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THEME:
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EDITOR'S PAGE

Agricultural Education In Development

BY LARRY E. MILLER, EDITOR
(Dr. Miller is a Professor in the Department of Agricultural Education at The Ohio State University.)

Accustomed to enjoying the bounty of an affluent society with shelter, food and comforts; we seldom have reason to scholarly consider those with less. Going about our daily job of conducting teaching activities gives us little time to consider how our program might be an effective model for helping people in other countries.

Programs designed to aid the agricultural development of developing countries have not focused typically upon agricultural education. Authors in this issue relate some of the concerns which need to be addressed to facilitate the development of agricultural education.

International Youth Year provides a unique medium for focusing attention upon youth around the world. The attention given to hunger should provide an ideal opportunity to highlight the need for agricultural education.

To help facilitate the development of agricultural education, the Association for International Education (AIAE) has been formed. The Theme Editor, Burt Swanson, is Chairperson of the group. AIAE invites your membership. The objectives of the group are enumerated in the article by Thuemmel.

Expertise To Share

The Cameroon conference may help to focus renewed attention upon agricultural education not only in Africa but in other places as well. Teachers may well have an opportunity to elect to become involved in international activities. The years of experience we have gained through vocational agriculture may be of benefit to developing countries. Experience and training in working with youth organizations, SOE programs, adult programs, and providing practical instruction in agriculture could be valuable assets.

Numerous people have noted how communications, transportation and technology have made the world smaller. Agricultural educators will soon see the effect of the shrinkage. The contributions made to American agriculture by agricultural educators have been noted by others. This expertise, so valuable in U.S. development, may also be of worldwide benefit.

THEME

Serving Rural Youth Around The World

BY BURTON E. SWANSON, THEME EDITOR
(Editor's Note: Dr. Swanson is an Associate Professor at the University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.)

This issue spotlights the beginning of International Youth Year, which is being celebrated around the world in 1985. It is also a good time to reflect on agricultural education's role in serving rural youth around the world and particularly in developing countries. However, before considering agricultural education's contribution and potential to agricultural development overseas, it is useful to briefly review this role in the agricultural development of the United States and other industrialized nations.

Agricultural and extension education have made an important contribution to agricultural development in North America and Europe. In the United States, vocational agriculture programs in schools provided essential technical and managerial skills that rural young people needed to succeed in farming and, more recently, in agribusiness. Agricultural extension built on this educational foundation by providing the up-to-date technology and information farmers needed to increase production and farm incomes. Rural youth programs developed the leadership and organizational skills rural people required to form farm organizations, such as cooperatives, promote agriculture and improve rural living.

As agricultural education and other rural youth programs have been initiated in many developing countries, they have frequently been organized in different ways and

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Swanson receives a garland of flowers from a school girl at an agriculture school in Rajasthan, India.

Peter Oram, Deputy Director of the International Food Policy Research Institute, Washington, D.C. and Swanson view young seedlings with the teaching staff at an agriculture school in Rajasthan, India.

Serving Rural Youth Around The World

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they have received few resources, both from national governments and from donors, such as the U.S. Agency for International Development (USAID). The reasons for different approaches being pursued and few resources being committed to agricultural education and rural youth are understandable, yet appear to be short-sighted.

Stop-Gap Measures

In terms of approach, agricultural education programs have been developed as a reflection of quite different educational systems and traditions. These programs tend to be academic rather than vocational in approach, and students and parents frequently see education as the best vehicle to leave farming and even rural areas. This approach and these attitudes contribute little to the broader goals of agricultural and rural development and, in some cases, detract from these goals.

In terms of resources, agricultural education programs in general and rural youth programs in particular, have not fared well in most developing countries. The concern with achieving national food self-sufficiency and avoiding a major food crisis, such as is the case in many African nations, have directed national and donor resources to programs and projects that deal with immediate problems. However, most of these stop-gap measures pay too little attention to the future and the need to invest in quality agricultural education and rural youth programs. Many poorer nations appear to be mortgaging their future capacity to produce food by failing to invest in their rural youth today.

Rural Youth

The central proposition of this issue is that rural youth are a very important and valuable national resource. It must be recognized at the policy level within both national governments and donor agencies that the future ability of a nation to feed itself rests on the shoulders of its rural young people. However, for this next generation of farmers to effectively utilize improved agricultural technology, and thereby increase agricultural production and farm income, will require agricultural education investments today that will develop their technical, managerial, and leadership skills.

Theme Emphasis

To convey this message, this issue has been developed around three main ideas. The first deals with International Youth Year and the opportunity to focus attention of the importance of rural youth around the world. As agricultural educators, we clearly understand the importance of improving the agricultural skills and knowledge of rural young people, but this perspective needs to be repeated and highlighted with our students, their parents, and in the communities where we live. Therefore, International Youth Year provides us with an opportunity to celebrate and highlight some basic values that are central to our profession.

The second major theme deals specifically with the situation confronting rural youth in developing countries and some positive examples from Asia, Africa, and Latin America, as to how agricultural education is responding to these needs. Clearly the task ahead in these countries is large, but there are some valuable lessons being learned to increase the effectiveness of these agricultural education programs.

The final theme revolves around the general topic of "getting involved." Many agricultural educators are already involved in international education programs. For example, Teacher Educators from 22 U.S. universities participated in a major African Agricultural Education Conference in Yaounde, Cameroon in July 1984. A report on this conference is included in this issue.

Another dimension of this final theme is the fact that some of our approaches, that we take for granted in the U.S., may need to be modified for the different conditions of other countries. Two articles explore different ways of implementing agricultural education programs under these different conditions. The final article suggests one mechanism whereby agricultural educators in the U.S. (and beyond) can get involved in and learn more about international agricultural education programs and opportunities.

International agricultural education is both an opportunity and a responsibility for our profession. Agricultural educators have made an important and significant contribution to the development of rural people and agriculture in the U.S. Adequate food is a basic requisite of political stability and national survival in developing nations.

Countries that cannot feed themselves are a threat to world peace, to say nothing of the immense human suffering that is present today and growing more serious by the day in many nations, particularly in Africa.

Agricultural education is part of the solution to this problem of increasing agricultural production. As professionals, we need to do whatever we can to assist our colleagues abroad to build and strengthen quality agricultural education programs for their rural youth.

THEME

FFA Celebrates International Youth Year

By Lennie Gamage

(Editor's Note: Mr. Gamage is International Programs Specialist with the National FFA Center, P.O. Box 15160, Alexandria, Virginia 22309.)

During 1985, most nations around the globe will be celebrating International Youth Year. The thirty-fourth U.N. General Assembly voted in 1979 to designate 1985 as International Youth Year (IYY). The themes chosen for IYY include Participation, Development and Peace.

Participation in the life of a nation is important for all, and especially important for the young. If they are to help form the society in which they will live their adult lives, young people need a voice first in youth organizations, as offered through structured programs such as FFA, and later a voice in national life. Education and information, from a wide range of sources and perspectives, are necessary to the exploration of future possibilities. It is crucial that youth have access to all sources of information, and that they be allowed the possibility to travel across political borders to study and to explore further their interests. We provide this opportunity to FFA members through programs such as Work Experience Abroad and a variety of Travel Seminars made available by the organization.

Worldwide Understanding

Youth of the World have a vital stake in development. Both the developed and developing societies need to increase their economic growth to improve the lives of their citizens. With world population continuing to grow, agricultural productivity must also continue to grow throughout the world. If any major groups in the world society are left out of the development process, they are likely to face poverty, misery and despair. The development process which will lead to a viable world economy must include all segments of society, and certainly an important role must be played by today's youth who will live and manage the future.

FFA members must be aware not only of the development process used in community development and the Building Our American Communities program in FFA, but also must have information on and access to the development process worldwide. Programs such as the Peace Corps, U.N. Volunteers, and a variety of religious organizations offer opportunities for FFA Alumni to become involved. FFA's own USAID-funded project in Panama offers the same kind of opportunity to FFA members who are sincerely interested in working with and helping young people in developing countries.

A recent statement of purpose from the International Youth Year Commission had the following to say about peace: "Peace is a prerequisite for implementing the other themes of International Youth Year. Youth, which throughout history has borne the brunt of fighting in war, have a special interest in promoting peace.

We must recognize that peace has two definitions, one negative and one positive. The negative definition of peace is simply the absence of war during a particular period of time. While this is the most common peace found in history and is desirable, a positive peace, where the conditions that might lead to war are not present, is the sort of peace which we hope ultimately to obtain. So far, the objective of world peace has eluded every generation. But today's youth, who are expressing this desire around the globe, must help us all to rededicate ourselves to this quest for peace."

Conferences

International Youth Year will be a part of FFA's international activities during 1985. Several international conferences relating to youth and agriculture are being held, and FFA will be represented. The province of British Columbia in Canada will convene a meeting in Vancouver, and Jamaica has invited FFA to attend an April 1985 International Conference on Youth and World Youth Festival of Arts. The Kingston meeting, with 1200 youth in attendance, will for the first time bring together the successor generations from democratic societies from all corners of the world.

FFA participation in the Fifth World Congress of Young Farmers, in November, 1985 in Christchurch, New Zealand, will highlight IYY. One of the goals of New Zealand Congress will be to formalize a world body of young farmers, future farmers and rural youth. The official delegation will include the 1984 Star Farmer and Star Agribusinessman.

Increased emphasis on youth exchange will be FFA's major effort for IYY. With the cooperation and support of the U.S. Information Agency, many more FFA members and youth from cooperating overseas organizations took part in the 1984 programs — a substantial increase over previous years. In August, FFA received a grant from USIA which will allow eight state officers or outstanding chapter

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FFA Celebrates International Youth Year

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members to visit Thailand during the 1985 National FFA Convention. It is expected that continued support will be received from USIA for Canada, Japan, France, West Germany, the United Kingdom and Italy.

Chapter Activities

During the year-long celebration of IYY, FFA Chapters are encouraged to become more knowledgeable about the world around us. Here are some activities that could be considered:

1. Invite an exchange student to talk to the chapter.
2. Have a returning WEA participant speak at the annual banquet.
3. Correspond with a rural youth group in another country.
4. Help to sponsor a chapter member on a WEA program.
5. Host an inbound WEA participant.
6. Help to sponsor a chapter member on an agricultural travel seminar.
7. Donate funds to assist the FFA development project in Panama.
8. Set up an IYY or WEA display in a store window.

FFA advisors and chapter officers are encouraged to contact the National FFA Center for ideas, materials, and sources of information to help them participate in the celebration of International Youth Year. FFA has the opportunity and the challenge to play a significant role in spotlighting agricultural youth during IYY.

THEME

International Youth Year: Opportunities and Benefits

By Joel R. Soobitsky

(Editor's Note: Dr. Soobitsky is National 4-H Program Leader for International Programs, USDA, Extension Service, Washington, D.C., 20520.)

Your vocational agriculture program and FFA Chapter have a unique opportunity through participation in special activities during the International Youth Year. This is a special year to elevate our ideals, deepen our tolerance, strengthen our determination, share our technologies, build new bridges of understanding and shape a future of freedom, peace and prosperity that can be shared by youth throughout the world.

Guidance for participation, programming ideas, and high visibility are available for chapters which elect to participate. This article will give you a brief background, share objectives and ideas, and be a source for more information.

The thirty-fourth United Nations General Assembly voted to designate 1985 as International Youth Year (IYY). In so doing, the UN expressed its conviction that youth have energies, enthusiasm, and creative abilities to harness.

Goals

The year's three major themes are Participation, Development, and Peace. The objectives are:

(1) To gain, through education, hands-on activities, and personal development, a knowledge of problems and opportunities facing youth throughout the world, and particularly in the United States.

(2) To use participatory knowledge in creating personal skills enabling proper self-development, social responsibility, and a willingness to devote personal initiative in the pursuit of better living conditions for people at home and abroad.

(3) To understand and to foster an appreciation of all mankind recognizing other's rights, accepting their differences, and offering one's talents and resources in a spirit of cooperative achievement. To seek alternatives to confrontation.

Major purposes of IYY as identified by recent planning committees are as follows:

- Foster mutual understanding and cooperation between young people of all backgrounds.
- Expand youth participation in decision making within the institutions and organizations which affect their lives.
- Highlight the increasingly important role of youth-serving organizations in the life of a nation.
- Expand international education.
- Provide opportunities for international exchange of information, young people, and youth workers.
- Promotion of international cooperation and understanding.

Vocational Agriculture Involvement

The participation of young people is obviously crucial to the success of the programs and activities we may adopt at the national, regional, state and local levels. Vocational agricultural students have unique understandings and talents which could play a vital role in increasing the understandings of the importance of agriculture to our American society. The success of the vocational agriculture program could be featured throughout the year in terms of:

- youth participation in decision making
- youth contributing as productive members of society
- gaining greater opportunity for employment
- strengthening the role of youth in families
- fostering cooperation among young people of all backgrounds
- important role of FFA in the life of our nation
- opportunities for international exchange of information
- developing and strengthening leadership skills
- importance of youth education with technology transfer
- understanding of world hunger and malnutrition
- appreciation of cultural heritage
- recognition of economic interdependency and crises
- community service and citizenship education

Vocational agriculture and/or FFA chapters should develop programs and projects during the year that create opportunities for meaningful educational experiences. These programs could range from adopting a foster child through a Foster Parent's Plan international program, to hosting an agricultural student from a third world country, to conducting a seminar on rural youth migration to urban centers.

The following suggestions for local events and/or programs are listed to stimulate your thought process:

- sponsor international seminars/workshops on contributions/needs of rural youth in the world
- develop programs/projects focused on world hunger, including observance of World Food Day (October 16th)
- create an exhibit on careers in agriculture and its importance to world peace
- organize committees of youth representing community organizations to provide community services during the year, i.e., voter registration, health care, energy conservation, nutrition, sanitation, etc.
- strengthen farm-city relationships especially during National Farm City Week
- host foreign visitors, especially those with a special interest in agriculture
- supply speakers for civic organizations to illustrate youth contributions/needs
- develop outreach projects through existing international organizations, i.e., Sister Cities, Partners of the Americas, Foster Parent's Plan International, Youth for Understanding, Work Experience Abroad (WEA), International 4-H Youth Exchanges
- sponsor chapter recognition for development/participation in IYY programs, i.e., public speaking, exhibits, fund raising for developing countries, World Food Day Seminars, etc.
- coordinate international fair, concert, exhibit, talent show, etc., with focus on IYY
- participate with local radio, TV spots and newspaper on promoting important role of youth/agriculture in our society

Organizations have been encouraged to support a number of activities during the year and the IYY Commission has suggested the following focus for each month:

January	Participation
February	Health and Handicapped
March	Arts
April	Religion
May	Education
June	Youth in the Work Place
July	Families
August	International Relations and World Concerns
September	Citizenship and Government
October	Sports
November	Agriculture and the Environment
December	Recognition and Wrap-Up

Conclusion

This article has attempted to summarize the objectives, goals and purposes of the 1985 IYY observance in this country. The suggestions for local involvement are written only to stimulate your participation in this unique opportunity . . . a year to elevate our ideals, deepen our tolerance, strengthen our determination, share our technologies, build new bridges of understanding and shape a future of freedom, peace and prosperity that can be shared by youth throughout the world.

For more information write IYY Commission, 1522 K Street, N.W., Suite 620, Washington, D.C. 20005 or phone 202/682-9040.

The Cover

School boys with a harvest of maize grown in their school garden in Benin. Food is grown for consumption or sale in the market. (World Food Programme photo by J. Van Acker.)

1985 Themes

February	Vocational Agriculture and the Handicapped Student
March	Innovative Student Management Strategies
April	Using Microcomputers in Agricultural Education
May	FFA Conventions and Contests
June	The Supervisor: Local, State, and National
July	Planning, Organization, and Time Management
August	Evaluation of Vocational Agriculture
September	The Teacher of Vocational Agriculture
October	Elementary and Pre-vocational Programs
November	Teaching Tips
December	Future Programs in Agricultural Education

THEME

Rural Youth In The Less Developed Areas

By William I. Lindley

(Editor's Note: Mr. Lindley is Rural Youth Specialist with Food and Agricultural Organization of the United Nations, Rome, Italy.)

There is growing concern that the youth of today are facing more complicated problems than those of their parents. To illustrate this point, here is a brief look at the situation of youth in the less developed world.

From the United Nation's definition, youth are classified as young men and women from age 15 through 24. However, in the following discussion, the term youth has been expanded to include the group of young people, male and female, married or single, from age 10 through 24. It is unrealistic to discuss a comprehensive approach to youth work without including the 10 through 14 year olds. The International Labour Organization (ILO) estimates that 50 million children under the age of 15 are at work and that about 11 percent of the 10 through 14 age group are economically active. Nearly 98 percent of the child labourers are found in developing countries.

World Wide Trend

The data in Table 1 show a projected increase in the numbers of youth between 1980 and the year 2000. The most striking figures relate to the expected increase in urban centres as compared to the rural areas is a very real concern to educators and planners.

It is estimated that 80-90 percent of the world's population growth will occur in low income countries where there are already food shortages, massive rural-to-urban migration, inadequacy in housing, health care and education and high unemployment, particularly among youth. The following is a brief examination of the situation confronting youth in the three major regions of the developing world.

Africa

Regional data shows some variation, but the situation is critical in every location. In 1980, Africa's total population was estimated at 470 million, with 71.1 percent living in rural areas. With an annual growth rate of over three percent, the continent's population will increase to over 850 million by the year 2000.

In 1980, there were 101 million rural youth from the ages 10 through 24, which represented 21.5 percent of the total population. In the year 2000, there will be an estimated 152 million rural youth from the ages of 10 through 24 or 17.8 percent of the total population. The percentage of youth in the rural areas is decreasing, but the absolute numbers are continuing to rise at an alarming rate. Looking ahead, in Africa alone, there will be over 300 million young people to educate and prepare for the future between 1985 and the year 2000.

Rural youth constitute the largest sector of the youth population in Africa. They are confronted with problems such as: lack of amenities, social services and educational facilities; isolation and lack of organizations for youth; contradictions between new aspirations and traditional attitudes and systems; limited access to land and the introduction of new techniques in agriculture; the old and new marriage systems (including relevant financial constraints); and traditional attitudes with regard to the status and role of girls and women in society.

The 1983 Africa Regional Meeting on International Youth Year stressed the need for increased attention to rural youth in order to secure their integration into their societies. Reference was made to the Lagos plan of Action, which, among other things, stated that for an effective agricultural revolution in Africa, it is essential to involve the youth and to arrest the rural-to-urban drift, and recommended that training efforts should concentrate on extension workers who should, in turn, focus a portion of their work on rural youth and women.

Table 1. The Urban/Rural Distribution of Youth, Aged 10 through 13, in Africa, Latin America and Southern Asia in 1980 and 2000.*

	Rural Youth age 10-24 (000)			Urban Youth age 10-24 (000)			Total Youth age 10-24 (000)		
Regional Areas	1980	2000	% increase	1980	2000	% increase	1980	2000	% increase
Africa	101,273	152,268	50.4	45,246	122,702	171.0	146,519	274,970	69.2
Latin America	40,282	40,482	0.5	77,112	128,108	66.1	117,594	168,590	43.4
Southern Asia	334,552	380,072	13.6	123,035	252,787	105.5	457,587	632,858	38.3

**Data do not include China, Japan, Hong Kong, Democratic Peoples' Republic of Korea, Republic of Korea, and Mongolia.*

The scope of the statement on agriculture could also be extended to other sectors of rural development. In order to facilitate the involvement of rural young people in development activities, organizational structures are required to relieve the isolation of youth and involve government and non-governmental organizations. At present, such organizations find it difficult to reach a large number of youth, but also to initiate and reinforce the cooperation between youth and adults.

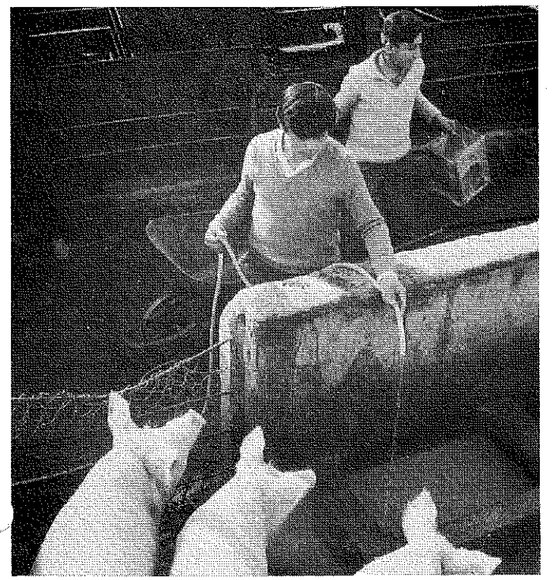
The urban youth population in Africa will nearly triple from 45 million in 1980 to 123 million by the year 2000. These are staggering figures for the people in charge of educational planning and economic growth.

Africa is already beset by drought, famine and unemployment. There is worse to come if these millions of young people are not educated for productive employment and are left to cope with an impossible situation as young adults. The key issue is government recognition of the problems and the need to implement specific national policies to meet the need.

Southern Asia

A comprehensive look at the rural/urban youth distribution across Southern Asia shows a similar pattern to that of Africa. Table 1 shows urban youth numbers will increase by 105.5 percent or an additional 130 million by the year 2000, while rural youth will increase by 13 percent or 45 million more in the same period of time.

Participants in the 1983 Asia and Pacific Regional Meeting for the International Youth Year noted that youth constitute the largest component of the population and that has tremendous implications in terms of manpower planning and utilization. The extent to which youth can be absorbed into society constitutes an enormous challenge to governments.



A young trainee watering pigs at the "Remhue" IER (Rural Training Centre) at Osorno, Chile. Apart from pig raising, the Centre includes courses in rural carpentry. (World Food Programme/FAO photo C. Sanchez.)

Unemployment and underemployment continue to remain as serious problems and the persistance of rural unemployment and the related migration to urban centers are serious problems in every country. The subject of vocational training for rural youth was explored at length and the problem of the lack of meaningful industrial development outside the capital cities was discussed in each regional meeting. Recognition of the problems and subsequent action are priority areas of concern for those dealing with rural youth programmes.

A recent FAO sponsored study cites the need for increased cooperation among existing agencies serving youth and a continuing need for governments to recognize the value of vocational and leadership training through both formal and non-formal education. The essential role of parents who understand the goals of youth programmes and who support youth activities was also stressed. The implications here are that there is perhaps too little being done to explain the benefits of effective programming for youth. Too often a "Youth Programme" is viewed as a luxury item instead of a basic societal need.

Latin America

The Latin American data from Table 1 are even more startling. From 1980 to the year 2000, the proportion of youth aged 10 to 24 will increase by 200,000, or only one-half of one percent in the rural areas, but in the urban centres, there will be an increase of 66.1 percent, from 77 million to 128 million. Urban dwellers will continue to apply pressure for low food prices, that are disincentives for increased agricultural production. Land reform issues will have to be addressed, along with providing incentives for rural people to continue in agricultural production work. Young men and women of child bearing age are continuing to migrate to the urban centres, a fact that compounds the population pressure in the cities.

The Latin American regional meeting on International Youth Year stressed that, although the percentage of the total population living in urban areas in increasing very rapidly there is still an increase in the absolute numbers for the rural sector. This increase in rural population should be a reason for concern and a stimulus for finding ways to more effectively employ rural people in jobs related to

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Carpentry trainees in the workshop of the "Remehue" IER (Rural Training Centre) at Osorno, Chile, some 600 km. south of Santiago. Their diet has been improved by World Food Programme (WFP) meals. (WFP/FAO photo by C. Sanchez.)

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agriculture and non-agricultural occupations. Estimates from the Economic Commission for Latin America show that over 70 percent of the Latin America region's population will be located in the urban areas by the year 2000. These data lead to the conclusion that farm producers are going to have to be more efficient than at present and that farm prices are going to be increasingly at the mercy of a politically powerful urban voice.

If the problems of Latin America's rural youth are to be adequately addressed, it will have to be preceded by unprecedented recognition and action in the areas of employment opportunities, adequate pay and social services.

Summary

In 1980, youth and children in the less developed regions of the world made up 59.3 percent of the total population. The percentage will drop to just over 52 by the year 2000. It is clear that for the foreseeable future, over half of the population in the more developed regions of the world will be under 25 by the year 2000.

Youth programmes in the less developed countries are going to have to be designed to meet a set of criteria quite different from the more developed nations. Creative approaches are going to be a necessity.

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THEME

Vocational Agriculture Helps Rural Youth: Japan and Taiwan

BY O. DONALD MEADERS

(Editor's Note: Dr. Meaders is a Professor of Agricultural and Extension Education at Michigan State University, East Lansing, Michigan 48824-1039.)

Vocational education in agriculture has been and is a part of the plans for strengthening agriculture in both Japan and Taiwan. The programs have provided rural youth with career opportunities which otherwise would not have been possible. And, in both countries, youth programs associated with vocational agriculture have been a part of the methods used to motivate youth to higher achievements in agriculture.

During the last part of the nineteenth century, when Japan was pushing to create a modern nation, schooling was one of the means used. The modern educational system in Japan has its roots in the Fundamental Code of Education of 1872 (1:96). During the 20-year period 1890-1910 the apprentice schools which were started for the traditional industries were soon upgraded to vocational schools. They included some apprentice schools in agricultural subjects such as tobacco production and sericulture (2:22-23). This early beginning with organized instruction in the science and practice in agriculture was a beginning of government policy to utilize formal schooling as a means to achieve modernization.

On the other hand, formal agricultural education in Taiwan had its roots established during the period 1895-1920, the beginning of the 50-year colonization of Taiwan by the Japanese. Between 1905 and 1915, the study and practice of agriculture was introduced in the primary (common) school curriculum.

> "Agriculture, taught in rural schools, was intended to cultivate respect for manual labor and to teach work habits, as well as to give practical information about soil cultivation. . . livestock, sericulture, and tree and fish farming." (3:50)

Japan

The public educational system in modern Japan includes vocational education in agriculture. The six years of elementary and three years of lower secondary school education are compulsory for children between ages six and fourteen. These levels are part of the 6-3-3-4 school system which was established after World War II (4:1).

Agriculture is taught as a vocational subject in the upper secondary level schools. In 1980 there were about 230 separate agricultural schools which enrolled approximately 174,200 students, or 3.8 percent of the total student enrollment in upper secondary schools.

In Japan, the agricultural programs in the upper secondary school are divided into two kinds: Future farmer programs which include agriculture (crops), horticulture, livestock production and sericulture (silkworm and silk production); and agribusiness programs which include food processing, agricultural machinery, forestry, and rural living.

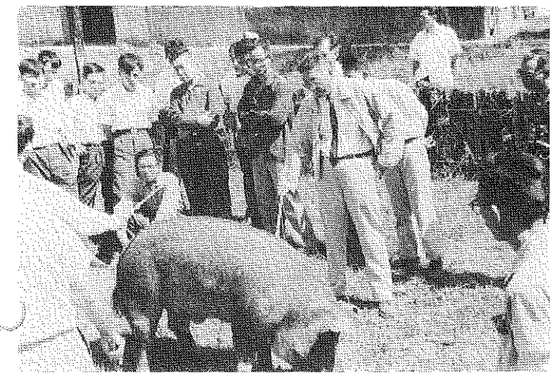
Taiwan

In Taiwan, the introduction of agriculture into the rural primary schools in the early 1900's was followed by an emphasis on vocational education starting around 1918-23. The reader is reminded that the period of World War I and the years immediately following were marked by major socio-political changes in many countries around the world. Vocational agriculture was introduced at the lower secondary (junior high) school level. In 1919, there were six agricultural schools with a total of 341 pupils. One of the objectives of this instruction was to "integrate Taiwanese into the colonial economy's rapidly growing industrial, (agricultural) and commercial sectors" (3:88).

Agricultural education in Taiwan since 1950 has undergone many changes but it remains a strong, integral part of the educational system. The lower secondary (junior high) schools for vocational agriculture have been phased out; the number of upper secondary schools for vocational agriculture have been adapted to the specialized agriculture of the school areas; two junior colleges of agriculture and two colleges of agriculture (with graduate degrees) have emerged. In 1974, there were nearly 6000 graduates from all three levels, compared with only 1700 in 1955 (5:128). In 1983, there were about 20 upper secondary schools with vocational agriculture curricula.

In Taiwan, the vocational agriculture curricula include food processing; animal husbandry and veterinary medicine; farm machinery; forestry; agricultural civil engineering; horticulture; farm business and comprehensive agriculture; sericulture; and rural homemaking. More than 50 percent of the students are in the first three curricula; food processing, animal husbandry and veterinary medicine, and farm machinery (5:33).

In both Japan and Taiwan, the vocational agriculture programs serve students from both rural and urban areas. The vocational agriculture schools in Tokyo serve students interested in poultry, horticulture and dairy. In Taiwan, a study by Meaders and Hu reported that 52 percent of the vocational agriculture students came from farms, and 47 percent from rural and city non-farm residents (5:34).



Taiwan vocational agriculture teachers receive technical updating to make their teaching relevant to modern agriculture.

The programs of agricultural education in Japan and Taiwan are integral parts of their extensive educational systems. In both cases the enrollment in agricultural curricula are a reflection of the importance of agriculture with industrial societies. Agriculture represented 4 percent of the GDP (Gross Domestic Product) in Japan (1980) and 7.4 percent of the GDP in Taiwan (1982). Enrollments in agricultural courses/curricula as a percentage of the total school enrollments were about five percent or less as shown in Table I. (More recent data were not readily available for both countries.)

Table I. Enrollments at Upper Secondary, Junior College and University Levels, Total and in Agriculture, 1971

	Enrollment*			
	Japan		Taiwan	
Level of Schooling	Total No. Enrolled	% in Ag.	Total No. Enrolled	% in Ag
Upper Secondary	4,170,501	5.4	354,187	3.7
Junior Colleges	275,256	1.3	91,966	5.2
Universities	1,468,538	3.7	59,634	4.3

Sources: See references (6:11 and 7:26-33, 104-113)

Youth Organizations

Vocational youth organizations have been a part of the vocational agriculture programs in Japan and Taiwan. The FFJ (Future Farmers of Japan) was established in 1950. It continues as a strong youth organization for boys and girls who are students of vocational agriculture. Its three goals of leadership, social character, and scientific character have provided a focus for promoting agricultural education. It is an organization authorized by the Ministry of Education, has local chapters, state associations and the one national association.

In the late 50's, Taiwan agricultural educators established a youth organization and modeled it after the 4-H program in the United States. However, the in-school organization has been very effective for helping motivate students to achieve leadership, cooperation and community service. The organizations in each school, with leadership from the Provincial Department of Education and the Council for Agricultural Planning and Development (formerly known as the J.C.R.R.), have involved many vocational agriculture students in skill contests, demonstrations, public speaking, and community service activities as well as individual and cooperative production projects.

The graduates from the vocational agricultural programs have entered farming, become technicians in government and agricultural organizations, become agricultural extension agents, and serve agriculture in many ways. Perhaps the most obvious role for agricultural development has been their work as agricultural extension agents. About 90 percent of the village extension agents in Taiwan and 60 percent of the agents in Japan are reported to be high school vocational agriculture graduates (8; 9:308).

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Vocational Agriculture Helps Rural Youth: Japan and Taiwan

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Summary

There are many differences between the vocational agriculture programs in Japan and Taiwan and the programs in the U.S. Those differences are related to differences in culture, socio-political factors and economic systems. The educational systems have fundamental differences.

In spite of the many differences it is possible to identify consequences of Vo-ag programs which have similarity. Three of those consequences, expressed as generalizations are: (1) Vocational agriculture programs provide rural youth with educational and occupational opportunities not provided by general education. (2) Vocational agriculture programs contribute positively to the modernization and improved productivity of agriculture. (3) Youth programs associated with vocational agriculture provide motivational forces for helping achieve development of leadership, citizenship and cooperation qualities in youth interested in agriculture.

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THEME

How You Gonna Keep 'Em Down On The Farm?

There is a crisis in Africa. Food production per capita is declining at about the same rate that the population is increasing. Many believe that production is declining because there is a dearth of trained agricultural scientists generating new technological innovations to fit the unique conditions of Africa's agriculture. Others are consumed with creating favorable price policies or strengthening the linkages between research and extension. All of these efforts are important, but there is a fundamental problem that supercedes all these.

BY RAYMOND H. MORTON AND KAJIH JOHN TANSAM

(Editor's Note: Dr. Morton is an Assistant Professor of Agricultural and Extension Education at The Pennsylvania State University, University Park, Pennsylvania 16801; and Mr. Tansam is Director, IPAR-Buea, Republic of Cameroon.)

The Problem

Farming is percieved by the majority of African youth as tedious, a boring vocation that dooms one to a life of substandard living and second-class citizenship. But, it is upon the shoulders of African youth that future gains in agricultural productivity rest. They are not only tomorrow's farmers, they should be today's as well.

Schools, which are supposed to inspire and educate youth to become better farmers than their parents, actually exacerbate the problem. Listen to what one young African graduate had to say about his educational experience in agriculture (1):

> "We respected nothing and nobody, and in turn no one respected us or cared two hoots about us. We had all 'finished' school and yet we had no work. . . if we had no work we thought, it was not because we were bad but because there were no jobs. Tell us to go back and work on our parents' farm — to 'go back to the land,' as the politicians' cliche ran — and we would say: 'Look here Sir, if we wanted to be peasant farmers, we would not have wasted a full ten years at school learning to read and write. If we are to be farmers at all, we don't simply want to weed a piece of land and plant yam or plantain or cocoyam or cassava or vegetables on it in the topsy-turvy way we've seen our fathers do for years, but which barely gives them enough food to live on, let alone bring them money. No, Sir! Ask us: 'But do you know any better way of farming than your fathers?' Our answer would be a big 'NO!' Our teachers had no specialized training in agriculture. How could they teach us agriculture? They just gave us a plot to plant things on. And the things grew. . . Anyone can do that!"

Unfortunately, for most African youth a formal education at the primary and secondary level leads to an assumed expectation that literary not practical agricultural training, will lead to full employment.

This assumption is shared by many of the students' parents who exempt their children from agricultural chores as long as the children study. It is the peasant farmer's shared hope that the best educated of their family will bring honor and more wealth to the entire family — the future belongs to industrial development not peasant farming.

Emphasizing Agricultural Education

The disparity between expectation and fact are frightening. There are not enough jobs in the cities for the rural youth who migrate there with no vocational training. The industrial economies are underdeveloped and agriculture and natural resources still contribute approximately 60-90 percent of the gross national product of most African countries. Migration of African teenage school-leavers to the cities is inevitable and will never stop in Africa or anywhere else. Perhaps the rate could be reduced, but this is unlikely unless farming is perceived as desirable by primary and intermediate school graduates. It is essential that Africa's primary and intermediate rural schools emphasize agricultural education, demonstrating acceptable and efficient farming methods to achieve food self-sufficiency.

Swanson (2) pointed out that two types of agricultural skills and knowledge were needed as farmers move from subsistence to modern farming: technical and allocative competence. Technical competence refers to practical skills and knowledge, which may include some understanding of the basic principles involved. Allocative competence refers to management skills and knowledge to make choices between different practices, processes, and inputs consistent with available resources. Acquiring both types of competencies is the job of formal educational systems i.e., in a formal classroom and laboratory setting.

In Africa, this education should begin at the primary level because less than 20 percent of Africa's children enter secondary school (3). There are educational programs in Africa that emphasize practical education in agriculture that includes allocative and technical competencies in the local curriculum. Cameroon and Swaziland are good examples of what can be done to inspire and educate rural youth to seek and be successful in farming careers.

The Cameroon Program

In Cameroon, two different colonial educational systems existed prior to 1967, one based on the British, the other on the French educational systems. Neither was practical, both emphasized rote learning of the three R's based on culturally-biased and unrealistic examples.

Since 1977, IPAR/Buea, an institute of education with a rural orientation, has been busy with teacher education and curriculum reform in four major curriculum classifications: English language, arts and crafts or village technology, and environmental studies, which includes (a) agriculture and (b) traditional/social systems (4). These programs are conducted for a six year primary school course in the English-speaking primary schools near Buea, which is in the southern part of the country.

Primary teachers learn how to use the curriculum using the problem solving teaching approach at the various teacher colleges that serve these areas. Students receive a practical laboratory experience from the beginning. Class one, i.e., first grade, raise flowers on school land, and this experience is related to simple classroom lessons on nature. Classes two and three are provided land, seed, and other supplies for vegetable plots. Classes five through seven are provided additional land and supplies for a full laboratory, including vegetable plots large enough to grow a marketable surplus, an orchard, and small livestock enterprises.

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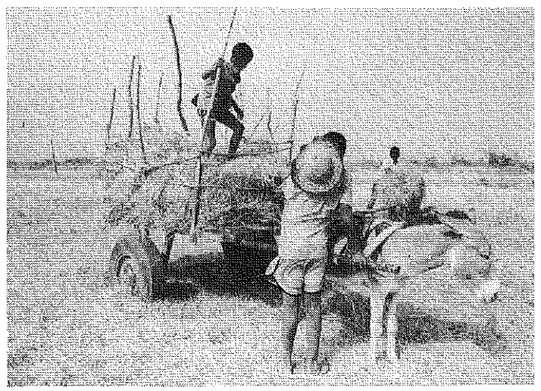

Collecting hay for animal feed near Niono, Mali, at the western edge of the inner Niger Delta. (FAO photo by J. Van Acker.)

School boys hoeing the garden at their World Food Programme — assisted school in Benin prepare for planting a new crop. (WFP photo by J. Van Acker.)

How You Gonna Keep 'Em Down On The Farm?

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Four other facets of the IPAR-Buea agricultural education program are important: the "Grand Manual Award in Agriculture", provincial agricultural shows, a credit loan farm scheme, and demonstration farms. The Grand Manual Award in Agriculture is awarded to the top primary and teacher training schools based on their ability to demonstrate improved farming methods — a logical extension of classroom learning.

Provincial agriculture shows are not new in Africa, but allowing rural youth to demonstrate new farming methods to the public and compete with adult farmers is novel and daring. Student teachers from the teacher education colleges participate as teachers and evaluators. The U.S. Agency for International Development (USAID) has supplied some of the rabbits and poultry to the schools that competed.

Third, the revolving credit loan farm scheme provided a source of funds for qualified schools to develop an agricultural laboratory. Schools may buy tools, seeds, nursery materials, and fencing materials and loans are repayable after the first two years of harvest.

Last, two demonstration farms were established as pilot teacher education centers. Further expansion is planned. "Mile 17 Demonstration Farm" was established in the Southwest Province to serve as a laboratory for theory and practice in Environmental Studies. Students are introduced to measurement, accurate recordkeeping, and problem solving and farm management through a series of exercises that begin with simple farm experiments and lead to multi-enterprise analyses involving decision making based on the school's farm records.

Again student teachers from nearby teacher education colleges practice, teach and evaluate the students' progress. Further expansion of all phases of this program is planned for other Provinces. Farmers have assisted IPAR/Buea as advisors on curriculum revisions.

Programs in Swaziland

"Schools Agriculture" in Swaziland is aimed at improving attitudes towards agriculture, such that agriculture is viewed as a profitable and enjoyable way of life (5). Schools Agriculture does not try to train farmers, but students do aquire an appreciation for agriculture by getting their hands dirty.

In each school, a full range of practical facilities and equipment are available. Locally prepared curriculum materials and a trained teacher are also provided. There is also a support network to provide timely inputs for the projects and regular supervision and encouragement from a team of five regional coordinators. Learning is allocated approximately 50 percent to practical work and 50 percent to related classroom instruction. Every pupil in Standards 5 and 6, i.e., approximately fifth to sixth grades, grow their own vegetables in individual plots, keep layers or broiler chickens for a year, and manage some form of larger livestock (rabbits, goats, or cattle) for one year. Pupils pay their expenses in the form of an agriculture fee and receive the profits as cash or credit toward further inputs.

Two indepth evaluations of the program concluded that the Schools Agriculture was effective in improving pupils' attitude toward agriculture, however, it was not yet persuading them to go back to the land. Hopefully, as economic conditions improve so also will their willingness to farm. The most recent of these evaluations (1982) concluded that Schools Agriculture was unique and should be adapted by other African countries. Togo, Nigeria, and Zimbabwe have expressed an interest in visiting the program in Swaziland.

Summary

From these two examples and others not discussed, there are six factors that could contribute to successful agricultural education programs for rural youth in African countries. They include:

1. Favorable national policies for the education of rural youth in literacy and vocational education; and support of the agricultural economy by government officials.

2. Sufficient funds to develop and utilize fully a school laboratory for agriculture. This includes sufficient land adjacent to the school; water supply and/or storage capacity; enough seed, inputs, and tools for every student; financial credit for students to get started; and sufficient security measures (fencing, storage sheds, etc.) to avoid theft, storage loss, and vandalism.

3. Teachers trained in agricultural methods at all agricultural levels, beginning with the first year of school; regular in-service coursework for teachers to keep their skills and knowledge up-to-date; student teachers should practice teaching agriculture to real students.

4. Adequate support services for teachers including regular supervision and timely supply of inputs, e.g., seeds, fertilizers, and instructional materials.

5. If national examinations include agricultural science, the test questions must relate to the practical and theoretical lessons learned; marking schemes and teacher grades must reflect accurately the balance between practical skills and theoretical knowledge.

6. Involvement of parent and community groups to advise and assist schools with the agriculture program is needed. Both groups serve as excellent resources for technical advice, particularly for combining traditional farming methods and new agricultural technology developed for improved farming practices.

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THEME

Objectives of Brazilian Technical Agricultural Schools

BY TIMOTHY KOEHNEN

(Editor's Note: Mr. Koehnen is a Graduate Research Assistant, International Agricultural Education of the University of Illinois at Urbana-Champaign, Urbana, Illinois 61801.)

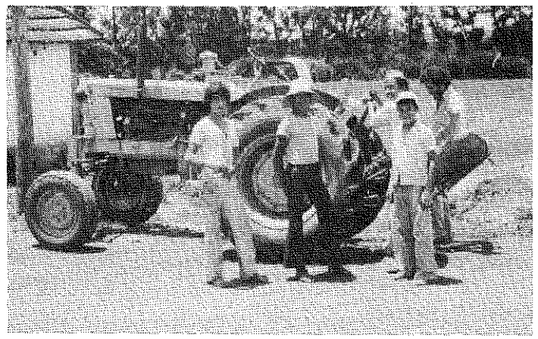
As teachers, many of you receive unexpected visits from former students. Recently, I met a former student of mine at the World Soybean Conference in Ames, Iowa. The former student graduated from a Brazilian technical agricultural school in which I taught and worked at as a Peace Corps Volunteer. This student told me of his interest to enter an agricultural university. Students who wish to enter a university must compete in a rigorous academic testing program. The reason is the small quota of freshmen spaces allotted for each curriculum.

During our visit, he told me that he had not been successful in gaining admission to higher education. However, he has been quite successful in the private sector, working as a farm manager of 10,000 hectares of the cerrado ecosystem. Cerrado is short shrub vegetation and, in the past, were the unimproved pastures of the extensive cattle production system. Today, his agricultural high school training has involved him in the decision making process of converting these cerrado lands into alternative crop-livestock production systems, such as grain and intensive cattle production.

This unexpected encounter made me reflect on the important role Brazilian technical agricultural schools have in training their youth for a variety of agricultural occupations and for adulthood. A primary objective of these schools is their attempt to meet the agricultural/educational needs of youth (male and female) planning to enter middle level agricultural employment. Most schools are relatively successful in achieving this goal.

The Curriculum

Perhaps part of the reason for explaining this success involves the fact that these technical agricultural schools have many of the key components that would be found in vocational agricultural programs in the United States. For example, these Brazilian schools stress the importance of general educational courses, technical/scientific courses, demonstrations, field trips, group projects, and supervised practical work experience. All of these educational activities become a part of the students' training when, for example, third year students establish and maintain a coffee seedling nursery and market their nurtured seedlings to coffee growers. These schools are production and market oriented with a training process that emphasizes the practical skills required to undertake middle level agricultural employment.



Brazilian technical agriculture students prepare to go to the field for "hands-on" experience using tillage equipment. (Photograph courtesy of Nancy Adams.)

The primary differences between vocational agricultural programs in the United States and those in Brazil reflect the fact that technical agricultural schools in Brazil are in an earlier, formative stage of development, while vocational agriculture in the U.S. has existed since 1917 and has evolved to reflect the needs of the agricultural sector over time. Some of the important differences to be found in Brazilian technical agricultural high schools include the following. First, Brazilian students generally leave their families and take residence in dormitories and boarding homes within the immediate boundary of the school. A similar condition existed in some parts of the United States prior to the Smith-Hughes Act in 1917. These schools were known as county schools in Wisconsin.

Secondly, students who enter these Brazilian schools after eight years of primary education spend three years studying and working toward their diploma. The eleven-year program is not significantly different from the twelve-year program in the United States. More importantly, the educational systems provide education in agricultural subjects at the secondary school level.

Thirdly, these technical agriculture schools are physically separated from other high schools in Brazil, which might offer an academic or commercial curriculum. Prior to the Smith-Hughes Act in the United States, a great debate occurred over whether to have vocational agriculture within a comprehensive high school or in separated schools, as is the case in Brazil. A key figure that influenced the final outcome was Eugene Davenport, Dean of the College of Agriculture at the University of Illinois. Davenport stated,

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Objectives of Brazilian Technical Agricultural Schools

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"I see no good and sufficient reason why a system aiming at a particular kind of efficiency should be cut off and separated from other systems aiming at other forms, particularly when human life is enriched in proportion to this capacity for achievement and enjoyment" (Davenport, 1909).

Objectives

However, the responsibility of Brazilian technical agricultural schools goes beyond the primary objective of occupational employment. These schools have additional objectives, which are similarly promoted by agricultural youth organizations such as the FFA in the United States. The second set of objectives for the Brazilian schools involve "developing character, training for useful citizenship, and fostering patriotism" (Phipps, 1980). The school's staff and the educational curriculum attempt to stimulate the intellectual, social, and moral development of the student for useful adulthood as Brazilians.

Another equally important objective, that is encouraged by Brazilian teachers, involves the student's physical and teamwork development (mind and body) through recreational activities. These group activities allow students to plan and execute game strategies as a cooperative group effort. These recreational activities also serve to uplift the morale and *espirit de corps* among students themselves and promote a positive student-teacher relationship. Brazilian teachers are aware of the important role these additional objectives play in the student's development for adulthood.

In summary, Brazilian technical agricultural schools seek to achieve many of the same educational objectives as vocational agriculture programs in the United States. However, there also important differences which reflect, in part, the social, political, and economic environment of Brazil. As a whole, however, these Brazilian schools appear to be achieving their overall goal of preparing students for the world of work, as demonstrated by my unexpected visit with a former student.

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THEME

Catalyst For African Development

The smallness of the world, the interdependence of all human beings, the need for a global outlook: all are concepts that remind us of the similarities of human beings. Sometimes these concepts are, however, so abstract that it is difficult to really draw comparisons from our everyday existence. What could a vocational agriculture teacher in McLeod, Texas have in common with an agriculture teacher in Buea, Cameroon? Could there possibly be any similarities between the problems faced in preparing teachers of agriculture in Blacksburg, Virginia and trying to do the same thing in Kampala, Uganda? Do professionals who are a world apart but are, none the less, trying to accomplish the same goals have anything to learn from one another?

Cameroon Conference

The answer to that question was a resounding "yes" at the close of an Agricultural Education Workshop held in Yaounde, Cameroon, July 23-27, 1984. The workshop was sponsored by the U.S. Agency for International Development (AID). It was hosted by the AID mission in Cameroon and the Ministry of Agriculture of the United Republic of Cameroon. Over 100 participants were in attendance including representatives from 22 U.S. universities and twenty African nations: Cameroon, Guinea, Ivory Coast, Lesotho, Malawai, Mali, Mauritius, Nigeria, Rwanda, Senegal, Sierra Leone, Sudan, Swaziland, Tanzania, Togo, Uganda, Upper Volta, Zambia, and Zimbabwe.

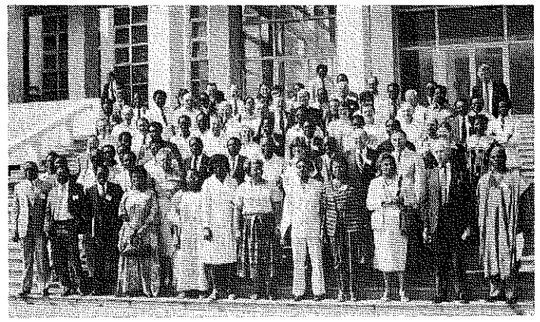
By Edna L. McBreen and Cynthia S. Perry

(Editor's Note: Dr. McBreen is an Agricultural Education Officer, and Ms. Perry is Chief of Education and Human Resources Division, AFR/TR/EHR, USAID, Washington, DC 20523.)

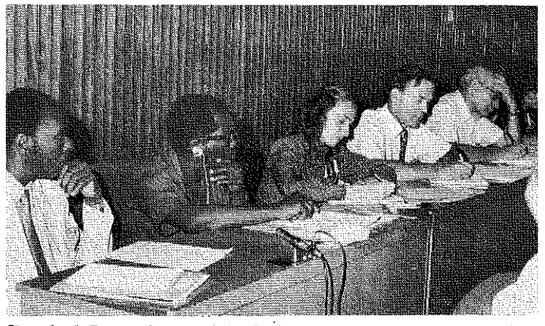
The workshop focused on five major areas: (1) the inclusion of agricultural content in the general education curriculum at the primary level; (2) vocational and technical agriculture at the secondary and post secondary levels; (3) women in agricultural education; (4) higher education in agriculture; and (5) extension and non-formal agricultural education.

Expressed Concern

The similarities between the concerns of the African agricultural educators and those facing their counterparts



The Agricultural Education Workshop participants represented 20 African nations; 22 universities; as well as American and international agencies and organizations.



Since both Francophone and Anglophone countries were represented at the workshop, simultaneous translation from French to English and English to French was available.

in the United States were numerous. Concern about inequities in food pricing, lack of support mechanisms for rural families, policies which deny a fair return on investment to farmers and an inability to attract young people to agriculture as a profession were voiced throughout the workshop. While the concerns are similar, the degree of urgency is very different. As Dr. Solomon Nfor Gwei, Vice Minister of Agriculture of Cameroon, said in his opening remarks to the workshop,

> "The food question . . . is the number one problem facing Africa today. It is a problem which we must solve urgently in order to save the lives of millions of our sons and daughters. Hunger, malnutrition and consequent diseases stare us straight in the face. Food, food, food is the outcry in many corners of the continent. Food importation and gifts of food by benevolent organizations are only temporary relief measures. Food self-sufficiency is the answer. The means to this end is agricultural development and there can be no real and effective agricultural development and there can be no real and effective agricultural development . . . except through agricultural education." (Nfor Gwei, 1984)

The problems are urgent, the concerns are real and Africa is looking to agricultural education for some solutions.

While participants at the workshop were cautious to avoid presenting agricultural education as a panacea, they did see it as an essential element in any long term solution to Africa's food problems. The conclusions stemming from each of the five areas discussed help define that element.

Additionally, the conclusions were formulated within the context of the following generalizations. Interdisciplinary, integrative approaches to agricultural education are essential. Thus, an overall understanding of agriculture must include understanding of such concepts as the farm family, sociology, management, and decision making. Agricultural education is a continuum of learning from primary through secondary and higher education to adult education. Denying a need for programs at any level will inhibit success at other levels. In light of the previous generalization, priority should be given to those efforts which will have an impact upon basic education and skills development in agriculture. Programs should target (1) farm families for immediate impact on agricultural development and food production, (2) primary level students for long term impact, and (3) agricultural professionals to develop the technology needed for increased food production.

Workshop Conclusions

The following conclusions are organized around each of the major areas of concern considered during the workshop. There is much overlap and interaction among the areas accentuating the importance of the continuum approach to agricultural education. The conclusions represent the general agreement of the participants reached in small group meetings and during the larger, total workshop meetings.

Agriculture in the General Education Curriculum

The situation in Africa's rural schools is such that those individuals who will become farmers rarely progress beyond a primary level education. This, teamed with evidence supporting the positive correlation between literacy and numeracy of farmers and increased food production, when there is access to appropriate technology, provides support for the introduction of agriculture concepts in the very earliest education programs. Infusing agriculture into the general education curriculum, especially as a part of primary science education, will seek to make the curriculum more relevant to the students, increase awareness of options in agriculture among youth, help improve the image of agriculture which is currently one of a harsh lifestyle to be escaped, and consequently reduce and reverse patterns of migration to urban centers.

There should be continuity in agricultural education from the primary to the Ph.D. levels and students should have applicable skills for a gainful livelihood at any stage on that continuum. Agriculture should be incorporated into the teacher education curriculum emphasizing theory, practices and attitudes relevant to food production and rural living as well as optimum methods for teaching those concepts.

Vocational and Technical Agriculture at the Secondary Level

Secondary schools in Africa are generally seen by rural youth as a means of escape from rural areas and farming. Until greater agricultural development occurs, increasing

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the quality of rural life, there will be a limited demand for secondary vocational agriculture programs.

There is, however, a role for vocational agriculture programs in Africa. Where countries can make an investment in secondary agriculture programs, those programs can: (1) provide high quality, motivated students to attend agriculture universities and become agricultural professionals; (2) provide trained individuals to fill technical positions in the agriculture sector; (3) serve as an avenue for rural women to move into professional agriculture positions; and, (4) as agricultural development proceeds, train students to be capable farmers with skills essential to the effective use of new agricultural technology.

Education in Africa is adapted from the colonial models which allowed little room for practical learning experiences. For agriculture programs in Africa to be successful, there must be a shift away from teacher centered methods of instruction; school farm facilities and equipment for practical instruction must be made available or up-graded; and the lack of agricultural youth clubs must be remedied.

Higher Education in Agriculture

A total program package in higher education in agriculture for Africa should involve not only the training of professionals but also the building of institutions to continue training needed personnel. Degree programs at U.S. universities help provide the seed for growth of African universities. The African universities themselves need strengthened linkages with other universities. African professionals need the support systems offered by linkages with others in their respective fields. A key to effecting such linkages is faculty exchanges among African institutions, international organizations and U.S. universities.

The focus by African universities on practical, applied research based on local needs and priorities is essential to the solution of Africa's food problems. The integration of teaching, research and extension that exists in the U.S. Land Grant model is equally necessary in African institutions. This does not mean that the U.S. model should be cloned in Africa but that an African hybrid should be developed to accomodate local culture, government, priorities, needs, and agricultural systems.

Women in Agricultural Education

Women's roles in agriculture in Africa are becoming recognized more and more. Women produce 47 percent of the food in Africa but make up only 3.4 percent of the total trained agricultural personnel (FAO, 1984). In most sub-Saharan African countries, women are responsible for the production of food crops, However, educational programs and support systems for farmers do not always reach women.

The workshop participants supported increasing efforts to identify, highlight, and promote the contributions women in agriculture are making to development. The numbers of women must be increased in all agricultural professions from teaching to research to policy making levels. Cultural barriers must be identified and, where necessary, special methods developed to insure the delivery of information to women. Full integration and participation of women in training programs must be guaranteed in order to be effective.

Extension and Non-Formal Agricultural Education

Extension in Africa faces the constraints of: a lack of research based technology to extend; poorly paid extension agents who lack transportation, supplies, and other elements of a support system; inadequate numbers of subject matter specialists; and various bureaucratic and policy constraints. Top level government support is essential to the success of extension programs but the problem identification must be at the grassroots level to make extension the people's program.

Extension agents should be educators and not have other responsibilities such as regulation enforcement and credit administration as they often do in Africa. Reward and incentive systems for extension workers should be reviewed and improved to increase job satisfaction. Efforts must be made to involve both women and men in extension as professional and as clients.

The rural populations of Africa are in need of politically astute leaders to represent them in nations that are becoming more and more influenced by urban areas despite the majority status of the rural population. The training of extension agents should include training in leadership and a focus of extension programs should be the development of leadership skills among women, men and youth.

Another crucial element to success lies in the appropriate choice of methodologies in extension. Emphasis should be on result demonstrations and farmer consultations. The technology and concepts disseminated through extension must be based on applied research. Local leadership, possibly in the form of advisory committees, should be sought and harnessed for design and implementation of projects.

Summary

The U.S. Agency for International Development sponsored the Yaounde workshop with an objective of providing an opportunity for the exchange of ideas among African and American agricultural educators. The Agency plans to incorporate many of the conclusions from the workshop into an Africa Bureau Agricultural Education Assistance Strategy which is currently being developed.

Workshops, however successful they are, have a way of ending on a bitter-sweet note. Enthusiasm is high but there is usually a concern for what will happen after the enthusiasm dies down. To truly count the Yaounde workshop as successful, there must be continued effort to include more interested professionals; to maintain contact with workshop participants; and to act on workshop conclusions and recommendations. The work is just beginning and the list of interested agricultural educators is far from complete. If you want to be involved and kept up to date on future agricultural education efforts in Africa write to the authors.

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Rural volunteer workers prepare fields for planting crops as part of the World Food Programme — assisted drought rehabilitation project in Chad. (World Food Programme photo by A. Girod.)

At the rural youth club of Sokponta (central Benin), girls learn to look after pigs and goats. The club receives food aid from the World Food Programme (WFP).

THEME

A New Model For International Agricultural Education

By Clifford L. Nelson

(Editor's Note: Dr. Nelson is in the Department of Agricultural and Extension Education at the University of Maryland, College Park, Maryland 20742.)

Millions of dollars have been invested in aid for international agricultural development. USAID, World Bank, FAO, other developed nations and many foundations, to name a few, have invested in improving agriculture in the developing nations. What has been the success rate? How has the money been invested? Have all avenues of development strategy been explored? Perhaps now is the time to objectively examine the answers to these questions and to propose a viable role for vocational agriculture in international development.

The United States has experienced the most dramatic increase in agricultural technology and production in the history of mankind. Agriculture created much of the capital that allowed the nation to industrialize and develop. The strength of the United States is dependent upon our agricultural strength. Systematic agricultural education is a very important factor in this development.

The nation can point to four major contributors to quality agricultural education. These are the Land Grant college, experiment station, cooperative extension and vocational agriculture. Each have their own strengths and weaknesses. Collectively they have created a vision and model for all of the world to emulate.

What Have We Exported?

Since the late 1940's USAID, and its predecessors, have supported the establishment of agricultural colleges, experiment stations and extension services in the developing world. On fewer occasions, vocational agriculture has been introduced to the developing countries. Why hasn't the agriculture in the developing nations moved more quickly? Could it be that our models are not appropriate for most developing countries?

Obviously effective long-term agricultural development cannot take place without a research base. The United States has demonstrated that research funded by both federal and state sources is a successful model over our nation's history. The research base is integral within the Land Grant university which also has the responsibility to carry out the research and to extend this research to the public through its teaching programs and extension.

One American innovation, vocational agriculture, has not been exported in significant amounts. Vocational agriculture has been introduced most often in developing countries in residential high schools. Here, though agriculture is taught and applied, there is no assurance that the technology learned will be taken to the rural areas for application. Significantly, in developing countries, only limited numbers of students reach high school and the majority come from urban areas where they have had suffi-

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A New Model For International Agricultural Education

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ciently affluent parents to assure opportunity for quality primary education. Could this mean that the U.S. vocational agriculture model as exported also may not be viable?

What Are The Problems With U.S. Models?

International agencies are seeking new insights and strategies for aid to spur agricultural development. One must remember that the legislation creating the U.S. system was developed and enacted between 1860 and 1920. It was developed through the political process of give and take which reflected the concerns of Congress and their constituents of that time. U.S. conditions today are significantly different.

What were the conditions that encouraged the Morrill, Hatch, Smith-Lever and Smith-Hughes legislation? The U.S. was an agrarian economy with the majority of the people living in rural areas. There was a relative surplus of labor in the rural areas that was needed in the cities to fuel industrial development. There was a special need to develop technology and mechanization in the rural areas to free manpower. Two of the major pieces of legislation were passed during the time of war when manpower demands were even greater.

The level of education and sophistication of the American farmer has consistently been above the rest of the agricultural world. When extension and vocational agriculture were introduced, most farmers were literate enough to utilize bulletins, farm magazines and newspapers. Also many rural children had comprehensive high schools available and the opportunity to attend. Thus extension and vocational agriculture had the opportunity to reach their rural clientele through many of the same methods still used today. Most of the students at Land Grant colleges studying agriculture until the 1970's were products of rural areas. Many of the graduates returned to live in rural communities as professionals and farmers. This type of education and quality of rural life does not exist in the developing world.

What Model Should Be Examined?

The vocational agriculture model is one that should be examined in another light and be considered for export to the developing world. One of the essentials of vocational agriculture is that the classes are taught in rural areas to the children of farmers and to the farmers themselves through adult programs. Another essential of vocational agriculture is teaching for application at the students' home. The third essential is that there is leadership development instruction to assist the rural people to develop their skills as effective future citizens.

What modifications to the American model should be considered before export? Vocational agriculture in the U.S. is found at the secondary level. Perhaps in the developing world it could be introduced in primary school. In the developing world, many more students have opportunity for primary education. High school education for all youth does not exist and is prohibitively expensive for most developing nations.

Teaching materials could be developed at primary level that would teach students to read in books concerning approved agricultural practices. Mathematics problems could be based upon agricultural skills, such as determining amounts of fertilizer to use, areas of fields and number of kilos of seed needed to plant a field. Students could be encouraged to try out their agricultural skills both at school and at home. The science curriculum for the school could be based entirely on applied agricultural technology. The levels of instruction would be lower than can be achieved in a high school. However as the agricultural sophistication and education levels of the rural population increase, the more traditional American extension and vocational agriculture models could be introduced.

Does introduction of agricultural subject matter below high school work? One can view the results of the many successful agriculture programs in junior high schools, for example in Virginia and Maryland, to demonstrate that younger students do well in the courses. The 1970's work of Dr. Robert Herr in Lancaster County, Pennsylvania, also demonstrated that elementary school children profited significantly from agricultural courses. The current Agriculture in the Classroom thrust of USDA also indicates the viability of introducing agricultural subject matter at lower grade levels.

Evidence that teaching agricultural subject matter at an early level is found in the history of U.S. teacher education. The U.S. first summer school for teachers was developed by the University of Minnesota School of Agriculture for "one-room-school" teachers. The objective was to give teachers enough agricultural knowledge so they could relate to their students and enrich their teaching with approved agricultural technology. Perhaps the models from our past might work in the developing world. Our strength remains the capacity of taking students from where they are to where they ought to be. The rural food producer must be the focus of our agricultural development efforts.

Coming in February . . .

Vocational Agriculture and the Handicapped Student

THEME

The Association For International Agricultural Education: Professionals With Passports

By William L. Thuemmel

(Editor's Note: Dr. Thuemmel is an Associate Professor and Head of Agricultural Education at the University of Maryland, College Park, Maryland 20742.)

Agricultural education in the United States today is rapidly developing an international perspective. This trend is in response to the challenges presented by a global agriculture and a global concern for reducing poverty through agricultural and rural development. As a nation, the United States is concerned with maintaining a strong base for agricultural production and trade; also with promoting democracy and stability through development assistance projects worldwide.

However, as a profession, agricultural and extension education has until recently remained primarily a domestically oriented field of specialists with only a few individuals venturing overseas from time to time on foreign assignments. This could very well change, though, with the recent formation of a new professional organization — the Association for International Agricultural Education (AIAE).

Why AIAE Was Formed

Many developing countries are struggling to develop adequate agricultural and extension education programs and institutions. In some nations, the importance of agricultural education is still poorly understood and is given low priority. In others, the importance of human resource development is understood, but these countries lack agricultural educators who can plan and effectively implement appropriate developmental programs at all levels.

With the above in mind, the Association for International Agricultural Education was established by a group of 32 internationally oriented agricultural educators and development specialists on February 3, 1984, near Kansas City, Missouri. The group chose the following motto for its new organization: "A professional association committed to strengthening agricultural and extension education programs and institutions in developing countries." AIAE's primary function is to provide a professional association and network of agricultural educators (vocational agricultural teachers, teacher educators, extension personnel, state specialists, and others) who share the common goal of improving and strengthening agricultural education programs and institutions, especially those in the developing countries.

Cameroon participants share ideas on agricultural education.

Objectives of AIAE

The AIAE has developed an organizational brochure to disseminate information about the Association and to promote membership enrollment. Some specific objectives of the AIAE are to:

1. More clearly articulate the role of agricultural education in developing countries.
2. Develop state-of-the-art papers on agricultural education in developing countries.
3. Establish a continuing dialogue within the profession on international agricultural education on a global scale.
4. Establish a continuing dialogue between AIAE and donor agencies for international agricultural development.
5. Establish a roster of professionals in agricultural education who could provide the expertise needed to assist funding agencies and developing nations to plan and implement agricultural education programs and institutions.
6. Encourage research within the profession which will have an impact on programs in developing countries.
7. Improve the skills and knowledge of professionals who want to work in international agricultural education.

The AIAE seeks to serve as a catalyst for action in associating agricultural educators around the world so these individuals can bring their collective expertise to bear on the problems of human resource and agricultural development. The Association is unique in this role. Other in-

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The Association For International Agricultural Education: Professionals With Passports *(Continued from Page 21)*

ternational development organizations, such as the Society for International Development (SID), are primarily concerned with world development in general (rather than agricultural and rural development in particular). Also, most domestic agricultural and/or vocational associations in the United States, such as the American Vocational Association and its agricultural affiliates (AATEA-NASAE-NVATA), while encouraging some international activities, are mainly concerned with state and national matters.

Some areas of expertise that agricultural educators can bring to the international agricultural development process through the AIAE include:

- Vocational agricultural education
- Rural youth programs
- Teacher education in agriculture
- Developing country manpower and training plans
- Conducting research and evaluation studies
- Planning secondary agricultural education institutions
- Conducting training programs in curriculum development, teaching methods, and related areas

Through improved networking and closer professional interaction with international development organizations such as the U.S. Agency for International Development, the World Bank, and the United Nation's Food and Agriculture Organization (FAO), AIAE members can expect to become better informed about the international dimension of their profession, to more closely monitor opportunities for international assignments, and to collectively promote agricultural education as a central component in the agricultural development process.

The AIAE is a professional association. It is not an incorporated business or consulting firm intent on bidding on contracts for international development projects. Neither is the Association a "splinter group of rebel agricultural educators" bent on establishing an organization in competition with the traditional and long established professional agricultural education organizations in the United States. In fact, most AIAE members are also active members of AATEA, NASAE, and/or NVATA and are expected to remain so. Most AIAE members consider their new Association to be a highly complementary organization to AATEA-NASAE-NVATA.

Who Can Join AIAE?

All persons interested in promoting and sharing information about agricultural education as a basic component of agricultural development may join. Members may come from secondary schools, extension programs, universities, or from other organizations such as foundations, government agencies, and private industry.

Three classes of AIAE membership are presently available — Regular Member ($10), Developing Country Member ($5), and Student Member ($3) — on an annual (July 1-June 30) basis. *The Agricultural Education Magazine* readership is invited to join AIAE. Applications for membership can be obtained from Mr. Lennie Gamage, AIAE Secretary-Treasurer, National FFA Center, P.O. Box 15160, Alexandria, VA 22309. Telephone: 703/360-3600.

Although the current AIAE membership consists mainly of U.S. agricultural educators, efforts are underway to recruit more agricultural educators from other countries so that the Association will become truly international in scope and perspective.

Reference

Association for International Agricultural Education informational brochure.

THEME

Improving Agriculture In Developing Countries

If you were asked the question "How can the agricultural education in the United States help improve agriculture in developing countries?" which of the following would you select as the answer?

A. By bringing the natives of other countries to the United States and training them to be vo-ag teachers.

B. By sending practicing vo-ag teachers to foreign countries and having them work with the people.

C. By sending U.S. teacher educators to foreign countries and have them train vo-ag teachers.

This question and several similar questions about improving agriculture in developing countries were recently asked to a group of agricultural educators who had been on international assignments. These agricultural educators had been involved in establishing training programs, secondary schools and colleges, and extension networks in developing countries. Unlike agricultural scientists, who are trained in a specific discipline such as agronomy, agricultural educators possess a broad general knowledge of agriculture and also are educated in people technology.

By Ismail bin Yahya and Gary E. Moore

(Editor's Note: Mr. Yahya, a graduate student, and Dr. Moore are in the Department of Vocational Agricultural Education at Louisiana State University, Baton Rouge, Louisiana 70803.)

Background Information

Teacher educators were asked to react to 91 statements about agricultural development in foreign countries. The researcher was primarily concerned with what these teacher educators viewed as the major problems hindering agricultural development and to identify what the agricultural education profession could do to help alleviate these problems.

Why Do Developing Countries Have Problems wilth Agricultural Development?

Seventeen possible reasons for underdevelopment in foreign countries were listed on the survey instrument. The three factors which were ranked the highest by the experienced teacher educators are discussed below.

Social stratification based on wealth and education was the most serious obstacle to the development process. In many developing countries there are two groups of people — the "haves" and the "have nots." As these societies remain stratified some of their members possess land, while others are landless; some assume the role of financiers (money lenders) and the others the indebted, and some become afflicted with the "white collar job syndrome," while the rest remain subordinated to the minimal, low-prestige occupations such as farming.

Low agricultural productivity per worker was the next most critical problem for development in these countries. Small farmers in developing countries are generally very hard workers who put in long days. Unfortunately, they often have to depend solely on muscle power. Knowledge of the rudiments of crop or animal production and improvisation of farming implements such as the hoe could make a drastic difference in productivity.

Developing countries lack good and reliable transportation networks of roads, railways, and waterways. Because of this lack of infrastructure, there is poor distribution of inputs and marketing of agricultural commodities and other services.

What Should Be Done To Improve Agriculture In Developing Countries?

The teacher educators with international experience were presented with a list of 18 possible suggestions for improving agriculture in developing countries. The three factors they viewed as being the most important are listed below.

Governments need to design and implement long range programs that focus primarily on increased food production. Abundant and healthful food is the first precondition for ensuring an efficient and productive labor force. Presently the food situation in the developing world is so deplorable that hunger, starvation, and death appear to be the rule of life in many countries.

Developing countries need to improve their marketing and distribution systems. With improved distribution networks food can reach the ultimate consumer who is usually the urban dweller. Equitable pricing of agricultural commodities, especially food, is equally important for the common citizen. Of what use is food that never reaches the final consumer? Or is it too expensive to be bought?

Realistic educational programs in agriculture must be designed and implemented. This view was rated third highest on priorities for development. Experienced teacher educators agreed that governments in developing countries need to emphasize the "training and preparation of more practical minded persons for all levels of agricultural manpower." A disturbing trend of the past has been that theory was stressed with very little practical experience provided. As a result of this theory-base education, most graduates from agricultural schools do not have true marketable skills. Training needs to be characterized by an appropriate mix of both theory and practice.

How Can Agricultural Education Help?

Four factors were identified from a list of 14 possible factors as being the best ways for U.S. agricultural educators to help developing countries. The four suggestions were:

Involve more vocational agriculture teachers from secondary and post secondary schools in international assignments. The teacher educators believed practicing vocational agriculture teachers could relate to the people and teach practical down-to-earth agriculture.

Involve all agricultural departments in international development. One group alone cannot solve the problems of agricultural development in Third World nations. We need to involve agronomists, animal scientists, and agricultural engineers, and other agricultural educators to help developing countries.

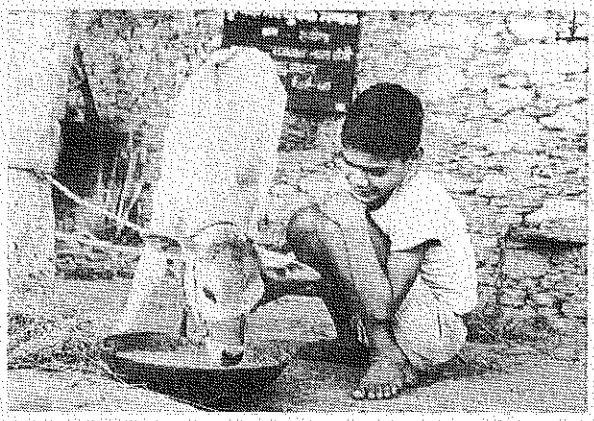
County extension agents should be involved in international development. Extension agents from the county level should be part of a team to improve agriculture in developing countries. Like their vocational agriculture teacher counterpart, they come into daily contact with agricultural problems. Since the educational system in many countries is not highly developed, there is a need to implement nonformal education programs similar to that conducted by county extension agents.

Implement the Supervised Occupational Experience (SOE) concept in developing countries. Agriculture in many developing countries is taught as a science or academic subject. The SOE concept would lead to improved agriculture in developing countries.

Conclusions

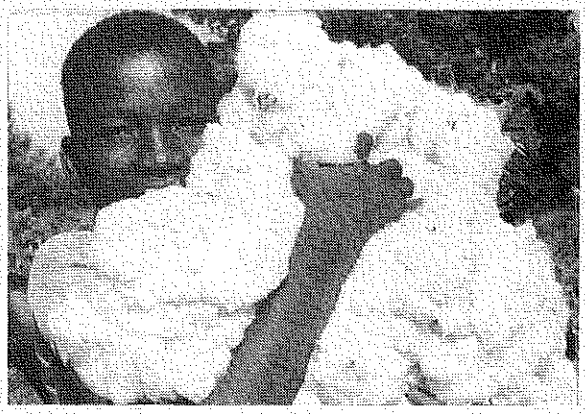
What does all this mean? Developing countries have serious problems and need help. The agricultural education profession cannot solve all the problems but could take the leadership in solving several problems. The use of practicing vocational agriculture teachers on international assignments, the development of education programs emphasizing both theory and practice, and implementation of the supervised occupational experience program would be a step in the right direction.

Stories in Pictures



A 15-year old boy with the calf he is rearing as an individual project under guidance of the Young Farmers' Club of Savina, Rajasthan, India. (Government of India photograph, issued by FAO.)

Reafforestation campaign on the island of Sao Nicolau, Cape Verde Islands. School children are encouraged to grow plants which will be used in the fight against erosion. (FAO photo by B. Polimeni.)



A boy carries newly picked cotton to be weighed near Bobo-Dioulasso, Upper Volta. (FAO photo by J. Van Acker.)

Farmer harvesting wheat in Pakistan. (World Food Programme photo by F. Mattioli.)

Fourteen-year old twins building a poultry shelter in Rajasthan, India. (Government of India photograph, issued by FAO.)

Members of the Sisarma Young Farmers' Club (Rajasthan, India) gain practical experience in the maintenance of a mechanical water pump under guidance of the local youth leader. (Government of India photograph, issued by FAO.)