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SOCIAL SOUNDNESS ANALYSIS TECHNICAL PAPER

University Center for Agriculture, Dschang

Impact on Small Holders and Women

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INTRODUCTION TO THE
SOCIAL SOUNDNESS ANALYSIS
TECHNICAL PAPER

This technical paper provides a general social soundness analysis, and concrete recommendations about programs and departmental structures at the University Center for Agriculture, Dschang (UCA). The report examines 1) the needs and constraints underlying UCA's programs in teaching, research and extension and 2) the articulation of UCA with the Ministry of Agriculture (MOA) in terms of curriculum, placement of graduates and training of extension personnel. At present, UCA is primarily a teaching institution, but to fulfill its potential as an agricultural university at the national level, research and extension components must be incorporated and rewarded. The goal is to develop a holistic approach to agricultural education in order to create a university where theory and practice are integrated, and local and international level agricultural problems are studied. Graduates will be able to fill positions in Cameroon's ministries, research institutes, colleges and universities. They will have to be knowledgeable about Cameroonian and international agriculture.

USAID projects aim to help the small farmer, rural poor and women. AID has requested that this social soundness analysis consider how assistance to higher education in Cameroon can impact on these target groups. The Cameroon small farmer is the backbone of the country's agricultural production. This paper examines the characteristics of small holders and briefly discusses farming approaches, division of labor and receptivity to innovation according to region. Cameroon often is described as Africa in miniature because of its ecological and cultural diversity and historical background. The aim in this paper is to provide data to make UCA personnel cognizant of regional and ethnic differences as they affect agricultural production. UCA graduates will be placed throughout the country and their training must prepare them for regional customs and constraints.

The report also studies the topic of women in agriculture both at the University level and in terms of the farmer. As we move into an era when governments are interested in realizing the potential of both men and women in order to have full economic development in their countries, we must consider constraints on any segment of the population. In Cameroon, almost half of the total number of small farmers are women and they perform more than half of the labor on family farms. A focus on these farmers is germane to a consideration of the problems of small scale production and feeding the nation. The report also studies women in the UCA and MOA in terms of their participation and potential for impacting on women in the development process in Cameroon.

In considering the goals of USAID's project to assist higher education in Cameroon, it is crucial to ask about the end results desired by the donor and recipient. The main goal of USAID is to increase the agricultural productivity and income of small farm families in Cameroon. It proposes to

accomplish this by increasing the number of appropriately trained agricultural scientists who will be employed in the agricultural sector to provide services to small farmers and women. The goal of UCA is to obtain technical assistance in programs, graduate training and campus facilities. These goals are different, yet there is convergence that is both explicit and implicit. Well trained agricultural scientists should be able to deal with their country's agricultural needs. For their positions in the MOA and parastatals, they must have the skills to administer extension programs, supervise personnel, retrain agricultural officials and set policies to improve services to farmers. However, many of the UCA professors have studied abroad and received training more oriented to the large scale agriculture of the developed world than to small holder agriculture. At present, the curriculum at UCA reflects this orientation and students know more about agricultural theories and techniques in developed than in developing countries. Furthermore, the training tends to be more theoretical than practical so that graduates require about a year of on-the-job training once they take up their positions in the Ministry of Agriculture and research institutes. We suggest that the move of the National School of Agronomy (ENSA) to Dschang and the restructuring of UCA provide the opportunity to remedy the program's focus, teaching strategies, and research and extension components.

A major aspect of this paper is the Department of Rural Education and its teaching and extension programs. The Department has two Divisions with different but converging missions. The Division of Rural Sociology and Extension provides theoretical and practical experiences concerning cultural conditions and communication techniques concerned with small holder agriculture. The sociology courses consider peasants and could expand to include Cameroon's small holders' problems. The extension education course at ENSA allows interaction with farmers through interventions. Extension education should continue on the Dschang campus and be expanded to include students in all programs at UCA (i.e., the Institute of Agricultural Techniques' (ITA) two levels and ENSA). The Division of Rural Pedagogy has linkages to the MOA through its mission to prepare curriculum for MOA's agricultural colleges and training schools. Presently this activity is constrained by the lack of staff, but the potential for incorporating a focus on the small holder in agricultural education is great. We therefore make suggestions for the Department's programs, training and equipment needs to facilitate the above goals.

To conclude, it is fair to say that there is a great willingness for USAID and UCA to mesh their needs and desires. Hopefully, the recommendations here will facilitate these ends and align the commitment of these two institutions towards agricultural excellence.

I. SUMMARY AND CONCLUSIONS

A. Social Feasibility

1. Small Holder Characteristics and the Context of Development

a. The Government of the United Republic of Cameroon (GURC) is extremely interested in agricultural activity and agricultural producers in the country. Small holders are the agricultural backbone of Cameroon; one million farm families cultivate 1.5 million hectares of food and cash crops, which includes 70% of the export production. The President's 1980 Policy Report gives priority to the rural areas and the farmer so as to increase production for home consumption and export.

Eighty-seven percent of rural and 42% of urban families are farmers. The Cameroonian small-scale holder relies on his and his family's labor and uses minimal capital inputs on a small-sized, rain fed farm. The average farm size is 1.6 hectares; cash crop parcels average 61 ares¹; mixed crop parcels 42.5 and food crop parcels 33 ares. The small holder uses traditional and improved agricultural methods. Fertilizers and pesticides are used primarily for the cash crops of coffee, cocoa and cotton.

b. There are a large number of ethnic groups in Cameroon and the cultural and ecological diversity is great. However, it is possible to group the various peoples into three groups which correspond roughly to the three major ecological zones: 1) the Western Highlands grasslands zone, 2) the Northern savannah-sahelian zone and 3) the Central and Eastern forest zone. Cultural factors affect land holdings and tenure, division of labor and receptivity to agricultural innovations. Both men and women farm, often doing different tasks and cultivating different crops. Men are primarily involved in export crops; women in food crops. Men are responsible for the heavy work of clearing the land; women for the continual work of planting, weeding, harvesting and processing. The family forms the production unit which is involved in consumption and distribution. Women are involved in the marketing of their surplus food stuffs; men in the organization and running of cash crop cooperatives.

c. The Bamileke people live in the Western Highlands, which is the area where the UCA is located. They are a centralized group with numerous chiefdoms headed by a *Fon* (chief) who apportions land to lineage and family heads for use by themselves and their wives. Land is very scarce in this region and the holdings small (1.2 hectares). Women are responsible for almost all food production, with yams, maize, cassava, beans, groundnuts and vegetables being the main crops. Men grow plantains, tea, tobacco and rice, but coffee is the main cash crop.

¹One hectare contains one hundred ares.

The Bamileke are known as resourceful, energetic cultivators, and their rich area as the heartland of agricultural production. They are likely to be a good target zone for innovations because of land fertility on the one hand and a social system that allows for adaptation on the other, but great care needs to be given to the target group. Most extension work in the area has focused on cash crops and extension workers have been men. Women, who are overwhelmingly important in food crop production, tend not to receive the information given by the extension workers to their husbands. But they form a group of farmers who are interested in technical information concerning plant protection, use of fertilizers and improved seeds. Younger men will be interested in different innovations than older men as they lack the large coffee holdings because of land scarcity and tenure rules.

The University Center for Agriculture's program should include extension work with local farmers directly, and the training of local Ministry of Agriculture (MOA) extension and community development personnel. It is well to bear in mind that since the Bamileke are innovators and their soils are fertile, what may work well in this area may not necessarily be transferable to other areas without modifications for cultural and ecological differences.

d. In the North there are Fulani and non-Fulani people. Their farming practices differ. The Fulani are agriculturalists and cattle keepers, organized into twenty-one *lamidats* units, each headed by a chief (*Lamido*). Fulani men prefer to hire laborers if they are able. Women have "kitchen gardens" but prefer trading and food processing to cultivating. Among non-Fulani peoples, both men and women cultivate millet, maize, rice and groundnuts. Cassava and yams are grown occasionally. Men are involved in cotton production for export. All agricultural endeavors are constrained by the short rainy season which places heavy demands on agricultural labor and all family members must work at these times. Agricultural innovators must take the separation of the sexes into account, and male and female extension personnel who speak the local language would be the best diffusion agents. Any innovations suggested for the area must consider that people here are closer to subsistence, and agricultural risk-taking must be minimized. Thus far, extension efforts have favored cash crops, but people are very concerned about food for their families.

e. In the Southern forest zones, people live in small lineage units without centralized chieftancies. Farming land is allocated by heads of lineages to families, and women are dependent on husbands and fathers for land to grow food crops. Men are responsible for the heavy clearing of forest lands. They cultivate cash crops such as cocoa and tend palm trees. Women are responsible for the cultivation of most food crops (cassava, cocoyams, plantains, maize and vegetables) and their sales of food crop surpluses have increased dramatically in regions near urban areas such as Yaoundé. A good potential exists for positive response to innovation both for women and young men. Women desire technical information on improved methods, as well as inputs such as pesticides and fertilizers. Their interests in innovations were demonstrated in the Yemesso and Mbankomo intervention zones organized by ENSA faculty for student training.

2. Donor and Recipient Interests: The Interrelations of UCA and Small Holders and Women

Small holders are articulate about their needs and interests. They want technical information on pest management, optimal plant types, spacing for mixed cultivation and maintenance of soil fertility. They would welcome information and inputs from a variety of sources such as UCA personnel, radio broadcasts and Ministry of Agriculture extension workers. The needs of women farmers are the same as the men who farm, except that their access to inputs, credit and information is reduced.

One reason why women have had less access is because local MOA extension workers are all male and tend to work with the men. There are female community development (CD) assistants, but they tend to teach domestic and sewing skills commensurate with their training. It would seem that extension and community development workers would be an ideal combination for reaching small holders as they are already located in the rural towns and villages. Some are of the same ethnicity or speak the local language; others are from different areas and may or may not have good rapport with their clientele. The female CD assistants seem an appropriate group for agricultural training as they are already located in the area and family constraints (husband's location and child care) are already being solved.

The University Center for Agriculture can have an impact on small holders and women, but it is important to realize that the small farmer (rural poor) form one client and the faculty and students at UCA form another. There are direct and indirect ways that an institution of higher learning can affect the rural poor. UCA's aim is to train Cameroonians to the Ph.D. level in order to increase its faculty and to acquire facilities for its campus. UCA's interest in small farmers and women is tangential to AID's interests, except for the fact that the University must function to produce good agricultural scientists, the majority of whom will work in ministries and parastatals concerned with small holder needs and food/cash crop production. Many faculty members and students recognize the need for theories and practicums that are more appropriate to the country's needs. The move to Dschang and restructuring of the University Center would provide an ideal time and context for curricular and outreach emphasis on small holder needs.

a. Each department needs to be evaluated individually in terms of its practical commitment to small scale agriculture. However, students at all levels are required to do some practical work concerning farming and agricultural management. Students at UCA do three to four weeks of practical farm work in the first year, the same amount with parastatals and private societies in the second and they live in a village for the time period in the third year. ENSA students go back to parastatals in the fourth year with a specific problem and in their final year they carry out a small research project (two to four months) concerned with a development problem. Students are placed all over the country and many have experiences in several provinces and levels of development. Although the experiences are very brief, this structure is crucial for the students' education; it would be possible to emphasize small holder problems as topics for consideration at this time.

b. The Department of Rural Education links rural sociology and extension activities. The faculty in this department are interested in small holder attitudes, problems and motivation. They presently offer "Rural Sociology" in the third year for 35 hours at ENSA, 20 hours at Upper ITA, and 40 hours at Lower ITA. Upper ITA students take 20 hours of "Applied Sociology." Some of the topics covered in this course deal with the small holder. For ENSA students taking the option in Economics and Extension, there are a great variety of courses offered in the fifth year on an occasional basis. Adequate faculty would mean that courses such as "Peasant Organization," which deals directly with small scale agriculture, could be given on a regular schedule. The "Extension Education" course presently includes outreach activities in which the students learn to interview farmers and obtain information about agricultural practices. With an increase in staff, they could offer courses on "Extension Administration" and "Women and Youth Extension Programs."

c. Between 1970-78, the Department set up an intervention zone at Yemessoa to work with small holders in order to provide 1) a practical rural experience for their students, 2) an experimental research area for research and 3) technical aid to the small holders. The results of the project have been variable with very good success in the early years when there was funding for inputs, and declining success after 1975 when there were no funds for inputs. The project at Yemessoa ended in 1978. Since then, students have been interviewing farmers at Mbankomo, which is approximately seventy kilometers (km) from Nkolbisson, where ENSA is located. No major intervention project has been implemented though.

It appears that in the later years of the project, ENSA faculty came to the conclusion that a university intervention zone could not work because "the university was not a development agency" and could not therefore supply inputs. One criterion for selecting the site was that no parastatals, which provide inputs, be operative in the area. As a result of the Yemessoa experience, the faculty suggested that an intervention program involve a development agency for inputs as well as relieving the students and faculty from taking the whole responsibility for funding and diffusion of innovations.

The Cornell Report (1979:64) cautions against setting up extension and practical training programs in the Dschang area because of the Western Highlands Development Project which will be starting in the area next year. The rationale for this position is that 1) farmers will not have a choice as to whether or not to participate, 2) it is a "top-down" type of extension program and 3) large farmers, especially coffee growers, are likely to benefit the most. The report concludes that UCA would not be able to operate its practical training and extension programs effectively as a result. The present report does not support the Cornell position and suggests that an extension/intervention program be set up at Dschang. First, the criterion of having no other agency in the area must be removed since it presupposes a "pure," controlled situation which does not exist anywhere in Cameroon. Second, students and faculty have to consider the operation and impact of development projects and parastatal agencies. Since a large number of UCA graduates will work for these agencies, it would be wise to consider the constraints posed by the

agencies' programs on the farmers' acceptance of innovation. Furthermore, students need to consider the problems of using existing structures which have dealt with large, commercial farms, to deal with small holder needs. It is highly recommended that the criteria for site selection be modified and that an intervention zone be set up by the Department of Rural Education in the Dschang area.

It also will be important to coordinate efforts of the agriculture and livestock departments in solving local problems in the zone. The lack of technical inputs and a coordinated multidisciplinary approach was partly responsible for difficulties encountered at Yemesso. With the larger staff, all of whom will be located at Dschang, and with the creation of a Director for Research and Extension, it should be possible to coordinate a multidisciplinary effort to solve local problems.

3. UCA and Ministry of Agriculture (MOA)

a. UCA graduates work for the MOA throughout the country as Advisors, Inspectors, Directors, Bureau Chiefs and Provisional and Divisional Delegates. The Cornell Report notes that there is now a more specific demand for specialized positions within the MOA as previous graduates have filled most of the upper level administrative posts. Future UCA graduates will be implementing projects closer to the local level than their predecessors.

b. The Division of Rural Pedagogy within the Department of Rural Education was created in 1970 to prepare curriculum for MOA technical schools. It was housed at ENSA because ENSA was the only institution concerned with national agricultural education. Between 1970-1975, the Division prepared curricula and teaching materials for MOA schools, as well as offering media services to ENSA faculty. However, with the cessation of funds from the Bureau pour le Développement de la Production Agricole (BDPA), and the appointment of its faculty to the MOA, the Division functions are now reduced. Currently, only one course on note taking/report writing and the use of audiovisuals is being offered by a part-time instructor. The other faculty in the Division of Rural Sociology and Extension have taken over the supervisory aspects of the printing and media operations. This is viewed as detracting from their teaching, research and extension functions and hence, a centralized media and printing center is suggested.

However, the structural links to MOA and its agricultural training schools and colleges are formulated already and these should not be allowed to wane or dissolve. Rather, Cameroonians should be trained in agricultural education so they can work in the Division on curriculum design for agricultural training colleges, extension programs and farmers' training centers. The Rural Sociology, Extension and Pedagogy components would provide an ideal unit to update agricultural curriculum and prepare in-service training for MOA extension workers. It is proposed that the Department of Rural Education, in conjunction with the Director of Research and Extension, set up a model program in the Dschang area to give short courses to extension and community development workers.

4. Role of Women

The small number of women at UCA is a reflection of the small number of girls in higher education in Cameroon. Girls comprise 44% of primary school students but only 20% of students in higher education. The current number and percentage of women students at ENSA, Upper ITA and Lower ITA are seventeen (7.0%), sixteen (5.9%) and twenty-two (7.7%), respectively. Women students comprise 15% of those taking the UCA entrance examinations. It would be useful to examine why the percentage of those taking and passing the examination differs.

Most women students were hoping to go to medical school, but decided to take the examination for the agricultural schools as well. The students said that women do not consider agricultural careers because they know very little about them and believe a job in agriculture requires the operation of heavy machinery and being subjected to rough, bush conditions. When they get to UCA, their opinions change of what agricultural scientists do. Once in UCA, women students perform extremely well; their drop out rate is low and they tend to experience little preferential or discriminatory treatment.

ENSA women students tend to chose options in Economics and Extension and Plant Production. No women have yet chosen Animal Science or Forestry, although a second year student may chose the former; generally these are perceived as men's fields. Women students are rarely selected for graduate training; there is one ENSA woman faculty member and she is being trained in the United States. Five percent of ENSA graduates are female and most are assigned to MOA extension administrative posts in urban areas after graduation.

B. Suggestions to Improve UCA's Commitment to Small Holders and Women

1. The position of Director for Research and Extension should be created to 1) help coordinate the model extension program for agricultural extension programs for agricultural extension workers and community development assistants and 2) focus research and extension interests on small holder agriculture.

2. A four to six week "Seminar in Farming Systems and Small Scale Agriculture" should be held for UCA faculty. The Seminar will be led by the contracting university professors.

3. A program should be implemented in which UCA faculty and students visit secondary schools to acquaint potential students (especially women students) with UCA programs and requirements. A special information campaign should be prepared to inform girls about careers in agriculture.

4. Department of Rural Education

a. Eleven faculty are necessary to provide the requisite staff to carry out teaching, extension and MOA outreach activities. Six should be:

trained to the Ph.D. level, four to the Masters¹. It is suggested that two or three of those trained be women.

b. The courses in "Rural Sociology" and "Extension Education" should be increased by five to ten hours each in order to incorporate new materials on small holder farming systems. The ITA course on extension should include a practical component.

c. The Department should operate an "intervention zone" where students can work with local farmers. Research can be carried out, and a multidisciplinary effort coordinated. UCA activities in the zone should articulate with parastatal and MOA services in the area through the Director for Research and Extension so as to assure technical input. Until ENSA moves to Dschang, it is suggested they keep the Mbankomo site, but there should be an effort to locate a zone in Dschang so ITA students can gain experience working with local farmers.

d. The Department should prepare short courses for MOA extension and community development assistants. The effort would be coordinated through the Director for Research and Extension to assure technical input from the other departments at UCA.

e. The Department should coordinate and produce radio tapes on problems such as pest management, use of fertilizers, crop associations, soil fertility, etc. The tapes would be recorded in various languages using both male and female narrators.

f. The media and printing duties of the Department should be removed to a central location in order to facilitate wider usage and the Department's concentration on teaching, research and extension.

g. The Division of Rural Pedagogy should re-activate its mandate to prepare curriculum and teaching materials for Ministry of Agriculture technical training colleges. Information on small holder agriculture should be added to the curriculum.

5. UCA Farms at Bansoa, Djouttitsa and on the campus should have sections where the problems and commercial viability of small holder agriculture and animal production are considered. At Bansoa there should be a section for traditional farming techniques and crops which could be cultivated by students and farm workers. At Djouttitsa, animal production problems of the small owner needs to be considered. At the UCA campus farm, it is recommended that subsistence food crops, as well as export crops, be used in research experiments and practical exercises. Poultry and swine production should be considered in terms of family and commercial production at the village level.

¹One will complete his Ph.D. training independent of this project.

6. The extent of the above suggestions in terms of the curriculum changes, training of extension personnel, research interests on small holders and women and activities of the intervention zone should be monitored and evaluated at two year intervals by a team from USAID, UCA, MOA and the contracting university.

II. BACKGROUND INFORMATION

A. Background on the Small Holder and Women

1. Government Policy

In 1974, the President said that "the agricultural sector is clearly the number one economic sector in the country . . . the one whose contribution to gross domestic production is the greatest" (Ahidjo 1974:8). He noted that although agricultural production had increased and the export sector had undergone great expansion, "the same cannot be said of food crops which have not shown the same rate of growth" (Ahidjo 1974:7). The farmer should be encouraged to adopt more farming techniques, use improved varieties, extend his/her cultivated lands and use agricultural credit. He argued that no effort should be spared to bring subsistence farms into the modern production sector.

The current Policy Report (Ahidjo 1980) notes that the Fourth National Development Plan gives priority to the rural areas so as to increase the standard of living in the rural areas and agricultural rural production for home consumption and export. The President's speech exalts the peasant farmer and the peasant family where "members are all attached to production" and proposes to revitalize the rural village areas. To this end he suggests "the development of community activities within cooperatives," fair agricultural prices, better living conditions in the rural areas, facilities to enable young people to settle and own property, better transportation networks concerned with produce distribution, diversification of agricultural products and greater importance be attached to food production.

In particular the report argues that because of soil impoverishment, pests and plant diseases, the yields in some parts of the country are diminishing. The size of the average farm is decreasing, and in the West farms now average 1.2 hectares. The President cautions that if the fertility rate of Cameroon remains unchanged, there will only be about 1.0 hectare of arable land per person by year 2000, and 0.4 hectare by 2005.

To increase agricultural productivity, the country should pursue a policy of setting up industrial plantations especially for export crops, "however small family holdings will not be sacrificed" (Ahidjo 1980:21). The report states that government is interested in helping farmers with prices, pest management, credit and new techniques and last year gave small farmers bonuses for replacing their low yielding cocoa and coffee plants. Considering the President's speeches, the rural peasant farmer is very much a target of government concern.

The President also urges greater participation of women in the economic, social and political life of the country (Ahidjo 1980:8). Along these lines, the Women's Wing of the Cameroon National Union recently completed the first phase of a national program to train rural women organizers to work with village leaders to improve living conditions. USAID's interests and the

policy of GURC are in agreement vis-à-vis the need to focus on the small farmer and women.

2. Definition and Characteristics of the Small Holder

" . . . the small-scale farmer is an agricultural producer who is self-employed and uses his and his family's labour. Generally he is non-mechanized or hardly mechanized in his operations. Being mainly subsistence oriented, he uses minimal capital inputs on a small-sized farm . . . (1.5 hectares in Cameroon . . .). The majority depend on rain-fall while others may have the advantage of irrigation facilities." (Report of group C 1978:1-2.)

In Cameroon, small farmers produce both food and cash crops. Approximately one million farm families cultivate 1.5 million hectares. Crop exports are about 70% of total exports, and most of these crops are cultivated by small farmers. However, two-thirds of all hectares cultivated are food crops (Cornell Report 1979:2).

The small holders may be found in the urban areas as well as the rural. Table 1 gives the numbers and percentages of rural and urban farmers by sex.

TABLE 1
Rural-Urban Men and Women Engaged in Agriculture¹

	Rural		Urban		Total	
	M	F	M	F	M	F
Number (000)	971	871	102	91	1073	962
Percentage	53	47	53	47	53	47

The 1972-73 agricultural census (UNDP/FAO 1977) notes that 87% of rural and 42% of urban families are agricultural. There are 5.4 individuals per agricultural family, with 2.7 adults providing the major labor input. Agricultural family size varies from 4.5 in the North to 6.8 in the West, and 5.4 in rural to 6.3 in urban areas. The census relates the characteristics of the farmer in relation to the "chef d'exploitation" or head of household who cultivates. Men compose 92.3% of "chefs d'exploitation." Women compose 8.7% for the whole country, but the figure increases to 16% in Littoral and 14% in the West and Southwest Provinces. The majority of males who are

¹Adapted from Table 1 Bryson (1979:46) which is based on the 1976 population census.

"chefs d'exploitation" are married monogamously (61%); 25% have more than one wife and 14% are not married (single, separated or widowed). Three quarters of the females who are "chefs d'exploitation" are widows; the others are single or separated. A small number are married, but their husbands have been away a long time. The average age for men heads of households is forty-four and for women it is forty-seven years.

The typical production unit is the family unit. The population doing active agricultural work is 57% female, of whom 73% are the wives of the male "chefs d'exploitation," 8% are their daughters, 12% are other female adults and 7% are women who are themselves "chefs d'exploitation" (UNDP/FAO 1977:63). The average farm size is 1.6 hectares for all of Cameroon but reaches two hectares in South Central and is only 1.25 in the West and Northwest. On the average, men cultivate 167 ares and women eighty-six ares. Farms are divided into fields and these into parcels. The categories and divisions reflect ecological variations, division of labor by type of crop grown and inheritance patterns. The average field is fifty ares and the average number of parcels differ. For the country as a whole, the average cash crop parcel cultivated is sixty-one ares, while the average mixed cultivation is forty-two and a half and food crops thirty-three ares. In the North it is sixty-five, forty-two and twenty-two ares, respectively. The land is primarily cultivated by hoe (97%); tractors are used on 3% of the land.

Table 2 gives the number of farms and the area cultivated. Farms having less than 1.5 hectares (3.7 acres) comprise 61% of the total, and 81% are under 2.5 hectares (5.2 acres); these farmers cultivate only 52% of the land. The average small holder can be defined as a man and one or two wives who do not hire laborers and cultivate less than 2.5, or even 1.5, hectares. Other small holders may hire laborers or have more wives or both in order to cultivate three hectares or more by hand cultivation. Small holders are not a single entity, but there is a distribution of farmers in terms of size of their holdings.

Commercial agricultural production utilizes fertilizers, but only 10% of food stuff production does so. In mixed cash cropping of cocoa and coffee robusta, 22% receive fertilizers but the proportion decreases to 5% in the East, 6% in the South Central, 15% in the Southwest, but reaches 45% in the Littoral, 40% in the Northwest and 80% in the West Province. Pesticides are used on 25% of cash crop production and 4% of food stuffs production. In mixed cash cropping, 65% of cocoa and coffee robusta are protected (55% in the East and 80% in the South Central) whereas 61% of coffee arabica are protected in the West Province. For mixed cropping, 37% of the total plants of Cameroon are protected (UNDP/FAO 1977:70-1).

TABLE 2

Number of Farms and Area Cultivated¹

	<u>Number of Farms</u>		<u>Area Cultivated</u>	
	(000)	%	ha (100)	%
less than .5 hectares -	185	20.0	51	2.5
.5 to 1.0 hectares -	210	22.7	153	10.3
1.0 to 1.5 hectares -	168	18.2	405	27.4
1.5 to 2.0 hectares -	114	12.3	197	13.3
2.0 to 2.5 hectares -	74	8.0	165	11.1
2.5 to 3.0 hectares -	51	5.5	140	9.5
3.0 to 4.0 hectares -	64	7.0	221	14.9
4.0 to 5.0 hectares -	26	2.8	113	7.6
5.0 to 10.0 hectares -	30	3.2	192	13.0
more than 10.0 hectares -	<u>3</u>	<u>.3</u>	<u>41</u>	<u>2.8</u>
	926	100.0	1481	100.0

Table 3 shows the value of small holder production. They produce CFA 96,090 million in total food crops and CFA 35,336 million in commercial crops.

3. Regional Variations and Constraints on Innovations

There are 136 distinct ethnic groups in Francophone and sixty-five in Anglophone Cameroon. In spite of the great linguistic and ethnic diversity, it is possible to group the various peoples into three groups which correspond approximately to the three primary ecological zones: 1) Western Highlands grasslands zone, 2) the Northern savannah-sahel zone and 3) Central and Eastern forest zone.

There is variation by region in terms of the crops that small farmers grow, both for food and export. In the North, the main food crops are sorghum, millet, maize and groundnuts, and the main export crop is cotton. In

¹Agricultural Census 1972-73 (UNDP/FAO 1977:172).

TABLE 3: AGRICULTURAL PROJECTS RECONNAISSANCE MISSION
 AGRICULTURAL PRODUCTION SMALLHOLDER SECTOR 1966/68 - 1976/78
 (1974/75 Constant Prices)

	1974/75		1966/68 ^{1/}		1976/78		Annual Growth in va- lue of produc- tion Percent
	Prices CFAF '000/ton	Tons '000	Value-CFAF million	Tons ^{2/} '000	Value-CFAF million		
FOODCROPS							
Cereals :							
Paddy	25.0	16.2	405	43.8	1 095		
Maize	23.0	262.0	6 026	418.0	9 614		
Millet + Sorghum	30.0	441.8	13 254	382.0	11 460		
Sub-Total			19 685		22 169		1.2
Other major staples :							
Manioc	11.0	667.8	7 346	983.5	10 819		
Taro-Macabo	15.0	394.1	5 912	972.0	14 580		
Yams	25.0	172.4	4 310	652.0	16 300		
Plantains	15.0	939.9	14 099	1 122.0	16 830		
Sub-Total			31 667		58 529		6.4
Others :							
Sweet Potatoes	15.0	61.2	918	180.0	2 700		
Potatoes	36.0	16.1	580	76.0	2 736		
Beans	29.0	53.7	1 557	93.3	2 706		
Fresh vegetables	53.0	18.8	1 034	50.0 ^{1/}	2 750		
Misc. vegetables etc.	18.0	181.7	3 271	250.0	4 500		
Sub-Total			7 360		15 392		7.7
Total Foodcrops			58 712		96 090		5.1
COMMERCIAL CROPS							
Cocoa	111	97.8	10 856	104.5	11 600		
Coffee - Arabica	200	20.1	4 020	22.0	4 400		
- Robusta	135	50.3	6 791	72.0	9 720		
Cotton	43	57.6	2 477	49.5	2 128		
Groundnuts	40	135.7	5 428	167.3	6 692		
Tobacco (leaf)	280	1.4	392	2.2	616		
(shredded)	120	2.2	264	1.5	180		
TOTAL COMMERCIAL CROPS			30 223		35 336		1.6
TOTAL MAJOR SMALLHOLDER CROPS			88 940		131 426		4.

^{1/} From Economic Memorandum 1978

the Southwest, Central and Eastern forest zones, cassava, yams, maize, plantains and groundnuts are the food crops, cocoa and robusta coffee the cash crops. The Highland region (West and Northwest) is the country's agricultural heartland. Yams, maize, cassava, plantains and groundnuts are food crops; arabica and robusta coffee are the cash crops.

Cultural factors affect land holdings and tenure, division of labor and receptivity to innovations. Generally speaking, husbands hold the land and apportion it to their wives. The services of both men and women are needed for household production and income generating activities. In the southern part of Cameroon, men are involved in export crop production and women cultivate food crops, whereas in the north both men and women participate in cash and food crop farming. A common expectation of westerners is that agricultural production is a male activity, but in Cameroon women are heavily involved in agricultural production, spending 70% of their waking hours in this pursuit (Bryson 1979:5).

The production of food crops gives women status and decision-making input within the family. Bryson argues that women make production decisions of when they work, what they plant, weed and harvest and decisions about what is surplus to be sold. Women are likely to continue their involvement in agriculture as Cameroon's population grows and they need to feed their families and others. Bryson argues that women's low involvement in wage employment "plus the fact that 40% of the women in wage employment are working in agriculture" means "it will be at least forty years and probably considerably longer before the numbers of women in agriculture are reduced by any appreciable amount" (1979:49).

The production of cash crops (cocoa, coffee, tea, tobacco, cotton and rice) generates income for men and they are involved in cash cropping throughout the country. In the Lekie District in South Central Province, many have begun to grow food (including bananas, plantains, groundnuts and vegetables) for sale and their contribution to food crop production for sale is likely to increase.

Women are also heavily involved in the marketing of food stuffs, and in the urban areas some have become known as the "Buyum-Sellums" who buy produce in the countryside and resell in the cities. On the other hand, men work as wholesalers in expensive vegetables and they are the main organizers and members of cooperatives.

The Highlands¹

The University Center, Dschang, is located in the Western Province, a densely populated agricultural district. The largest group in the area are the Bamileke (population 701,000 in the mid-1960's), who have densities of 150 people per

¹This section relies heavily on Bryson (1979), National Cereals Project (1979) and Nelson et al. (1974).

square kilometer and who are noted for their community enterprises, energetic attitudes and resourcefulness. As UCA farms will be located in Bamileke areas and extension services directed to this area, it is important to describe their agricultural and economic practices in detail.

Social Structure as it Relates to Land Tenure

The Bamileke are a centralized group who have numerous chiefdoms each headed by a *Fon* (chief) who is the titular head of the land in the area. He parcels the land out to lineage heads who then allocate it to family members. Lineage heads may also give land to strangers after taking care of family needs. Each family has its own compound which is fenced and includes cultivated garden plots. Customary law provides that a man's property is not divisible and is inherited by his favorite son often, but not necessarily, the eldest. This often causes struggles between brothers, especially half-siblings, and sons other than the inheritor tend to split off and form their own patrilineages. Daughters rarely inherit through the patrilineage.

Land distribution has been a continual problem in the area because of increasing population. Farms are smaller in this region than elsewhere (the average is 1.2 hectares). In the past, after marginal village land was cultivated and large plots subdivided, men tried to settle outside the village and there was armed conflict with neighboring groups. At present, social tensions provide incentives for Bamileke entrepreneurial activities and migration to the cities. Chiefs, who were also responsible for adjudication, intervened in land palavers, and although they frequently split up land for other people, usually refused to divide their own property. They also reallocated land of people who were temporarily away from the village. Presently, they are reluctant to give out land on a permanent basis, especially for tree crops, as they may not be able to reclaim or reallocate it. They will give out land for food crops as this land can be reallocated after the harvest. A reason for the reluctance to give out permanent land rests on the 1974 land laws which allow people "to develop" the land and therefore claim it as their own. Planting permanent tree crops as opposed to "temporary" food crops is considered "development." In any case, chiefs have become the focus of resentment concerning land rights, and men who cannot obtain land become laborers, domestic servants, entrepreneurs or leave the area.

Each chiefdom has a "queen mother" who has her own household, lands and raffia plantations. Her daughters inherit her lands and presently there is a group of noble propertied women. The literature states that this group did not have to depend on their husbands for sufficient land to grow food for the household. Other women also had some land rights through their matrilineages. It would be interesting to compare women's actual land holdings from their matrilineages with the land they farmed which belonged to their husbands.

Agricultural Crops and Roles

Women are responsible for almost all food production and may spend 190 days of work per year solely in agriculture. Kaberry's study (1952) on neighboring

Tikar noted that men spent only 10 days per year on land clearing. Bamileke women do all the work (except for plantain and banana cultivation) associated with food crop production; they also clear the land. They receive some help from men in the heavier work, usually from their daughters' fiancés rather than their husbands. Women grow yams, coco-yams, maize, groundnuts, beans, cassava and vegetables. Men grow bananas, plantains, tea, tobacco and palm trees, but coffee is the major export cash crop. Women help their husbands in cultivation and harvesting of many of these crops. Men raise cattle, sheep, goats and swine; women raise poultry. Men provide palm oil, build houses and fences, and many are artisans. Women trade in food crops, weave baskets and make pots. It is estimated that women sell 35-40% of the food crops and have part control over the proceeds. Rice cultivation, up to 60% of which is designated for commercial markets, is primarily grown by men. But it is arabica coffee that most men have cultivated for the cash crop market and the coffee cooperative is large, has its own export markets, electronic sorters, etc.

Women's organizations are important in economic activities. Women's societies are used to organize cooperative work in the fields. A special society called the *Mansu* admitted the best women farmers. These women carried a long curved knife used to clear fields as a symbol of *Mansu* membership and had priority over other women in the fields and on paths.

Bamileke men, in both rural and urban areas, form savings associations, but women in the rural areas did not in the past. In towns they do form rotating credit associations which are very important to market women and traders, and Bryson argues that with increased economic activities in the rural areas involving women selling food crops, women's savings associations are likely to appear.

Other Economic Activities

Nelson et al. (1974) write that the Bamileke have become among the wealthiest people in Cameroon, adapting quickly to the cash economy by improving their farms and purchasing trucks, stores, hotels, factories, etc. The main constraints on their progress in the rural areas are population pressure and land scarcity. In the cities they are important in the transport sector and become taxi drivers. They are well represented as doctors, engineers and government officials. In Douala, they are believed to comprise 70% of professional and 30% of civil servants, 60% of the traders, 80% of the artisans, 40% of the laborers and 12% of domestic workers. In Yaoundé, they are a majority of the merchants. In Southern cities, they constitute a large proportion of the unemployed. The percentage of Bamileke women in the professions and as urban workers is not known.

The Cornell Report lists the number of ENSA graduates by province. Western Province alumni constitute 131 of the 276, but this includes the Bamileke as well as other groups such as the Tikar, Bamoun and Widekum. Fourteen or 44% of the Cameroonian faculty at ENSA are from Western Province.

Innovation Concerning Agricultural Research and Extension

The Bamileke area and Bamileke people are likely to be good target zones and candidates for innovations because of land fertility on the one hand, and a social system that allows for adaptation on the other. The National Cereals Research Project concluded that "the highlands are the midst of an agricultural revolution" and that "the adoption and adaptation of innovative agronomic practices and new varieties and crops should be very rapid" (1979:111-12).

However, great consideration needs to be given to the categories of people to which innovations will be introduced. Young men will be interested in certain innovations, but may have difficulty securing land. Chiefs may or may not be opinion leaders because of their position in land tenure decisions. The National Cereals Research (1979) noted that "the most important factor to consider in this area is the overwhelming importance of women in food crop production." They argued that there was loss of information to women producers when male extension agents worked with men. Effective demonstration programs would probably require women extension agents and supervisors to work with women producers through cooperatives and community development sectors, as well as in the informal sector. Unfortunately there are no agricultural extension agents who are female and the present agricultural training of community development assistants is minimal. Also it would seem useful to utilize women's societies such as the *Mansu* in the introduction of agricultural innovations.

There is little question that women in the area are working long hours and most days, and could benefit from improved seeds, fertilizers and pesticides, as well as improved management techniques to increase yields and reduce labor inputs. The emphasis on cash crops, combined with male extension workers, has precluded information and inputs from reaching women foodstuff producers.

In terms of mechanization, as much as 25% of the cultivation is carried out on mountain slopes and the hoe is likely to remain the major tool; but appropriate technology concerned with water supplies, food processing and storage could be important in the area.

The North¹

The northern areas of Cameroon is where USAID has concentrated its programs. ENSA students with an option in Animal Science do their fieldwork studies in the north. More than 80% of the area is rural and half of the urban dwellers grow a large percentage of their own food. There are four Departments that have a plains ecology and one Department that is mountainous.

¹This section relies heavily on Bryson (1979) and National Cereals Project (1979), and to a lesser extent on Nelson et al. (1947).

Social Structure as it Relates to Agriculture

About half the plains dwellers are Fulani or Boulbe and approximately 80% of them are sedentary agriculturalists and cattle raisers. They are organized into twenty-one *lamidats*. The Chief (*Lamido*) is important in land use and allocation, and in the implementation of agricultural production programs. Fulani follow Islamic inheritance rules. One-eighth of the estate goes to widows, two-thirds of the remainder is equally divided amongst the sons, and the remaining one-third is equally divided amongst the daughters. The property of a man with no sons should go to his brothers, but the usual practice is for daughters to inherit the property. Some women have become large landowners as a result. The agricultural census of 1972-73 lists 16,059 women as farm owners in north Cameroon.

The Mafa live in the Mandara Mountains, where USAID and World Bank are working on a large water-dam project. These agriculturalists have an extremely dense population (up to 245 people per square kilometer). The patrilineal, patrilocal family is the basic social unit. The youngest son inherits his father's land and the older ones must settle elsewhere.

Other people in the area are the Massa and Toupouri along the Chadian border who are agriculturalists, but keep livestock and fish.

Agricultural Crops and Roles

The staple crops are millet and sorghum/sometimes supplemented by maize or rice and cassava; yam and sweet potatoes are grown occasionally. Groundnuts are grown for local consumption or as a cash crop. Rice is the primary cash food crop, cotton the major export crop. Central plains people practice shifting, extensive agriculture.

"In some areas, cotton rotates with sorghum on heavy soils and on sandy soils cotton may be followed by sorghum interplanted with peanut before prolonged fallow. Transplanted sorghums are grown in the clayey lowlands, without rotation or interplanting. In the Mandara, the Mafa use a complex system of mulching and intercropping to grow sorghum, millet and other crops on terraces. Even when the Mafa move to the plains, their cropping systems remain intensive." (National Cereals Research 1979:111-9.)

In terms of cultivation, Fulani men prefer to hire laborers. Fulani women prefer to trade or process food rather than cultivate, but they grow their own kitchen gardens. Secluded women rely on children and employees to vendor their products. Women in lower status families will work in their husband's fields curing labor shortages connected with planting and harvesting. The responsibility for most household costs falls on the men, and women normally can retain any income they earn for their own purpose. Among nomadic Fulani, women milk the cows and make milk products (soured milk, butter) for sale. They purchase staple foods and clothes with their earnings.

Among non-Fulani peoples, men and women cultivate. The division of labor is based on who owns or has usage rights to a particular field. In the mountains, women cultivate sorghum and groundnuts with their husbands, as well as secondary crops in their own fields. The sorghum harvest is placed in the husband's granary and he dispenses the grains to his wives. The women's harvest is kept in granaries in their rooms and is used to prepare daily meals or sold in small amounts. In the plains, the men grow cotton for cash incomes, women grow groundnuts. Men own livestock and women own poultry.

Massa and Toupouri men and women cultivate their own fields. The men's granary supplies the seed material, reserve stock and any surplus for market. Women keep their harvests of sorghum, sesame, beans and vegetables for the preparation of daily meals. During certain seasons, men spend a great deal of time fishing and their wives look after their agricultural endeavors at this time. Men own and care for cattle which are used mostly for bridewealth; women are responsible for the care of smaller animals and poultry.

Constraints on Innovations Concerning Agricultural Research and Extension

All agricultural endeavors are constrained by the short rainy season which places heavy demands on agricultural labor and all family members must work at these times, often ignoring the traditional division of labor.

Bryson notes that the literature does not mention any women's organizations for Northern groups, and that the absence of these organizations would tend to limit the spread effects of extension activities. Nevertheless, the National Cereals Project argues that "traditional roles of men and women do not appear to limit agricultural innovation of and by themselves, but both sexes should be trained by extension personnel" (1979:111-10). Because of the strict separation of the sexes, they suggested female extension personnel who speak the local language.

Agricultural innovators in the area must take into consideration the fact that people here are closer to subsistence and risk-taking must be minimized. Labor shortages at important growing season points constrain the adoption of new techniques and ideas. "Subsistence farmers consider food for their families more important than cash crop production, but Cameroonian extension efforts have favored cash crops" (National Cereals Project 1979:111-9). For innovations to be accepted, farmers must be able to see favorable results, especially because of the risks of crop failures and low rates of literacy. Furthermore, inputs must be inexpensive and easily obtained, and labor demands must not conflict with demands of other crops.

The Southern Forest Zones¹

There are many ethnic groups in the Littoral, Southwestern, Center South- and Eastern Provinces. Littoral Province includes Douala and has 935,000

¹This section relies heavily on Bryson (1979), and National Cereals Research (1979), and to a lesser extent on Nelson et al. (1974).

people, 233,000 are rural. Southwestern has 621,000, 420,000 of whom are rural. Center South, where Yaoundé is located, is the largest Province with 1,497,000 people, 994,000 of whom live in rural districts. Eastern Province has the smallest population of 366,000, with 291,000 living in rural areas.

The present ENSA faculty is located at Nkolbisson, eight km from Yaoundé. Students have worked with small holder families in the areas around Yaoundé, especially at Yemessoa (sixty-five km away) and Nbankomo (ten km away).

Social Structure as it Relates to Agriculture

The Pahouin, a collective name for a group of eleven societies including the Ewondo, Fang and Bati, live in Center South Province and are stateless, i.e., without centralized chiefdoms. People live in small hamlets consisting of five to twenty houses. Patrilineage heads provide political leadership and have control of land in the area. Farming land is allocated to all married men by heads of the family. The position of lineage head is inherited patrilineally by a younger brother or oldest son. Sons inherit land from their fathers; women do not own or inherit land, but inherit personal property from female relatives. Women are dependent on husbands or fathers for land to grow food crops. People form work teams which are

"... based on the traditional 'machete group,' whereby several families cooperate in land clearing, cash crop plantation rehabilitation or other tasks. The teams have six to ten members and may be organized on the basis of age, sex, strength, friendship, proximity or family."
(National Cereals Research 1979:111-13)

Agricultural Crops and Roles

Each family cultivates about two hectares per year but requires a larger area because of shifting cultivation. The family's ability to clear land limits the food crop acreage. Men are responsible for clearing the land and women cultivate most of the food crops. Cassava, cocoyams and plantains are interplanted with each other, and groundnut fields include manioc, maize, gumbo, pepper, green vegetables and plantains. Women may grow sweet potatoes, greens and very early corn under irrigation for the urban market. They often form workgroups to clear the bush. "Growing food crops is still a rather demeaning activity for a man, although this attitude changes when the possibility of marketing specialty crops for the urban market is perceived" (National Cereals Research 1979:111-14).

Kpé men are somewhat more involved in food crops, cultivating plantains and yams while Kpé women cultivate cocoa, yams and other crops. In many groups, men tend palm trees, gather clusters of oil-bearing kernels and cap palm wine. Women extract the oil from the kernels which is a laborious activity. Cocoa is a major cash crop in the area, and some coffee and rice are grown. Cocoa accounts for 50% of men's incomes, which have expanded

greatly in the last twenty years. Food crop sales have expanded women's incomes as well in this time period. Guyer (1977), who studied the women's farming system among Ewondo near Yaoundé, shows that women changed their farming and marketing patterns to provide surpluses in many crops with few major innovations in techniques or organization. In the 1950's, only 2% of the family's total income came from the sale of food stuffs and the rest came from cocoa. By 1964, 25% came from food stuffs, and by the 1970's, 50% of the family's income was derived from food stuffs sold by women. Some women were paying to have their fields cleared when they had no male help available. Women also purchased tools, utensils and baskets for farming. Guyer notes that "there has been a steady narrowing of the gap between men's and women's agricultural incomes since 1954" (1977:73). As women's incomes have risen, they contribute to the family's welfare, often paying for half of the routine expenses such as food, soap, kerosene, school supplies and minor medical costs.

Constraints on Innovations Concerning Agricultural Research and Extension

Bryson (1979:81) believes that if extension programs with the various improved inputs could become available to women, then a good potential for women's positive response to innovations exist. The experience at Yemessoa and Mbankomo (see below) supports this position. ENSA students were able to work with both men and women in promoting innovations. They noted that women were often reluctant to attend meetings or speak in public when men are present. To overcome these difficulties, other programs (e.g., ZAPI-EST) successfully utilized teams of extension agents consisting of one woman and one man to cover a district.

The National Cereals Research argues that the small settlement units, and the lack of good roads and transport, would hinder change. However, young men in particular might be intrigued by improved methods and inputs to cultivate food crops, especially since they are often constrained by custom from owning cocoa and coffee plantations.

4. Small Holder Interests in Innovations

Small holders, both men and women, are desirous of having their problems and needs recognized. Farmers whom we talked to articulated their interests and needs with little hesitation. Food producers consistently noted that inputs (seeds, fertilizers and pesticides) were not available for food crops. Export crop producers said inputs were sporadic and allocations political at times. In particular, farmers want to control pest problems, as they perceive pest damage as the single most important factor affecting yields. Although small holders, by necessity, are expert cultivators, they asked for technical information concerning optimal intercropping (which crops should be planted in association with which crops), plant spacing and field utilization and maintenance of soil fertility. They would receive this information gladly from a number of sources, e.g., Ministry of Agriculture extension workers, parastatals such as MIDEVIV, UCA students doing intervention projects and radio broadcasts.

Women farmers articulated their needs for technical information and inputs. Their needs do not differ from men who farmed. However, their access to inputs, credit and information is reduced compared to men's. Fertilizers generally go to men for growing coffee and cocoa, and loans are made for export and certain cash crops only.

All agricultural extension post workers are men and they are supposed to work with farmers indiscriminately. In fact, they work primarily with men. Most have attended the agricultural training schools for one and two year programs, and their opportunities for refresher courses are minimal.

There are two categories of women who work at the community level and are the "female counterparts" of the extension workers community development (CD) assistants and *animatrices*. Community development assistants complete secondary school or teacher training and then receive a one year course at Kumba in home economics, self-help and communication methods. A few have attended the Pan African Institute for Development for short courses and subsequently become supervisors. *Animatrices* have primary school backgrounds. They often are employed to teach specific skills such as sewing or knitting. CD assistants and *animatrices* generally focus on teaching women domestic skills such as cooking, house cleaning, embroidery and knitting, hygiene and child care. They may have some agricultural input in that they are supposed to encourage the women to implement what extension agents are reporting. Their work was described as "psychological" in some areas as far as agriculture is concerned. But other *animatrices* received refresher courses and prepared demonstration plots. *Animatrices* and CD assistants could be given short courses on agricultural techniques in order to work with women farmers (see below).

In general, the MOA personnel at the local village level are constrained by their lack of technical information, as well as by lack of support for inputs and transportation. These people, as well as MOA supervisors at the District and Provincial levels, expressed much interest in retraining extension and community development personnel, and cooperating with UCA faculty and students in seeking solutions for small holder problems.

B. Interrelations of University Center for Agriculture (UCA) Programs and the Small Holder and Women

I. General Curricula

Present ENSA and ITA philosophy places teaching as the preeminent activity even though the goals of UCA, according to Dr. Bol Alima, who is Director General, include research in collaboration with DGREEST (the national research agency) as its secondary priority and direct support to rural development as its third. Considering teaching, classroom instruction focuses mainly on theoretical issues and most courses are large lectures with few practical exercises.

ENSA students do spend three weeks to a month every year for the first four years in practical work. The "stage-ouvrier" or practical farm work

which includes cultivation and working with farm animals is given in the first year. For the second year's "stage de production," students work with parastatals, private or public organizations. The third year includes the "stage monographique" in which the students live in a village, often in their own area, and study the socio-economic characteristics and activities of farmers. They are taught interviewing techniques and their reports consider the social system (e.g., political organization, polygyny, bridewealth) and social constraints. For the fourth year's "stage pre-optional," they go back to the parastatals and other agencies to consider specific problems. In the fifth year, the students spend four months in the "stage of pre-specialization" where they design and carry out a small research project concerned with a development problem. Professors visit their students at their field sites, usually to check on accommodations, but in the later years to help with project design.

Students are placed all over the country and some students have experiences in three or four Provinces by the end of their education. Students with options in economics and extension and agriculture may go to almost any Province, whereas students in animal production go to the north and students in forestry often go to the east. As a result of these experiences, students in the third year have a small amount of direct contact with farm work, small holders and women, but it varies depending on their option in the fourth and fifth years. It is more likely that these students will have experiences on research stations and/or using improved agricultural techniques in controlled settings. One student in animal production noted that he had to make a special effort to find out about traditional animal production. He realized his fourth year experience at an animal research station was limited, and designed his fifth year project as a comparison of research station and small holder techniques.

Students at ITA schools do relatively little field work. In the first year of upper ITA ("stage-ouvrier"), students do farm work as agricultural laborers for three weeks. The second year ("stage monographique"), they live in a rural area and consider the problems of farmers in terms of their option. In the third year they have ("stage optionnel") in which they work in parastatals, public or private organizations.

Lower level ITA has the "stage ouvrier" in the first year, "stage monographique" in the second as well as 100 hours of practical work, but these hours do not include any contact with small holders. In the third year, they have 100 hours of practical work and the "stage pre-professional." The experience gained in this practical work is mostly manual labor rather than skills producing.

Students are willing to consider small holder needs, but may require their professors' guidance in this direction. The number and specializations of professors who are interested in this approach is not known. However, it is recommended that a group of faculty from various disciplines be asked to form a farming systems team along the lines of one at the University of Florida group. A Seminar on Farming Systems by the contracting university faculty is proposed.

In terms of considering whether or not the recipients and the donor (AID) are of similar mind regarding the goals of this project, it is important to consider that the recipients do not constitute a single entity. The faculty and students at UCA constitute one client, the small farmers (rural poor) constitute another. UCA officials are most desirous of the physical facilities and training programs that this project can provide. First on their list of wants is the library. Second, are good demonstration production farms at Bansa and Djouttitsa. Finally, UCA wants to train Cameroonians to the Ph.D. level in agriculture, rural sociology and extension, crop protection and animal science. USAID's interest in small farmers and women is tangential to UCA's interests. Whereas everyone in the country including UCA follows the President's interest in increasing food production, the University must function to train agricultural scientists, some of whom will work in ministries and parastatals concerned with food production and small holder needs. It would be possible to encourage the use of theoretical materials concerned with small holders and women as well as the use of Cameroonians examples in various courses and at the experimental farms. Up to now, the course content is more likely to focus on large scale production techniques and heavy mechanization with little practical application to the local scene. Many UCA faculty recognize the need for more appropriate theory and practicums. The move to Dschang, and the restructuring of the University Center and its training programs would provide the ideal time and context for curricular and practical emphases on small holder needs. The content and mechanisms of this new approach needs to be carefully delineated and discussed with UCA administrators and faculty.

2. Role of Women

Administrators, faculty and students agree that the low number of women students at UCA is a function of girls in Cameroon entering formal education at a later time than boys. At the time of independence, girls constituted 30% of the school population and, according to the 1976 census, represented 44% of those in primary schools. However, at the higher levels the numbers were lower (secondary, 30%; technical, 36%; and higher, 20% in 1976). In terms of UCA, Table 4 shows the percentage of women at Lower ITA (5.9%), Upper ITA (7.7%) and ENSA (7.0%).

Entrance to UCA schools is by examination. Many fewer girls than boys take the exam. It was estimated that 1700 boys (85%) and 300 girls (15%) take the exam yearly, but we did not obtain exact figures on the number who passed. Girls are not represented in UCA in proportion to the number who take the exam. They either do not do as well as boys on the exam or chose to go to other institutions.

In fact, students may take several examinations (for Medical School, Faculty of Arts and Sciences, Technical Schools, etc.). Many of the women students wanted to go to medical school, but passed the exams for ITA or ENSA. Their preferences were based on knowing more about physicians' jobs than agricultural jobs. ENSA students said that before entering the school they thought higher agricultural education was only for men because they

TABLE 4

Student Enrollments for 1979-80

by sex, year and option

	<u>Lower ITA</u>					<u>Upper ITA</u>				
	<u>Men</u>	<u>%</u>	<u>Women</u>	<u>%</u>	<u>Total</u>	<u>Men</u>	<u>%</u>	<u>Women</u>	<u>%</u>	<u>Total</u>
1st year	120	(93.7)	8	(6.3)	128	100	(89.9)	10	(9.1)	110
2nd year	95	(93.1)	7	(6.9)	103	97	(94.2)	6	(5.8)	103
3rd year	41	(97.6)	1	(2.4)	42	67	(91.8)	6	(8.2)	73
	<u>256</u>	<u>(94.1)</u>	<u>16</u>	<u>(5.9)</u>	<u>272</u>	<u>264</u>	<u>(92.3)</u>	<u>22</u>	<u>(7.7)</u>	<u>286</u>

E.N.S.A.

	<u>Men</u>	<u>%</u>	<u>Women</u>	<u>%</u>	<u>Total</u>
1st year	54	(90.0)	6	(10.0)	60
2nd year	47	(84.0)	3	(6.0)	50
3rd year	47	(95.9)	2	(4.1)	49
4th year					
Agronomic Option	32	(89.9)	4	(11.1)	36
Forestry Option	11	(100.0)	-	(0)	11
5th year					
Agronomic Options					
Animal Science	6	(100.0)	-	(0)	6
Plant Protection	10	(100.0)	-	(0)	10
Economics and Extension	4	(67.7)	2	(33.3)	6
Forestry	16	(100.0)	-	(0)	16
	<u>227</u>	<u>(93.0)</u>	<u>17</u>	<u>(7.0)</u>	<u>244</u>

believed that it involved heavy machinery and "tramping through the bush." In terms of their secondary school training, students noted that they had very little information about the course of study in agriculture colleges, and most girls thought it better to work in an office than "with the soil." Once they got to UCA, their opinions changed and they became dedicated agricultural scientists.

At UCA, the girls do as well as the boys and their drop-out rate is lower. There is occasional jealousy and harrassment on the boys' part when the girls do well. But generally a congenial relationship is maintained. Many professors go out of their way so as not to discriminate against women students. There are no women in forestry or animal science options¹ because women believe that forestry deals with hunting and going through the bush which are men's jobs. The traditional Cameroonian association of men with the ownership of large animals may inhibit women from choosing animal science.

The number of ENSA women students was restricted in the early years of its formation because there were no dormitory facilities and a special exception was made so they could live outside the campus. The situation has been remedied and eleven women live in the dorms. There are women's dorms at ITA as well. Table 5 shows the number of ENSA graduates by year of graduation and sex. Five percent of the alumni are women

There is only one ENSA faculty member who is a women (she is in the United States for graduate training presently). Most ENSA graduates are placed in MOA extension administration positions in the urban areas. With an increase in women graduates, it is suggested that they fulfill a variety of positions and be selected in greater frequency for graduate training. In terms of increasing the number of women on the teaching faculty, this number will increase in direct proportion to the number of women students selected for graduate training. It was noted that several of the wives of UCA faculty have Master's degrees in relevant fields and could be employed.

¹The present group of fifth year women have chosen the Economics and Extension option, some fourth year women students are planning to take the plant production option in their fifth year.

TABLE 5

E.N.S.A. Graduates by Year and Sex

<u>Year</u>	<u>Men</u>	<u>Women</u>
1965	5	--
1966	10	--
1967	13	--
1968	8	--
1969	8	--
1970	4	2
1971	15	--
1972	30	--
1973	26	2
1974	25	2
1975	31	1
1976	30	1
1977	32	--
1978	<u>29</u>	<u>6</u>
TOTAL	266 (95.0%)	14 (5.0%)

3. Department of Rural Education

The Department of Rural Education is composed of two Divisions: the Division of Rural Sociology and Extension and the Division of Rural Pedagogy.

a. Division of Rural Sociology and Extension

The topics of rural sociology and extension are linked together since the founder of the Department studied rural sociology and worked as an extension agent. The current Head of the Department was asked to do both of these topics in his studies (60% rural sociology and 40% extension); the two

other Departmental members have focused primarily on extension, with a few courses in rural sociology. It is fortuitous that the founder linked these topics, as rural sociology is indispensable for a sound extension component. The professors in this Department are interested in small holders' attitudes, problems and motivational needs. They are constrained by a shortage of personnel and the small number of hours allotted to rural sociology in the curriculum.

Although the list of courses (Appendix B) in rural sociology is substantial, few are taught. Presently there are only two professors who teach—one Cameroonian who is completing his doctorate and one Dutch professor who is scheduled to leave this year. The Cameroonian professor goes to Dschang for short periods to give lectures to ITA students and he also chairs the Department consisting of both Divisions. With an increase in staff, it would be possible to increase the theoretical and practical focus on small holder problems in the Department.

Extension courses within the Division of Rural Sociology and Extension are in Appendix B also. Presently there are two staff members with Master's degrees who teach these courses; one is at ENSA and the other at ITA. There also are two enumerators who follow the daily operations of farmers in the extension site, collect data on yields, field size, crops marketed, etc. The course in "Extension Education" has a practical, outreach activity connected with it. The class goes to the rural areas on Saturdays to carry out survey research and interview small holders. Small groups of students are assigned to a particular village, extension post worker, model farm, farmers' group or individual farmer to obtain information on the area, and social and farming systems. They write reports on their findings and on the basis of these reports, the professor prepares questions for the next group of students to answer. The students obtain some experience in a variety of situations and sites as a result of this class.

a-1. Mbankomo (about ten km from Nkolbisson) is the present area where students are working; the professor has arranged seven contact points in this area. The current situation at Mbankomo is one in which students practice their interviewing techniques and information gathering in terms of the small holder. The students are finding that the farmers main concerns are inputs and yields. Students have been well received by the farmers and seem to enjoy the opportunity to deal with "real" issues. Whether or not Mbankomo becomes the site of a full scale research and farming project will depend on the support from ENSA and USAID and the availability of the faculty.

a-2. Yemessoa

From 1970 to 1978, an "intervention zone" with an extension training component was located at Yemessoa (sixty-five km from Yaoundé). The goals of the project were to 1) provide practical, rural experiences for the students, 2) provide an experimental area for departments to do research and 3) aid the people of the area with their agricultural production (Cornell Report 1979:53). It was hoped the work would aid the students in their future careers as well.

The zone was selected based on three considerations: that 1) it not be too far, 2) the population would accept technical assistance and 3) it was located in an area that did not have parastatal services operating. The reason for the last criterion was to prevent outside forces from influencing the diffusion of innovation. There were nine hamlets and 1700 people in the area. The average family held one hectare of cocoa, .5 hectare of food fields and several dozen ares of fruit trees (Tchala-Abina 1980).

The students tried to operate as agricultural agents or rural delegates to provide technical information and motivate the farmers to adopt their innovations. There was intensive work on ten topics: production problems and increasing yields of cocoa, food crops (tubers and grains), fruits, vegetables, bananas and plantains, swine, poultry and fishing; and infrastructural problems concerned with village roads and water supply, and formation of a cooperative.

Studies were carried out during the first three years of the intervention program. The first report on the project (Tchala-Abina 1974) notes that nearly all of the target population had adopted some of the food production techniques that were recommended. A second report (Van Gils 1978) noted that they had abandoned many practices because of the high costs in relation to returns. The Cornell Report argues that ENSA's extension training effort "was substantially undercut by the structure of food prices. (The lack of success may also be attributed in part to the attempt to introduce monoculture)" (1979:62). The Report also notes that this project was one of the few extension projects to address the issue of women farmers effectively. The program did not focus on women specifically, but a clear attempt was made to assure that all benefitted and students worked with the entire village.

Tchala-Abina (1980) considers the final impact of the project in terms of carrying out long lasting technical assistance to the farmer as being minimal, a "half success." Most of the recommendations the students and faculty made were not adhered to in the long run with exception of poultry breeding. He cited some reasons for failure and it is useful to discuss them in some detail here as they directly address the direct impact of UCA programs on small holders. The reasons the peasants gave for rejecting innovation were:

- 1) The difficulties the new methods presented--in particular farmers disliked row cultivation. They cited fatigue, old age and health problems as interfering with adoption of new methods.
- 2) They experienced the opposition of their neighbors.
- 3) They lacked money to purchase the necessary materials.
- 4) The cultivation of cassava was not integrated into the program.

- 5) They thought the new methods were unnecessary, were against fertilizers ("they burn the soil") and feared risk due to uncertainty of the new methods.

The interventionists came to the conclusion that the partial failure of the program was due also to lack of logistical, technical and economic support. In terms of technical support, none of the recommendations made were based on research carried out in the area. According to Tchala-Abina, recommendations were taken from general agronomy and specialized agriculture courses, research in the school garden and an experimental program on fertilizers carried out by FAO. Some of the technical advice was not applicable to the particular type of ecology found in the zone.

Although a number of problems concerning plant protection were delineated, they could not be solved as ENSA's specialists were not always available and multidisciplinary links were not well established. This was partly because of the small size of ENSA faculty who had their own interests and could not solve the zone's problems. Lack of economic support put serious constraints on the intervention. ENSA could not supply the farmers with credit, inputs or marketing boards. The peasants had to take it upon themselves to sell their produce in nearby urban markets.

One conclusion that Tchala-Abina draws is that the training of students was of much pedagogical significance but that such programs have difficulty in increasing small holder production and upgrading their standards of living. He argues that such objectives would become possible if UCA's interventionism were built on the model of a development agency which could provide specialists and financial support. He suggests that by working through an agency, the students and faculty could contribute their knowledge and skills without taking the whole responsibility for the diffusion of innovations. Along these lines, the project might be started by UCA and USAID and then continue in conjunction with parastatal organizations in order to assure funds on a long-term basis.

b. Division of Rural Pedagogy

In 1970, the MOA decided to house a unit in the University which would prepare curricula and training for MOA technical schools. The basis of this decision was that ENSA was concerned with national agricultural education, and provided a scholarly atmosphere for developing curricula. Between 1970 and 1975, the Division prepared curricula for the schools and teaching materials (posters, pamphlets, audio-visuals) for teachers. It also was involved in the training of teachers at technical schools and ENSA. Its primary method was to video-tape the teacher in the classroom situations and then analyze the teaching in terms of "style." It helped individual teachers and professors prepare slides and classroom materials. Funds for these activities were provided by the Bureau Pour le Développement de la Production Agricole (Parrot and Bauchau, 1973-74, 1974-75). The Division also aided other African countries (e.g., Chad, CAR, Congo, Gabon) in terms of curricula and agricultural teaching.

Its stated goals were as follows:

- 1) Assure the educational instruction of the ENSA students.
- 2) Retrain teachers of secondary agricultural education.
- 3) Organize internships for training and upgrading agricultural extension agents, *animateurs* and the community development workers.
- 4) Elaborate and work with the teachers on the program for secondary agricultural schools.
- 5) Aid agricultural training in Chad, CAR, Congo and Gabon. (Parrot and Bauchau, 1973-74)

In 1975 the project ended and there was difficulty in funding and staffing. The expatriates left and only one Cameroonian remained and he was subsequently appointed to the MOA. As a result, the training of teachers and the preparation of technical training college curricula have not been functioning. However, the MOA Deputy Director of Agriculture continues to teach the course on "Psychopedagogy" at ENSA and ITA. This course is concerned with note taking, report writing, the use of audio-visual materials in training extension workers and basic psychology.

This Division is severely constrained in terms of personnel at the present time. Given the links it has already to the MOA, and the possibility of focusing the curricula of agricultural training colleges in Cameroon and neighboring countries towards small holder agriculture, the Division's staff should be increased.

The Cornell Report encourages this Division in terms of pedagogical communication and technical training. By pedagogical training the report means short-course development. The recommendations here (see Section III-B) place these short courses within the Department of Rural Education with input from both Divisions. By communication training, the report means interview techniques which find out about the peasants' needs. The recommendation here is that the Division of Rural Sociology and Extension should focus on these aspects since they will be working with small holders directly, as well as considering theoretical materials on this topic. In terms of technical training, the Cornell Report argues that only additional technical training is necessary for MOA secondary school teachers as they received technical information as part of their formal education. In fact, it is recommended that additional agricultural training be given in light of new scientific findings, as well as the increased emphasis on small scale, peasant agriculture.

The Cornell Report recommends that separate facilities "be constructed at ENSA for the purpose of providing in-service training" so as not to interfere with the regular University program. At present, this aspect has not yet been fully considered.

In addition to MOA related activities, some comments must be made about the Division's printing and photographic operations. There are five technicians--one to do duplication, two for offset printing, one for drawing and one for photography. These people prepare maps and diagrams, covers for ENSA publications and the like. They are being supervised by the professors in extension, as well as the Department Head. The professors are continually interrupted in their own work to make decisions on design and layout. The recommendation here is that these printing and media functions be removed from the Division and Department to a centralized printing/media center.

4. UCA Farms

The farms are located near the present Nkolbisson and Dschang campuses and are used for student and faculty projects. Students learn techniques of cultivation and may work on research projects of their own or their professors'. The small plots cultivated here are located close to the main buildings and are easily accessible. There is an animal production unit which houses swine, poultry and rabbits.

The Technical Paper on Research and Experimental Farm Development deals with UCA farms at length. Because of the farms constant usage and proximity to the UCA, they would be ideal places to include sections on small holder techniques and production problems. However, implementing this may be constrained by the perspective of the agricultural faculty who were trained in Europe and the United States where university farms are seen as research units for large scale commercial agriculture.

a. Bansoa farm is located forty-five minutes by car from the Dschang campus. This farm was started in 1977-78. Twenty hectares are under cultivation at present, but there are plans to expand it ultimately to 300 hectares. The crops now cultivated are maize and plantains and there are some experiments on beans. The farm manager would like to start coffee, fruit trees (orange, guava and mango), and a vegetable garden (tomatoes, carrots, etc.). Although primarily focused on cash crops at present, there are plans to do more work on food crops in terms of varieties, tests with pesticides and herbicides and agronomic practices. Farm projects are constrained by the fact that much of the UCA staff is still in Yaoundé.

The major goal of Bansoa is to provide a work place for students to do manual labor (weeding is chemical, harvesting mechanical and these are carried out by men hired by the farm manager, not by the students), and eventually to sell produce and animal feeds to UCA. The farm manager expressed the thought that Bansoa would be a good place to try out ideas on the plots before presenting them to village small holders, as expertise in cultivating and research on new ideas would be necessary to maintain credibility. There is the desire to build facilities to house fifty workers and four to five staff members and to hire temporary workers from the villages in order to expand the farm into a viable production unit.

b. Djouttitsa farm for animal production is housed in an old MOA extension unit and has two barns for cattle and pigs, a cold storage unit and pastures. The Research and Experimental Farm Development Technical Paper did not find large scale dairying to be a viable option here. Problems of small holder cattle and goat breeders could be investigated at this facility and should be considered in addition to the commercial endeavors that are planned.

C. Ministry of Agriculture (MOA)

1. Use of UCA Graduates

The MOA is one of the largest and most important ministries, and is the largest employer of agriculturally trained personnel in the country. The MOA has been responsible for agricultural extension work, although recently parastatal organizations have been doing some of these activities. (MIDEVIV is concerned with food stuffs, SEMRY and SODERIM with rice, SOCOPALM with palm oil, SODECAO with cocoa and SODECOTON with cotton.)

MOA technical staff are classified into cadres based on qualifications and/or seniority. The highest cadre, A2, are "Ingénieurs de Conception" who conceive, direct and control agricultural policy and rural production. Next are A1 or "Ingénieurs des Travaux" who conduct and control agricultural operations. The "Techniciens d'Agriculture" are cadre B and they execute agricultural programs. ENSA graduates are accepted into cadre A2, Upper ITA graduates go to A1; ITA cycle des techniciens go to cadre B. Other lower-level agricultural schools train C cadres who are "Agents Techniques d'Agri-cultures" and D cadres who are "Agents Techniques Adjoint." C and D cadres are in charge of on-the-job extension work.

Of the 258 Cameroonians who graduated from ENSA from 1965-1978, the majority now work for the MOA (15.5% directly and 15.9% in extension), or parastatals (26.7%). Table 7 gives the breakdown by category and percentages and is taken from the more detailed "Tableau Recapitulatif des Effectifs de Diplômes Formés par l'ENSA" (Table 6) prepared by Mr. Jacob Foko, the registrar at ENSA.

The MOA would like to fill positions from Technical Advisors to Divisional Delegates with A2 cadre, and Divisional Chiefs of Sections and Principal Chiefs of post-position with A1. This would require 140 for A2 cadre and 341 for A1 cadre. Table 8 gives the exact breakdown of positions. It is obvious from the positions requested that ENSA and ITA graduates will be in strong supervisory positions with potential for directing their staffs to impact on small holders. The Cornell Report notes that there is now a more specific demand for specialized positions within MOA as previous graduates have filled most of the upper level administrative posts. Hence, ENSA and ITA graduates will have "to implement projects at a more local level than their predecessors" (1979:44). MOA officials state they want students to study more extension related topics to meet these needs.

TABLE 6. TABLEAU RECAPITULATIF DES EFFECTIFS DE DIPLOMES

FORMES PAR L'ENSA¹

(Prepared by the Registrar, ENSA)

Promotion et année de sortie	Effectif total	Camérounais		Etrangers		AFFECTATIONS DES CAMEROUNAIS										
		G	F	G	F	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
						Admini- Agricole (minagri)	Vul. Dévelop	Soc.de Dévelop	autres Sociétés	ENA Sup. A- gric.	ENS sec agric.	Res	Banques et Or. Div.de financ.	En for- mation à l'ext	autres Ministe- res Ad.	Dive
1ère promotion 1965	5	5	-			3	-	1	-	-	-	-	1	-	-	-
2ème promotion 1966	10	10	-			4	-	4	-	1	-	-	-	-	1	-
3ème promotion 1967	13	13	-			5	-	5	-	1	-	1	-	-	1	-
4ème promotion 1968	8	8	-			2	-	5	-	-	-	-	1	-	-	-
5ème promotion 1969	8	8	-			1	-	4	-	2	1	-	-	-	-	-
6ème promotion 1970	6	4	2			2	1	-	-	-	1	1	1	-	-	-
7ème promotion 1971	15	11	-				1	2		3		4	-	-	-	1
				4	-											

Promotion et an née de sortie	Effect. total	Camerou nais		Etran- ger		Ad. Agri (Minag.)	Vulg.	Soc. de Dévelop	Autres Sociétés	Ens. sup Agric.	Ens. sec Agric.	Res	Banques et org. de Fin.	for- mation à l'ext	Autres Min. Ad	Dir
		G	F	G	F											
8ème promotion 1972	30	25	-			2	6	3	-	5	6	1	-	-	2	
				5	-											
9ème promotion 1973	28	21	2			3	10	4	-	-	-	3	1	-	1	
				5	-											
10e promotion 1974	27	22	2			3	3	5		2			1		1	
				3	-											
11e promotion 1975	32	31	1			2	13	5	-	2	1	1	1	?	2	
				-	-											
12e promotion 1976	31	29	1			3	2	6	-	-	-	3	-	3	1	1
				1	-											
13e promotion 1977	32	28	-			2	2	9	1	7	1	1	-	5	-	-
				4	-											
14e promotion 1978	35	29	6			8	3	16	2	1	1	3	-	-	-	1
				-	-											
Total	280	244	14	22		40	41	69	3	24	5	23	7	8	9	29

- 1) Services centraux du Ministère de l'Agriculture
- 2) Services extérieurs du Ministère de l'Agriculture
+ Délégations provinciales
+ Délégations départementales
- 3) Sociétés et Missions de développement
- 4) Autres Sociétés exerçant des activités connexes
au Développement rural
- 5) Enseignement supérieur Agricole

1. Prepared by M. Jacob Foko, Registrar, ENSA

- 6) Enseignement secondaire agricole
- 7) ONAREST (Recherche)
- 8) Banques et Organismes divers de financement
(BCD, FOSNI)
- 9) En formation à l'étranger pour le compte du
MINAGRI l'ONAREST
- 10) En poste dans d'autres Ministères (Economie
Plan jeunesse et sports, Tourisme, etc)
- 11) Affectation non définie, décédés, ou en posi
tion d'absence irrégulière.

G = garçons
F = filles

TABLE 7

PLACEMENT OF E.N.S.A. GRADUATES

1965 - 1978

	<u>No. ENSA Graduates</u>	<u>%</u>
MOA	40	15.5
MOA Extension	41	15.9
Parastatals	69	26.7
Other Rural Development Societies	3	1.2
ENSA/ITA	24	9.3
Secondary Agricultural Education	5	1.9
Research	23	8.9
Financial Organizations (e.g. FONADER)	7	2.7
Graduate training abroad	8	3.1
Other Ministries	9	3.5
Other	29	11.3
	<hr/>	<hr/>
TOTAL (Cameroonians)	258	100.0
Foreigners	22	
	<hr/>	
TOTAL (ENSA Graduates)	280	

TABLE 6
Current Stock of Manpower in the Cameroon MOA by Position

Positions	Stock of Manpower by Cadre				Vacant	Total No. ^{1/} of positions	Current GAP in Personnel	
	A2	A1	B	C			A2 Cadre	A1 Cadre
	Technical Advisors	2	-	-			-	1
General Inspectors	2	-	-	-	-	2	-	-
Directors	7	-	-	-	-	7	-	-
Deputy Directors	7	-	-	-	-	7	-	-
Officer in Charge of Studies	1	1	-	-	-	2	1	-
Chiefs of Service	6	8	1	-	4	19	13	-
Assistant Chiefs of Service	4	10	4	-	3	21	17	-
Chiefs of Bureaux	7	4	26	2	10	49	42	-
Provincial Delegates	7	-	-	-	-	7	-	-
Provincial Chiefs of Service	12	18	15	1	3	49	37	-
Assistant Provincial Chiefs of Service	4	2	-	-	1	7	3	-
Divisional Delegates	14	17	9	-	-	40	26	-
Sub-Total	73	60	55	3	22	213	140	-
Chiefs of Section	-	N.A.	N.A.	N.A.	20	160	-	160 ^{2/}
Principal Chiefs of Post	-	-	N.A.	N.A.	-	181	-	181
Other Positions or Unclassified	-	N.A.	N.A.	N.A.	-	454	-	-
Total ^{1/}	73	66	382	445	42	1,008	140	341

^{1/}As given by the service of Personnel in MOA.

^{2/}Because of lack of information it is assumed that none of the Chief of Section positions are filled by personnel from A1 cadre.

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ENSA graduates now working for the MOA were interviewed about their ENSA training, and its relation to their present positions. Several themes emerge in terms of their opinions of ENSA training. First, the graduates thought that ENSA training was too general. This is especially true since in the past the course of study was 4 years; the 5th year specialization commenced in 1979. Second, they noted that there were no classes concerned with management, yet many of them are involved in managerial posts presently, and all expect they will be at some time. Almost all MOA positions involve supervising people or organizing a post, and therefore, managerial/organizational skills and techniques are important. Third, the graduates felt they were ill-prepared to organize information on their own. They said that at ENSA the materials were all prepared for them and they subsequently had difficulty in solving new problems on their own; they did not know where to get the information or how to approach the problem. Fourth, they remarked that ENSA training provided them with little opportunity to observe farming or participate in practical exercises. The main exception was the extension course in which students worked at Yemessoa. On the basis of these points, training at UCA in 1) management, especially in communication techniques and budget preparation, 2) use of the library and information gathering of research materials and 3) writing skills would be particularly useful.

ENSA graduates who are now in directorships discussed courses which the MOA holds for its employees. MOA personnel believe that ENSA students need training for one year (and the Director of Studies and Projects has plans for a training program which will last upwards of four years). The reasons for this training are to make graduates cognizant of the Ministry's philosophy and to give them practical training lacking at UCA. An example of this training is the three level approach used by the Department of Studies and Projects. First, it gives a theoretical course in rural economy and project analysis. (Interestingly, the lecturers come from ENSA, University of Yaounda and elsewhere.) Second, trainees visit agricultural projects and prepare or read evaluation papers. The aim is to view the relationship of the theoretical and practical aspects of projects. Finally, the trainees are given instruction by World Bank personnel on communications techniques and working with groups.

It is important to note that this Social Soundness Analysis and the other technical papers all note that the integration of theory and practice is indeed lacking at UCA and make recommendations for its implementation. The Department of Rural Education has a course on project analysis and works with communication techniques but apparently this is not known by the MOA. There seems to be a serious problem in that the MOA has been excluded from having input in the curriculum, and as a result does not find ENSA training adequate. Since the UCA training program is supposed to prepare its graduates for MOA positions, some mechanism should be found for greater MOA input into UCA programs.

2. MOA Extension and Community Development Services

The MOA and UCA are visibly linked all through the country through administrative and extension services. Directors, Advisors, Inspectors and Provincial Delegates (A2 cadre), Divisional Delegates (A2 and A1 cadres) and Sub-Divisional

Posts (B and C cadres) are UCA graduates (Table 8). People in these positions supervise extension and community services at the local level i.e., extension posts, community development assistants (C and D cadres) and animatrices. One provincial delegate felt that UCA students who fill these positions 1) lack adequate preparation in dealing with farmers; 2) need more practical farm work so they will be credible farmers; and 3) lack technical information. Curricular suggestions for UCA course content clearly need to address these inadequacies (see Curricula Evaluation and Instructional Program Technical paper).

In the agricultural section of extension, the post workers are the lowest level (under the section chiefs) and are D cadres (completed primary school and given training for 3 months). These men actually live in villages and small towns where they have some land for demonstration farms and a building for storage of materials. The agricultural census notes that each post worker has 900 farmers in his area but in actuality there may be several thousand. Their operating funds are minute and they do not have vehicles. Post workers have infrequent contact with farmers and some seemed out of touch with the farmers' real needs.

The community development part of the MOA has a women's service division, with Provincial and Divisional level delegates, and community development assistants (animatrices) who work at the village level. These women work with the male extension post workers to provide access to women farmers. In one area in Northwest Province, they were able to get women to change from cultivating slopes vertically to horizontal contouring. In another area, South Central Province, they provided "motivational help" in encouraging women to grow groundnuts. The CD assistants/animatrices appeared to have good rapport with women in their areas, one reason being that they were able to teach skills (e.g., knitting, embroidery, baking) that the women were desirous of learning.

CD assistants at the village should have 4-5 groups of women whom they visit at least once a week. The 1979-1980 policy paper urges that they focus on improving food production, small animal breeding, conservation and storage of food, and child care, health and sanitation, marketing techniques, and home crafts and management. In terms of agriculture, one aim is to introduce farm tools and home equipment, such as improved hoes and chemical pesticides/fertilizers, in order to increase production.

The staff of Women's Service in the Department of Community Development is given in Table 9 by rank and province. There are more CD Assistants in the Northwest and Southwest Provinces (anglophone Cameroon) than elsewhere and the Community Development training school at Kumba is located in Southwest Province. The Service is severely constrained by a small budget and lack of personnel and transport.

The extension agent or CD assistant at the village level is an all purpose individual who is called upon to answer all types of questions. He or she must be able to do the agricultural work him/herself, understand the constraints on farmers and provide technical information. There are some refresher courses which are given, but those who come in for training are primarily from the areas close to where the course is given and training is

sporadic. There is some discussion of increasing the agricultural training for community development assistants and this move should be supported.

TABLE 9
Staff of the Women's Service, MOA, 1980

Provinces	Chief of Service	Chief of Bureau	Coordinator	Supervisors	CD Assistants
National Level	1	2	1		
Central South				2	30
East				-	9
Littoral				1	11
North				1	22
Northwest				5	45
Southwest				4	35
West				1	9
TOTAL	1	2	1	14	161

It would seem that extension post and community development workers would be an ideal combination for reaching small holders. They are already located within the villages. Many have good rapport with the local people. Their acceptance may be predicated on belonging to the same ethnic group, speaking the same language, being from the area, as well as for their personal attributes and skills. Nevertheless, given that the MOA has already placed these people in the villages, they would form a convenient and ready group for reaching the small holders. As such, training in small farmer problems and technical solutions is highly recommended for extension post and community development assistants in the area of UCA (see Section III-B).

III. Suggestions to Improve UCA's Commitment to Small Holders and Women

A. General University

1. Creation of a Position for Extension and Research and Farming Systems Seminar

It is important that curriculum, research and outreach activities at the university be geared to Cameroonian needs and especially to problems of small holder agricultural production. Two mechanisms are suggested to facilitate this end. First, the position of Director for Research and Extension should be created in order to add a practical outreach component and a research focus which could be channeled to study Cameroonian agricultural problems and programs. The Research and Experimental Farm Technical Paper details this position and the Administration Technical Paper sets up the articulation of the various departments to this office. It is suggested that one publication series handled through the Director be reserved entirely for small holder research and extension activities.

Second, it is suggested that the faculty at UCA needs to become knowledgeable about current theory, research and outreach activities on the farming systems' approach geared to the small holder. If the University of Florida is the contracting university, it has an interdisciplinary group of faculty who have prepared courses, lectures and practical exercises. They would be requested to prepare a four week course for UCA faculty which would utilize Cameroonian examples. The team would consist of an agricultural economist, social scientist, vegetable crops specialist, extension specialist and perhaps, an animal scientist. It is suggested that one short course seminar be given at the initial phase of USAID involvement in the UCA project to provide impetus to new theoretical and research interests. A second seminar should be given after ENSA moves to Dschang.

2. Recruitment of Women Students and Faculty

There are only three suggestions regarding women students and faculty at UCA.

First, a program should be started in which ENSA and ITA students visit secondary schools and inform the students of what is involved in an agricultural education. If girls (as well as boys) understand the jobs that UCA graduates will do, they may change their attitudes towards careers in agriculture. A special information campaign should be carried out using media (radio), information brochures and visits to secondary schools to inform girls about agricultural careers. The campaign should be handled through the general administration at UCA (but further study and discussion is necessary to determine which office would be best suited to handle this assignment).

Second, women as well as men students should be selected for graduate training. In choosing ENSA students, it is likely that women would be selected from the options of economics and extension and plant production,

as they are options that women are studying at present. Candidates from the University of Yaounde's Department of Sociology would be available also for selection.

Finally, faculty wives who have masters degrees (or higher) in fields taught at UCA could be employed as lecturers. The possibility of hiring qualified faculty wives needs to be considered.

B. Department of Rural Education

1. Training of Staff

In order to constitute a fully functioning teaching and research Department, the staff needs to be upgraded and its numbers increased. Appendix A provides a budget and time table for training and technical assistance. The goal is eleven faculty members by 1986, six of whom have Ph.D.'s¹ The Head of Department will receive his Ph.D. in rural sociology in 1981 independent of AID financing. One Ph.D. rural sociologist may be hired next year. Two extension professors have Master's degrees and need to be trained to the Ph.D. level. The remaining seven can be trained to Ph.D. or M.A. levels depending on USAID's goals and commitment to this Department and small holder agriculture. It is suggested that a minimum of three others be trained to the Ph.D. level (one in rural sociology, one in extension and one in agricultural education), and that four be trained to the M.A. level (one in rural sociology, two in extension and one in agricultural education).

Although people with Master's degrees would be capable of teaching some of the courses, they would not be able to provide 1) the instruction in research design and methodology needed to handle the intervention zone, 2) curricula design for MOA extension personnel and 3) curricula preparation for MOA training schools. Concerning the latter, the opportunity to structure and influence all agricultural training schools in the country should not be lost because of unqualified and untrained personnel. The MOA placed the responsibility for this task in UCA because it expected academic soundness. In terms of rural sociology, it will be necessary to train a minimum of two Cameroonians in applied social science and agriculture. It is suggested that the first student begin in 1981 with six months of language training and then proceed through the Masters and Ph.D. course work (1981-1984), research in Cameroon (1984-1985) and dissertation write up (1985-1986). One student should begin a masters program in 1984 and complete it in 1985. In the selection of students for this specialization, the large pool of graduates from the Department of Sociology at the University of Yaounde should be considered. The student should take the Certificate in Tropical Agriculture along with a degree in applied sociology/anthropology, the contracting university should send one Ph.D. rural sociologist/anthropologist to Cameroon in 1982-1984.

¹The Department of Rural Education would prefer that all eleven be trained to the Ph.D. level, but USAID would prefer fewer because of budget considerations.

In terms of the extension component, there are two professors with master's degrees in extension who will need to go abroad for their Ph.Ds. To handle the increased emphasis on extension courses, MOA training and research, there should be three trained to the Ph.D. level and two trained at the master's level. It is suggested that the first trainee carry out the program in 1981 through 1984 and the second 1982 through 1985. Another student should commence his or her training in 1981 and complete both master's and Ph.D. by 1985. Two additional students should be trained to the MA level, one commencing in 1983, the other in 1984, each taking two years to complete the program. The contracting university needs to provide one Ph.D. agricultural extension professor for 1981-83, and one for 1983-85. Of the five proposed for training in rural sociology and extension, two or three should be women.

In terms of Rural Pedagogy, the primary function of preparing curricula for MOA training colleges needs to be resurrected, since it is critical for the linkages between UCA and the MOA. The only way to accomplish this aim is to build up the division which presently has only a part-time staff and one course. Therefore, as soon as the USAID project commences, students should be sent to the States for training in agricultural education. One Cameroonian should be selected to begin language training in 1981, go to the U.S. for training to the Ph.D. level in agricultural education, and complete the degree in 1985. The second could begin in 1981 in order to finish a master's degree in 1985. The first contract university Ph.D. in agricultural education should come in 1982-1984, the second should come in 1984-1985. This timetable would provide for setting up the program, maintaining continuity and working with Cameroonian counterparts.

2. Curricula suggestions

Given the nature and content of rural sociology and extension courses, it would be possible to incorporate information on the small holder and food production into the curriculum. To do this, it is suggested that "Rural Institutions" be increased by 5 to 10 hours at each level to handle this topic.

The special problems of women and economic development could be developed into a separate course (optional special topic in the fifth year). However, it would probably be a better idea to incorporate the problems of women and agricultural development (in general and in Cameroon) into existing courses. So all students could be educated in this topic, the "Rural Sociology" course should be increased by 5 - 10 hours at all levels.

There is no problem with the extension curriculum for ENSA students, but ITA students need to have an outreach component in which they work with small holders. To facilitate this end, two vehicles are budgeted for Dschang. The Saturday schedule of taking students to interview farmers should be followed.

As more faculty are added the Department intends to offer the following courses:

Rural Sociology

"Research Design and Evaluation."

Extension

"Extension Administration."

"Extension Program Evaluation."

"Women and Youth Extension Programs."

Rural Pedagogy

"Social Psychology."

"Educational Materials and Programming."

With the increase in faculty, changes in curriculum and outreach activities and the new office of the Director for Research and Extension, research interests on small holders by American and Cameroonian professors should be stimulated.

Appendix A also lists equipment necessary for the Department of Rural Education to house its personnel, set up its laboratories and carry out the training and curricular changes discussed above and below.

3. UCA Intervention Zone

It is important to keep in mind that the University Center for Agriculture, Dschang is not an intervention structure and is therefore limited in dealing with the small holder directly. Nevertheless there are several ways that UCA can impact on the small holder. UCA should have its own extension area similar to Yemessoa. It is suggested that the present site, Mbankomo, become an intervention zone similar to Yemessoa in the years before the move to Dschang. This site has the advantage of being quite close to Nkolbisson. However, it will be necessary to change the purpose of the site. It is now used to give students general practice in interviewing, but a research design based on intervention goals and strategies would need to be developed. This would require working together with the Departments of Agriculture, Plant Protection and Soil Science to provide technical information; the Department of Rural Education, Division of Rural Sociology and Extension would be concerned with communication of technical information. To carry out this project the following are necessary:

- 1) The Director of Research and Extension to coordinate the effort (see III-A-2)
- 2) The faculty to design the project, instruct the students and do research on the impact
- 3) Vehicles for faculty and student transport
- 4) Funds for inputs

The major constraint at Yemessoa was inputs. In the initial phases of the Yemessoa project, inputs (fertilizers, seeds, pesticides) were supplied by FAO and a Dutch project. When the funds were unavailable, expatriate faculty continued to purchase inputs from their own funds to keep the project going. This situation must be avoided. There are several ways to solve the problem. One possibility is for USAID to provide funds for inputs on a per capita, per annum basis for a limited group of small holders and demonstration units involved in cash and food crop production. Another is to work in coordination with parastatals, which should have the inputs already.

ENSA faculty voiced some problems along these lines. In particular, they are concerned with differences in approach between the university and parastatal agency. University innovators, they believe, try to encourage farmers to adopt innovations by participatory methods which are optative. They take an educational approach which involves extensive discussions with farmers and hope for long term results. Parastatals, ENSA faculty argue, are more autocratic and tell farmers to use certain inputs and methods; they thereby gain immediate results. Furthermore, the professors note that allowing both UCA and parastatals in the same area would set up a situation where the methods and results of each would be compared; this might engender criticism and hostility.

Although it is rare to find an area completely free of parastatal involvement, the agricultural university faculty are wary of contaminating their "pure research" on innovation by having the parastatals in the area. (A criterion for selection of Yemessoa was that no parastatal be operative in the area.) Yet, this constraint must be overcome for a variety of reasons. First, the parastatals are mandated to cover all regions. Second, they have the inputs and should supply them. When development funds end, they will be the remaining source, and it is better for them to provide inputs all along. Third, the students need to consider the constraints and benefits of parastatals so that when they work in these agencies they will understand the problems.

These issues are particularly germane to setting up an extension intervention zone in the Dschang area. The World Bank, in conjunction with the International Development Association, is considering a \$25 million project in Western Province to work on "balanced rural development." The project would organize all extension activities into a single service under UCCA0, the coffee marketing cooperative. The problems connected with this would be serious; the Cornell Report argues:

- 1) It is unclear how farmers who are not members would receive extension services.
- 2) The extension program planned is not participatory but rather is of the top-down type where there are systematic visits to farmers coordinated with short training sessions of extension staff. "It presumes

that the extension organization has all the certified knowledge and merely needs to pass it on to the farmers" (Cornell Report 1979:63).

- 3) UCCAO is a successful local operation not because of extension activities or grassroot support, but because of its monopoly on coffee marketing. Large farmers dominate the organization and it was necessary to have marketed a ton of coffee in a two year period to be a candidate for a section post. So it is unclear how small holders would benefit (World Bank 1977; 1979).
- 4) Food crops are quite secondary to coffee in terms of the focus on pest control, and the village water supply would be developed primarily to provide coffee washing facilities.

The Cornell Report concludes:

"It appears highly unlikely that ENSA would be able to effectively operate the extension and practical training programs in the face of such a massive infusion of capital and organization oriented toward non-participatory involvement" (1979:64).

Yet, this assessment may be turned around with some careful planning. First, it is always possible to increase the scope of research to include the change agent's influence. Second, there is no such thing as "pure research" when studying the diffusion of innovation because contributions to innovations come from a variety of sources. Third, the very fact that the food producers will be by-passed by this development project, means that they may be interested in other projects. Food production is not likely to dwindle because of the project and small farmers will want to receive technical information. Also, it is possible that new strategies to market food stuffs will develop independent of UCCAO—and that university-based interventionists can help organize these. In any case, small holder's problems will occur and students can obtain valuable experience working with farmers. Faculty and students can carry out research in the area, if they expand their theoretical horizons.

In order to implement an intervention zone in the Dschang area, the three criteria used in the Yemessoa Project must be modified. It still is important for the zone to be close-by and for the people to accept the interventionists. However, the criterion that it be located in an area without parastatals must be dropped. It is suggested that the intervention zone focus on small farmers who are involved in intercropping (as opposed to large monocropping establishments).

4. Training for MOA Extension Posts and Community Development Assistants

Through in-service training of MOA extension workers and by preparing curricular materials used in agricultural training colleges, it is possible to have a sizeable impact on small holders. It is suggested that the Department of Rural Education prepare a model program consisting of short courses and appropriate materials for MOA local post and community development assistants who are working in the Dschang area and adjoining Northwestern Province. It is suggested that participants come from the Districts of Menoua and Bamboutos in Western Province, and Manyu and Mezam in Northwestern Province to assure that community development assistants and animatrices, and anglophone and francophone extension personnel are represented. The course could provide technical information about pest management (both chemical and manual) intercropping strategies, fertilizers and the like, extension communication techniques, and financial management information for small holders. It is hoped that this could begin as a small program that would serve as a model for training extension workers, both men and women.

There may be difficulties in selecting people who are already in situ because they may have established a certain position or reputation in the community (which may be positive or negative). However, it seems more appropriate to begin with individuals already occupying these positions. This is especially true for the community development assistants and animatrices. If other women were recruited, they might not be able to relocate because of marital and family responsibilities. But if they are already in the position, it is likely they will be able to remain there to implement what is learned. Some may argue that pregnancy will constrain CD assistants/animatrices from effective extension work because they are entitled to maternity leave. The women's service deals with this problem regularly and still manages to function. Fertility is high for Cameroonian women, yet they still manage to farm for family and surplus sales. It is hoped that by limiting participation to local extension personnel, transport and housing costs can be minimized. Furthermore, the model of information radiating from university specialists on the campus to local areas is one that has been used successfully elsewhere as a means of establishing good rapport with the local community, (see the Agricultural Extension/Student Training Technical Paper).

5. Radio Tapes

Along these lines, the short course materials used for in-service training could be used to prepare tapes for radio broadcasts. In the U.S., Guatemala and elsewhere, radio messages on agricultural problems have been used extensively as a way of reaching large number of farmers. In Cameroon there was an early morning agricultural program called "Operation 100,000 tons of Cocoa" that was extremely popular some years ago. It is suggested that the Department of Rural Education coordinate the radio taping, but subsequently any other Department may prepare tapes on technical subjects. It should be remembered that the method and level of presentation must be appropriate, and pre-testing the tapes on some farmers is recommended. The tapes should be recorded using both male and female narrators (depending on the audience). The tapes should

be in French, English, Pidgin and in a variety of local languages e.g.; Bamileke, Ewondo, Fulani, etc. From the information gathered from farmers in the South Central Province, tapes need to be broadcast around 6:00 PM in the evening. Unlike American farmers who listened to early morning shows (6:00 AM) while they ate breakfast and before going to the fields and barns, Cameroonians leave early for their fields or church activities. They can listen to the radio after they have returned and completed their household tasks (obtaining water and firewood, completing food preparation) or palavars in the early evening. Programs need to end before 8:00 PM as farmers retire early. The farmers were desirous of having radio broadcasts and noted that transistor radios were common household items and people listened to broadcast in the early evening. In order to prepare the programs well and broadcast them at appropriate times, a small study needs to be made of listening practices and radio ownership.

6. Media Center

Media functions, such as the preparation of audio-visual materials and printing, have been carried out by this Division using technicians and professors from the Division of Rural Sociology and Extension as supervisors. As the media work takes up a great deal of their time and is tangential to their work, it is suggested that printing and photographic functions, and some audio-visual services be removed to a centralized media center. The move would provide better access to equipment and services for all faculty at UCA. The media center will be linked to the Director of Research and Extension as detailed in the Administrative Technical Paper. The mechanisms for access and use would fall under the Director's provenience. The Building Construction Report sets aside a special area near the Library for the media center.

In order to set up this media and offset printing center, USAID needs to hire a consultant in this field(s) to cost out the equipment and set up the facility. The media center needs trained staff to operate it and maintain the equipment. It is suggested that the media consultant deals with staffing and training needs as well.

C. Other University Components

1. Departments of Agriculture, Animal Science and Rural Engineering

In order for UCA to have an impact on small holder agriculture, there must be an effort to focus the agricultural and animal science departments on small holders problems. The training of good agricultural scientists should include the theory and practice of small scale agriculture. However, at the present time, UCA courses and faculty do not include enough local examples and mostly focus on large scale export crop agriculture. To remedy this situation, it is suggested that the faculty in the Departments of Agricultural Economics, Plant Protection, Soil Science and Animal Science attend the Seminar on "The Farming Systems Approach" to be given by contracting university professors. (See Section III-A-1). It is hoped that participation in the

seminar will emphasize the need to change course content and orient research to local problems. Additionally, this emphasis will be facilitated by the creation of the Director for Extension and research who would coordinate technical input from agricultural and animal scientists. With the increase in staff, it should be possible for faculty to work on small holder problems such as those brought back to UCA by students working in the intervention zones. Agricultural and animal scientists should participate in preparing the short courses for MOA extension workers and radio tapes in their fields of expertise. In order to do this, they will need to work on food crops and small as well as large producers in terms of production and marketing. The emphasis on practical and laboratory work in conjunction with lectures is discussed in Curriculum Evaluation and Instructional Program Technical Paper, and the emphasis on research on small holders is discussed in the Research and Experimental Farm Development Technical Paper.

With the creation of a new Department of Rural Engineering, the introduction of "Appropriate Technology" in the UCA curriculum and extension program will be possible. The Rural Engineering program Technical Paper acknowledges the need to orient the program's endeavors to the needs of small holders and rural people regarding such items as potable water, sanitation, storage facilities and energy production. The aim of the Rural Engineering Program is to offer the students research and outreach training so that when they work for CENEEMA or other agencies, they will be able to address Cameroonian needs.

At the present time there is great interest among national and international agencies in utilizing small capital investment and technology that is responsive to local needs. Proper input in terms of the contract university personnel and curriculum changes can add this dimension to UCA and it is highly recommended that the Rural Engineering Department be formulated as outlined in the technical paper.

2. UCA Farms

The UCA farms at Bansoa, Doujittitsa and the Dschang campus itself should provide the research areas for both faculty and students on small and large scale agricultural and livestock problems. The interest of USAID in setting up these farms should provide the impetus for a focus on small holder needs.

a. Bansoa

UCA administrators first aim for Bansoa is that it be a production farm that is commercially viable. This would be desirable in and of itself, but it is critical that the farms attached to the agricultural university have teaching and research functions as well. The Research and Experimental Farm Development Technical Paper sets out the mechanisms for the production unit. It is proposed that facilities for thirty students, a few faculty and farm manager, and fifty families be constructed. However, the mechanisms for the focus on the smaller holders needs to be strengthened. It

is recommended that a section of the farm be devoted to traditional farming techniques e.g., tuber crops, intercropping, hoe-cultivation, non-chemical weeding and harvesting.

b. Doujittitsa

The livestock farm could provide an opportunity for faculty and students to consider problems and commercial viability of small and large holder livestock raising. It is recommended that the opportunity to consider the small livestock owner not be lost. Attention should be paid to traditional patterns of ownership and care of animals by older and younger men, and women and children.

c. UCA, Dschang farms

Adjacent to the campus are the farms where students practice their agricultural techniques and livestock management. The recommendation for this area is that food crops as well as export crops be grown and that studies on problems of small holders be carried out. Of particular interest would be experiments on pest management, crop spacing and associations and fertilizer mixtures. In terms of livestock, the poultry unit, in particular, should consider the technology for family and commercial production at the village level. Almost every family keeps a few chickens and is interested in minimizing poultry loss and disease. It is recommended that the Department of Animal Science address this interest.

D. Ministry of Agriculture and Parastatals

1. MOA

The MOA is concerned with agricultural production at all levels. Up to now more emphasis has been placed on export crops than food crops and MOA recognizes the need to consider both. The difficulty is that there is the expectation that structures that have been used for large scale and/or export crops in terms of the distribution of inputs and credit can be used for small scale agriculture too. So far this has been problematic. Either the persons directing the MOA projects will have to change their focus or new structures will have to be set up. Cameroon can ill afford duplication of services so the former is more viable economically. Many UCA graduates will be employed by the MOA in middle and upper management positions and in training extension personnel. If UCA training focuses on small holder issues, then we can expect to have an impact on MOA policies and services.

For a more direct impact, USAID should consider funding a project directly through the MOA. One such project might consider the training of female extension workers which this and other USAID projects (e.g., National Cereals Research 1979) have pointed to as a necessary and direct way to reach women agriculturalists. Another is direct training and funding of MOA extension and community development workers on small scale agriculture projects.

2. Parastatals

It is useful to review the fact that 69/258 or 27% of ENSA graduates work in parastatal agencies. The training of UCA students in the Department of Rural Education intervention zone which would work in conjunction with parastatals, should prepare the students for some of the obstacles they can expect to encounter in their future careers. The students would study the problem of lack of inputs and credit to the small holder. For example, hopefully they would notice that women are often not allowed credit and loans because they do not grow the "right" crop or are not heads of households. The expectation is that the extension experience would inspire them to create remedies to the problems. The action is indirect, the UCA can influence the parastatals only through its graduates.

E. Monitoring and Evaluation

The impact of UCA programs on small holders and women needs to be monitored and evaluated. It is suggested that the monitoring and evaluation process be part of the conditions for USAID's involvement in training and facilities for UCA. The progress of UCA programs can be evaluated through:

- 1) A detailed consideration of curricular changes. In terms of the formal curricula, have the recommendations for courses, numbers of hours, year given and course format be carried out? Which courses have Cameroonian examples? Use practical exercises? Have outreach components? Informally, it will be possible to interview faculty about the course content.
- 2) The success in training of extension personnel. The extension program of UCA can be monitored and evaluated in terms of the a) participants—Who are they? Where do they come from? What training did they receive? What did they do with their training? b) faculty—who participated? What materials did they utilize? c) the small holder client—Did he/she receive any benefits from extension personnel? Have technical information and inputs changed small holders practices?
- 3) Research on the small holder. Do faculty focus on problems of small holder agriculture? Do they try to solve the problems through research? Do they try to disseminate the knowledge gained? What research was coordinated through the office of the Director for Research and Extension? What was published? How were publications distributed? Were the UCA farms utilized in the research? What interdisciplinary research was undertaken?
- 4) An evaluation of extension and intervention activities by the Department of Rural Education. What kind of zone was set up? What methods and procedures are being used? What are the results in terms of the student's experience, the impact on the farmer and the rural area? What research has come from this effort? Was there interdisciplinary cooperation so that technical information was received and utilized?

It is suggested that there be an evaluation every two years and that a report be written to discuss the progress that UCA is making toward small holder needs. Only if small holder needs are continuously stressed, will USAID fulfill its goal and assure an impact. The team to evaluate progress in this direction should consist of the following members:

1. one member USAID/Yaoundé - Education
2. three members contracting university - one sociologist, one agricultural economist, and one agriculturalist
3. two members UCA - one rural sociologist and one agriculturalist
4. one member - Ministry of Agriculture for policy input.

TIME TABLE AND COSTS

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UCA Program and Evaluation Funding

<u>Date</u>	<u>Contracting University</u>	
1981	Short-Term Personnel for Short Seminar on Farming Systems	
	Salary 42 days at \$150/day	6300
	Overhead 100% of salary	6300
	Per diem 42 days at \$85/day	3750
	In country travel	1500
	International travel 1 round trip at \$4000 trip	4000
		<hr/>
		(\$17,670)
	4 consultants at \$17,670	70,680
1983	Evaluators	
	Salary 10 days at \$150/day	1500
	Overhead 10 days at \$150/day	1500
	Per diem 10 days at \$85/day	850
	In country travel	1500
	International travel	4000
		<hr/>
		(\$ 9,350)
	3 evaluators at \$9350	28,050
1985	3 evaluators at \$9350	28,050
1983	MOA Personnel Short Courses ¹	
	Per diem at \$40/day for 90 days	3600
	Transportation	50
		<hr/>
		(\$3650)

20 to be trained \$73,000

¹ Salary to paid by MOA

1984 20 to be trained 73,000

1985 20 to be trained 73,000

1981 UCA visits to secondary schools to recruit women students
transportation 500
per diem at \$50/day for 10 days 500
Supplies 200

(\$1200)

4 recruiters \$4800

1982 4800

1983 4800

1984 4800

1985 4800

Department of Rural Education

A. Training of Cameroonians

	1981	1982	1983	1984	1985
All Costs are in \$US x 10 ³					
Extension: MA to PhD	13.5	27	27	27	27
" " "		13.5	27	27	27
" MA and PhD	13.5	27	27	27	27
" MA only			27	27	
" MA only				27	27
Rural Sociology MA and PhD	13.5	27	27	27	27
" " MA only				27	27
Agricultural Education MA and PhD	13.5	27	27	27	27
Agricultural Education MA only				27	27
TOTAL	54	121.5	162	243	189

B. Technical Assistance:

The contracting university needs to provide technical assistance to set up programs, teach courses and work with counterparts.

Actions by	Year	1981	1982	1983	1984	1985
All Costs are in \$US x 10 ³						
Technical Assistance funded by AID						
PhD in Extension - 2 years		67.5	125	67.5		
PhD in Extension - 2 years				67.5	125	67.5
PhD in Rural in Rural Soc. - 1 year			125	125		
PhD in Agricultural Education - 2 year			125	125		
PhD or MA in Ag. Ed. - 2 years					125	125
	TOTAL	67.5	375	375	250	192.5

C. Equipment

The following tabulates the furniture and equipment needed for the Department of Rural Education. Eleven faculty will be teaching by 1986 and furniture for 8 is budgeted since 3 already have furniture. Furniture for the office staff of 2 secretaries and 2 enumerators as well as for the office operation is budgeted. The Department will need the capability of a copier, ditto and stencil machines for classroom materials. The audio-visual/conference room and research laboratory will need capability in

- a) overhead transparencies
- b) slide and motion projection
- c) video taping

The latter will be used to record interactions with extension personnel in the laboratory and small holders in the field. Two vehicles are budgeted, but these are to be used by the entire University. It is suggested that the equipment be purchased in two installments, the first being in 1983 and the second in 1985. Maintenance costs figured at 10% of value per year need to be figured in starting in 1983.

Office Equipment: Furniture for Professor's Offices

8 desks at \$400 each	\$ 3200
8 desk chairs at \$75 each	600
16 book cases at \$100 each	1600
16 file cabinets at \$125 each	2000
16 side chairs at \$60 each	960
6 small wall black boards at \$40 each	240

Furniture for Department Office and Enumerators

6 side chairs at \$60 each	360
2 secretarial desks at \$450 each	900
2 secretarial chairs at \$75 each	150
4 file cabinets at \$125 each	500
4 book cases at \$100 each	400
2 small desk at \$300 each	600

2 IBM electric typewriters at \$1750 each ⁺	3500
2 small electric typewriters at \$700 each ⁺	1400
2 typing stands at \$50 each	100
1 Ditto machine at \$350	350
1 Electronic stencil maker ⁺	450
1 Ronograph stencil machine ⁺	550
1 small copier	3000
2 supply cabinets at \$200	400
4 calculators at \$40	160
8 transformers at \$30	240
	<hr/>
	\$ 22,360
60% for freight	13,416
	<hr/>
	\$ 35,776

⁺Maintenance on Electrical Equipment (10% of value) \$925 per year.

Furniture for Teaching/Extension Laboratory

1 Conference table		\$ 600
12 side Chairs at \$60 each		720
1 16mm Motion Picture Projector Singer Education Systems 2110+	\$ 959	950
2 silde projectors Eastman Kodak AF-2	310	620
Case	34.95	75
2 overhead projectors Bell and Howell 301 KA+	225	450
Storage cover	7	14
3 projection tables Advance projects Comp. AV-444A	77	231
2 projection screens Knox Manufacturing Co. 60 x 60 lenticular	75.00	75
70 x 70	90.00	90
Carrying case 60"	17.50	18
70"	18.50	19
2 video cameras, monochrome+ JVC Industries GS-4600 U	697	1394
1 video tape recorder (portable)+ JVC CR-4400 U	2850	2850
Adaptor and battery charger + JVC AA-P44 U	250	250
2 video receiver/monitor, monochrome + Electronome Limited - EMB-23 Monitor	549	1098
2 Camera Tripods	100	200
1 video tape recorder JVC Industries Vid star HR-3300 U	1050	1050
		<hr/>
TOTAL		10,704
Shipping 60%		6,422
		<hr/>
		\$17,126

+Maintenance (10% year)

867/yea:

The building modules necessary for this
Department are:

	<u>No of modules</u>
Department Chairperson's office	1
Office for 2 secretaries and space for office equipment (e.g. copier, ditto, etc.)	2
Office for enumerators	1
Audio-Visual/Conference Room	2
Research Laboratory	2
Professors offices (2 per office)	5
	<hr/>
	13

SUMMARY

Total Actions by Year

	1981	1982	1983	1984	1985	Total
Training	54	121.5	162	243	189	769.5
Technical Assistance	67.5	375	375	250.	192.8	1260
Equipment	-	-	22	-	22	44
Maintenance			2	2	4	8
Farming Systems Seminar	70.7	-	-	-	-	70.7
Evaluation	-	-	28	-	28	56
MOA Personnel short courses			73	73	73	219
UCA recruiting of women students	4.8	4.8	4.8	4.8	4.8	24
						<hr/>
						2451.2

Appendix B

Department of Rural Education¹

Courses in Rural Sociology in the Division of Rural Sociology and

Extension:

One week proseminar at ENSA, (2nd year); 10h (Upper ITA) and 20h (Lower ITA 2nd year) Rural Institutions:

The main focus is on the following aspects:

(a) Interventionism as development strategy in Agriculture; (b) a typology of parastatal organizations in Cameroon's agricultural sector; (c) the internal dynamic of bureaucratic organizations; (d) the interaction of bureaucrats and farmers in relations to agricultural production activities; (e) case studies, (a cooperative, a development society, a plantation complex, etc...) with special guests speakers from these organizations.

ENSA

502 Methodology I: An Introductory course

Fifth year, common to all Options 10h

Discussions are centered around the following:

(1) science is a source of truth; (2) characteristics of scientific knowledge; (3) analysis of the major steps in scientific method with special emphasis on the statement of the problem and the formulation of hypotheses; (4) an introduction to research project design.

EV. 505 Sociological Theory and Rural Development: Fifth year Option

A comparative analysis of some major theoretical approaches to the study of development and the related rural development strategies. Particular attention is given to issues of conceptual clarification and conceptual frameworks (1) evolutionist; (2) behavioral; (3) diffusionist; (4) human ecology and; (5) structural dependency.

Rural Sociology: Introductory course

3rd year, 35 hours; 5 mornings practical training

What is sociology? Some basic concepts institutions; rural institutions; economic institutions (especially in the context of the Cameroonian countryside). Political institutions at the village level. Social change; social development.

Practical training: interview exercise in villages near Nkolbisson. The present site is Mbankomo.

¹ The course descriptions were prepared by Mr. Francois Tchala-Abina, Chairperson.

EV. 500 Methodology II: 20 hours: ENSA 5th year, for students taking Option in Economics and Extension. Practical training mixed with courses: case study research; methods of sampling; how to make a questionnaire; codification and conclusions from quantified data.

EV. 502 Elaboration and Analysis of Projects: ENSA 5th year Case study analysis of 5 or 6 rural development projects. What is social feasibility? Evaluation of social effects of rural development projects. Prefeasibility studies and the role of the sociologist in project appraisal.

EV. 507 Peasant Organizations and Rural Development: 20 h, 5th year, for students taking Option in Economics and Extension An analysis of selected types of peasant organizations. Theoretical and policy aspects of modernization of peasant communities, with special references to group farming, community development, collectivization, resettlement programs, etc.

Optional Courses: (5th year)

To be arranged each year on special topics, after discussion with students.

"Upper ITA"

Rural Sociology: Introductory course, 20h

The first part deals with the importance of human factors in agricultural development. The second part is devoted to the definition of sociology and of some basic concepts. The third part is concerned with the analysis of major social institutions with specific reference to the Cameroonian context.

Applied Sociology: 1st year 20h

A : a brief introduction on (1) the implication of sociological theory in the analysis of rural development project and (2) sociological methods. B : case studies in small groups of some applications of sociology to development programs (social feasibility and sociopsychological evaluation of agricultural and rural development projects).

"Lower ITA"

Rural Sociology: Introductory course 40 h

The focus here is twofold (1) on the examination of some basic sociological concepts, social institutions and their implications to agricultural programs and (2) on the use of sociological research to agricultural extension programs. (Identification of local opinion leaders, situation analysis and program evaluation).

Extension Courses in the Division of Rural Sociology and Extension.

E.N.S.A.

Extension Education 4th year: 35 hours

Examination of the basic theories and concepts of Extension approach.

Philosophy and Extension methods. Administration, planning and evaluation of Extension programs. Case studies.

Outreach Activities: Every Saturday

Allows students to be in contact with the rural environment and help small holders in their agricultural activities. Provides information for research activities.

Applied Research and Extension 5th year: (for students taking Option) 20 hours

Overview of the basic approaches to research and extension. The planning of research and the diffusion of research findings. Articulation of the needs of small holders in extension services.

Upper ITA

Extension Methodology: 10 hours

No clear content has yet been underlined. In this case there is no outreach activity.

Rural Animation Techniques (10 hours)

Lower ITA

Extension Education: 60 hours

Program content is similar to the one at ENSA with special emphasis on programing. Up until now, there is no outreach activity.

Courses in the Division of Rural Pedagogy

"Psychopedagogy"

LNSA and ITA: 35 hours

Emphasis on reporting techniques, use of audio-visuals, preparation of training sessions in rural areas and introductory psychological concepts.

PERSONS INTERVIEWED

Mrs. Elizabeth Balepa, Deputy Chief of Services (Agricultural Statistics)MOA
Dr. Gibering Bol Alima, Director General, UCA
Mr. Muzong Boyomo, Chief of Services, UCA
Mr. Joseph Djoukam, Director, ITA, UCA
Ms. Hildegrade Ebakisse, Inspectrice Pedagogie Nationale Enseignement
Menager et Couture, Ministry of Education
Ms. Rose Elive, Community Development Supervisor, Bamenda, MOA
Mr. Simon Essomba-Abamba, MOA
Mr. Jacob Foko, Deputy Director ENSA, UCA
Mr. Christian Fomy, MOA
Mr. Charles Forsham, External Relations, UCA
Mr. Joseph Gamga, Department of Studies and Projects, MOA
Dr. Solomon Gwei, Vice Minister, MOA
Dr. Stanley Handleman, USAID, Yaounde
Mr. Paul Jiekak, Chief, Bureau of Soils, MOA
Mr. Jules Kome, Deputy Director, ITA, UCA
Mr. Dean Mahon, USAID/Coop/Mut, Yaounde
Mrs. Malaga, Deputy Director of Training, MOA
Mr. Ricahrd Molu, Director ENSA, USDA
Mr. Jean Momo, Assistant Chief of Agriculture, Dschang, MOA
Mr. Phillip Moumie, Deputy Director, Department of Agriculture, MOA
Mr. Antoine Mvogo, MOA
Mr. Ernest Ndonga, Community Development Officer, Mbankomo, MOA
Mrs. Lydia Nengom, MOA
Mrs. Mara Ngando, Assistance Chief of Services (Surveys), MOA
Mrs. Agatha Ngi, Chief of Women's Services, MOA

Dr. Dorothy Njema, Vice Minister, MOE
Mr. Jean Nyemba, Department of Rural Education ENSA, UCA
Dr. Jean Ongla, Secretary General, UCA
Mr. Joseph Oyono-Owondo, MOA
Mr. Phillippee Sayette (de la), Professor ITA
Dr. Martin Schulman, USAID, Yaounde
Mr. Bill Scott, USAID, Yaounde
Mr. S. S. Shang, Director, Department of Cooperation and
Mutuality, MOA
Mr. Thomas Tata, Provincial Delegate, Bamenda, MOA
Mr. Francois Tcala-Abina, Head, Department of Rural Education, ENSA, UCA
Mr. Thomas Tchemeza, Extension Officer Bafou
Mr. Emmanuel Toze, MOA
Mr. Hans van der Belt, Department of Rural Education, ENSA
ENSA students
ITA students
Bafou, Dschang farmers
Mbankomo farmers

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