculture deal with the personal background characteristics of the student body in relation to the post-training pursuits of the graduates.

There is a lack of studies and critical evaluation based upon a student's personal background and how these factors might bear upon his attitude toward, and the usefulness of, his high school training in relation to his post-training pursuits. This lack of information is

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[11] G. R. Cochran, "Human Betterment--Best Basis for Evaluation," Agricultural Education Magazine, XXXVI, No. 12, (June, 1964), p. i.

especially true in most developing countries like Ethiopia, where educational programs are relatively new.

The Organization of Education and World Affairs, in cooperation with the African Liaison Committee of the American Council on Education, reports a year long study currently under way in nine African countries. This study, being conducted at the request of the Agency for International Development, includes surveys of Ethiopia, Guinea, Kenya, Liberia, Nigeria, Republic of Congo (Leopoldville), Sudan, Tanzania, and Uganda. The aim of this study is to appraise from available information and seven months field study the following: (1) the need for trained manpower, (2) the capacity of educational facilities, (3) the scholarship opportunities existing both in Africa and overseas for African students, (4) how trained African professionals are employed, and (5) how the education African students receive in the United States meets each country's needs.[12]

A recent study by Ato Teodros Asfaw[13] evaluated the progress that has been made in educational programs in Ethiopia below the college level. He made a survey of the changes that occurred in numbers of schools, teachers, and in pupils enrolled in the five year period 1958 to 1962. The data included all fourteen provinces of Ethiopia in addition to the capital city of Addis Ababa. One of the main objectives of the study was to discover what steps were needed if all children of

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[12]American Council on Education, Bulletin on International Education. Washington, D. C., Vol. II, No. 5—June, 1964, p. 16.

[13]Teodros Asfaw, "The Educational Challenge in Ethiopia." (Unpub. Master's Report, Oklahoma State University, Stillwater, Oklahoma, 39 pp) August, 1964. p. 38.

school age had an opportunity for education.

The findings of Ato Teodros have merit in that it provides descriptive evidence of the dire need for new educational programs in addition to the need for utilizing and maintaining programs now in operation in Ethiopia. On the basis of the five year period studied an estimated ten times as many children were not in school as were in school. If the facilities and teachers were made available to all school age children it would require approximately 13,000 additional schools and 85,000 more teachers.

Since agriculture is the mainstay of Ethiopia's economy, a large percent of the population is engaged in farming and herding, and over ninety percent of the country's export is from agricultural products.[14] The educational challenge Ato Teodros reports could possibly be an agriculture educational challenge.

Card[15] made an observational report of sixteen agricultural institutions in India in 1962. Most of the institutions were cooperating with the University of Illinois Contract program. The objectives of his observations were twofold: (1) to report changes in curriculum, department organization, agriculture extension, and significant building programs; (2) to interview participant trainees returning to India from advanced study in the United States.

Card's brief observational report is satisfactory for the purpose for which it was intended but not detailed enough for comparative purpose with the Jimma study (because none of the data provides explicit

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[14]Lipsky, p. 238.

[15]L. E. Card, A Progress Report on University of Illinois Contract in Region I, India, U, S. Agency for International Development (American Embassy, New Delhi, India, March 8, 1962).

insights as to factors that might serve as evaluative criteria). The interviews with the 67 participants who returned to India after studying in the United States listed the degrees they obtained and their general reaction to the effects of overseas training and listed their suggestions about the participant program.

A recent study by Dharom Tom Tesna[16] of the Mae Joh College of Agriculture, Thailand, compares the accomplishments of farm boys and non-farm boys in the following training areas at the college: (1) academic and agricultural subjects, (2) supervised farm training, and (3) behavior and leadership activities. Findings in the study revealed farm boys received a significantly higher rating from their instructors in the supervised training at the college while non-farm boys received a significantly higher rating in leadership activities. The implications of the study were that the institution should consider the family social background of non-farm and farm boys in guidance counseling and training experiences.

There have been numerous evaluation studies in the United States of high school students and their subsequent success in college. Lester[17] reported summaries of forty-five studies of this nature conducted between 1927 and 1962. However, over sixty-nine percent of the investigations have occurred since 1957. Fifteen of the studies were

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[16]Dharm Tom Tesna, "Accomplishment as Influenced by Family Social Background of Vocational Agriculture Students of Mae Joh College of Agriculture" (Thailand) (Unpublished Master's Report, pp 47, Oklahoma State University, August, 1962), p. 32.

[17]Herschel T. Lester, Jr. Staff Study, "Summary of Studies in Relation to High School Students and Their Subsequent Success in College" Department of Agricultural Education, University of Georgia (Athens, Georgia, March, 1962).

non-thesis reports, twenty-two were master's studies, and eight were doctoral dissertations. He reported the major conclusions a majority of the research findings agreed upon. Some of the areas of common agreement were as follows:

(1) The success a student has in college cannot be determined by the type of courses he takes in high school. A large number of evaluative studies compared the college performance of students who had taken agriculture courses in high school and those who had not. Researchers generally agree that no differences exist between the two groups in college accumulative grade point averages when mental abilities are constant. Success in any high school curriculum favors the success of students in college.

(2) Vocational agriculture in high school is equal to other individual high school courses as preparations for the college of agriculture. Lester, in his research review, found little or no differences between students with differing numbers of years of high school agriculture instruction and their subsequent success as measured by over-all grade point averages. Students who had received vocational agriculture training in high school tended to have higher scholastic records in technical agriculture courses but no significant differences in such college courses as mathematics, physics, chemistry, botany, and zoology.

(3) High school rank in class is a useful tool in predicting academic success in college for groups of students. However, several studies, also reviewed by Lester, indicated individual class rank cannot predict achievement.

(4) Numerous studies have revealed the relationships between agricultural college completion and years of vocational agriculture in high school.

Generally, all the studies concluded no significant differences existed among students who had and students who had not received high school agriculture graduating from college or dropping out of college for academic reasons.

In summarizing the research review, Lester proposed guidance counselors direct high school students into combination preparatory courses of vocational agriculture and science and mathematics courses whenever possible as the best preparation for a college education in agriculture.

Eggenberger[18] completed an evaluation study in the summer of 1964 of agricultural students completing one or more years of vocational agriculture in forty-five high schools in the Panhandle Plains of Texas. In addition to determining the occupational status of high school graduates his study determined factors related to occupational choices; evaluated high school course areas and vocational agricultural programs as related to occupations; and determined possible changes in vocational agriculture curriculums.

The factors used by Eggenberger to relate the occupational choices of graduates were the occupation of their fathers, acres of land operated by the father while the son was in high school, the years of vocational agriculture training received, and the graduate's subsequent attendance at college.

Some of the interesting findings Eggenberger made were as follows:

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[18] Lewis Eggenberger, Staff Study, "An Analysis of High School Vocational Agriculture from Evaluations of Graduates in the Panhandle Plains of Texas" Agricultural Education Department, Texas Technological College (Lubbock, Texas, July, 1946).

(1) Only 17 percent of the 846 respondents who became farmers graduated from college while over thirty percent of the farm-related and non-agricultural occupied respondents were college graduates.

(2) High school graduates not classified by occupation rated vocational agriculture sixth, graduates in farm-related occupations rated it fourth and farm operators rated it second.

(3) Farm operators rated the subject matter units in vocational agriculture as first, crop production; second, farm management; third, farm mechanics; fourth, livestock products; fifth, soils. The non-farm operators rated FFA leadership and soils higher than did farm operators.

(4) The farm operators rated the training area of supervised farming "important," unlike the non-agricultural occupations rated as of "little importance."

An important implication of findings of Eggenberger's study is that institutions in a given area need constantly to re-evaluate their educational offerings in light of the post-high school pursuits of their graduates. The educational offerings would include not only the review of courses but the practical training and leadership training opportunities. Educators should be selective in the students enrolling in vocational agriculture courses according to occupational opportunities and the degree or extent the educational offerings could benefit graduates in their jobs.

Wood[19] conducted an evaluation study in Illinois to determine what degree vocational agriculture was meeting its stated aim—to train present

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[19]Eugene S. Wood, "What Happens to Illinois Vocational Agriculture Graduates." Summary Report of a doctoral dissertation submitted to Missouri University. School of Agriculture Publication No. 5 (Southern Illinois University, n.d.).

and prospective farmers for proficiency in farming, and its value to the high school graduates. His study included a total of 1409 graduates and 122 drop-outs in vocational agriculture from five different school years from 34 schools.

The findings and conclusions of Wood's study implied that the objectives of vocational agriculture should change to include specialized training in occupations related to agriculture, and provide more guidance regarding related occupations. The strongest points of vocational agriculture, as the graduates saw them, were the instructions that they received in plant and animal sciences and leadership training activities in the Future Farmer Organizations.

A number of studies have attempted to determine the relative effect upon the success of students in colleges of agriculture measured by cumulative grade points and their vocational agriculture courses in high school. Several studies (Bell, 1953[20], Circle, 1957[21], Moss, 1957[22], Wiggins, 1953[23]) compared the total cumulative college grade point

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[20]Albert Paul Bell, "Comparison of College Grades Received by Students Having and Not Having Vocational Agriculture in High School" (Unpublished Master's Research Problem, Oklahoma State University, Stillwater, Oklahoma, 1963).

[21]Duncan Fulton Circle, "A Comparison of Certain Agricultural College Graduates Who Took Vocational Agriculture in High School and Those Who Did Not" (Unpublished Master's Thesis, Kansas State College, Manhattan, Kansas, 1957).

[22]Nuel L, Moss, "Vocational Agriculture Credits from High School as a Basis for College Agriculture Work" (Unpublished Master's Thesis, Texas Technological College, Lubbock, Texas, 1947).

[23]Charles S. Wiggins, "The Effectiveness of Vocational Agriculture in High School as a Basis for the Four-Year Courses in Agriculture at the Pennsylvania State College" (Unpublished Master's Thesis, Pennsylvania State College, University Park, Pennsylvania, 1953).

averages with the fact of whether or not college graduates had received vocational agriculture as a part of their high school training.

Research findings are somewhat divided as to whether or not vocational agriculture training in high school influences success in agriculture college. Bell and Circle reported students who had vocational agriculture in high school made significantly greater achievements in grade point averages in college than students who had not taken vocational agriculture in high school. However, Circle did report that, as the number of units of vocational agriculture dropped, the mean grade point upon graduation from college in agriculture dropped.

Moss and Wiggins reported findings of no significant difference between the two groups on their total grade point averages for all college work. Moss's study did show a slight difference in college grade points earned in agricultural subjects in favor of students who had high school vocational agriculture. Wiggins reported the rank of high school students appeared to be a more reliable predicting factor for subsequent college of agriculture success than the vocational agriculture background.

Investigations relating to post-high school pursuits of agricultural students generally are based upon a comparison of farm with non-farm groups. There are only a small number of studies which attempt to identify through a systematic approach the personal background characteristics of a more detailed nature. There are no known studies that identify and relate such personal characteristics as tribe and home province or state with post-high school pursuits and/or relative success of the high school training program offered by an institution.

CHAPTER III

DESIGN OF STUDY

A statement of the questions of concern in this study, an enumeration of the selected criteria used in answering the questions, an explanation of the population selected for study, and a description of the procedure used in obtaining the data will reveal the design of the research used in the evaluation study of the graduates from the Jimma Agricultural Technical School, Jimma, Ethiopia.

The bases of this study are the anticipated findings to selected questions pertaining to the post-high school pursuits of Jimma School graduates as related to certain personal characteristics. The questions of concern deal with the students who attended Jimma, course content, practical work training, and the effect of instruction at Jimma on success in agricultural college. The selected questions are as follows:

A. What differences exist among the home provinces of the Jimma School graduates, the tribes they belong to and the following characteristics of occupational experiences?
   (1) present occupation
   (2) type of job held
   (3) the need of additional training
   (4) type of additional training, if any

B. What differences exist among the home provinces of the graduates

and the tribes they belong to with regard to their opinions about the following practical work training experiences at Jimma?

(1) value of practical work training in relation to present jobs or educational pursuits

(2) emphasis placed on practical work training

C. What differences exist among the home provinces of the Jimma graduates and whether or not they have continued their educational pursuits in agricultural college and their expressed opinions as to the usefulness of the following high school program of studies?

(1) Agriculture I

(2) Agriculture II, III and IV

(3) Languages (English, Amharic)

(4) Mathematics

(5) Sciences

(6) Social Sciences

D. What differences exist among the home provinces of the Jimma graduates and the tribes they belong to with regard to the following characteristics of their proficiency status?

(1) additional training in specific areas of learning that might have been helpful in their present career

(2) factors most helpful in obtaining jobs and advancements in their careers

E. What differences exist between the home provinces of the Jimma graduates and the following cumulative grade point averages?

(1) high school grade point

(2) high school grade point averages of Jimma graduates attending agricultural college and those not going on to college

(3) college grade point averages of Jimma graduates

F. What is the relationship between the high school attended and the following college records?

(1) dropped or withdrew from college

(2) cumulative college grade point averages

G. In what academic areas did the Jimma School graduates dropping from agricultural college for academic reasons appear to be deficient?

Selected Criteria

Independent Variables

There are two independent variables in this study: the tribe the student belongs to and the geographic area in which he lives as represented by the provinces of Ethiopia. One of the concerns of educators planning institutions for agricultural training in Ethiopia has been what would be the effect of the cultural background of the prospective students with the ultimate success of the school in meeting its objectives. An equally important concern has been the effectiveness of the proposed type of training program and course offerings in preparing graduates for their future. Since the Jimma School is a boarding school, qualified students are accepted from all provinces of the Empire. Obviously, the tribe and geographic location from which the students come are not the only important cultural background variables that might influence a student's success in school or his attitude toward the type of training

he receives in school. However, as far as this study is concerned, they are the more important starting points in an evaluation of work in Ethiopia and other developing countries where similar diverse conditions exist among the people of the country. Also it is recognized in making the selection of the two variables of tribe and province, that the possibility exists of tribal and provincial interrelationships in addition to their being further interrelated with other such factors as language, social customs, and value judgment differences. For the purpose of this research no attempts will be made to identify or test these complex interrelationships.

That portion of the study concerned with the question of the course work areas will take into consideration whether or not the Jimma graduates continued their formal education in the agricultural college. The major objectives of the school are to provide terminal education for those interested in farming and related agricultural occupations as well as to provide training for students wanting to continue their formal education in institutes of higher learning. It is important to include this variable in the study.

Dependent Variables

Occupational Status. The information that reveals the present occupation and type of job held by Jimma graduates constitutes one dependent variable. Since the major school objectives are two-fold in nature, it is important to collect and analyze information relative to employment of graduates after high school as well as those continuing formal education in the agricultural college. The Ethiopian government is currently engaged in its second multi-year plan of social and economic development.

A majority of Jimma graduates who take employment after high school, as well as those who graduate from the agricultural college, are assisting in some phase of the social and economic development programs of the Government Ministries. Therefore, the types of occupations are classified as government, post-high school education, private employment, and other employment. Another factor which might provide useful information to school authorities in evaluating their program is whether or not graduates needed additional training after their formal education and if so what type of training was required. A study of these factors related to provincial and tribal backgrounds of the graduates will be made to determine if an association does exist between the cultural background and occupational status of graduates.

Practical Work Training. The practical work training program at Jimma is designed as the learning by doing or laboratory experience in agricultural practices and skills that provides students an opportunity to put into practice the theories taught in the classroom. Vocational agriculture in America, as established under the Smith-Hughes Law, had as an integral part of its educational experiences a supervised farming program to provide the learning-by-doing experiences in agriculture.[24] Since students at Jimma board at the school and are considerable distances from their homes, the practical training program at the school substitutes for the on-the-farm experiences of the supervised farming program.

The concept of working as a part of the formal training is a relatively

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[24]Lloyd J. Phipps, Handbook on Agricultural Education in Public Schools (Danville, Illinois, 1965), p. 202.

new experience for students attending Jimma. Lipsky[25] reported the negative attitude of a majority of ethnic groups in Ethiopia toward manual dexterity and skill work as not having virtue in the eyes of Ethiopians. Students attending Jimma have been extremely cooperative in participating in the work training program. Only one student has been dismissed from the school for refusing to participate in the practical work training program.

After students are away from the school and removed from any influence the school presently might have in relation to their present position, it is of interest to obtain the reactions of former graduates concerning the work training experience at Jimma. The value of the practical training in relation to their present job, their expressed opinion of the emphasis to place on work training, and their opinion of how the work program might be improved will be dependent variables in the study to check the association between the student's tribe and home province and practical work training experiences.

Program of Studies. The program at the Jimma School consists of courses of instruction in agriculture, languages, mathematics, sciences, and social sciences. Students attend classes in the mornings for four periods and attend either laboratory classes or practical work programs in the afternoons during the school week. A total of twelve hours of practical work training is required each week of which four hours may be on Saturday mornings.

The teaching and instruction in the course of studies is planned so as to develop the skills, ideals, understanding, and knowledge needed

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[25]Lipsky, p. 66.

by students to be successful in their post-high school pursuits. Since graduates from Jimma either terminate their formal education at the end of high school and enter an occupation or continue their formal education in an institution of higher learning, the two categories of "college" and "no college" is an independent variable in this portion of the study. Also the graduate's home province is an independent variable to check what association might exist between their home background and their evaluation of the courses taught at Jimma. Rated values of the various divisions of their high school course work are dependent variables. The National Study of Secondary School Evaluation listed two pivotal points in Evaluative Criteria that could be used in evaluation work. "The two pivotal points of this evaluation are (1) the school's philosophy and objectives and (2) characteristics of the school and community."[26]

Proficiency Status. The courses students took at Jimma and the practical work training experience are not the only influences at the school which might play an important part in student success. Graduates were asked their opinions of the need for additional training in specific areas of learning which they thought would have been helpful to them in their career. They also were asked which factors they considered most helpful to them in obtaining jobs and advancing in their careers. The factors included in this list represent any influences from extra-curricular activities and student association groups. As in most schools, the students at Jimma have an opportunity to participate in hobby clubs or professional interest organizations, such as the Future Farmers of

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[26] Evaluative Criteria, National Study of Secondary School Evaluation (Washington 6, D. C., 1960), p. 50.

Ethiopia. The additional training in specific areas of learning and the factors the former students considered most helpful to them in their careers will be dependent variables to check the association that might occur between these two items and the student's tribal group and his home province.

Grade Point Averages. The Jimma School and the Agricultural College of the Haile Selassie I University have both adopted the standard method used in the United States to record student achievement. The letter grade "A" equals four points; "B", three points; "C", two points; "D", one point; and a failing grade of "F", no points. The grades students received at Jimma will be used as a criteria in evaluating a student's scholastic achievement. It is impossible to use the elementary grades incoming students earned in grade school due to the wide variation of procedures in scholastic achievement evaluation. Most elementary schools in Ethiopia use the number of students passing the eighth grade leaving examination, administered annually by the Ministry of Education, as a basis for determining student scholastic achievement.

The cumulative high school grade point average and the cumulative college grade point average of Jimma graduates who have graduated from college are dependent variables to check the possible association of grades with the independent variable of the home provinces of the Jimma School graduates.

Agriculture College Records. Approximately fifty percent of the graduates from the Jimma School continue their formal agriculture education at the Imperial Ethiopian College of Agriculture and Mechanical Arts of the Haile Selassie I University. The Jimma School constitutes the major source of supply of students for the agriculture college;

however, students are admitted from other high schools in Ethiopia. Here, again as with the elementary schools, it is impossible to compare the high school scholastic background of the Jimma graduates entering agriculture college with high school graduates from other secondary schools. However, it is possible to obtain from the college records some information that would be of interest in evaluating the Jimma graduates. The number of students who have been dropped or have withdrawn because of scholastic difficulties and the cumulative college grade point averages are dependent variables in this section of the study, and the high school from which college students graduated is the independent variable.

Scholastic Deficiency. The transcripts of Jimma graduates dismissed from the agricultural college for reasons of scholastic deficiencies will be examined to determine the college course areas with which Jimma graduates have had difficulty.

Selecting the Population

The study involved students who graduated during the first ten years of operation of the Jimma School. From a compiled list of student names and present locations, several attempts to select a representative sample based upon accepted procedure for population studies failed because, regardless of the method considered, the limiting factor was the inaccessibility of many students studying abroad and working in various isolated places in Ethiopia not served with the usual means of communication. Therefore, the decision to contact as many as possible of the three hundred fifty-eight graduates who graduated during the period 1953-1962 seemed to be valid.

Since the investigation is concerned with the tribe and home province

of the students graduating from Jimma and their post-high school pursuits, a check was made after contacting as many graduates as possible to see whether or not the sampled graduates were representative of all graduates of Jimma.[27]

Procedure for Collection of Data

The data for part of the study came from the records at the Jimma School, located in Keffa Province in southwestern Ethiopia, and the Imperial Ethiopian College of Agricultural and Mechanical Arts of the Haile Selassie I University, located in Harar Province in southeastern Ethiopia. A combination of personal contact and correspondence was used to collect information on a schedule specifically designed to obtain data needed to answer the major portion of the questions of this study. Due to the language barrier between the researcher and former graduates as many as possible were contacted personally or in small groups.

A survey schedule form was constructed with the advice of three American staff members of the Ethiopian Agricultural College and one staff member of the Oklahoma State University Agricultural Education Department.[28]

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[27] See Appendix B page 107.

[28] See Appendix A page 102.

CHAPTER IV

PRESENTATION OF DATA

The survey data came from personal contact with or from responses to a mailed survey schedule to graduates of the Jimma School from 1953 to 1962.[29] The group contacted or responding to the survey consisted of 242 of the total 358 graduates (67.6 percent).

Data pertaining to the academic achievement of those responding came from the administration of the Jimma School and the Imperial Ethiopian Agricultural and Mechanical Arts College of the Haile Selassie I University, Alemaya, Ethiopia. (See Appendix C for data related to the evaluation study of the Jimma graduates.)

From a compilation of the data, tables were developed in an attempt to analyze and relate the findings to the objectives of this study. The study was designed to ascertain answers to the following questions:

(1) Does the graduate's home province and tribal background have a relation to their occupational status?

(2) What is their evaluation of the practical work training?

(3) What is their evaluation of courses studied at Jimma?

(4) What is their academic success in the Agricultural College?

Data in Tables II-A through V-B reveal information pertaining to

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[29]This information was collected by the writer while he was serving the last year of seven and one-half years as a member of the Oklahoma State University Ethiopian contract program at Jimma, Ethiopia.

the occupational status of Jimma graduates as it relates to their tribe and home provinces. The data in tables A present the various tribal groups represented by the graduates from Jimma responding to the survey. In no way should inferences be made that tribal information from this study applies to Ethiopia as a whole. Only a small fraction of the tribal and ethnic groups of Ethiopia are represented in the student body at Jimma. There are a total of seventeen tribes represented in the graduates from Jimma. Several of the groups were represented by less than five graduates. This group included a total of twenty graduates from the following tribes: Gojam, Hamasen, Kullo, Kambatta, Menze, Ormo, Saho, Serea, Somali, and Wallamo. Graduates from these tribes are listed as "others" in this study.

The data in tables B present the questions being considered as they relate to the home provinces represented by the graduates from Jimma responding to the survey. Ethiopia is divided into fourteen provinces. Six provinces were represented by the graduates of Jimma to be included as a separate classification in this study. Where the province was represented by less than five graduates they were classified into a separate group listed as "others." The provinces with less than five graduates each were Bale, Begemdir, Gemu Gofa, Gojam, Ilubabor, Kefa, Sidamo, and Welo. A total of thirty graduates responding to the survey were from these nine provinces.

An analysis of the findings presented in Tables VI-A through VII-B reveals the opinions of the graduates from various tribal groups and provinces as to the value and emphasis placed on the practical work training experiences received at Jimma.

Data in Tables VIII through XVI present the average ratings former

graduates, grouped by provinces and educational status, listed for the various courses in relation to their usefulness to them in their post-high school pursuits. Courses of study are grouped according to subject matter areas. The graduates were given an opportunity to react to the specific subjects taught in each of the course work areas with the exception of Agriculture I. Due to a few minor changes in the block courses included in Agriculture I since the opening of the school in 1952, former graduates were asked to rate their course as one unit.

Tables XVII-A and XVII-B list the factors evaluated as first by graduates, grouped by their tribe and home province, as being important to them in obtaining jobs and advancing in their careers.

Tables XVIII, XIX, and XX list the academic achievement as revealed by cumulative high school and college grade point averages. The cumulative high school grade point averages of former graduates terminating their education after high school and those going on to college and also grouped by home provinces are given in tabular presentation in Table XVII. Table XIX compares the cumulative agriculture college grade point averages of Jimma graduates grouped by home provinces. The data presented in Table XX compare the cumulative agriculture college graduates' grade points of Jimma with those of high school graduates from other high schools.

Table XXI presents data concerning the college of agriculture drop-outs. The Jimma graduate drop-outs are compared with high school graduates from other Ethiopian and African nations. Table XXII lists the specific college curriculum areas in which Jimma graduates are academically deficient. For the purpose of this study grades of D and F were considered as deficient.

Data Regarding Occupational Status

Tables II-A and II-B show the occupational distribution of graduates from Jimma grouped by tribe and home provinces, respectively. Of the 242 graduates responding to the survey, 142 (58.7 percent) are in occupations classified as government employment; 85 (35.1 percent) are students in institutions of higher learning; 6 (2.5 percent) are in private employment; and 9 (3.7 percent) are classified as other occupations.

Table I lists a more complete occupational distribution pattern of all graduates from Jimma. The findings compiled for the 445 graduates in Table I show 275 (61.8 percent) of the graduates are now engaged in agricultural occupations. Currently 113 (25.4 percent) of the Jimma graduates are students in institutions of higher learning working on degrees in some phase of agriculture. There are 31 (7.0 percent) of the former graduates working in occupations closely related to agriculture and 26 (5.8 percent) working in occupations not related to agriculture. Ninety-four percent of the Jimma graduates are in agricultural occupations or pursuing an education in preparation for agricultural occupations and less than six percent are in occupations not related to agriculture.

Additional findings in Table I reveal 157 (35.2 percent) of the Jimma graduates are working for the Ministry of Agriculture and 95 (21.3 percent) are employed by other ministries of the Ethiopian Government. Forty-one (9.2 percent) of the graduates are in private employment. Of this number, five are in private farming for themselves, and ten are managing farms for other people. A total of 15 (3.4 percent) of the graduates are farming or assuming the managerial responsibility of production agriculture.

TABLE I

OCCUPATIONAL DISTRIBUTION OF THE 445 JIMMA GRADUATES

Department	Number	February, 1965* Total	Percent
I. Ministry of Agriculture			
A. Animal Science			
1. Production	14		
2. Diseases	20		
		34	7.7
B. Plant Sciences			
1. Forestry	8		
2. Pest Control	5		
3. Agronomy	9		
		22	4.9
C. Teaching or Staff			
1. Jimma	10		
2. Ambo	6		
3. Agricultural College	3		
		19	4.3
D. Research			
1. Debra Zeit	13		
2. Economics and Statistics	5		
		18	4.0
E. Extension			
1. Agents	40		
2. Trainees	13		
3. Specialists	3		
4. Scholarships	2		
		58	13.0
F. Other			
1. Agricultural Education	2		
2. Provincial Officers	2		
3. Special Projects	2		
		6	1.3
II. Institutions of Higher Learning			
A. Haile Selassie U. Agri. College			
1. Freshman	20		
2. Sophomore	10		
3. Juniors	13		
4. Seniors (National Service)	13		
		56	12.6

TABLE I (CONTINUED)

Department	Number	February, 1965* Total	Percent
B. Other Ethiopian College			
1. Army	4		
2. Navy	3		
3. University	8		
		15	3.4
C. Scholarships Outside Ethiopia			
1. United States of America	25		
2. Communist Block Countries	12		
3. Other European & Asian	20		
		57	12.8
III. Ministry of Commerce and Industry			
A. Coffee Board	31		
B. Planning Board	4		
C. Director General	1		
		36	8.1
IV. Ministry of Community Development			
A. Field Agents	15		
B. Awossa Project	8		
C. Central Office	3		
D. Awash Valley Project	6		
E. Arba Mintch Project	4		
		36	8.1
V. Land Development Bank			
A. Main Office	6		
B. Provinces	4		
		10	2.3
VI. Farming-Private Employment			
A. Private Farming	5		
B. Farm Managers	10		
C. Wonji Sugar Estate	5		
D. Tobacco Monopoly	4		
E. Ethiopian Airlines	5		
		29	6.5
VII. Ministry of Education			
A. Teaching	9		
B. Central Office	4		
		13	2.9

TABLE I (CONTINUED)

Department	Number	February, 1965* Total	Percent
VIII. Miscellaneous			
A. Other Government Ministries	10		
B. No Information	9		
C. Deceased	5		
D. One Each Peace Corps, Ras Hotel, A. Besse Co., Asst. to American Agri. Attache, National Cash Register Co., and Nutrition Section Hospital	6		
E. Present Position Unknown	6		
		36	8.1
		445	100.0

*Compiled at Oklahoma State University from previous lists and with the assistance of former Jimma graduates presently enrolled at Oklahoma State University.

The findings in Table II-A give the occupational distribution of Jimma graduates by tribes to which they belong. The findings in regard to this question indicate there is little correlation between the tribe students belong to and their occupations after high school. Approximately half of Jimma graduates are employed by the government. The number employed when grouped by tribes very closely resembles the occupational distribution of all the graduates as listed in Table I. The only exception was the Guragie tribe which had less than approximately half of the graduates working for the government. Only 20 percent of the graduates from this tribe reported working in governmental jobs and 70 percent were students in institutions of higher learning.

The employment pattern of the Guragie tribe deviates from the average of 52 percent in government employment as reported in Table II-A of the sample and 56.6 percent working for the Ethiopian government as reported for the total population in Table I. Also the percent of students in institutions of higher learning from the Guragie tribe was considerably higher than the average of 42 percent reported in the sample and the 28.8 percent as reported in the total population. However, due to the small sample size it is doubtful if the deviation is of any real significance.

The findings in Table II-A indicate a difference does exist between the type of occupations graduates belonging to the Tigre tribe are engaged in and the averages established by the sample group and the total population. Twenty-one (72.4 percent) of the graduates belonging to the Tigre tribe are working for the Ethiopian government and 7 (24.1 percent) are enrolled in institutions of higher learning. The number of graduates belonging to the Tigre tribe in government employment represents approximately 20 percent more than graduates belonging to other tribal groups.

The discrepancy that exists between the sample of 42 percent reported to be in institutions of higher learning as compared to the total population percent of 25.4 percent of all Jimma graduates classified into this category can be explained by the fact that a greater number of students in institutions of higher learning responded to the survey schedule than did graduates not classified into this category. Jimma graduates in institutions of higher learning were much more readily accessible to mail and other lines of transportation and communication than were graduates working in more remote areas of Ethiopia.

If inferences are possible in regard to the close correlation between the tribe and provinces as represented by the Jimma graduates in this study, Table II-B substantiates the findings of Table II-A. Very little if any differences exist between the occupational distribution of Jimma graduates and their home province, with an exception of graduates from Tigre province. Seventeen (81.0 percent) of the graduates from Tigre province are in government employment as compared to 58.7 percent average of the graduates responding to the survey. Only 19.0 percent of the Jimma graduates from Tigre province are enrolled in institutions of higher learning, compared to 35.1 percent of the sample.

Data Regarding Type of Job Held

The type of jobs held by Jimma graduates are classified into four general categories: agricultural agents, administrators, technicians, and teaching. Some graduates are engaged in occupations difficult to classify in specific agriculture job title categories and are listed in a classification of "others."

The types of jobs available to Jimma graduates are influenced by

TABLE II-A

OCCUPATIONAL DISTRIBUTION OF JIMMA GRADUATES GROUPED BY TRIBES

Tribe	Government Employee		College Student		Private Employment		Other		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Amhara	74	63.3	35	29.9	1	00.9	7	5.9	117
Amhara & Galla	5	50.0	5	50.0	0	0	0	0	10
Galla	19	54.3	14	40.0	0	0	2	5.7	35
Eritrian	9	42.9	11	52.4	1	4.7	-	-	21
Tigre	21	72.4	7	24.1	1	3.5	-	-	29
Guragie	2	20.0	7	70.0	1	10.0	-	-	10
Others	12	60.0	6	30.0	2	10.0	-	-	20
Total	142		85		6		9		242

TABLE II-B

OCCUPATIONAL DISTRIBUTION OF JIMMA GRADUATES GROUPED BY HOME PROVINCES

Province	Government Employee		College Student		Private Employment		Other		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Arusi	3	42.9	3	42.9	-	-	1	14.2	7
Eritrea	16	47.1	16	47.1	2	5.8	-	-	34
Harar	13	68.4	6	31.6	-	-	-	-	19
Shoa	69	59.0	39	33.3	3	2.6	6	5.1	117
Tigre	17	81.0	4	19.0	-	-	-	-	21
Wollega	8	57.1	6	42.9	-	-	-	-	14
Other	16	53.3	11	36.7	1	3.3	2	6.7	30
Total	142		85		6		9		242

the Ethiopian government planned programs for social and economic development. Various ministries are in the process of organizing bureaus to carry out their proposed developmental projects. At the present time, a majority of Jimma graduates hold positions with the Ministry of Agriculture, Ministry of Commerce and Industry, and the Ministry of Community Development. Graduates without college training work as agents or technicians. Generally, graduates employed as agents serve in similar capacities as agricultural extension agents, whose purpose is to extend the knowledge and findings of educational institutions and research stations to the farmers and coffee growers.

The Ministry of Agriculture employs agricultural extension agents to work in provincial areas with farm people in the improvement of agriculture in general. The Ministry of Commerce and Industry employs National Coffee Board agents for the purpose of assisting coffee producers with the improvement of yield and market quality of coffee. The Ministry of Community Development employ Jimma graduates to work in project centers of land re-settlement or in existing communities or villages that are attempting to improve community life in general.

Jimma graduates employed as administrators are usually those who have attended agriculture college and earned a baccalaureate degree. They are working as supervisors in charge of agents and trainees in the various projects or as specialists in a particular field. Jimma graduates employed as technicians may or may not have had college training. They are working in technical phases of agriculture such as animal disease control, pest control, agriculture research work, or various departmental jobs for the ministries of the Ethiopian government.

An examination of data in Table III-A shows the relationship of the

tribes to which Jimma graduates belong and the type of jobs they are holding. A total of 157 of the 242 high school graduates responding to the survey were employed. Of the 157, 97 (60 percent) were employed after high school graduation and 60 (38 percent) had received college training; 36 (22.9 percent) of the graduates were employed under job titles as agriculture agents.

The number of graduates belonging to the Galla tribe working as agriculture agents are 10 percent above the average for the group while graduates of the Tigre tribe are 10 percent below the average. There are 29.2 percent of the graduates included in the study working as administrators, 27.3 percent as technicians, 11.4 percent teaching, and 8.9 percent classified as "other jobs."

The number of graduates participating in different type jobs do not appear to be greatly influenced by the tribe they belong to, even though some percentages do vary from the averages for the group. It is difficult to attach significance to any differences due to the small size of the tribal groups involved in the study.

The data in Table III-B present the type of jobs held by Jimma graduates when grouped by their home provinces. Seventy-six (48.4 percent) of the Jimma graduates in the study are from Shoa province. Ethiopia's national capitol, Addis Ababa, is located in Shoa province. When the Jimma School first began, a majority of the elementary schools were located in Addis Ababa; therefore, Shoa province was the major source of elementary graduates for secondary schools in Ethiopia. After educational opportunities became available to more people in provincial areas outside Addis Ababa, the Jimma School admitted students from other provinces.

TABLE III-A

TYPES OF JOBS HELD BY JIMMA GRADUATES GROUPED BY TRIBES

Tribe	Agri. Agent		Administrator		Technician		Teacher		Other		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Amhara	19	23.2	28	34.1	20	24.4	6	7.3	9	11.0	82
Amhara & Galla	1	20.0	1	20.0	2	40.0	1	20.0	-	-	5
Galla	7	33.3	4	19.1	6	28.6	2	9.5	2	9.5	21
Eritrian	2	20.0	4	40.0	3	30.0	1	10.0	-	-	10
Tigre	3	13.6	5	22.7	8	36.4	6	27.3	-	-	22
Guragie	-	-	2	66.7	-	-	1	33.3	-	-	3
Others	4	28.6	2	14.3	4	28.6	1	7.1	3	21.4	14
Total	36		46		43		18		14		157

TABLE III-B

TYPES OF JOBS HELD BY JIMMA GRADUATES GROUPED BY HOME PROVINCES

Province	Agri. Agent		Administrator		Technician		Teacher		Other		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Arusi	2	50.0	1	25.0	1	25.0	-	-	-	-	4
Eritrea	3	16.7	4	22.2	6	33.3	4	22.2	1	5.6	18
Harar	4	31.0	3	23.0	5	38.4	1	7.6	-	-	13
Shoa	18	23.7	22	28.9	17	22.4	9	11.9	10	13.1	76
Tigre	3	17.7	4	23.5	7	41.1	3	17.7	-	-	17
Wollega	-	-	1	12.5	5	62.5	-	-	2	25.0	8
Other	6	28.6	11	52.3	2	9.5	1	4.8	1	4.8	21
Total	36		46		43		18		14		157

In 1953 the graduating seniors at Jimma came from three tribal groups of five different provinces of Ethiopia and attended seven elementary schools. The graduating class of 1964 represented 13 tribal groups, 13 provinces of Ethiopia, and a total of 31 elementary schools.[30]

Additional Training Required

One of the questions educators most commonly ask themselves in the evaluation of secondary schools is "Does our educational program adequately prepare terminating students for employment, or do they require additional training on the job?" If additional training is necessary, the educator then might be interested in the implications this could have in curriculum revision. This problem becomes even more complicated in an institution such as Jimma where school objectives are dual in nature and offer both a terminal program and a college preparatory program.

Tables IV-A and IV-B show the number of Jimma graduates grouped by tribe and provinces who listed additional training was needed after taking employment.

A total of 122 (77.7 percent) of the 157 graduates on the job indicated they needed additional training after going on the job. Of the 122 graduates requiring additional training on the job, 97 (79.5 percent) were high school graduates who had taken employment after graduation and 25 (20.5 percent) were college graduates.

The findings in Table IV-A indicate graduates grouped by tribal background showed little or no difference in the need for additional training. The data in Table IV-B are in agreement with these findings.

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[30]See Appendix C page 108.

TABLE IV-A

TRAINING REQUIRED BY JIMMA GRADUATES AFTER TAKING EMPLOYMENT GROUPED BY TRIBES

Tribe	Required Training		No Training Required		Total Number
	Number	Percent	Number	Percent	
Amhara	70	85.4	12	14.6	82
Amhara & Galla	4	80.0	1	20.0	5
Galla	16	76.2	5	23.8	21
Eritrian	6	60.0	4	40.0	10
Tigre	14	63.6	8	36.4	22
Guragie	2	66.7	1	33.3	3
Others	10	71.4	4	28.6	14
Total	122		35		157

TABLE IV-B

TRAINING REQUIRED BY JIMMA GRADUATES AFTER TAKING EMPLOYMENT GROUPED BY PROVINCES

Province	Required Training		No Training Required		Total
	Number	Percent	Number	Percent	Number
Arusi	4	100.0	-	-	4
Eritrea	13	72.2	5	27.8	18
Harar	11	84.6	2	15.4	13
Shoa	61	80.3	15	19.7	76
Tigre	12	70.6	5	29.4	17
Wollega	5	62.5	3	37.5	8
Other	16	76.2	5	23.8	21
Total	122		35		157

The fact seems to be brought out that, regardless of the type of formal training (high school or college), a high percentage of graduates receive additional training.

The types of additional training listed on the survey schedules were as follows: (1) training school, (2) in-service training, and (3) other. All graduates who indicated additional training was needed checked either training school or in-service training. Tables V-A and V-B list the type of training needed by graduates grouped by tribe and province. A total of 35 (28.7 percent) of the 122 graduates who needed additional training listed training schools as the type needed. Eighty-seven (71.3 percent) gave in-service training as the type they needed. The data presented in Tables V-A and V-B do not reveal any differences in the type of training needed by Jimma graduates when considering their needs in relation to their tribal backgrounds. It is of interest to note in Table V-A the Eritrean tribe all reported in-service training as the type of training needed. A total of 12 (92.3 percent) of the Eritrea group in Table IV-B, when training needs were considered by home province, reported in-service training as the type they needed.

A closer investigation reveals the type of job taken has more influence on the type of additional training graduates need than tribal groups or home province. Most of the in-service training programs are offered to high school graduates taking employment soon after graduation. The graduates employed as agricultural agents for the extension service and national coffee board are hired as trainees. For a period of one year, graduates are offered short courses combined with assignments in the fields working with an extension agent or coffee board agent. The short courses are specifically designed to acquaint prospective agriculture

TABLE V-A

TYPES OF TRAINING REQUIRED BY JIMMA GRADUATES AFTER TAKING EMPLOYMENT GROUPED BY TRIBES

Tribe	Training School		In-Service Training		Total Number
	Number	Percent	Number	Percent	
Amhara	21	30.0	49	70.0	70
Amhara & Galla	3	75.0	1	25.0	4
Galla	2	12.5	14	87.5	16
Eritrian	-	-	6	100.0	6
Tigre	6	42.9	8	57.1	14
Guragie	-	-	2	100.0	2
Others	3	30.0	7	70.0	10
Total	35		87		122

TABLE V-B

TYPES OF TRAINING REQUIRED BY JIMMA GRADUATES AFTER TAKING EMPLOYMENT GROUPED BY PROVINCES

Province	Training School		In-Service Training		Total
	Number	Percent	Number	Percent	Number
Arusi	1	25.0	3	75.0	4
Eritrea	1	7.7	12	92.3	13
Harar	3	27.3	8	72.7	11
Shoa	20	32.3	41	67.7	61
Tigre	5	41.7	7	58.3	12
Wollega	2	40.0	3	60.0	5
Other	3	18.7	13	81.3	16
Total	35		87		122

agents with such things as the nature and purposes of the organizations for which they are working, objectives of the organizations, and various extension techniques used in working with adult and youth groups.

Data Regarding Practical Work Training

One of the questions prevalent among both American and Ethiopian educators has been whether or not students attending Jimma would accept work as a part of training experiences. In an inquiry with regard to the student evaluation of practical work training in relation to their present job or position, all the students responded to the survey. Graduates who are working and those in institutions of higher learning were asked to rate their work training as of great, moderate, little, or of no value to them.

Data in Table VI-A indicate the seven tribal groups rated the value of their work training approximately the same. The findings show 57.9 percent of the graduates rated their work training as being of great value; 27.7 percent, of moderate value; 10.3 percent, of little value; and 4.1 percent, of no value.

A slightly smaller percent of the Guragie tribe rated their training as being of great value to them. Only 40.0 percent of this tribe rated the training in the top category, representing a deviation of 17.9 percentage points from the average of this category. Also the percent rating their training in the lower two categories (of little or no value) was somewhat higher than the average for the group.

Data in Table VI-B also show there are little differences existing between the graduates when grouped by home provinces and their rated value of practical work experience at Jimma. Regardless of tribe or

TABLE VI-A

THE OPINIONS OF JIMMA GRADUATES CONCERNING THE VALUE OF PRACTICAL WORK TRAINING TO THEIR PRESENT EMPLOYMENT OR EDUCATIONAL STATUS

Tribe	Great Value		Moderate Value		Little Value		No Value		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Amhara	70	59.8	30	25.7	11	9.4	6	5.1	117
Amhara & Galla	5	50.0	4	40.0	-	-	1	10.0	10
Galla	19	54.2	12	34.3	3	8.6	1	2.9	35
Eritrian	14	66.7	5	23.8	2	9.5	-	-	21
Tigre	17	58.6	6	20.7	5	17.2	1	3.5	29
Guragie	4	40.0	3	30.0	2	20.0	1	10.0	10
Others	11	55.0	7	35.0	2	10.0	-	-	20
Total	140		67		25		10		242

TABLE VI-B

THE OPINIONS OF JIMMA GRADUATES CONCERNING THE VALUE OF PRACTICAL WORK TRAINING TO THEIR PRESENT EMPLOYMENT OR EDUCATIONAL STATUS.

Province	Great Value		Moderate Value		Little Value		No Value		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Arusi	4	57.1	2	28.6	-	-	1	14.3	7
Eritrea	21	61.8	8	23.5	5	14.7	-	-	34
Harar	13	68.4	4	21.1	2	10.5	-	-	19
Shoa	65	56.4	37	29.9	9	8.6	6	5.1	117
Tigre	12	57.1	4	19.1	4	19.1	1	4.7	21
Wollega	7	50.0	6	42.9	1	7.1	-	-	14
Other	18	60.0	6	20.0	4	13.3	2	6.7	30
Total	140		67		25		10		242

home province, graduates hold rather high opinions of their work training experiences at Jimma.

In addition to obtaining the graduates' evaluation of practical work training, the Jimma graduate had an opportunity in the survey to express an opinion on the emphasis placed on work training. Graduates were asked to check whether they thought more, same, or less emphasis should be placed on this type of training. The training program in which they participated consisted of working twelve hours a week.

A summary of the responses given in Tables VII-A and VII-B shows 53.3 percent of the graduates thought more emphasis should be placed on work training; 31.4 listed the same emphasis; 6.1 percent suggested less emphasis; and 9.0 percent did not respond to this question. Further examination of Tables VII-A and VII-B reveals that no meaningful differences exist between tribe and home provinces and the graduates' expressed opinions on the emphasis on work training. The consensus of graduates would appear to favor leaving the work training the same or perhaps slightly increase the emphasis in this phase of the training offered at Jimma.

Data Regarding Courses Taught

The courses taught at Jimma were grouped in the following subject matter areas for the former graduates to appraise: (1) Agriculture I, II, III, IV; (2) Languages; (3) Mathematics; (4) Sciences; and (5) Social Sciences. They were given an opportunity to evaluate each of the separate courses included in the subject matter areas. Agriculture is taught as sixteen separate block courses of nine weeks each in the four years of high school. As explained previously, the four block courses of

TABLE VII-A

THE OPINIONS OF JIMMA GRADUATES CONCERNING THE EMPHASIS THAT SHOULD BE PLACED ON PRACTICAL WORK TRAINING

Tribe	More		Same		Less		No Response		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Amhara	66	56.5	33	28.2	7	5.9	11	9.4	117
Amhara & Galla	6	60.0	2	20.0	-	-	2	20.0	10
Galla	15	42.9	14	40.0	2	5.7	4	11.4	35
Eritrian	10	47.6	9	42.9	2	9.5	-	-	21
Tigre	16	55.1	9	31.0	1	3.5	3	10.4	29
Guragie	5	50.0	4	40.0	1	10.0	-	-	10
Others	11	55.0	5	25.0	2	10.0	2	10.0	20
Total	129		76		15		22		242

TABLE VII-B

THE OPINIONS OF JIMMA GRADUATES CONCERNING THE EMPHASIS THAT SHOULD BE PLACED ON PRACTICAL WORK TRAINING

Province	More		Same		Less		No Response		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Arusi	3	42.8	-	-	1	14.4	3	42.8	7
Eritrea	17	50.0	13	38.2	2	5.9	2	5.9	34
Harar	15	78.9	2	10.5	1	5.3	1	5.3	19
Shoa	60	50.4	42	36.0	6	5.1	9	8.5	117
Tigre	11	52.4	6	28.6	1	4.7	3	14.3	21
Wollega	8	57.2	3	21.4	1	7.1	2	14.3	14
Other	15	50.0	10	33.3	3	10.0	2	6.7	30
Total	129		76		15		22		242

Agriculture I are grouped together with only one rating due to a change in the block schedule of courses taught in Agriculture I.

The graduates were asked to evaluate the various areas of the course work phase of the training received at Jimma as to its extent of usefulness to them on their present job or as students of higher education. The extent of usefulness was listed as great, moderate, little, and none. In order to obtain an average numerical rating for each course area the degrees of usefulness were valued as four, three, two, and one, respectively.

In addition to grouping former graduates by their home province this section of the study attempts to check the relationship of the student's educational status with his rated evaluation of the areas of course work taught. The group listed as "college" includes former Jimma graduates who are presently in colleges as well as those who have graduated from college. The "no college" group are Jimma graduates who took employment after high school graduation.

Reference to Table VIII shows only a small spread between the average rating Jimma graduates checked for the extent of usefulness of Agriculture I. The fourteen students from Harar Province rated Agriculture I slightly higher (3.57) than the average rating of 3.13 given by all graduates responding to the survey. There was no great difference in the ratings of Agriculture I by graduates grouped according to the post-high school educational status. All rating for Agriculture I are high on the rating scale with no rating averaging below the moderate level.

The four nine-week courses taught in Agriculture II are dairy production, feeds and feeding, woodworking, and vegetable production. As shown in Table IX, there is a difference between the mean rating of the twenty-seven graduates from "other" provinces of Ethiopia. The graduates

TABLE VIII

AVERAGE RATING BY GRADUATES OF AGRICULTURE ONE IN THE CURRICULUM AT JIMMA

	Number Responding	Average Rating
Arusi	5	3.20
Eritrea	23	3.30
Harar	14	3.57
Shoa	87	3.10
Tigre	15	3.00
Wollega	9	3.00
Other	21	3.14
College	104	3.04
No College	70	3.28
Total		3.13

from Shoa and Wollega rated dairy production lower than the group mean of 2.80. The data also indicate graduates generally did not widely disagree as to the value of the other three block courses of Agriculture II. However, the majority of all groups considered vegetable production as the most useful block course in Agriculture II and woodworking the least useful to them in their present job or position. The "no college" group expressed an opinion that all four block courses were more useful to them than the "college" group.

The four nine-week block courses taught in Agriculture III are field crops and coffee production I, poultry production, animal power and application, and tractor maintenance. Data presented in Table X show there were no meaningful differences in the rating of individual block course areas in Agriculture III when comparing the graduates grouped by provincial areas, with the exception of tractor maintenance. Graduates of Harar Province rated tractor maintenance of greater value to them than did graduates from other provinces. The data indicate a difference between average individual block course ratings. Coffee and field crops production were considered of more value than animal power and tractor maintenance, and slightly higher than poultry production. The mean ratings for the four block courses were as follows: field crops and coffee production 3.41, poultry production 3.05, animal power and application 2.39, and tractor maintenance 2.50. A comparison of the course evaluation between the college and no college group in Table X shows the "no college" Jimma graduates thought most block courses of more value to them than the Jimma graduates with college training (except for tractor maintenance). Graduates with a college education or currently enrolled in college indicated tractor maintenance of more benefit to them than did the Jimma graduates with no

TABLE IX

AVERAGE RATING BY GRADUATES OF AGRICULTURE TWO IN THE CURRICULUM AT JIMMA

	Dairy Production		Feeds and Feeding		Wood Working		Vegetable Production	
	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating
Arusi	4	3.00	5	3.20	5	2.40	5	3.40
Eritrea	28	2.96	29	2.89	30	2.56	31	3.19
Harar	15	3.00	13	2.38	18	3.00	16	3.37
Shoa	99	2.67	97	2.70	101	2.72	104	3.04
Tigre	15	3.00	18	2.77	17	2.64	18	2.83
Wollega	11	2.55	8	2.87	10	2.70	7	3.00
Other	27	1.96	25	2.92	28	2.53	28	3.42
College	118	2.71	114	2.76	123	2.65	125	3.04
No College	81	2.93	81	2.76	86	2.76	84	3.26
Total		2.80		2.76		2.69		3.13

TABLE X

AVERAGE RATING BY GRADUATES OF AGRICULTURE THREE IN THE CURRICULUM AT JIMMA

	Field Crops and Coffee Production I		Poultry Production		Animal Power & App.		Tractor Maintenance	
	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating
Arusi	5	3.40	6	3.33	5	2.40	6	2.50
Eritrea	30	3.50	31	3.12	26	2.53	31	2.61
Harar	16	3.62	14	3.21	13	2.53	16	3.12
Shoa	105	3.40	101	3.01	95	2.32	102	2.53
Tigre	17	3.23	16	3.50	14	2.21	18	2.33
Wollega	10	3.70	10	3.20	7	2.42	9	2.33
Other	27	3.33	29	3.06	26	2.53	26	2.07
College	126	3.25	124	2.90	106	2.25	126	2.58
No College	84	3.67	83	3.28	80	2.58	82	2.39
Total		3.41		3.05		2.39		2.50

college training.

Data presented in Table XI list the evaluation of block courses included in fourth year agriculture. Graduates evaluated field crops and coffee production II and soils management more useful to them in their post-high school pursuits than they did beef and sheep production and the shop course of metal work. The low rate graduates gave metal work can be explained by the general attitude toward this and other types of skill jobs in Ethiopia.

When graduates were grouped by home provinces, there was very little difference in the average ratings of the block courses in Agriculture IV. One exception was the rating given to metal work by graduates from Tigre Province: Table XI shows the graduates from Tigre Province rated metal work 3.23, as compared to an over-all average of only 2.55 by all Jimma graduates.

Table XI reveals a highly important point in this study in the comparison of the college and "no college" groups. Jimma graduates with no college training considered their over-all course work in agriculture block courses consistently of greater value to them in their post-high school pursuits than did the Jimma graduates with college training, with the one exception of courses taught in the shop block courses of metal work. This difference in attitude toward having skills taught in shop work substantiates the finding revealed in the higher rating the college group gave tractor maintenance in Table X. There is some indication that the more education students received, the greater is the psychological separation from some of the prejudices toward this type of learning experiences.

The data in Table XII indicate little difference in students' opinion

TABLE XI

AVERAGE RATING BY GRADUATES OF AGRICULTURE FOUR IN THE CURRICULUM AT JIMMA

	Field Crops and Coffee Production II		Beef & Sheep Production		Metal Work		Soil Mgt.	
	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating
Arusi	6	3.00	6	2.66	5	2.22	6	3.17
Eritrea	27	3.37	28	2.53	31	2.64	29	3.20
Harar	13	3.69	13	2.84	15	2.86	14	3.71
Shoa	95	3.40	99	2.61	104	2.73	103	3.10
Tigre	17	3.23	16	2.62	17	3.23	19	3.00
Wollega	9	3.55	11	2.54	10	2.40	11	3.36
Other	25	3.20	27	2.85	26	2.30	26	3.15
College	110	3.23	117	2.64	126	2.72	124	3.05
No College	82	3.54	83	2.65	82	2.28	84	3.33
Total		3.36		2.64		2.55		3.16

of the usefulness of various language courses taught at Jimma. One exception noted in Table XII is the average rating of Amharic grammar and literature. Graduates from Eritrea indicated Amharic (the official language of Ethiopia) was of less value to them than did graduates from other provinces of Ethiopia. Eritrea is a northern province only recently federated with Ethiopia. Very few students admitted to Jimma from Eritrea know Amharic as well as students admitted from other provinces. Also another possible reason for the low assessment is that many Jimma graduates from Eritrea return to work there after leaving high school and work among people in the province who do not speak Amharic.

Data presented in Table XII show Jimma graduates with college training regard English language and grammar as being more useful to them than did graduates who terminated their education after high school. This is easy to understand because students attending the agricultural college are instructed in English, and most of their reference material is in English.

The findings listed in Table XIII, pertaining to Jimma graduates' evaluation of the usefulness of mathematics to them, show there is little difference when graduates are grouped according to home provinces. It is interesting to note, however, there are differences of opinion as to the usefulness of mathematics when the educational status of graduates is considered. Graduates with no college training considered the introductory mathematics course of agricultural arithmetic more beneficial to them than algebra and geometry. Graduates who were in college or had attended college thought the higher mathematics more useful to them in their careers.

The basic science courses at Jimma are as follows: general science, hygiene, biology, chemistry, and physics. The data in Table XIV follow the general patterns established in previous tables where former graduates

TABLE XII

AVERAGE RATING BY GRADUATES OF THE LANGUAGE COURSES IN THE CURRICULUM AT JIMMA

	English Grammar		English Literature		Amharic Grammar & Literature	
	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating
Arusi	5	3.00	6	2.50	5	2.20
Eritrea	29	3.34	29	3.10	32	1.96
Harar	19	3.42	17	3.11	18	2.61
Shoa	108	3.46	104	2.86	98	2.52
Tigre	17	3.29	17	2.58	17	2.64
Wollega	12	3.41	11	2.90	12	2.08
Other	29	3.10	27	3.14	26	2.50
College	134	3.47	131	3.12	128	2.08
No College	85	3.21	81	2.58	80	2.95
Total		3.37		2.90		2.53

TABLE XIII

AVERAGE RATING BY GRADUATES OF THE MATHEMATICS COURSES IN THE CURRICULUM AT JIMMA

	Agricultural Arithmetic		Algebra		Geometry	
	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating
Arusi	5	2.40	6	2.50	6	2.50
Eritrea	25	2.28	30	3.13	31	2.90
Harar	17	3.29	18	3.27	17	2.82
Shoa	99	2.83	107	3.05	107	2.89
Tigre	18	2.50	17	2.29	17	2.35
Wollega	8	2.75	13	3.07	11	2.63
Other	25	2.88	28	2.96	28	2.50
College	119	2.86	136	3.18	135	2.80
No College	78	3.00	83	2.69	82	2.73
Total		2.91		2.99		2.77

were asked to evaluate their course work training received at Jimma. No important differences were noted when graduates were grouped by home provinces. However, graduates from Arusi provinces were of the opinion that all areas of course work were of less use to them than graduates from other provinces of Ethiopia. Also, as noted in previous tables, the evaluations in Table XIV show Jimma graduates with college training deemed the more difficult science courses (chemistry and physics) as more useful to them than did graduates with no college training. Biology and general science were ranked as of approximately equal value to both groups, a deviation from the general pattern where the more basic or introductory courses were thought to be of more value by the "no college" group of Jimma graduates. Hygiene was listed as being more useful to former graduates with no college training.

The courses of social science taught at Jimma are world history, Ethiopian history, and agricultural economics. The data in Table XV indicate the graduates deviated slightly in the general patterns established in other tables. It is interesting to note that graduates with no college training evaluated all three courses in social science slightly higher than did graduates with college training. The evaluation of social sciences deviates from the general pattern where graduates with no college training considered the least difficult courses more beneficial to them and the more difficult courses less beneficial to them. Table XV shows all Jimma graduates represented in this study appraised social science courses more useful to them in their post-high school pursuits than did the former graduates who had received college training. This, of course, is based on the premise that agriculture economics is "more difficult" than the Ethiopian history and world history. This idea would

TABLE XIV

AVERAGE RATING BY GRADUATES OF THE SCIENCE COURSES IN THE CURRICULUM AT JIMMA

	General Science		Hygiene		Biology		Chemistry		Physics	
	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating
Arusi	5	3.00	6	2.66	6	3.16	6	2.16	5	2.80
Eritrea	26	3.26	29	3.24	32	3.37	31	3.16	30	3.00
Harar	16	3.56	15	3.46	15	3.60	17	3.05	14	3.00
Shoa	90	3.28	91	3.07	102	3.35	100	2.88	17	3.11
Tigre	16	3.31	18	3.27	18	3.50	18	2.88	17	3.11
Wollega	7	3.57	10	3.10	9	3.77	9	3.00	10	3.10
Other	25	2.96	27	3.25	28	3.35	29	3.10	29	2.93
College	114	3.27	115	3.00	125	3.40	130	3.08	123	3.00
No College	71	3.26	81	3.39	85	3.40	80	2.73	79	2.74
Total		3.26		3.16		3.40		2.94		2.90

TABLE XV

AVERAGE RATING BY GRADUATES OF THE SOCIAL SCIENCE COURSES IN THE CURRICULUM AT JIMMA

	World History		Ethiopian History		Agricultural Economics	
	No.	Av. Rating	No.	Av. Rating	No.	Av. Rating
Arusi	5	2.00	5	2.20	3	3.00
Eritrea	31	2.51	30	2.23	30	3.13
Harar	15	2.33	16	2.25	16	2.93
Shoa	99	2.26	103	2.25	97	3.19
Tigre	15	2.40	16	2.18	14	3.00
Wollega	12	2.83	10	2.20	10	3.50
Other	28	2.39	28	2.39	27	3.11
College	122	2.22	126	2.11	117	2.97
No College	83	2.55	82	2.48	80	3.41
Total		2.35		2.25		3.14

perhaps be accepted by both staff and students at Jimma, since agricultural economics is a senior level course while world history and Ethiopian history are sophomore courses.

Graduates with no college training checked all courses in social sciences more useful to them than did graduates with college training.

Course Work Summary

There is no important difference in the evaluation former graduates gave to course work areas they studied in high school as to the extent of their usefulness in post-high school pursuits when graduates were grouped by home provinces. Graduates from Arusi province rated all courses studied at Jimma of less value than graduates from other provinces.

There is a noticeable difference in the evaluation of high school courses studied at Jimma when graduates were grouped according to their post-high school educational status. Former graduates with college training considered the more difficult or higher level high school courses as of more value to them than did graduates with no college training.

The courses included in basic sciences received the highest overall rank by graduates from Jimma with an average rating of 3.13, English second with 2.93, agricultural third with 2.89, mathematics fourth with 2.88, and social sciences fifth with 2.58.

As graduates received more education, their attitudes began to change from a negative to a more positive one about the courses in shop skills generally not accepted in Ethiopia.

Data Regarding Factors Helpful in Career Advancements

The questions in the survey schedules regarding career advancements

are related to the preceding part of the study in as much as they deal with the areas of courses studied at Jimma. Graduates were asked to indicate the two curriculum areas in which they thought additional training should be offered to better prepare them for their jobs. The curriculum areas included were as follows: (1) agriculture, (2) science, (3) social science, (4) English, and (5) mathematics.

In the second section of this part of the study graduates were asked to select five of the following factors they considered most beneficial to them in career advancements: (1) acquiring agricultural knowledge, (2) completing assigned tasks, (3) getting along with people, (4) expressing thoughts clearly, (5) doing hard work, (6) being honest, (7) earning grades in school, (8) sharing knowledge with others, and (9) learning technical skills.

As noted in Tables XVI-A and XVI-B, representing graduates grouped by tribe and home province, respectively, there are no differences in their expressed opinions as to the need of additional training in any of the five curriculum areas. It was shown that more than half of all graduates rated all curriculum areas in column three, indicating they did not think additional training would have been beneficial to them in their present post-high school pursuits. There are close correlations between their rankings of the usefulness of courses included in the curriculum at Jimma and their expressed opinions if they thought additional training should be offered in the five curriculum areas.

If there is any indication of the needs for additional training by the number of graduates' ranking any one course area as first choice, it would be agriculture. Eighty-two (34.7 percent) of the 242 graduates selected agriculture as a first choice of a curriculum area to add more

TABLE XVI-A

CHOICE BY GRADUATES OF ADDITIONAL TRAINING IN TWO COURSE AREAS IN THE CURRICULUM AT JIMMA

	Agriculture			Science			Social Science			English			Mathematics			
	1*	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
Amhara	45	9	63	16	41	60	10	17	90	15	10	92	25	27	65	117
Amhara & Galla	5	-	5	3	2	5	-	1	9	-	3	7	2	4	4	10
Galla	10	2	23	9	9	17	2	6	27	7	6	22	6	9	20	35
Eritrian	9	1	11	2	4	15	2	4	15	1	4	16	7	6	8	21
Tigre	7	4	18	9	9	11	2	4	23	3	5	21	7	5	17	29
Guragie	2	-	8	4	3	3	-	1	9	-	-	10	3	3	4	10
Other	4	5	11	5	4	11	5	4	11	3	6	11	6	2	12	20
Total	82	21	139	48	72	122	21	37	184	29	34	179	56	56	130	242
Percent	33.9	8.7	57.4	19.8	29.8	50.4	8.7	15.3	76.0	12.0	14.0	74.0	23.1	23.1	53.8	

*Numbers 1 and 2 represent a first or second choice of including more training. The number 3 indicates graduates did not think additional training in this area needed.

TABLE XVI-B

CHOICE BY GRADUATES OF ADDITIONAL TRAINING IN TWO COURSE AREAS IN THE CURRICULUM AT JIMMA

	Agriculture			Science			Social Science			English			Mathematics			
	1*	2	3	1	2	3	1	2	3	1	2	3	1	2	3	Total
Arusi	2	1	4	3	1	3	-	2	5	-	1	6	1	1	5	7
Eritrea	12	7	15	6	5	23	3	9	22	2	7	25	11	5	18	34
Harar	8	1	10	4	8	7	-	1	18	2	-	17	3	6	10	19
Shoa	41	5	71	23	36	58	12	17	88	17	14	86	26	29	62	117
Tigre.	4	3	14	7	7	7	2	2	17	1	3	17	5	6	10	21
Wollega	4	-	10	4	2	8	2	3	9	2	4	8	2	4	8	14
Other	11	4	15	1	13	16	2	3	25	5	5	20	8	7	15	30
Total	82	21	139	48	72	122	21	37	184	29	34	179	56	56	130	242
Percent	33.9	8.7	57.4	19.8	29.8	50.4	8.7	15.3	76.0	12.0	14.0	74.0	23.1	23.1	53.8	100.0

*Numbers 1 and 2 represent a first or second choice of including more training. The number 3 indicates graduates did not think additional training in this area needed.

training. However, since this number represents only one-third of the graduates, it is interpreted that this does not represent a large enough percent to even consider curriculum change when using this factor as basis for change.

In the determination of factors which graduates grouped by tribal background thought to be important in obtaining a job or for career advancements, the data as presented in Table XVII-A indicate little difference in factors considered most important. The factor graduates checked as most important to them was their knowledge of agriculture. Graduates expressed the opinion that grades were the next most important consideration, and that getting along with people was a close third. Among the other six items listed, graduates expressed about equal emphasis to their importance, except for sharing knowledge and their knowledge of technical skills. They considered these two items of less importance than the following: (1) completing assigned tasks, (2) expressing thoughts clearly, (3) doing hard work, and (4) being honest.

Data in Table XVII-B indicate graduates are not in agreement, when grouped by home provinces, as to what was important in helping them in career advancement. The greatest variation exists between the graduates from Wollega Province and other provinces of Ethiopia in what was considered the most important item listed. The graduates from Wollega Province listed "getting along with people" as the most important item in obtaining jobs and advancing. Graduates from other provinces followed the pattern established in Table XVII-A as to what was considered more important.

TABLE XVII-A

NUMBER OF JIMMA GRADUATES RATING FACTORS FIRST IN IMPORTANCE TO OBTAIN JOBS AND ADVANCE IN CAREERS

	Agricultural knowledge	Completing tasks	Getting along with people	Expressing thoughts clearly	Hard work	Being honest	Grades	Sharing knowledge	Tech. skills	No Resp.	Total
Amhara	49	8	10	4	9	7	15	3	3	9	117
Amhara & Galla	3	1	1	-	1	1	1	-	1	1	10
Galla	8	3	5	4	3	3	5	-	2	2	35
Eritrian	7	1	1	1	2	1	6	1	1	-	21
Tigre	10	1	2	3	1	2	6	-	-	4	29
Guragie	3	3	-	-	-	-	3	-	-	1	10
Other	6	2	8	-	2	1	1	-	-	-	20
Total	86	19	27	12	18	15	37	4	7	17	242
Percent	35.5	7.9	11.2	4.9	7.4	6.2	15.3	1.7	2.9	7.0	100.0

TABLE XVII-B

NUMBER OF JIMMA GRADUATES RATING FACTORS FIRST IN IMPORTANCE TO OBTAIN JOBS AND ADVANCE IN CAREERS

	Agricultural knowledge	Completing tasks	Getting along with people	Expressing thoughts clearly	Hard work	Being honest	Grades	Sharing knowledge	Tech. skills	No Resp.	Total
Arusi	4	1	-	-	-	1	-	-	-	1	7
Eritrea	11	2	5	1	3	2	8	1	1	-	34
Harar	9	-	3	1	2	-	3	-	-	1	19
Shoa	43	13	8	5	6	7	17	3	6	9	117
Tigre	6	-	2	3	1	2	4	-	-	3	21
Wollega	2	-	4	2	2	2	2	-	-	-	14
Other	11	3	5	-	4	1	3	-	-	3	30
Total	86	19	27	12	18	15	37	4	7	17	242
Percent	35.3	7.9	11.2	4.9	7.4	6.2	15.3	1.7	2.9	7.0	100.0

Data Regarding Academic Achievement as Revealed by Cumulative Grade Point Averages

As indicated in the data presented in Tables XVIII through XX, no attempt is made to make a detailed analyses of grades earned by students; rather the cumulative averages have been examined in an attempt to associate differences between students' home provinces and grade point averages.

Data presented in column one of Table XVIII indicate there are no differences in the cumulative grade points of Jimma high school graduates from various provinces of Ethiopia. However, column two of Table XVIII shows a difference of approximately one-half grade point between graduates' cumulative high school grade point averages admitted to college when grouped by home provinces. Graduates from Tigre province were admitted to college who had an average cumulative high school grade point average of 2.91 as compared to a high of 3.31 for students from Arusi province. Table XVIII further reveals grades are criteria which influence admittance to the agricultural college. There is a difference of .71 grade points between the Jimma high school graduates who were admitted to college and those not going on to college. Column three of Table XVIII confirms the findings that no important difference exists among the Jimma graduates' cumulative grade point averages and home provinces.

The agricultural college grade point average is influenced by the requirement of at least a 2.0 average to graduate. In an examination of the data in Table XIX, it is evident there is little difference between the total cumulative averages and cumulative averages of graduates when grouped by home provinces. However, there is a difference of .52 grade

points between the cumulative averages of graduates from Harar province and the cumulative high of 2.79 of graduates from Eritrea province. Also Table XIX shows the cumulative average college grade point average earned by Jimma graduates is .44 grade points lower than the high school mean cumulative average by the same group of former students as revealed in Table XVIII.

As indicated by the data presented in Table XX, there is a noticeable difference between cumulative agricultural college grade point averages and the Ethiopian high school attended. There was a difference of less than one-third grade point between the high average of 2.92 of college graduates who attended General Wingate High School and the low average of 2.59 of college graduates attending Ambo and Menelik II Addis Ababa High Schools.

There is a noticeable difference between the cumulative college grade point averages of high school graduates from other African nations when compared to the low cumulative averages earned by graduates from Ethiopia. However, when considering the fact that graduates admitted from other African nations are a more select group than graduates from Ethiopian high schools, it is questionable whether the significance is as great as might appear.

Data Regarding Drop-Outs at Haile Selassie I University College of Agriculture

One of the classic issues in American agricultural education has been about which kind of high school curriculum best prepares students for academic success in agricultural colleges. This issue is also prevalent among Ethiopian educators. It is not the intent of this study

TABLE XVIII

HIGH SCHOOL GRADE POINT AVERAGES OF JIMMA GRADUATES GROUPED BY HOME PROVINCES AND EDUCATIONAL STATUS

Province	Cumulative High School Grade Point Averages					
	Did Not Attend College		Attended College		Total	
	Grade Point Average	Number	Grade Point Average	Number	Grade Point Average	Number
Arusi	2.38	3	3.31	4	2.84	7
Eritrea	2.54	15	3.15	19	2.84	34
Harar	2.28	8	3.12	11	2.70	19
Shoa	2.43	37	3.09	80	2.76	117
Tigre	2.31	13	2.91	8	2.61	21
Wollega	2.38	7	2.97	7	2.67	14
Other	2.36	14	3.06	16	2.71	30
Total	2.38	97	3.09	145	2.73	242

TABLE XIX

CUMULATIVE COLLEGE GRADE POINT AVERAGES OF JIMMA GRADUATES GROUPED BY PROVINCES

Province	Cumulative Grade Point Average	Total Number
Arusi	2.64	3
Eritrea	2.79	11
Harar	2.27	7
Shoa	2.60	61
Tigre	2.41	6
Wollega	2.72	6
Others	2.46	9
Total	2.55	103

TABLE XX

CUMULATIVE COLLEGE GRADE POINT AVERAGES OF COLLEGE GRADUATES GROUPED BY DIFFERENT HIGH SCHOOLS IN ETHIOPIA AND OTHER AFRICAN NATIONS

High School	Average Cumulative College	Number
Ambo	2.59	33
General Wingate	2.92	9
Jimma Agri, Tech. School	2.77	119
Medhane Alem(AA)	2.66	8
Menelik II(AA)	2.59	6
Teacher Training School, Harar	2.81	14
Other Ethiopian High Schools	2.67	37
Other African Nations	3.15	10
Total	2.77	236

to attempt to answer questions in this controversy. Rather, a comparison of the agricultural college drop-out, admittance, and graduation rates will provide additional means to evaluate the Jimma graduates.

The Ambo School is the only high school, in addition to Jimma, that offers agriculture in its curriculum. The other Ethiopian high schools offer liberal arts college preparatory curriculums. (The high school background of agricultural college graduates from other African nations is unavailable.)

For the purpose of this study, the agricultural college graduates from Ethiopian high schools with less than eight students represented are grouped as "others." Schools grouped in this classification are as follows: (1) Medhane Alem, Harar; (2) Tafari Makonnen, Addis Ababa; (3) Prince Makonnen, Asmara; (4) Ethiopian Evangelical College; (5) Haile Selassie I, Addis Ababa; (6) Prince Makonnen Secondary School, Asmara; and (7) Haile Selassie I, Asmara.

Table XXI presents data comparing agricultural college graduates grouped by the high school they attended and the following information from their college records: (1) number admitted to college, (2) number graduates, and (3) number dropped or withdrawing from college.

Table XXII gives the results of an examination of college transcripts of the Jimma graduates dismissed from agricultural college for academic reasons. Data presented reveal the number of deficient grades in the curriculum.

Admittance, Drop-Outs and Current Enrollment of Agricultural College Students Grouped by High Schools

The data presented in Table XXI indicates a considerable difference

does exist between the number of students from high schools admitted, graduated and dropped from the agricultural college. However, for the purpose of this study, one of the more important comparisons in Table XXI is the percentage of students dropped from the college because of academic deficiencies. An average of 27 percent of all students admitted to the college are dismissed because of low grades. The percent of Jimma graduates dismissed is slightly less than the average. The percent of Jimma graduates dismissed for this reason is considerably less than the other Ethiopian high school offering agriculture in its curriculum. A smaller percent of students from Menelik II, Addis Ababa, other Ethiopian high schools, and other African nations were dropped for academic reasons than Jimma graduates; however, the total number of students admitted for these three schools combined is less than Jimma graduates admitted to the college. Graduates from Jimma account for 40.7 percent of the students admitted to the agriculture college and 50.4 percent of their graduates.

Data presented in Table XXII show the curriculum areas in which the sixty-five Jimma graduates dismissed from college received grades of "D," "F," or "WF." A greater number of deficient grades were reported in the physical sciences. A total of 56 (81.2 percent) of the deficient grades in the physical sciences were in chemistry and 13 (18.8 percent) in physics. Table XXII also shows that fewer deficient grades were reported in English, and technical agriculture courses of plant and animal sciences. The total deficient grades reported for the biological sciences was slightly larger than the other six curriculum areas. Thirty-four (16.2 percent) of the two hundred ten deficient grades reported for Jimma graduates were in botany and zoology.

TABLE XXI

NUMBER ADMITTED, GRADUATED, CURRENTLY ENROLLED, AND DROPPED OR WITHDRAWN AT HAILE SELASSIE I UNIVERSITY COLLEGE OF AGRICULTURE BY HIGH SCHOOLS

High School	Number Admitted*	Number Graduated	Currently Enrolled**	Number Dropped or Withdrawn			Percent Dropped For Academic Reasons
				Health & Other	Transfer	Academic	
Ambo	100	33	24	5	-	38	38.0
General Wingate	40	14	9	5	-	12	30.0
Jimma Agri. Tech. School	250	119	48	9	9	65	26.0
Medhane Alem(AA)	22	8	1	2	5	6	27.3
Menelik II(AA)	13	8	2	-	-	3	23.3
Teacher Training School, Harar	36	12	4	7	-	13	36.1
Other Ethiopian High Schools	132	32	50	15	9	26	19.7
Other African Nations	21	10	3	1	3	4	19.0
Total	614	236	141	44	26	167	

*Includes 141 students enrolled in 1965.

**April, 1965

TABLE XXI

NUMBER ADMITTED, GRADUATED, CURRENTLY ENROLLED, AND DROPPED OR WITHDRAWN AT HAILE SELASSIE I UNIVERSITY COLLEGE OF AGRICULTURE BY HIGH SCHOOLS

High School	Number Admitted*	Number Graduated	Currently Enrolled**	Number Dropped or Withdrawn			Percent Dropped For Academic Reasons
				Health & Other	Transfer	Academic	
Ambo	100	33	24	5	-	38	38.0
General Wingate	40	14	9	5	-	12	30.0
Jimma Agri. Tech. School	250	119	48	9	9	65	26.0
Medhane Alem(AA)	22	8	1	2	5	6	27.3
Menelik II(AA)	13	6	2	-	-	3	23.3
Teacher Training School, Harar	36	12	4	7	-	13	36.1
Other Ethiopian High Schools	132	32	50	15	9	26	19.7
Other African Nations	21	10	3	1	3	4	19.0
Total	614	234	141	44	26	167	

*Includes 141 students enrolled in 1964.

**April, 1965

TABLE XXII

AGRICULTURAL COLLEGE CURRICULUM AREAS IN WHICH THE JDCVA GRADUATES DISMISSED FOR ACADEMIC REASONS SHOWED SCHOLASTIC DEFICIENCIES

Curriculum Area	Number of Deficient Grades Reported	Percent
Animal Sciences	20	9.6
Animal Husbandry	18	8.6
Poultry	2	1.0
Plant Sciences	19	9.0
Field Crops	12	5.7
Forestry	3	1.4
Horticulture	4	1.9
Biological Sciences	34	16.2
Botany	14	6.7
Zoology	20	9.5
Physical Sciences	69	32.9
Chemistry	56	26.7
Physics	13	6.2
Mathematics	23	10.9
English	19	9.0
Social Sciences	26	12.4
Total	210	100.0

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Purpose of the Study

The main purpose of this study was to discover whether or not relationships exist between Jimma graduates of the several provinces and tribes in certain specific post-high school pursuits. Also the graduates' evaluation of practical work training received at Jimma was examined with regard to their cultural backgrounds as represented by home provinces and tribes. Graduates' home provinces were examined with regard to their rating of the course work at Jimma. Graduates' academic achievements as represented by cumulative grade points received in high school and college were compared when they were grouped by home provinces. Another purpose of this study was to compare the agricultural college admittance and drop-out records of Jimma graduates to the same records of students from other Ethiopian high schools.

Method and Procedure of the Study

The method of the study was to formulate specific questions relating to the graduates' post-high school pursuits and the training they received at Jimma and to pose these questions to the graduates. The questions of concern dealt with tribal and geographic backgrounds of students graduating from Jimma, their training program in high school, and their

academic success if they attended the agricultural college in Ethiopia.

Two-way tables were constructed to present data collected pertaining to students' home provinces and/or tribes, educational status and/or high school attended, and the following information: (1) occupational experiences; (2) practical work training experiences; (3) ratings of courses taught at Jimma; (4) factors relating to career advancements; (5) cumulative high school grade point averages; (6) cumulative college grade point averages, and (7) areas of academic deficiencies in the college of agriculture.

The method of collecting the data was through a combination of personal contact and by mailing a survey schedule to as many of the former graduates from Jimma as possible. Two hundred forty-two of the three hundred fifty-eight graduates during the first ten years of operation of the Jimma School were contacted and formed the sample of this study. Data pertaining to academic achievement were obtained from official transcripts from both the Jimma Agriculture Technical School, Jimma, Ethiopia, and the Haile Selassie I University College of Agriculture, Alemaya, Ethiopia. Data regarding the total population of Jimma graduates related to this study (presented in the Appendices B and C) were obtained from office records kept at Jimma and Alemaya.

Summary of Findings

After the data were collected and tabulated, they were examined and analyzed in an attempt to answer the questions of concern of this study. On the basis of the data collected a few of the questions were answered by a positive association between the Jimma graduates' backgrounds and factors being tested in the evaluation. However, most of the questions

presented in this evaluation study showed no association between Jimma graduates' tribal and home backgrounds and factors being tested.

Home Province, Tribe, and Occupational Experiences

An analysis of the data regarding graduates' home provinces, tribes, and occupational experiences shows little or no association among these factors. The findings indicated that social and economic development programs planned by the ministries in central government influenced the occupation and type of jobs held by Jimma graduates, rather than their cultural backgrounds. Sixty-one percent of the Jimma graduates are currently engaged in agricultural occupations; twenty-five percent are students in institutions of higher learning; seven percent are working in agriculturally related occupations; and approximately six percent are working in occupations not related to agriculture. Less than four percent of former graduates are farming or managing farms.

As with the occupational distribution, the type of jobs Jimma graduates hold appears to be influenced by factors other than those tested in this study. The amount of formal education appears to have more influence on the type of jobs, rather than the tribes they belong to or their home provinces. The occupational distribution and type of jobs held by graduates also appear to be closely related to the growth of primary and middle school facilities in Ethiopia. As more of these schools were opened in the provinces, it was possible to admit students to Jimma from a broader geographic area, thus allowing more ethnic groups to have opportunity for agricultural education at Jimma.

Tables IV and V list the need for and the type of additional training respectively of graduates grouped by tribes and provinces to these questions.

Approximately seventy-eight percent of the graduates who were working required additional training after taking employment. The type of job had more influence on whether or not additional training was needed than did tribe or home province. Of the graduates listing additional training needed, 71.3 percent indicated their training was an in-service type training. Of this group a majority were graduates working as trainees for agricultural extension or agricultural field agents for the Coffee Board or Ministry of Community Development. A majority of the 28.7 percent of graduates listing attendance at training schools were agricultural extension agents who were sent to the American University of Beirut, Lebanon, for one year of technical training after serving from one to five years on the job as extension agents.

Home Province, Tribe, and Practical Work Training

It was ascertained that no meaningful difference exists in the rating of the value or emphasis placed on the practical work training among the graduates when grouped by tribe and home province. Eighty-six percent of former graduates rated practical work training as of great or moderate value to them in their present job, and only fourteen percent said the work training was of little or no value to them. Slightly over one-half of former graduates expressed an opinion that more emphasis should be placed on practical training than the present twelve hours each week.

Home Province, Educational Status, and High School Courses of Jimma Graduates

Former graduates grouped by home provinces and educational status were asked to evaluate the five course areas included in the curriculum

at Jimma: (1) agriculture, (2) science, (3) social science, (4) English, and (5) mathematics.

On this question, it was determined that Jimma graduates grouped by home provinces generally did not disagree in their rating of the broad course areas of the high school curriculum. However, it was found graduates grouped by home provinces did disagree in a few instances when comparing the average rating of block courses in agriculture or individual classes included in the course areas. Graduates from "other" provinces of Ethiopia rated dairy production of less value to them than did graduates from the six named provinces of Ethiopia included in this study. Harar province graduates rated tractor maintenance of greater value than graduates from other provinces of Ethiopia. Graduates from Tigre province rated metal work of greater value than graduates from other provinces. Graduates from Eritrea and Wollega rated the courses in the official language, Amharic, of less value than other Jimma graduates. It was determined that graduates grouped by home provinces did not disagree to a meaningful extent on the rated value of the courses taught in biological science, mathematics, and social sciences. Graduates from Arusi province rated all courses studied at Jimma of less value to them than graduates from other provinces of Ethiopia.

Responses as summarized in Tables VIII through XV did reveal some meaningful differences when former graduates were grouped according to educational status. The "no college" group of Jimma graduates considered twelve courses of more value to them than did the college group. The Jimma graduates attending or who had attended college thought eight courses of more value to them than did the "no college" group. Two agriculture block courses (beef and sheep production and feeds and

feeding) and two science courses (general science and biology) were rated of about equal value by both groups. This study definitely established graduates continuing their formal education in institutions of higher learning regarded non-agriculture courses as being of more value to them. Of the eight courses considered by the college group as being of more value to them, six were non-agriculture courses. Also another interesting fact was that the more highly rated subjects were the advanced (junior and senior) courses in the curriculum. The following non-agriculture subjects were believed of more value to the college group of Jimma graduates: (1) physics, (2) chemistry, (3) algebra, (4) geometry, (5) English grammar, and (6) English literature. Two shop agriculture block courses were listed as of more value by the college group of graduates: tractor maintenance and metal work. The two shop block courses teach some skills generally not acceptable by most ethnic groups in Ethiopia. The fact that the college group rated these two courses as being of more value to them than did the "no college" Jimma graduates could be interpreted to mean that attitudes toward these skill jobs change as a person received more formal education.

Career Advancements

Graduates were asked to react to two questions with respect to factors related to training offered that influenced their career advancements: (1) their opinions of additional training in various course areas, and (2) their opinions of what they considered most important in advancing in a career.

Little difference was observed, when graduates were grouped by tribe and province, in their expressed opinion of whether or not additional

training should be offered in the five course areas of the curriculum. None felt that additional training in any one course area would have been beneficial to them in their post-high school pursuits. Graduates were asked to check two course areas in which they thought additional training should be given. In no case was there evidence of a strong feeling that additional training would have been beneficial to them in their jobs or positions.

In regard to factors graduates thought important in advancing in their careers, there was little difference when they were grouped by tribe and province. Regardless of tribe or province, graduates generally agreed that their knowledge of agriculture and grades earned in school were the most important factors in helping them to advance in their careers.

Home Province and/or Educational Status and Cumulative High School and College Grade Point Averages

Data presented in Table XVIII compare the cumulative high school grade point averages of graduates, grouped by their home provinces, who terminated their formal education after high school and those admitted to agricultural college. There was no meaningful differences between cumulative grade point averages of former graduates when grouped by home provinces. As might be expected, high school grades were a criteria in determining college admittance. Jimma graduates admitted to college had .71 cumulative grade points above graduates not continuing their college education.

The cumulative agricultural college grade point average of Jimma graduates were slightly lower than the cumulative high school grade point average. The average cumulative high school grade point was 2.73 as

compared to 2.50 for Jimma graduates graduating from agricultural college. However, here again it is not possible to identify real differences in cumulative average grade points when graduates were grouped by their home provinces.

In order to make a comparison of Jimma graduates graduating from agricultural college with college graduates who had attended other high schools, the two hundred thirty-six college graduates were grouped by the high schools they attended and their cumulative college grade points compared. This comparison failed to indicate any noteworthy differences in the academic achievement of agricultural college graduates when grouped by the high schools they attended. Graduates from other African nations earned a higher cumulative grade point average than did college graduates from Ethiopia. An explanation of this fact might be that this group was a more select group than graduates from Ethiopia.

High School Attended and College Admittance and Drop-Out Rates of Jimma Graduates

From data presented in Table XXI it was ascertained that differences do exist in the number of students dismissed from the agricultural college when grouped by the high school they attended. Of the 614 students admitted to the college 167 (27.0 percent) were dismissed because of low academic standing. More graduates from the Ambo school (38.0 percent) were dismissed for this reason than other high schools represented at the college. An average of 26.0 percent of Jimma graduates were dismissed because of low grades.

Academic Deficiencies of Jimma Graduates Dismissed from Agricultural College

The transcripts of the sixty-five Jimma graduates dismissed from college because of academic deficiencies were examined in an attempt to identify areas of weaknesses. A total of two hundred ten failing or deficient grades were recorded for the Jimma graduates dismissed from agricultural college.

The following curriculum areas were compared: (1) animal science, (2) plant science, (3) biological sciences, (4) physical sciences, (5) mathematics, (6) English, and (7) social sciences. This comparison showed specific academic areas in which former Jimma graduates were deficient. Approximately one-third of the deficient grades were in the physical sciences; however, 81 percent of these deficient grades were in chemistry, and only 19 percent were in physics.

There was little difference in academic deficiencies in the other six curriculum areas.

Conclusions and Implications of the Study

The study was undertaken as a beginning of an evaluation of the agricultural education programs in Ethiopia. In no way should any of the results be considered final or evaluation of the Jimma School completed. Evaluation should be a built-in continuing part of educational programs. It is hoped this initial study will provide information that might be useful to other evaluation studies of a more detailed nature. As the number of graduates from Jimma and the agricultural college increases, perhaps detailed studies based upon more refined population

sampling techniques will be possible.

Inferences which may be drawn from the results of this study indicate the broad over-all objectives of the Jimma School are being met. Approximately fifty percent of Jimma graduates are continuing in higher education, and approximately fifty percent of the former graduates terminate their formal education after high school graduation. It is rather doubtful at the present time if the objective which states that farming is the aim for training at Jimma is legitimate since so few of the former graduates are actually farming. However, in the near future as government bureaus are filled with trained young men to carry out their planned programs for social and economic development, and as land tenure programs become functional, more Jimma graduates will have the opportunity to farm.

The results of the investigation show that very little association exists between the former graduate's tribal background; his home province; and factors such as his occupational experience, type of job he holds, his expressed opinion of work as a part of training, and the courses studied in high school. The administration and guidance personnel or others involved in student selection should not allow a student's tribe or geographic area to become a criteria for selection of students for the Jimma School.

If there are implications in the results of the study toward a change in the present training program, it would be toward increasing the amount of practical work training. Over half of the former graduates expressed opinions that practical work training should be increased. In the course of the interviews, graduates revealed a desire to have received more practical training in such skills as pruning coffee, processing coffee and other crops, and identifying and controlling disease and

insects of both plants and animals. Graduates repeatedly emphasized they would like to have had the additional time spent in practical application of such skills without additional theory.

The over-all opinion of former graduates was favorable toward the courses offered at Jimma. There was difference in opinion as to where the emphasis might be placed when graduates were grouped by educational status. The college group would emphasize the academic subjects, and the terminal graduates would emphasize the technical agricultural courses in the curriculum. With the dual objectives of the school, however, it would be doubtful if either of the group desires would imply a change in the present courses offered at Jimma.

With regard to academic achievement as measured by grade point averages, this study, in agreement with other studies, tends to bear out the fact that the differences between grade points among different ethnic groups are not too great. There has been a tendency in student selection to over-emphasize the importance of getting as many students as possible from certain areas because of the scholastic superiority of the prospective students. This study indicates this difference may have been more imaginary than real.

As indicated in the admittance and drop-out records of students at the agricultural college, Jimma graduates are well prepared for college when compared to students admitted from other Ethiopian high schools. It can be concluded there are implications the Jimma School objective of "preparing graduates for continuing education with some assurance of success" is a valid objective.

A review of the transcripts of Jimma drop-outs from college shows a very strong indication for the need to strengthen the physical sciences

curriculum (especially chemistry) as Jimma. As reflected in the examination of the drop-out transcripts, the preparation in agriculture, social sciences, and English appear to be adequate for college success. Jimma graduates were weak in biological science but not as weak as their preparation in physical sciences.

A review of attrition records of Jimma graduates reveals what appears to be a need to offer teacher training courses in both the college curriculum and at Jimma. As the bureau positions in government services become filled, more graduates are taking teaching positions in the provinces. General agriculture has been included in the curriculum in elementary schools, and in the past four years, more Jimma graduates are taking teaching positions.

In summary, it may be determined from results of this study that, with few exceptions, former graduate's tribal and home province background have little association with his post-high school pursuits. Jimma agricultural high school graduates are meeting a real need in providing Ethiopia with trained young men to establish and carry on programs for social and economic development. In view of the importance of agriculture in Ethiopia, this study would reveal what appears to be justification of the need to expand the type of agricultural educational offerings given at the Jimma School. Its former graduates are assuming leadership roles in agricultural education, research, and extension. Of the graduates from Jimma during the years 1952-1960, one hundred thirty have obtained baccalaureate degrees in Bachelor of Science in Agriculture. Of this number, one hundred nineteen have obtained their degrees in Ethiopia; eleven, outside of Ethiopia. A total of thirty-eight have received or are currently working on Master's degrees. Two

former graduates have received their Doctor of Philosophy degrees, and six are currently doing doctoral work. Four former graduates have earned a Doctor of Veterinary Medicine degree, and five are currently working on this degree. Two former graduates are currently working on Medical Doctor degrees, and sixty-three have received some type of specialized post-high school training or post-college training outside of Ethiopia.

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APPENDICES

APPENDIX A

SURVEY SCHEDULE

I. PERSONAL CHARACTERISTICS:

Name_____

1. Age_____

2. Year graduated from high school_____

3. Home province_____

4. Tribe_____

II. OCCUPATIONAL STATUS:

1, Present occupation:

____a. Government employee

____b, Private employment

____c, Self employed

(1) Own business____

(2) Farming____

____d. Agricultural related occupation

____e. Post-high school student

2. Type of job held:

____a. Agent

____b. Supervisor

____c. Administrator

____d, Trainee

____e, Technician

____f. Teaching

____g. Other Specify_____

3. Additional training needed on present job after high school graduation:

____a. yes

____b. no

4. Type of additional training needed:

____a. Training school

____b. In-service training

____c. Other

III. PRACTICAL WORK TRAINING AT JIMMA AGRICULTURAL TECHNICAL HIGH SCHOOL:

1. Value of practical work training in relation to present job or position:

____a. Great value

____b. Moderate value

____c. Little value

____d. No value

2. Emphasis on practical work training:

____a. More emphasis

____b. Same emphasis

____c. Less emphasis

IV. ACADEMIC COURSES AT JIMMA AGRICULTURAL TECHNICAL HIGH SCHOOL:

1. Rate the following areas of learning experiences at Jimma according to the degree of usefulness on present job or as students of higher learning.

Courses and Learning Area:	Extent of Usefulness			
	Great	Moderate	Little	None
a. Agriculture I	____	____	____	____
b. Agriculture II				
(1) Dairy Production	____	____	____	____
(2) Feeds and Feeding	____	____	____	____
(3) Wood Working	____	____	____	____
(4) Vegetable Production	____	____	____	____
c. Agriculture III				
(1) Field Crops & Coffee Prod.	____	____	____	____
(2) Poultry Production	____	____	____	____
(3) Animal Power & Application	____	____	____	____
(4) Tractor Maintenance	____	____	____	____
d. Agriculture IV				
(1) Field Crops & Coffee Prod. II	____	____	____	____
(2) Beef & Sheep Production	____	____	____	____
(3) Metal Work	____	____	____	____
(4) Soils Management	____	____	____	____
e. Language				
(1) English grammar	____	____	____	____

(2) English literature	____	____	____	____
(3) Amharic	____	____	____	____
f. Mathematics				
(1) Agriculture arithmetic	____	____	____	____
(2) Algebra	____	____	____	____
(3) Geometry	____	____	____	____
g. Science				
(1) General science	____	____	____	____
(2) Hygiene	____	____	____	____
(3) Biology	____	____	____	____
(4) Chemistry	____	____	____	____
(5) Physics	____	____	____	____
h. Social Science				
(1) World history	____	____	____	____
(2) Ethiopian history	____	____	____	____
(3) Agricultural economics	____	____	____	____

2. Check two (1, 2) course areas where additional training would be helpful to you on present job or career:

____a. Technical agriculture skills (ex. pruning coffee, etc.)

____b. Language

____c. Mathematics

____d. Science

____e. Social science

V. POSITION ADVANCEMENT

Check five factors most helpful in obtaining jobs or advancing in careers:

____a. Your knowledge in agriculture

____b. Completing tasks assigned

____c. Ability to get along with people

____d. Ability to express yourself clearly

____e. Hard work

____f. Being honest

____g. Grades in school

____h. Willing to share knowledge freely

____i. Technical skills

APPENDIX B

A COMPARISON OF THE RESPONDING JIMMA GRADUATES WITH THE TOTAL JIMMA GRADUATES (1953-1962) GROUPED BY TRIBE AND HOME PROVINCE

Tribe	Sample		Population	
	Number	Percent	Number	Percent
Amhara	117	48,3	206	57.6
Amhara & Galla	10	4.1	3*	.8
Galla	35	14,5	45	12.6
Eritrean	21	8.8	37	10.4
Tigre	29	12.0	32	8.9
Guragie	10	4.1	10	2.8
Other	20	8.2	25	6.9
Total	242	100.0	358	100.0
Province				
Arusi	7	2.9	20	5.6
Eritrea	34	14.0	45	12.6
Harar	19	7.9	25	6.9
Shoa	117	48.3	162	45.3
Tigre	21	8.7	25	6.9
Wollega	14	5.8	19	5.4
Other	30	12.4	62	17.3
Total	242	100.0	358	100.0

*As reported on the Official School Records at Jimma.

APPENDIX C

JIMMA GRADUATES GROUPED BY CLASS SIZE, AVERAGE AGE ADMITTED, TRIBES, PROVINCES, AND ELEMENTARY SCHOOL

Year	Class Size	Average Age Admitted	Number of Tribes	Number of Provinces	Number of Elementary Schools
1953	18	19.2	3	5	7
1954	18	18.2	3	8	6
1955	15	18.1	5	5	9
1956	20	17.4	4	6	10
1957	46	18.3	9	10	20
1958	46	18.0	7	9	18
1959	47	18.1	5	10	13
1960	52	17.8	9	12	15
1961	46	18.1	8	11	20
1962	49	17.6	12	9	24
1963	41	17.6	11	12	28
1964	46	17.3	13	13	31

VITA

Irvin Eldie Siegenthaler

Candidate for the Degree of

Doctor of Education

Thesis: AN EVALUATION OF THE JIMMA AGRICULTURAL TECHNICAL SCHOOL PROGRAM, JIMMA, ETHIOPIA, BASED UPON A STUDY OF JIMMA GRADUATES

Major Field: Higher Education

Biographical:

Personal Data: Born at Boynton, Oklahoma, May 3, 1927, the son of Irvin E., Sr. and Florence L. Siegenthaler.

Education: Attended grade school and high school at Wainwright, Oklahoma, graduating from high school with credits earned in military service in 1946. Received the Bachelor of Science degree from the Oklahoma State University with a major in Agricultural Education and a minor in Agronomy in January, 1950; received the Master of Science degree from the Oklahoma State University in August, 1954, with a major in Agricultural Education.

Professional Experience: Farmed with father near Wainwright, Oklahoma, from 1940 until October, 1944. Entered military service on October 15, 1944, by enlisting in the United States Navy. Served at San Diego for 23 months, and was honorably discharged July 23, 1946. Taught vocational agriculture at Altamont, Kansas, from August, 1950, until December, 1955. Appointed plant science instructor at the Jimma Agricultural Technical School, Jimma, Ethiopia, with the Oklahoma State University Ethiopian Contract Program December, 1955, until July, 1963.

On sabbatical leave from Ethiopian Contract Program from September, 1963 to September, 1964. Appointed graduate assistant in the Agricultural Education Department at Oklahoma State University for the school year 1964-65.

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