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**A COMPREHENSIVE ASSESSMENT OF THE
AGRICULTURAL DATA
COLLECTION AND PUBLICATION
SYSTEM IN CAMEROON**

by

Suha Satana

February, 1993

This study was financed through the Cameroon Agricultural Policy and Planning
Project (CAPP), USAID 631-0059

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LIST OF ABBREVIATIONS AND ACRONYMS

ACDI	Canadian Development Aid Agency (French)
AMP	Agricultural Management Project
API	Assessment of Program Impact
ASPAP	Agricultural Surveys and Policy Analysis Project (Rwanda)
CAPP	Cameroon Agricultural Policy and Planning Project
CDC	Cameroon Development Corporation
CFA	Monetary Unit in Cameroon (French)
CHC	Continuously Harvested Crops
CID	Consortium for International Development
CILSS	Interstate Committee Against Sahelian Drought (French)
CV	Coefficient of Variation
DEAPA	Directorate for Ag Econ Studies and Policy (French)
DIRAGRI	Directorate of Agriculture (French)
DP	Directorate of Planning (French)
DPA	Division of Agricultural Projects (French)
DSTAT	Directorate of Statistics
EAMI	Medium Sized Farms Assistance Project (French)
EC	European Communities
FAO	Food and Agriculture Organization
FEWS	Famine Early Warning System
FSR	Farming System Research
GOC	Government of Cameroon
IMF	International Monetary Fund
IRA	Agronomic Research Institute (French)
MIDEVIV	Mission for Food Crops Development (French, now defunct)
MINAGRI	Ministry of Agriculture
MINFI	Ministry of Finance
MINPAT	Ministry of Plan
MIS	Market Information System
ONCPB	Cash Crops Marketing Board (French, now defunct)
PACSA	Pioneer Seed Company in Cameroon (French)
PIR	Project Implementation Report
QC	Quality Control
SDSA	Divisional Statistical Office (French)
SESA	Unit for Statistical and Ag Econ Studies (French)
SNAR	National Early Warning System (French)
SOE	Survey Operations Unit (French)
SPEAPA	Provincial Statistics Office (French)
STABEX	Export Price Stabilization Fund (French)
UNDP	United Nations Development Program
USAID	U.S. Agency for International Development
WSU	Washington State University
ZD	Enumeration Zone (French)

EXECUTIVE SUMMARY

Brief Historical Background

Cameroon conducted its last agricultural census in 1984. The necessary preparatory phase for the census was completed under the USAID-supported Agricultural Management Project (AMP) between 1979 and 1983. The same project continued providing support to the survey operations in Cameroon until 1989. Since then, it has been succeeded by the current CAPP project which has a more limited mandate for interventions in agricultural statistics. If not extended, the CAPP project will end in September 1993 after four years of support to DEAPA.

In Cameroon, the most significant and still functioning source of agricultural data is DEAPA. It represents the collective intellectual investment of both Cameroonians and many person years of USAID-provided technical assistance.

Accomplishments of the Project

The survey methodology adopted by the national statistical data collection system in Cameroon is a two-stage cluster sampling scheme which is both the lowest cost and most appropriate for the conditions of the country. Its frame consists of a most innovative hybrid between an area and a list frame. Its field data collection technique builds on many years of experience involving three interlocking and interdependent data collection rounds distributed over the agricultural year. This rather ingenious design allows for the collection of reliable information from traditional farmers in three passes rather than five, thus representing significant economies for survey operations. The national agricultural data collection system has dedicated high quality field staff who have been recruited and trained over the past ten years. Therefore, the data collection system has four major strengths which are not typical in the African continent. These are, economic sampling scheme, appropriate field data collection techniques, good frame and dedicated high quality staff.

Assessment of User Needs

A short study conducted as a part of this study revealed that DEAPA does respond to users needs with the exception of price information which is now being designed under FAO assistance. If supplied on time, the data will be used extensively. In fact, DEAPA has been rather over responsive to its users as it has attempted to include many variables in its recent surveys for which no good data collection methods have yet been developed.

Project Weaknesses

It is true that the system has suffered some loss of reputation for not having published on time. Since all the unprocessed data have now been processed and published, the recovery process is already underway, although it is expected to take some time to fully reestablish DEAPA's image. Currently, the data processing activities are proceeding smoothly at DEAPA and the project leaders seem determined not to have any unprocessed data backlogs.

The project has a few technical difficulties in the sample allocation process. This is possible to remedy by selecting and surveying a fixed number of farmers in the selected segments.

The estimation of crop areas involves an allocation method which can be fine tuned to distinguish properly between annual, biannual and perennial crops. This is more of an accounting question than a fundamental statistical deficiency.

A questionnaire needs to be created for base data gathering which should be kept separate from questionnaires developed for periodic data gathering.

Although the field data collection techniques are basically sound, there is a need for a built-in experimentation capability to refine existing techniques and develop new ones. To economize on scarce resources, the project should not attempt large scale implementation of untested questionnaires and hypotheses since some of the results obtained may be unreliable.

Streamlining Operations for Further Economies

In 1990 the hybrid area frame was redesigned (revised and updated) and made more efficient than the one used between 1984-1989 which was already becoming obsolete, though technically still sound.

Also a new census-scale sample was defined which was more representative than the old one.

The system has already been subjected to intensive scrutiny and many competent analyses in an effort to reduce the operating costs. In this sense it can safely be considered to be operating already at a very economical level. Further cost reductions, however, are possible up to a limit beyond which surveys cannot and should not be undertaken.

The latest sampling design developed in 1990 called for a national census size sample of 923 segments and about 9200 farmers to survey in order to maintain error levels of 10 and 15 percent for the national and provincial levels, respectively. DEAPA reduced this to about a half by taking 515 segments with some 4100 farmers surveyed. This corresponds to 15 and 22 percent error for the national and provincial levels. If the sample size is again to be reduced by about a half, this would require some 230 segments and 2300 farmers to be surveyed yielding national and provincial errors at 20 and 30 percent, respectively. There is still a further possibility for reducing the sample from 230 to 204 segments if the urban stratum is to be excluded from the survey. This option will require only 2000 farmers to be surveyed annually. If further cost reductions are deemed necessary and funding to cover at least 2000 farmers annually cannot be assured, the national base data collection cannot be sustained. In this case only partial coverage can be contemplated under a rotating scheme whereby a part of the country is to be covered each year. If this type of partial coverage does not appeal to the policy makers, the basic data collection system should be terminated and replaced by some other system that responds to specific information needs for selected parts of the country under the limitations of available funding. Of course without any funding the entire data collection system will collapse, undoing about 14 years of monetary and intellectual investment.

Financial Needs

To run the surveys the project needs about CFA 145 million annually. If the existing sample size is reduced, it will save about a third of this amount. It is possible to economize funds up to a limit of CFA 90 million below which surveys cannot be undertaken for extrapolation to the national level. At this point surveys should be terminated.

It is conceivable that funds would be saved if excess personnel at DEAPA is eliminated. There are tremendous savings possible with such a scheme. In fact, Cameroon is capable of fully financing its surveys if excess personnel is terminated.

Major Recommendations

- o Preserve the two stage cluster sampling frame, the three-pass field data collection technique and core staff to run annual surveys at DEAPA.
- o Do not implement new ideas on a national scale whose results may be disappointing. Do not introduce questionnaires or formulas without first doing a field test for some time. Collaborate with IRA.
- o Consider an early release of reports based on seasonal data (one pass only) which would report on production and areas only.
- o Reduce level of operation and do fewer things better by reducing sample size again by 50 percent, doing lighter surveys for a few years and resuming existing sample size, dropping the urban and large farm stratum and defining a base data set which must be kept separate from the rest of the surveys and given priority in data processing.
- o Hire an international accounting firm for up to 2 months to audit resource use (staff and funds) at the MINAGRI and develop a severance scheme for superfluous staff at all levels for MINAGRI in order to save on resources which should be freed up for use in surveys or other areas of greater importance.
- o Assess funding levels and terminate all survey related activities unless at least CFA 90 million can be provided annually to run the survey with half sample size. Likewise do not attempt to do national surveys in Cameroon with fewer than 2000 farm households.
- o Avoid making abrupt and unannounced methodological changes unilaterally at DEAPA by DEAPA staff only. Consult with data users, Cameroonian technicians, scientists and donor representatives before changing methods. Conduct a national colloquium to discuss methods used, those newly introduced and recommendations from this report. Get engaged in this debate with or without an outside consultant's involvement.
- o Be responsive to data users without jeopardizing or destroying base data collection systems and avoid overburdening the data processing facility with dissimilar questionnaires for each round.
- o Maintain conditionalities on data processing so as not to relapse into a problem of unmanageable unprocessed data backlog once again.
- o Consider creation of an autonomous data collection unit. Think about how this unit can be self sufficient or at least cover some of its operating expenses.

I. INTRODUCTION

Cameroon is a middle income country with an unquestionable commitment to economic development despite the financial difficulties it has been experiencing over the past six years. Behind the design of every new development project and the monitoring of any economic activity, the need for good data emerges as an inevitable occurrence. Both unfortunately and ironically, countries that can less afford it, must pay the higher price for good data and cope with a higher level of difficulty in getting the needed data. The principal reasons which render data collection both expensive and difficult in Cameroon are:

- o Many small holders dispersed over large areas
- o Mostly illiterate farmers who need to be personally visited by enumerators
- o Difficult infrastructure and associated transport problems
- o Complex agriculture involving both double or triple cropping on the same land as well as mixing of a variety of crops in the same fields.
- o Difficulties of supervising field operations
- o Austerity measures adopted by the government that create difficulties in financing survey operations.

Faced with these basic problems, it is difficult to imagine that a statistical data collection and processing system can be tailored to fit very tight budgets in Cameroon. Due to the very nature of traditional agriculture in sub-Saharan and tropical Africa, there has probably never been any truly inexpensive statistical data collection effort in the continent.

Furthermore, too much emphasis on cost risks undermining institutional integrity of DEAPA which is already operating under severe financial restraints and austerity measures imposed by the administration. Having already adopted the most economical scientific data gathering technique, i.e the two-stage cluster sampling methodology, it is very unclear as to how one can substantially cut operating costs and still ensure DEAPA's institutional viability. The design of the field survey methods can be described as an ingenious one. It minimizes the number of passes (visits) made to the farmer while maximizing the amount of information collected. Fewer visits will both substantially reduce the amount and reliability of the information collected. So far, DEAPA has been able to mount a national statistical system with dedicated staff to this activity and has been able to construct a good frame from which data can be collected and generalized. This is already a very good start and should not be overlooked as some kind of negligible fixed cost while making decisions for the future. Dedicated statistical staff, appropriate field methods for data collection, economic sampling scheme and good sampling frames are not landmarks of many African countries.

Deprived of good data, policy makers in the agricultural sector must grope in the dark and use whatever information they can get from a variety of sources of questionable quality and reliability. Of course agricultural policy continues to be made with or without the data. The 1984 Agricultural Census was a source of information of tremendous value to Cameroon. According to the Division of Agricultural Projects, this census brought new perspectives to the Cameroonian agriculture and proved that the basic structure of agriculture had changed (rural population, crop patterns etc). This invalidated some of the late extrapolations and inferences derived from the 1972 census, which were simply not true any more.

To a certain extent, recent population-based estimates provided by the population Census of 1987 enabled data users in the public sector to continue extrapolating from the 1984

Agricultural Census using these recent estimates. But this is a vanishing facility as Cameroon's agriculture and population dynamics undergo further transformations over time.

The 1984 Agricultural Census is still the basis of many decisions pertaining to agriculture. The statistical system that succeeded the census was too heavy and too slow. Its methodology, its tools and its general organization remained like those of a census while its resources diminished. It produced an output with tremendous delays eroding much of the good will and confidence in the system. DEAPA now faces the rather formidable task of rebuilding its image as a reliable source of agricultural data. Fortunately, this is not an impossible task, but the problem of reduced confidence in the system must be explicitly recognized and the mistakes of the past must be avoided at all cost. The ill effects of seven years of inertia (for not having published) cannot be undone overnight despite the fact that DEAPA started clearing its unprocessed data backlog as of late 1992.

As to the underlying reasons for the non-publication of reports until 1992 after the Agricultural Census of 1984, there is very little credible evidence that the delays were due to deficiencies in data. Neither is there sufficient credible evidence that these delays could be attributed to lack of expertise in data processing. The problem appears to be one of organization and management resulting in the non-publication of reports for a long time. As already stated above, there is much reason to believe that the reputation damage caused by this delay is not an irreparable one.

Currently, DEAPA is the sole functioning agency in large scale data collection in Cameroon. If not supported, it will collapse. Its institutional basis still needs to be reinforced. Quality controls at all levels from questionnaire design to scrutiny of survey results need to be instituted over and above the current field level spot checks. Management training also needs to be beefed up, because running surveys is not an exclusively technical task. Costs should be carefully examined and kept to a minimum while producing data that still serves a good part of the users. The methodology must be freed of any possible defect, be it theoretical or practical. The data collection structure needs to be examined to see if it can be further streamlined. The whole system must be studied thoroughly to see if it is truly sustainable, and represent good use of public funds.

The purpose of this consultancy is to address all of the above issues by putting the national data collection system in proper perspective in light of the actual circumstances and trying to define a data collection system that is most responsive to users' needs, scientifically based and sustainable.

Any large agricultural data collection system must obey the following five conditions in order to be successfully implemented and sustained:

Desirable Property	Considerations
Socially acceptable	Potential and actual users
Scientifically accurate	Sampling methodology
Economically feasible	Costing
Administratively manageable	Structure
Politically sound	All of the above + environment

In order to ensure social acceptance (as well as political soundness), the activity must be made responsive to the users' actual and potential needs. In order to have confidence in what the system produces, it must have good methodology. The level of resources allocated for the data collection system is very important too. A system that is methodologically accurate and administratively manageable may in fact be very expensive to operate, which would normally disqualify it from further consideration. Hence one must strike a compromise between all the above desirable properties consisting of users needs for information, sampling methodology, costs of operation, administrative structure and the general political environment. This compromise is necessary for an activity to be deemed politically sound to carry forward by both the government and the donors. A further aim of this consultancy is to try to build this compromise by looking into the various project components as depicted in the terms of reference found in Annex A.

II. DEMAND FOR AGRICULTURAL DATA

2.1 An Overview of Data Users in Cameroon

Below is a brief survey of selected data users in Cameroon. The narrative information was collected through individual or group interviews with these data users as specified in the terms of reference for this consulting mission. The list of persons contacted during the course of developing this report is included in Annex B.

The interviews were followed by a formal questionnaire (please see Annex C1) administered by DEAPA staff with some of the same entities who were initially contacted. Questionnaires were also sent to other public and private organizations not initially approached in order to constitute a somewhat more representative sample. The purpose of the questionnaire was to record systematic information on what types of data was needed, how often it was needed, how it was used as well as users' priorities attached to the data needs as was the case with the initial interviews. The results of this special study which involved 28 respondents are discussed at the end of this section.

2.2 Provinces and Divisions

Data is most needed in the provinces by the provincial authorities to meet their planning needs. The type of data used at this level are provincial (or divisional) aggregates for the most important variables among which crop production, areas and yields are cited in that order of importance. Certain agricultural delegates contacted stated that the most critical data needs in the province involved the above mentioned variables complemented with some special agency or research data in order to set the agenda for the Rural Development Committee that meets once annually at the end of each fiscal exercise under the provincial prefect. The end use of the data is generally planning and monitoring the food security situation in the provinces. These two basic variables, production and areas, also represent the vitals signs for the local rural economy which are of significance to the government for developing policies such as arranging relief, planning for exports or imports, forecasting tax revenues etc.

It is very clear that the GOC is serious about data collection. The provincial statistical services are relatively better endowed with resources than other services due to the government's commitment in this area. Visiting a few of these offices one notices that data needs reported always pertain to production and areas. If DEAPA were to systematically provide this much information (from which yields can be derived), a good deal of the data needs at the provincial and divisional levels would be satisfied.

The same need is expressed at the divisional level. Hence, there seems to be some consensus about the basic data needs in the divisional and provincial levels - i.e., production and area data, but supplied on a timely basis. Not being able to produce this information themselves on a timely basis places the field offices in very difficult situations vis a vis their supervisors and local leaders. Hence, they feel obliged to operate their own parallel data collection system. Evidently, some data processing capability is needed in the provinces which have considerable autonomy in the management of local affairs, which in turn requires information for planning and monitoring of the agricultural sector.

Whether provided by the DEAPA system or not, it is useful to reiterate that there is tremendous pressure to generate figures at the divisional and provincial levels. For the past seven years, DEAPA has collected all the questionnaires in Yaounde with no copies for the field offices and did not publish 1985-90 survey results until 1992. A common complaint by all field offices have been that data processing in Yaounde has taken such a long time and resulted in an output which, for their purposes, is useful mostly for historical purposes than meeting current needs. There is an image problem associated with DEAPA which must be overcome. Hopefully, this problem will be redressed over time as future reports are published in a timely manner.

2.3 Directorate of Statistics and National Accounts

This entity is one of the most intensive data users in Cameroon. The input-output tables that are being prepared for Cameroon require data at the division level. Crop production is the most important variable which is needed together with sales and price information. The directorate finds DEAPA's coverage very limited and would like to see it expanded to cover all the crops. The modern farm sector apparently is easier to handle because their data can be obtained directly by contacting firms and parastatals. The traditional farm sector poses most of the data difficulties.

The household budget and consumption survey (Enquete Budget/Consommation or Enquete B/C) conducted in 1983-84 still constitutes the essence of many national income computations. In addition to restrictions in crop related data, the directorate staff state that cost of production data is next to impossible to obtain. No one collects it systematically. The current methodology for national accounting involves computing balances (involving production, consumption, exports, imports and stocks) crop by crop rather than working with aggregates. This increases detailed data needs.

The dissolution of some parastatals under the structural adjustment program has worsened the data availability problems at the directorate because some of these parastatals, such as the ONCPB, was also collecting considerable amounts of information which was being shared.

2.4 Directorate of Forecasts, Ministry of Finance

This Directorate prepares three documents, two of which are presented for discussion at an inter-ministerial committee that convenes in March and October. These documents consist of a) "note de conjuncture" b) economic report, and c) economic budget. The participants in the meeting are the ministers of agriculture, plan, trade, tourism and labor. The meeting that takes place in March discusses the July-December period for the past year, while the one in October is based on the results for January-June period. Thus, the Directorate needs data on a semi-annual basis. Latest total production figures for cacao, coffee, tea, fruits, tobacco and rubber were not available. Also, since semi-annual data is not generally available, existing annual data is used as a proxy.

As for the uses of the documents prepared, the report on economic budget shows the evolution of the agricultural sector, indicating any problems for the government's intervention. The economic budget retrospectively analyses the economy as a means for the preparation of the next budget cycle. It provides the government with a procedure for estimating its expected revenues.

2.5 MINAGRI/DEAPA

DEAPA deals with considerable quantities of data to monitor agricultural policy, prepare reports and intervene in the statistical data collection system. Data needs cover mostly food security (production, storage, losses, areas sown), national accounts (quantities produced, prices) and irregular data (exports, imports etc) which are usually required to meet other parties's demand.

Undoubtedly, one of the important functions of CAPP together with DEAPA has been their efforts for the creation of an information center where substantial amounts of secondary data flow in and get stored for easy retrieval. One example to cite is the modern sector data collection activity which is one of the few existing sources in Cameroon (if not the only one) with a complete data set on the sector's characteristics.

2.6 IRA

IRA needs data on many variables to monitor the effects of the application of agricultural research in the country. Objectively determined food crop yields (by crop cutting), preferably by varieties and major food crop associations are among the most important reported needs. Productivity measures based on field by field measurement of the effects of improved seeds and fertilizers are also critical for IRA. Data on farm management is another reported need to determine costs of production. But, it is recognized that such data cannot come from the larger system itself on a regular basis. Specialized studies can be organized to collect this information for a fee. Also DEAPA can make specialized data available on an ad-hoc basis by using some of the unprocessed information contained in the questionnaires. These could be in the form of custom-made data sets to be used by the individual researchers.

For DEAPA data to be more useful for IRA's purposes confidence intervals for the estimates need to be constructed and reported in the statistical reports. IRA would also like to see an expanded description of the basic methodology and lists of all variables on which data is collected or reported.

The current practice of reporting crop areas on sole crop basis, per IRA, is neither desirable nor necessary. Area data pertaining to major crop mixes can be confidently used by IRA. IRA also suggests to use the crop count results for the estimation of yields. Crop counts are done by DEAPA only for the purpose of allocating the mixed crop areas to individual crops. IRA is interested in knowing where DEAPA's reference crop densities come from which are used in converting mixed crops to sole crops.

IRA believes that many scientific users will refer to data in a baseline sense rather than pick up trends. In this sense light annual surveys followed by occasional agricultural censuses will meet their data needs.

2.7 MINAGRI, Division of Agricultural Projects

Division of Agricultural Projects is one of the most important data users in the ministry. Its needs are dictated by its mandate. It is involved in the following activities:

- a. Identify and prepare agriculture and forestry projects,
- b. Monitor and evaluate current projects

- c. Organize training sessions in analysis and management of projects and maintain liaison with the external agencies.

Hence the division's needs are mostly in micro level data for project monitoring and macro level data for design and analysis.

The division has made intensive use of the 1984 census, but was disappointed with the years during which DEAPA was unable to publish. They still use the census results which they combine with the 1987 population census to make estimates in the agriculture sector.

Supply and demand data (quantities, prices and incomes) are important for the division's work. The division also deals with such donors as the World Bank, USAID and IMF on a regular basis to exchange information. For instance, 1991 agricultural data is needed by the division in February 1993 for a forthcoming meeting with the IMF, but there was no data collected for that particular year.

Upon request, one of the division's professional staff stated in writing that the following types of data are regularly needed to perform the indicated types of analyses/purposes: agricultural production data is used for studies, research, computation of food deficit and trade-related inquiries; area data is needed for studies, research, computing yields, small and medium firms trying to acquire land for agriculture with a potential for food processing; agricultural input data (fertilizers, seeds etc) is needed to compute costs of production and promoting new inputs; and farm labor data is needed to compute production costs and do national accounting for the sector.

2.8 Canadian Aid Agency (ACDI)

There is only one agriculture-related project in Cameroon sponsored by the Canadian agency which is implemented by GEOMAR International, a multinational firm based in Cameroon since 1985. Since ACDI has been reducing both the level and number of its interventions all over the world, no other agricultural projects are contemplated.

The GEOMAR project is an export oriented marketing effort. The components included under this project consist of green beans production and marketing, peas production and marketing, tropical flowers, regional trade and business support center for professional organization.

ACDI is more actively involved in the areas of forestry, energy, technical training and private sector. But this list has also been narrowing due to reduced mission portfolio.

According to ACDI, Cameroon represents one of the most adverse cases for data reliability and availability in the areas of importance for the Canadian aid mission. For instance, in forestry management, data on production, imports and exports are very suspect. There are basic methodological flaws in the data examined by ACDI. ACDI is also interested in forestry related market information which is equally scarce and unreliable.

2.9 The European Communities (EC)

Reported data needs at the EC are mainly for project design and monitoring purposes. The data needs are felt for the variables covering production, areas and inputs periodically

(yearly). The EC believes that if no data existed at all, a census every five years may serve their minimum needs. The last two censuses were conducted in 1972 and 1984 with a spacing of 12 years. Nine years have elapsed since the last census was conducted. Thus, per EC, the minimum mission needs are not addressed at the present time.

One of the activities that the EC was involved in with attendant implications for data needs was the Special Project for Fertilizer Imports in 1991-92. This project aimed at improving availability of fertilizers in the three northern provinces (Extreme North, North and Adamoua). Data were needed for the implementation of the project, particularly on rolling funds. EC tries to meet its specific data needs by incorporating monitoring and evaluation units within the projects its sponsors. One classical case is the North East Benoue Project (Projet NEB) that has been going on for over a decade. Another area of intervention of the EC was in coffee and cacao export promotion within the STABEX (stabilisation des prix des produits d'exportations) fund which required data on inputs for monitoring purposes and which were impossible to obtain.

2.10 Belgium

Belgium's major contributions to Cameroon are outside of agriculture. The current agriculture based projects consist of an extension activity in the Littoral (now mainly financed under STABEX), a coffee and cacao seedlings project and some support to the University of Dschang. The aid mission itself does not use any data directly, although it is well acknowledged that there is a real need for reliable agricultural data in the country. The individual projects handle data and report to the mission.

The mission formally intervenes in the following areas: higher education, medical development, rural development, industrial and commercial development, infrastructure, financial support to the Structural Adjustment Program, special study funds, voluntary support activities and a program for scholarships and studies in Belgium. The relative importance of agriculture in this rather vast portfolio is modest.

Contacts with the coffee and cacao project reveal that there are massive data needs in producer prices and areas planted because this is how seed projects measure their impact. The seed project operates in the four southern provinces. It has not had access to any other statistics after the 1984 census.

2.11 FAO/UNDP

These two important donors are treated under the same heading because of their close collaboration and their common parent organization which is the United Nations.

As is well known, FAO constantly needs agricultural data of all types for its agricultural statistical for the publication of its annual yearbooks that cover the entire world. Specialists from FAO Rome handle most of the data related work either through direct short visits or by correspondence. Data is usually requested on standard FAO forms. Recent commentary about Cameroon data relates mostly to an abundance of estimations (questions asked by interview) with few actual measurements in the field. FAO's specific data needs also cover quantities and prices for cereal imports, exports and end-of-year stock levels in an effort to monitor the food security situation in Cameroon in conjunction with their national early warning system in Cameroon.

The UNDP intervenes in the agricultural sector by supporting individual development projects. One of the projects is the Post Harvest Loss project treated in some detail under agricultural prices which is an annex to this report (please see Annex D). The other project is the Medium Sized Farms Assistance Project (Projet EAMI in French). The EAMI project is a particularly important activity as it is geared towards supporting medium sized farms where there has been no intervention in the past. This activity itself generates considerable data needs to perform feasibility studies for the farms applying for loans under the project. Production, sales and yields are the most pressing data needs which the project has difficulty meeting on a regular basis. For this reason, one of the built-in schemes under the project is to collect farm level data through participating farmers which are to be used for other farms.

2.12 USAID

Since almost all of USAID's development strategy in Cameroon is agriculture based, there is no question that data is needed by USAID at all times. Data is mostly needed to respond to cables, prepare short write-ups about the economy, develop briefing papers at micro and macro levels etc. Data also goes into making progress reports, monitoring local level management, reporting to Washington DC and justifying the use of US public funds and measuring the mission's impact on the economy. To respond to these needs, a new data base is being prepared by USAID to combine all the existing scattered information.

Formally, USAID first defines its strategic objectives which are directed on certain targets. To track changes in the targets a series of benchmark indicators are defined. It is precisely at this step that data is needed since an indicator is essentially a quantifiable factor which requires data for its measurement.

For instance, the new agribusiness approach of the USAID mission constitutes a strategic objective. Under this strategic objective are the following targets: regulatory and policy environment; marketing information system; investment services for entrepreneurs; and improved technical and managerial capabilities.

To track the first target, i.e., the regulatory and policy environment, the benchmark indicators are production, marketable surplus, commodity and food crop prices and cross border trade. To track the second target, the indicators are production, prices at different levels, exports, imports etc.

There are other data priorities that pertain to reporting on the Structural Adjustment Program's various components and food needs assessment (production, imports, consumption). The API (Assessment of Program Impact) is a standard USAID document which requires elaborate data to complete. This document aims at assessing the program impact in Cameroon. For API, both micro (project related) and macro data are needed. Micro level data also goes into Project Implementation Reports (PIR).

From this discussion, it is evident that USAID's data needs are pervasive. It is generally hard to pinpoint exact needs at all times and define all priorities, because these also change with time. If DEAPA was able to produce the statistical reports on time, there is no doubt that they would have been extensively used by USAID for all the variables reported, with the exception of crop areas which did not come up in the interviews as a high priority data item.

2.13 The World Bank

Regular, recent and reliable data is always needed by the World Bank Mission to Cameroon. When there is a shortage of data, the Ministries of Finance and Plan, whose functions are important from the perspective of the Structural Adjustment Program (SAP) in Cameroon, have to operate with doubtful data. Since collection of price data has also been discontinued, this has caused difficulties in monitoring the SAP.

For export crops, prices are known, but there is a void in food price data collection. Recently, many observers feel that food crop prices have been falling due to a perceived abundance in production. To ascertain this observation, which has important SAP implications, reliable food crop price data is needed. Unfortunately, there are no statistics to allow such analyses at this time.

Study of trends is a very important activity for the World Bank due to the nature of its interventions in developing countries. The World Bank notices that it is very difficult to bring together various ministries for the collection of data that overlap different domains. The administrative division of labor among various ministries almost precludes cooperation, and this is not only peculiar to Cameroon. A relatively independent agency involved in data collection would be a desirable entity to satisfy the data needs for the World Bank. Data collected by various ministries may also reflect the biases and preferences of the individual ministries. Data is needed in a combined sense on fisheries, animals, forestry and agriculture for use in the sector level programs promoted by the World Bank. These are very hard to obtain at the present time for lack of a unified approach in collecting this combined information.

Specific data needs by the World Bank comprise the following: output and input prices for agricultural commodities, producer prices at divisional, provincial and national levels, agricultural and non-agricultural labor, areas planted, production and yields. Further data needs are felt in input availability, rural/urban and urban/rural migration patterns and technology use.

2.14 Pioneer Agrogenetique Cameroon (PACSA)

Pioneer is an American seed company which has recently taken over the seed production/multiplication operations from the now defunct parastatal, MIDEVIV. Pioneer is the sole private seed company in Cameroon.

For any seed company to operate economically and expand its business, there are vital data needs that have to be met. The most important data need for PIONEER is the knowledge of areas planted to specific crops without which no business plan can be made. Without data on areas planted to individual crops, PIONEER cannot do a market analysis, sales projections and a work based on this work. PIONEER also needs data on actual seeding rates (a data element actually collected by DEAPA but never reported on) to assess its market.

2.15 Special Study on Data Users

A short study was also conducted to assess users' data needs in a more formal and structured manner. Twenty eight respondents (please see Annex C2) answered DEAPA's request by filling out a questionnaire. Below is a brief description of the findings.

The simple frequency count for the data users by type of crop is as follows:

Data Category	Data Needed	Data Not Needed
Food Crops	27	1
Cash/Export Crops	27	1
Fruits	24	4
Vegetable	24	4

The majority of the potential users approached stated that they needed data. Users felt that they needed data on food crops and cash/export crops more than on fruits and vegetables.

The frequency counts for the 28 respondents for different types of data are shown in the following table:

Type of Data	Needed By	High Priority	Medium Priority	Semi Annual	Annual
Number of farmers	24	13	8	5	16
Areas	24	13	10	6	15
Production	24	14	6	5	18
Yields	24	9	13	6	14
Farm sales	15	6	8	4	7
Farm gate price	22	13	6	5	13
Farm income	19	10	6	4	11
Wholesale price(*)	20	6	6	7	8
Retail price(*)	19	6	9	7	8
Export price (*)	22	6	10	4	10
Farm labor	20	10	6	7	12
Fertilizers	23	12	6	2	13
Chemicals	20	9	7	6	13
Equipment	24	10	8	7	12
Seeds	23	9	7	7	12

(*) Data not collected by the DEAPA system

An analysis of the above table shows that users do need the data for the most important categories of data which were determined during the first round of interviews with the users. As stated above, the second round of interviews were conducted by the DEAPA staff equipped with a questionnaire. The number of farmers, areas planted, production, farm sales and farm gate prices are the most needed types of data which are attached high priority. Farm sales, retail and export prices are not attached high priority. Most of the data is needed on an annual basis. DEAPA is responding to the most important the data needs as revealed by this small-scale study with the exception of three categories data all of which involve prices. As for what is being done with the data, Annex C3 contains a complete frequency count for all the questions that took place in the special study.

The above narrative description of some users data requirements also confirms the existence of a demand for agricultural data. Over the past few years one of the concerns of DEAPA has been to be fully responsive to the users needs. This explains mostly the methodological changes evidenced after 1990 which were introduced in order to cater to these needs. In fact, it is possible to state that DEAPA has been overresponsive to its users since it wanted to introduce many variables in its surveys which did not figure in the base surveys of 1984 to 1989.

III. ORGANIZATIONAL MATTERS

3.1 The Central Office In Yaounde

DEAPA (la Direction des Enquetes Agro-Economiques et de la Planification Agricole) is Directorate under the Ministry of Agriculture. Its organization is codified in Decree No:89/140 of January 27, 1989 (please see Annex E1). It is headed by a director who is assisted by a deputy director. Its functions are the following:

- a. collect, process and publish agricultural and forestry statistics,
- b. conduct technical and economic studies for the same,
- c. perform planning for the same,
- d. manage documentation and archives for the same
- e. organize training in statistics, planning, studies and documentation.

It consists of five specialized units which are:

- a. Survey Operations Unit
- b. Data Processing Unit
- c. Statistical and Agro-Economic Studies Unit
- d. Agricultural and Forestry Planning Unit
- e. Documentation and Archives Unit

The most important units for the purposes of the evaluation are the first two indicated above. In this report the Survey Operations Unit is also referred to by its French acronym SOE (Service des Operations d'Enquetes).

There are 37 professional staff working at the Survey Operations and Data Processing Units. The training level of these individuals is as follows:

Level	Number
Statistician/Economist	2
Statistician/Data Process. Specialist	1
Agronomist (5 year college)	6
Agronomist (3 year college)	10
Other professional staff	18
Total	37

The top two lines also represent the units heads and deputy head. There is a shortage of trained statisticians at these two units. Out of the 20 persons who were sent for training to the USA under CAPP's MS degree program, there was only one position in statistics which belonged to MINPAT. There were, however, two positions in data management for the Data Processing Unit. The second line in the above table merits a comment. In Cameroon, there is a professional category called Ingenieur des Travaux Statistiques which is represented by only one person for the entire combined field and office staff of 447 persons.

About a half of the central office staff are assigned duties to produce reports, conduct quality controls etc. The remaining staff is not adequately prepared to do statistical work as acknowledged on many occasions to this consultant. Some of the current staff have been assigned to DEAPA when certain parastatals were liquidated in Cameroon.

3.2 Provincial and Divisional Offices

Data collection is done by the field offices. Provincial offices coordinate the activities while the divisional offices actually go out and collect the data.

The formal organization requires that the field offices report to the provincial or divisional agricultural delegates, and not to DEAPA. The provincial statistics office is one of the seven functional units at the provincial level. Its official title is: Service Provincial des Enquetes Agro-Economiques et de la Planification Agricole (SPEAPA). Each of these provincial units is headed by an agronomist who are mostly well qualified professionals.

At the division level, statistics are collected by the statistics section which is one of the seven sections under the divisional delegate. The official title of the statistics section is: Section Departementale des Statistiques Agricole (SDSA). Each section is headed by a section chief who usually has a three-year college degree in agronomy. These sections chiefs, some of whom function as field enumerators, have practically no chance of ever getting promoted to become provincial chiefs because of their lower level qualifications.

There are ten provincial chiefs and 56 divisional chiefs. Administratively and legally the provincial chiefs have no jurisdiction over the divisional staff, but technically they report to him. There does not seem to be any problem in this regard.

The distribution of staff in the provincial and divisional levels is as follows.

Level	Number
Agronomist (5 yr)	12 (*)
Statistician	1
Agronomist (3 yr)	45 (**)
Agricultural technician	127
Enumerators	225
Total	410

(*) Ten of these are provincial chiefs.

(**) All of these are divisional chiefs.

Interviews conducted by the field staff in five selected provinces give the impression that the field staff are basically competent and eager to work hard. There are some exceptionally well qualified survey statisticians among them, although this has been a discipline they learned mostly at the DEAPA following in-service training.

3.3 Staffing Policy and Work Load

From the above discussion it is seen that there are a total of 447 staff working to run the surveys in the field and interpret the data collected in the office. According to DEAPA's own conservative estimates, the same amount of work can be accomplished by retaining all of the central office's 37 and 319 of the field staff, giving a total of 356 persons who would be considered essential to running the surveys and handle the data at a later stage. This already represents a saving rate of 20 percent in the number of persons on the government payroll. A more conservative set of estimates provided by a joint CAPP/DEAPA study reveal that if certain administrative arrangements can be made to allow the enumerators to cross over to adjoining divisions and provincial control instituted over the survey operations, the total staff needed can be reduced to 229 persons as shown below.

Level	Existing Staff	DEAPA's Conservative Estimate	CAPP Conservative Estimate
Field	(numbers of staff)		
Provinces	30	30	40
Divisions	380	289	152
Total Field	410	319	192
Central Office	37	37	37
Total	447	356	229
Total field salaries (millions \$)	2.82	1.86	1.08

This rather overweight work force (1 person working for every 10 questionnaires filled) was created through the AMP's interventions starting in the early 1980's in order to conduct the agricultural census of 1984, but was not subsequently scaled down. Note that the central office staff remain unchanged in either scheme. However, there is room to cut up to a half of the central office staff without affecting the survey operations and data processing capability. However, efficiency does not appear to be the core issue in GOC's staffing policies, which seem to be equity-driven.

As for the field salaries, it is possible to save almost a million dollars by using the DEAPA's reduced personnel scheme involving DEAPA's own conservative estimates and up to almost 1.8 million by the CAPP scheme, which does not seem to be administratively feasible at his time. The details of this analysis are shown in Annex F in the project budgets.

The field staff are occupied by the survey for up to six months a year. This is because of the seasonal nature of the data collection process. During the slack period the field personnel may be assigned a variety of other tasks most of which get into reports which DEAPA central office regularly receives.

The agricultural survey does not appear to be the most prominent item on a provincial statistics office's agenda as can be judged by the very scanty reference made to this activity

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in provincial annual activity reports. There appears to be a statistical system in Cameroon outside of the DEAPA data gathering system, i.e., the parallel system also discerned by the last formal project evaluation, because of pressures on field offices to produce information to meet local needs. For the most part, this is what keeps these offices busy. The agricultural survey, however, is important in one clear sense. It is a conduit for qualifying and getting support from Yaounde and USAID by way of per diem, cars, motorcycles, field equipment, gas etc., a good part of which undoubtedly goes into conducting the surveys. There are certain cost categories that still need to be covered by the data collection funds whether or not any actual data collection takes place. Vehicle maintenance is one of these items since it is very difficult to ascertain whether a reported maintenance need is due to the survey or to other types of work.

In principle it is possible to presume that the GOC is indeed able to finance its statistical data collection system if only it took the necessary steps to lay off unneeded personnel, release funds and use these funds to finance its survey operations. The reality may be a different matter which this consultant did not have the time to fully investigate. Hence, it is recommended that outside donors help the GOC to define a severance plan for the entire MINAGRI (not just enumerators or field staff who are the most disadvantaged when it comes to severance). This study can be done by a team of specialists from an internationally acknowledged accounting/auditing firm in an effort to develop a severance plan for the MINAGRI the implementation of which should constitute the basis of future donor support for all projects involving the MINAGRI. This would also respond to one of the stipulations of the latest Project Agreement Amendment in order to conduct an audit of the use of existing government funds by the MINAGRI, and DEAPA in particular. As is stated, the severance scheme should not start with the field staff who are the hardest working and the least advantaged in terms of political clout. It may be possible to reassign some of these staff to more productive use and lay off or retire other superfluous personnel at other levels.

Meanwhile, procedures should be investigated to make more use of the field staff most of whom are genuinely interested and motivated in getting the work done. Limited scale decentralization of data processing may be one of the needed measures to reorient field staff's attention more towards the surveys.

3.4 The Legal Basis for Agricultural Statistics

The legal basis for statistics (agricultural or otherwise) is provided by the law in Cameroon: Law Numbered 91/023 of December 16, 1991 (please see Annex E2). This law defines the general framework for conducting surveys all which need to be authorized by the appropriate authority. Surveys conducted by private agencies are not mentioned in the law implying that these may either require special procedures or are simply illegal.

Secrecy of statistical information is one of the provisions of the law. There are sanctions against using specific statistical information for purposes other than general reporting. The law does not state which agency should be involved in data collection, in what manner and how data is to be released as is the case with some countries where statistical information is sensitive and must be released in accordance with some rules.

There is a need to stress that the law provides for statistical secrecy when conducting surveys. This is already included in the training manuals, but it should always be pointed out to the respondent farmers to facilitate interviews. During the course of this review, it was

mentioned many times that farmers are unwilling to cooperate with the enumerators lest they should divulge information which they would rather keep to themselves.

3.5 The Need for Centralizing Information

There is a need to centralize information for easy access. The CAPP office already acts a some kind of documentation center where everyone can refer to for data, because it collects and centralizes the data. The GOC does not have a functional center of this nature at present.

The government or the private agencies do not have access to specialized data directly. Sources must be visited by individual agencies on a one to one basis to get the needed data. For instance, if one needed Cameroon Development Corporation (CDC) data one must pay a visit CDC, which would be both time consuming and impractical. One of CAPP's responsibilities is to assemble such data and create some kind of a data bank, as is indicated in its joint work plan with DEAPA for 1992. The project's agricultural economist has been trying to strengthen this aspect of institutional development by compiling the data together with SESA staff. A formal system for soliciting the base data has not yet been sufficiently developed. This could possibly be done with the help of the returned trainees. It is necessary to continue reinforcing this aspect of permanent secondary statistics collection effort at DEAPA under SESA, which also happens to be one of the unit's formal obligations.

3.6 Privatization of Data Collection and Publication

It is always mentioned that one of the possible ways of improving agricultural data collection in Cameroon is by privatizing the operations somehow. Given the above background on the formal organization of the system, it is difficult to produce workable ideas for a privatization scheme at this time. Among the suggestions made was the creation of a semi-autonomous public agency outside of the ministerial system if privatization cannot be achieved. Given the state of affairs in Cameroon and the chronic financial crisis crippling the government services, the time may be opportune to formally discuss this matter at the appropriate decision making levels and reach some settlement. One of the key determinants of an eventual privatization scheme is the presence or absence of local consulting capacity which this consultant did not have time to investigate.

IV. METHODOLOGY, DATA PROCESSING AND REPORTS PRODUCED

4.1 Types of Surveys Conducted and Their Frames

Since 1992, the traditional farming sector is first divided into two strata: large farms (more than 10 hectares of land cultivated) and small farms. The small farm households are then divided into two sub-strata: urban based households and rural based households. The large farm stratum is not subdivided into further substrata. The large farm stratum is created in order to eliminate aberrant observations in the data set and impart a higher degree of precision on the survey results. If it could be well implemented, this is a good way of organizing the survey to avoid biases that are due to the inclusion of large farms alongside the small farms in the survey.

For data collection purposes, the small farms are visited three times a year while the large farmers are visited only once. The field areas for large farms are not measured, as opposed to small farms whose fields are all measured. Organization of the traditional farm survey can be presented in the table below.

Organization of the Traditional Sector Surveys

Strata	Substrata	Frame
Large Farms	--	List
Small Farms	Urban, Rural	Area

4.2 Survey Method and Execution

4.2.1 General Description of Survey Methodology

To arrive at the estimates for the traditional sector, only selected rural households are interviewed. Obviously all of the 1.2 million agricultural households in Cameroon cannot be surveyed for reasons of economics and management. In a way, every surveyed farmer who responds to the DEAPA speaks for about 300 other farmers who are not interviewed. It is DEAPA's responsibility to make sure that those farmers speaking for the others speak truthfully and completely. For this to happen considerable management is needed for the identification of those farmers who respond to DEAPA's surveys.

The composition of the identification number for the surveyed farmers gives a good indication of the underlying organization. This ID number consists of information pertaining to the province, division, stratum, segment and household number which uniquely identifies any farmer surveyed by DEAPA. A farmer to be interviewed is selected in two stages. In the first stage segments are selected which represent clusters of farmers. In the second stage farmers within these segments are selected for the survey.

The selection of segments (called primary sampling units) is aided by the area frame while farmers (called secondary sampling units) within a segment are selected randomly using farmer lists prepared by DEAPA itself in the field. Thus, the DEAPA survey methodology consists of a two stage cluster sampling scheme which also happens to be the lowest cost option possible that can be conceived for the conditions in Cameroon.

4.2.2 Frame and Sampling Methodology

In agricultural statistics two kinds of frames are used. The most common is the list frame. A list frame is simply a list from which a sample is selected. For instance, a phone book is a list frame for a city from which persons can be randomly selected for interview on the phone or by direct contact. To be able to use a list frame some one must take the time and effort to make a list. If there is no list to select from then one has to be constructed or substituted for somehow.

One way of substituting for a list (in this case a list of farmers in Cameroon), is by considering an area frame. An area frame consists of non-overlapping blocks of land with clearly defined boundaries such that the sum of all the blocks add up to the entire country's area. Since we are always short of both money and time for exhaustive coverage, we select a few blocks and study them carefully. Cameroon's area frame consists of about 10,000 non-overlapping blocks (segments) 515 of which are selected to run the agricultural survey.

The fact that segment based sampling is employed in Cameroon gives the impression that some kind of a formal area frame is being used. But in fact a segment is used only to define the area where the farmers live and not necessarily where they work. The area frame spirit would have been preserved if there was no other means of expansion of the sample results to the population other than using the areas as a basis. But Cameroon no longer uses areas for expanding sample results to obtain the population estimates. Therefore, it appears that the area frame methodology, in a strict sense, is vanishing and being replaced by the classical FAO approaches which are population-based rather than being land based, particularly following the 1991 revision of the sample frame. This should not be disconcerting. In fact, the present hybrid methodology adopted is one of the most innovative this consultant has seen. Cameroon can be proud of this very innovative and cost saving idea which can be applicable to many other African countries.

4.2.3 Sample Selection and Allocation

For the purposes of DEAPA, this process refers to how many agricultural farm households are to be selected in each division (and how these farm households are allocated to blocks of land) the total sum of which constitutes the province.

The first step is accomplished by dividing each of the 49 divisions (now 56) into many segments (blocks of land) on maps. Fortunately, the Census bureau has already done this work for its own purposes. They subdivided the country into many small blocks of land to organize and conduct the 1987 population count. These blocks are called the enumeration zones (Zone de Denombrement) and this is what DEAPA uses for its sample frame. DEAPA calls the ZD's segments. As stated above, there are a total of 10,000 segments and DEAPA uses only 515 of them for sampling.

The segments within divisions are selected by allowing them as much chance of being selected as can be justified by their size (the number of households they contain). The process of selecting the segments is sound. Once this is done, a predetermined number of farm households must be allocated to the segments. The procedure adopted by DEAPA selects an average of 8 farmers per segment. This translates into some 4100 farmers surveyed for the whole country. One of CAPP's consultants, Dr. Perry, developed a formula to accomplish this task of allocation.

The recent application of this allocation formula, which is theoretically correct and necessary to have self-weighted samples, caused confusion in the field because it produced counter-intuitive results which also proved to be very hard to implement. This led the present evaluator to recommend that the use of the formula be discontinued with a return to the old system of selecting a fixed number of farmers in each segment. Whatever theoretical rigor may be lost will be more than compensated for by the administrative efficiency attained.

The motive for introducing the formula was to reduce sampling variances to control estimation errors which may be due to both sampling and non-sampling. In this sense, the formula appears to be treating the symptoms and thus decreasing the apparent need to investigate the more basic problems in an effort to find solutions. This consultant is not convinced that sampling errors should constitute a primary concern for DEAPA amid a myriad of other more practical problems which await solution, such as developing appropriate field techniques for data collection for fruits and vegetables which may cause estimation errors in the order of 100 or even 200 percent.

In the sample allocation process, implementation problems arose because, prior to using the formula, survey administrators needed to know the total number of agricultural households in all the selected segments before determining the number of households to be covered in any particular segment. This required that every segment be visited twice, first for enumeration and then to administer the first pass questionnaire (after determining the in-segment sample size at the office). Ordinarily, the two operations should have been performed during the first visit which corresponds with the first round of data collection. This is one of the principal reasons why DEAPA missed data collection in the first part of 1992. The same problem will present itself each time segment level enumeration is attempted in the future.

4.3 Questionnaires

There has been a constant evolution in the questionnaires with no successive two years using exactly the same forms after 1989. It should be noted here that the previous project (AMP) started out with the 1984 census and only slightly modified its questionnaires in 1985 to include taro/macabo as a continuously harvested crop (CHC). The sample sizes were reduced but the questionnaires remained the same. Thus it appears that, these annual surveys were in fact were a series of successors, or mini-censuses, to the 1984 census which were based exactly on the same approach (questionnaire and methods) between 1984-89. However, both the questionnaires (coverage) and methods exhibit yearly changes for the 1990-92 period.

The questionnaires prepared for the 1984 census, and subsequently used until 1989, were of high quality. They incorporated a number of pertinent technical considerations and innovations. For the production, sale and areas under crops, these can be summarized as:

- o Explicit recognition of continuously harvested crops (CHC) as opposed to the seasonally or annually harvested crops.
- o Ingenious design which involved interlocking questionnaires. The first pass (Form 1) collected data on CHC production and areas for seasonal crops for season A. The second (Form 2) collected data on CHC's, season B's areas and season A's crop production. The third pass (Form 3) was programmed after the two production cycles were over. It collected data on CHC's, season

B production and cash crops. This design allowed the AMP to collect all the information in three passes rather than five.

- o Computer based data processing codes for the entry of selected pieces of information from the questionnaires for the preparation of summary tables (in lieu of all the information contained in the questionnaires), thus minimizing data entry errors and making data processing more manageable.
- o Scattered plant count section that involved trees on fallow fields, around the house and elsewhere (which are often overlooked).

As was stated, in 1986, 1987, 1988 and 1989 exactly the same type of information was collected without any changes in the questionnaires. From 1984 to 1988 all survey forms (Forms 0,1,2,3) were filled for all the years. The Form 0, which is not explained above, serves to enumerate all the farmers in a segment to draw the sample.

For the period 1990-1992, DEAPA retained the essential logic of Form 0, 1, 2 and 3 questionnaires but did not assure their continuity. Similarly, questionnaires exhibited dramatic changes.

The manner of administration of the four basic survey forms is shown in the following table for the 1990-92 period. The year 1989 is shown for reference although it does not belong in this particular period.

Year	Form 0	Form 1	Form 2	Form 3
1989	OK	OK	OK	OK
1990(*)	Not done	OK	OK	Not done
1991	No survey done this year at all			
1992	OK	Not done	OK	In progress

(*) No areas measured in this year.

Very much like the guiding principle behind accounting audits, the same practices must be used consistently over time in order to judge what the system produces. With the type of coverage discussed above, it is hard to judge what the system has produced or will produce for the new items introduced. As is mentioned above the internal logic of the three-pass interlocking questionnaire is still being maintained, while their continuity has not been consistently assured. This leads the evaluation to conclude that the data as of 1990 is less comparable than those of the 1984-1989 period, because it has basic missing elements assuming that everything else remained unchanged. But, as stated above, the questionnaire content had also changed in many ways.

The underlying reason for the methodological instability was DEAPA's overresponsiveness to outside users which it tried to cater to such a degree that it almost jeopardized the base data collection system.

These observations lead us to conclude that the collection of uninterrupted data for all the important variables must be resumed as soon as possible, i.e., as of the 1993 production

season with a reduction in the data collection load in those areas where no good and established field collection methods are available at this time.

There is very little credible evidence that questionnaires are indeed field tested before introducing them. Some of the flaws observed in questionnaire design are due to inadequate planning and testing which are also associated with a shortage of funding to conduct the tests. Other than the base data collected (production, sales, areas for twenty crops), further additions were consistently made to the questionnaires. This gives an outsider the impression that the core survey and supplementary study modules have all been merged which should have been kept separate. This sometimes resulted in delays (because parts of the questionnaire may not have been yet made ready to launch the whole questionnaire in one piece) for base data collection and jeopardized the constitution of uninterrupted and consistent series. Separation of base data collection from other types of collection is strongly recommended for the future.

It is an established fact that the methods (questionnaires and field techniques) used for data collection from 1984 to 1989 were far from perfect, as acknowledged by the AMP technicians themselves. But these are the best that DEAPA has available at the moment. And these are what DEAPA should use until it has better field-tested methods.

There has been some experimentation with area measurements in order to save on costs. The 1990 survey did not measure field areas but asked farmers to estimate them. This consultant believes that field measurement data should always be collected regardless of who needs it or how often it is needed. This is because the area data constitutes one of the most logical built-in verification mechanisms for the production data which is based on declarations. Also data on crop counts and the entire crop inventory will be missed if areas are not measured.

4.4 The Large Farm Survey

It is important to note that following Dr. Perry's technical intervention at DEAPA in March-April 1990, the project decided to separate farms equal to larger than 10 hectares from the smaller ones. These large farms were to be surveyed by using a list frame which has been prepared recently based on reports sent from the provinces.

The question with the large farm survey is that it rests on an untested hypotheses that the information can be collected with only one pass without area measurements. It is assumed that if the farm is large, it is better managed and the operator can provide both production and sales based on yearly recalls. The questionnaire prepared resembles that of the small farmers' other than being a single pass and ignoring areas. This hypothesis may easily prove wrong in the field.

Additionally, this consultant discerned that there has been neither adequate intellectual conception nor logistical preparation for the large farm survey. The hypotheses and the underlying methodology have not been field tested. There is no definitive decision on the sample sizes and it has not been fully costed.

The underlying motive for the large farm survey was to reduce estimate variances which were sometimes due to unusually large observations (i.e., production of bananas by a large farm) in the segments. The consultant who conducted the study recommending the large farm survey stated that it was possible to eliminate these unusually high observations with a 5

percent cut-off (eliminating the top 5 percent of the observations) in the data set. This means that the areas or production attributable to large farms are at most 5 percent or even lower. For an entity chronically plagued by financial problems, this is an extravagance that cannot be easily justified at this stage. This consultant believes that a separate strata should not be developed for a very small part of the national area and production. If DEAPA wishes to request funding for the large farm survey, further reasons must be found other than stating that it would be desirable to eliminate the outliers and reduce sampling variances.

The second reason why this consultant would challenge the large farm survey is that the sampling specialist who proposed it did so within the context of a national census size sample involving over 900 segments and 9000 farmers surveyed without any consideration for costs and the administrative rearrangements that would be needed to implement a major undertaking of this sort (adding a large farm outside of the segments is like adding another segment in the sample since these farms may be quite scattered). As is known the project reduced its sample size and should consider further reductions if it is to survive. Within this context, there is little justification for the large farm survey. The project should go back to the old method of incorporating the large farms in its segment based sampling scheme. As for why a consultant was invited in 1990 to draw a census size sample, this evaluation was unable to comprehend the underlying motive by reading the available documentation since no such census was planned in 1990.

4.5 Continuously Harvested Crops (CHC)

The agricultural survey defines the below mentioned crops as continuously harvested ones whose production estimation process requires some care as opposed to those other crops which are harvested only once in a given season. According to the survey, CHC's consist of cassava, plantain, bananas, palm oil, taro/macabo and sugar cane. Cassava, plantain and bananas, in that order, are also the most important three crops in Cameroon in terms of weight produced. We refer to bananas, plantains and cassava as regular CHC, while the remaining three crops, palm oil, sugar cane and taro/macabo are referred as irregular CHC. The regular CHC's are measured on a one week recall while the rest require a two week recall.

It is believed that there are potential problems due to possible recall lapses. The expected outcome is one of underestimation rather than overestimation. Due to these recall lapses, which are not uncommon even with a one-week recall process, one may not get a complete picture of the production and sales situation for both the regular and irregular CHC's.

The ASPAP Project in Rwanda has demonstrated that the recall process produced underestimations in production and sales which can be improved by computing some kind of a correction coefficient. These correction coefficients will get larger as the reference recall period is extended. The ASPAP Project found that monthly recall underestimated production by about 25 percent as compared to weekly recall. Similar factors may be developed for the DEAPA system. For instance, the first week's recall may need a 10 percent correction, the second week's recall may need a 20 percent correction while the last weeks recall may need a 30 percent correction. A field test is called for.

Using last weeks recall with three repeats (passes) is a very innovative approach and the AMP project deserves credit for this novel idea. This consultant believes that the idea is still valid and can be used in the future with some modifications as suggested in this section.

Further problems with the recall-based estimations can be summarized as:

- o Production of continuously harvested crops is not a uniform process and is very likely to have its peaks and seasonal fluctuations as revealed by several studies undertaken by the USAID mission in Zaire (1987-90). Hence averaging three passes possibly results in unreliable estimates for extrapolation to the year.
- o Lack of standard measures for the production and sales of continuously harvested crops.

Due to absence of focused studies at this stage, one cannot make precise quantitative assessments of the relative biases arising because of the above noted problems. The CAPP project and DEAPA should consider running some intensive test survey on a limited scale for all of the continuously harvested crops for the three agroecological zones (forest, savanna and sudano-sahelian zones) to compute coefficients of correction for estimates obtained from last week's recall and assess the impact of seasonal factors on the estimation process. To facilitate this task, reference recall periods can be extended up to three weeks while standard measures such as plastic basins or graduated buckets can be provided to all participating farmers.

4.6 Quality Controls

An internal document prepared by DEAPA to serve as the agency's guide for quality control identifies the following elements as those needing attention during the quality control process:

- o survey base (sampling methodology)
- o selection of sample
- o actual data collection in the field
- o data compilation and coding
- o data entry
- o data (processing) and cleaning

In operational terms, however, it appears that DEAPA's Service des Operations d'Enquetes, which is the responsible body for quality controls, refers to this process as a field-oriented effort involving the verification of the information collected by the enumerators.

The most important quality control problems in Cameroon consist of coverage errors (missing respondent farmers and/or his fields), not making available adequate materials to field enumerators to follow the evolution of farmers' fields, identification of agricultural households (and rural households for that matter), not accounting for fields worked by women and young family members, not dividing some fields into plots bearing different crops, committing errors in placing the density square in the field for plant counts and lack of mastery of some fundamental principles such as extrapolation factors. This is a basic list and may well apply to any country in the area.

To attain its objectives, quality control efforts must include both thorough reviews and spot checks on the system. Some of the spot checks may be followed by in-depth inquiries in order to find solutions to problems encountered. Evidently, the type of quality control adopted for any large data gathering system such as the one in Cameroon cannot always be based on exhaustive reviews for all the essential components or field work required covering

the different levels of head office, provincial office and divisional office level enumerators which are typically found in any national survey. Therefore, only spot checks or random visits can be contemplated for the project's major field operations.

On the other hand, quality checks for the methodology including the sampling scheme, questionnaire design and specific techniques used for information gathering must be exhaustive since a partial coverage may conceal many important problems that deserve attention. Quality control on methodology and sampling design can best be achieved through meetings, colloquiums etc. to be organized among local and expatriate professionals from various agencies who use the survey results or who have the competence to comment on the statistical methods. There is an necessity for DEAPA to enhance its interaction with its users on methodological matters and avoid making major decisions unilaterally or by taking for granted the word of an outside consultant. There is a need for a rational and informed debate on agricultural statistics methods on a national scale. There exists sufficient intellectual capacity to detect glaring mistakes and suggest very novel solutions to problems which seem insurmountable. This potential needs to be fully exploited and complemented by outside consultants when needed.

4.7 Documentation Needed

DEAPA should make serious efforts to produce a few documents for both internal use and for general public interested in learning more about the agricultural data collection and processing techniques. There is a scarcity of good documents on DEAPA's operations.

The first one of these documents can be effectively entitled as: Methodological and Institutional Aspects of Agricultural Data Collection in Cameroon. A second document is needed for laying down the principles of data processing for the agricultural surveys in Cameroon. This should contain manual data processing forms (formulaire de depouillement) for use at any level which would enable all data handlers (divisions and provinces) for making their own provisional reports. The third document needed is a revised training document the basis of which already exists. The base document is the excellent training manual prepared by Norman Beller in August 1987 under the title of: Cours Sur Le Sondage Aerolaire while working with AMP. It should be shortened, updated to contain the estimation formulas and reprinted to be made available for general use. A fourth and final document pertains to quality control. DEAPA has enumerator manuals, but no elaborate manuals for its own staff as to how they would go about quality controls. The manuals set rules as to how each question on the questionnaire should be administered, the same should apply to quality controls.

Once the documents are prepared, an outside consultant should be invited to teach DEAPA staff what is contained in these manuals and upgrade statistical skills, particularly at SOE. A further use of the documents will be at a possible national colloquium on agricultural statistics which has been recommended in this report.

4.8 Suggestions for Reinforcing Farming Systems Basis Research for DEAPA

DEAPA must always keep on looking for better methods to replace existing methods or use these to double check the validity of the estimates in an effort to determine systematic biases. To enhance its understanding of the traditional agricultural production in Cameroon, DEAPA can experiment with some other techniques. For instance, the current agricultural production

data collection method does not take into account post-harvest and storage losses and sales made from last year's stocks for cereals. To master production in Cameroon, one must understand the key factors of production.

The DEAPA system must also understand the land allocation patterns better and be able to track fields. To track fields, data is needed on new fields opened this year, old fields still used, old fields abandoned for good, old fields under fallow and old fields revisited. Regular patterns of interactions can be discerned between these different types of fields and once a pattern is established it can effectively serve as a basis for predicting agricultural production and making comparisons with those actually measured (declared) by the farmers. This is some kind of a built-in farming systems research (FSR) which can be considered as a small scale experiment.

Furthermore, there is very scanty data available on the different crop association in Cameroon which can be used for statistical purposes. The limited scale FSR study proposed here can also be tailored to produce a list for the major crop associations. This type of research can also be conducted on the basis of the questionnaires from 1984 - 1992, but a structured approach is recommended that will also take into account the history of fields, rotations, distance to the household base, other inputs used etc.

4.9 Potential For Reducing Sample Sizes

According to the latest sample design, sample sizes have been determined for achieving ten and fifteen percent coefficients of variation (CV) at the national and provincial level, respectively, for the most important variables (production and areas for the most important crops) for an all out agricultural census. Specifically these crops are: cassava, plantain, bananas, palm oil, sugar cane, cocoyams, maize, beans, groundnuts, sorghum, millet, rice, yams, peas, potatoes, tobacco, cacao, arabica and robusta. Essentially there are as many sample sizes as there are variables on a questionnaire, because each one of these variables defines a sample size based on its variability and the precision required. Thus the final sample size agreed upon for the country and for all the variables represents a compromise between many factors and human judgement.

It is not necessary to redraw the sample to compute what the new CV's would be for different sample sizes. Sampling theory and the figures in the sampling tables of 1990 are sufficient to compute the estimates provided in the following table which should be accurate within plus or minus one percent.

	Original Sample (100 %)	Current Sample (50 %)	Proposed Sample (25 %)
Segments	923	515	230
Farms/segment	10	8	10
Farmers	9230	4120	2300
Province error	15 %	22 %	30 %
National error	10 %	15 %	20 %

The current sample used by DEAPA has about 22 percent provincial and 15 percent national error. The sample to be obtained by another 50 percent reduction in the current sample size will have approximately 30 percent provincial and 20 percent national error. This would represent about 2300 farmers with an average of 10 farmers in each segment. If the urban stratum is to be dropped, as explained below, the number of farmers surveyed will decrease to 2040, while the error levels increase by about 2 percent for the province and one percent for the nation. This is the minimum coverage for the traditional farm sector in Cameroon and further reductions in the sample should not be considered. If sufficient funding cannot be provided for this minimum coverage, surveys should be discontinued and replaced by other types of irregular data collection efforts.

The original design included a sub-stratum for urban-based small scale farms and a stratum for farms larger than 10 hectares. These refinements cannot be justified with a sample which is a half or a fourth of the full size recommended in the original design. The large farm survey can be reintegrated into segment based sampling as of the next data collection round. The urban substratum can be dropped and the resulting estimates scaled up by about 10 percent (correction factors for each individual variable must be computed from the last survey for every division). These will represent further savings without significantly affecting sampling errors. The large farms stratum and urban substratum can be reconstituted in the future when resources become available to conduct a census with a full size sample.

4.10 Procedures for Other Agricultural Surveys

Any other agricultural survey conducted by DEAPA itself should use the exact same sample. Any redundant and overlapping questions should be dropped. The field staff should never be given different sets of instructions to do the same thing with different samples. To the extent possible, only very short questionnaires should be administered as separate modules. It is of utmost importance that as much information as possible should be extracted from the base survey to complement the modules launched. None of these basic principles was adhered to in the current fertilizer survey for USAID (but outside the CAPP project), which this evaluation found disorganized (suggesting no field test), confusing, overlapping, lengthy and disparate in its methods with the base survey. Like all surveys, such surveys must be field tested prior to launching them in the field.

Using the exact same sample economizes enumerator time, helps train the respondent farmers and make them more efficient to answer a few extra questions contained in the module, as well as avoiding confusion to the enumerators caused by the application of different techniques towards the same ends.

4.11 Data Processing

The data processing unit is capable of producing the survey results in a timely manner. It has demonstrated this capacity by doing the work of seven years in one year. All the past backlog of unprocessed data has been cleared. Four reports have been published for 1985/86, 1986/87, 1987/88 and 1988/89. The report for 1989/90 is ready for publication. DEAPA has demonstrated its capability by publishing five years of data in one year. It should be able to publish subsequent yearly data with great facility. The returned trainees in data processing are expected to further strengthen this capacity and avert future backlogs. The conditionalities that helped produce these results should not be slackened. Pressure must be kept on to avoid a relapse.

One of the potential data processing difficulties with the DEAPA system is that when one passes three times to collect information about the same farmer, it becomes a necessity to join this data for all of these three passes before being able to estimate the desired variables - total production, areas etc. Results obtained from a single pass can always be extrapolated individually, but this would always yield partial information.

This is because the first pass collects data on season A areas whose production and sales data come from the second pass, the second pass collects data on season B areas whose production whose production and sales data come from the third pass. Thus, the passes are not only complementary but are interlinked as well. Special care needs to be given to this aspect of data processing at DEAPA and it has to be very well documented. CHC areas and production data are collected at the same time for pass number one, but as of pass number two it gets less straightforward. New areas are added for CHC as well as seasonal crops in the second pass while production/sale of cash/export crops and last seasons production/sales data are collected in the third pass. As is also mentioned elsewhere, this is a very innovative and low cost data collection method. However, as efficient as the data collection system may appear, the data processing division must also ensure that the internal consistency (and logic) of the system is always properly maintained in the data processing stage. This becomes particularly relevant when staff are reassigned and positions change hands. There is need to document the such procedures.

The data processing service does not closely cooperate with the methodology service resulting in questionnaires that are very difficult to computerize. One questionnaire that has been particularly difficult to computerize is the fertilizer questionnaire. Among other design flaws, the matrix form for the collection of mixed crops data in the fertilizer questionnaire makes it exceedingly difficult to computerize. The data processing staff must be allowed to go in the field to make quality controls and make comments on the questionnaires designed.

Shortening and redesigning the existing base survey questionnaire will help the data processing operations. Using the exact same format for the three passes for data collection will greatly help the verification and data file merging processes.

Some rudimentary manual data processing is needed in the provincial and divisional offices to produce preliminary results using the base survey data. So far, to cope with the shortage of objective data, the field offices developed their own non-scientific parallel but regular data gathering systems. Some help should be considered for these field offices which would enable them to interpret their own survey results than having to generate other figures. This would be possible by giving them forms and other needed formulas to summarize their survey data. Some training would be needed. This can be organized in three national centers, say, Yaounde, Bamenda and Garoua. To reiterate, only manual techniques should be used in filling out these forms.

4.12 DEAPA Reports

DEAPA's statistical reports are printed in slim and economic format only in the French language. Each page bears two tables, as opposed to one contained on every page in the census document of 1984. They contain about half the number of tables contained in the census. Their size, however, grossly underestimates their actual effective content. Although these reports are an eighth of the size of the census document, they contain more than half the information. In effect, each DEAPA annual statistical report can be viewed to be

providing about the same level of information as the census document if one ignored the elaborate cross tabulations used in the census. This low cost format and tabulation should be preserved for future reports.

Although there are a few errors and inconsistencies in these reports, they are of good quality. As a general rule, one cannot objectively assess the validity of the published figures by simply looking at these figures. Any cursory assessment proclaiming data unreliability can be quite misleading, if not unjust. Hence, not much attention should be paid to such claims which may have a variety of motives.

To have a scientific basis, one must have a sample of figures and audit them by using objective methods. One such method is taking any awkward looking figure and investigating if the perceived discrepancy is due to a change in the method of data collection. This may be a first step in auditing the data. If the discrepancy is not found to be due to a change in the method of measurement, then an array of possibilities must be investigated including: data entry errors, processing errors, printing errors etc. Without having expended any of the effort to judge its validity, one has no basis for announcing that the data is inaccurate. Briefly stated, agricultural data in Cameroon is to be trusted unless one has good reasons for not doing so. This evaluation confirms that DEAPA's methods and techniques, for the most part, are basically sound and its staff competent both at the head office and in the field, thus inspiring and reinforcing confidence in the output produced.

These reports need to be embellished with visuals for which the project possesses the resources. An early release with limited coverage (provisional areas and production only) should be contemplated after each season for urgent data needs particularly in food security and early warning systems.

DEAPA systematically collects data on areas of fruits and vegetables which have never been published for the past nine years. Some reflection is needed in this domain to be able to publish area data on these crops which can be very useful to estimate production that cannot be satisfactorily measured at this time.

V. COSTS OF OPERATION

5.1 Background for the Base Survey

The current sampling methodology adopted for the covering the small scale traditional farmers is a two stage cluster sampling scheme which is the lowest cost option possible for sampling in Cameroon. It must be maintained.

The three-pass interlinked questionnaire administration is indispensable to collect reliable information, particularly on the CHC production and sales. This approach is also low cost given its usefulness in getting reliable data. Thus it should be maintained. Fewer passes may seem to represent savings but will significantly reduce data reliability.

Field measurements are the only objective measurement performed by DEAPA. They constitute an integral part of the overall data collection process in Cameroon. They also serve to check the consistency of production figures. Therefore, area measurements should be continued.

Next to not doing any survey at all, the greatest amount of savings is possible by reducing the existing sample size to one half which would represent a fourth of the original full census size. Approximate provincial and national sampling error levels are shown below for the existing as well as reduced samples. The reduced sample size is still amenable to extrapolation at the division level.

Item	Present Sample	Reduced Sample
Segments	515	230
Households	4120	2300
Provincial Error	22 percent	30 percent
National error	15 percent	20 percent

Additional savings will be possible by eliminating certain activities such as dropping the urban stratum, not covering the entire country every year and not using certain personnel that are not indispensable to data collection or possible combinations of the above. Selection and reallocation of material resources based on sharing is a further consideration that can be employed in saving scarce resources. To the extent possible, this can be done by replacing expensive 4WD vehicles by motorcycles and by moving the vehicles around the country to do quality controls or other related field work rather than assigning them to individual offices.

Future options in cost reduction will necessarily involve choices among the following decision variables if the base survey is to be maintained.

Variable Item	Options Available
Urban stratum	keep or drop
Large farm stratum	keep or drop
Segment rotation	do or don't
Form 0	do every year or don't do every year
Questionnaires	retain only 1984 census variables or expand
Sample size	maintain current size or reduce by 50 percent
Full coverage	bi-annual or annual
Partial coverage	six provinces in odd years, four in even years
Materials	cars or motorcycles
Vehicle allocation	fixed or moving between provinces
Personnel use	division's or division's + province's

Conceivably, the final selection of the most cost effective strategy must involve some kind of a mix of the above decision variables. There are many combinations possible with all the above options. Hence, only those possibilities that may have some operational significance will be explored.

5.2 Scenarios to Consider in Cutting Costs

Below are some plausible scenarios which may be considered for adoption.

Scenario 1: Maintain the existing situation.

Scenario 2: Administer the survey with its existing size the first year and reduce the sample size by half for the second and the third year. Resume the existing sample size in the fourth year and so on.

Scenario 3: Define the "light survey" by dropping urban strata, large farms and taking the half sample (50 percent of the existing segments). Administer the light surveys for two, three or four successive years and resume the current survey size for one year. Then go back to light surveys.

Scenario 4: Do the survey with its current size bi-annually for the entire country. Suspend all activities during the intervening years.

Scenario 5: Do the survey every year but cover only a part of the country in accordance with a predetermined plan:

a. Scheme for a two-year rotation: Divide the work load to have some representation of the ecological zones. Do three forest provinces and three savanna/sahelian provinces in even numbered years, and do two forest and two highland provinces in odd numbered years.

b. Scheme for a three year rotation: For the first year take two southern (forest) and two northern (sudano-sahel) provinces. For the second year take one forest province

and two western provinces. For the third year take two forest provinces and Adamoua. For the fourth year do as the first year.

Scenario 6: Have a Yaounde-based mobile team to do the surveys. With a 50 percent reduction in the sample size and a three year rotation scheme, this could be done by using central office and some divisional staff and require up to 10 vehicles (no motorcycles).

5.3 Cost Estimates for Scenarios 1 and 2 Above

In April 1992, the CAPP office conducted detailed studies on the survey operating costs under certain assumptions discussed under organizational aspects. These budgets are included in Annex F. The estimates listed below are based on these computations which represent the lowest possible costs for running the DEAPA surveys.

Yearly Operating Costs of Collecting Agricultural Data

Activities	Existing Sample	Half Sample
	(in million CFA)	
Training	18	18
Per Diem Survey&QC	48	26
Vehicle&Motorcycle Purchase	32	32
Vehicle&Motorcycle Maintenance	16	8
Gasoline	18	10
Printing Questionnaires	9	6
Supplies & Equipment	4	4
TOTAL	145	104

No reductions were programmed in the training line item because the existing level of training is inadequate and more staff needs to be trained than the minimum essential due to staff rotations. Since the current sample size is to be reconstituted periodically, this allows no savings in the number of vehicles and motorcycles. Lastly, the supplies and equipment line item is kept intact because there is a shortage of equipment in the field. Thus, it is possible to reduce the existing costs by about a third if a half sample is used. Assuming that per diem etc. could be negotiated down, the lowest cost for running the survey will probably

amount to no less than CFA 90 million annually. This is the cut off point below which surveys cannot and should not be undertaken.

As for what will happen with some of the other options mentioned above , Annex G contains a discussion of the possible savings as well as some pros and cons.

Each provincial office needs a vehicle. Most of the existing vehicles are expected not to function as of next year. These were purchased in 1987 and are close to being fully depreciated.

The vehicles will be purchased in accordance with the following plan: Two new vehicles will be purchased every year. The SNAR project will provide 2 vehicles. Therefore, 8 vehicles will be needed for the next four years plus one for the central office.

There are 142 enumerators planned to work on the survey under the least cost strategy. Each enumerator pair will be assigned a motorcycle. This amounts to 71 motorcycles. There will be a further motorcycle assigned to each divisional office as backup. Each provincial office will also get one motorcycle. Hence, the allocation of motorcycles will be 71 for the enumerators, 56 for the divisional offices and 10 for the provincial offices, yielding a total of 137. For budgetary purposes 40 motorcycles are programmed each year with replacements every third year.

In order to maintain the motorcycles intact for a period of five years, it is recommended that these motorcycles be made the personal property of the enumerators or provincial cadres who ride them. A special contract needs to be drawn between the furnishing agency and the owner. Joint ownership should not be excluded. The cost of the motorcycle can be reimbursed in equal installments over a three-year period. In order to induce motorcycle ownership by the field staff, motorcycles costs in excess of CFA 500,000 should not be reimbursed. The funds reimbursed are to be used to finance acquisition of other motorcycles or vehicles.

5.4 GOC Contributions to Data Collection

The official line items for GOC contributions to Project 631-0059 consist of the following:

Item	Percent of Total
SALARIES	54
OPERATING COSTS	46
Office Furniture	
Field Support	
Studies	
Building Maintenance	
Office Supply	
Data Collection	(33), (72)

For the purposes of conducting the survey, the most important line item in the above table is the one for data collection which comes under operating costs. The operating costs make up 46 percent of the total expected contributions. The data collection line item constitutes 33

percent of the total costs and 72 percent of the operating costs. GOC has been consistent in honoring the salary component of its obligations while defaulting on the operating costs which are essential to conduct the surveys. The percent realization rate for salaries has been 100 percent for the past four years with varying percentages for the realization of the data collection line item.

Over the past five fiscal exercises the GOC made the following contributions to the data collection effort as opposed to what was planned in the Project Agreement No: 631-0059 of September 29, 1988. According to the latest budget for 1992/93, what actually gets disbursed is roughly two thirds of what was budgeted.

Fiscal Year (*)	Programmed (in million CFA)	Budgeted	Disbursed (**)
1988-89	45.75	30.00	20.00
1989-90	57.95	100.00	67.00
1990-91	70.15	50.00	33.00
1991-92	106.75	50.00	33.00
1992-93	149.45	50.00	33.00
1993-94	200.00	--	--

(*) The fiscal year runs from July 1 to June 30.

(**) Rough estimates

The table shows that GOC budgets less than what was planned in the Project Agreement, disburses only about two thirds of what was budgeted and does not spend it on the surveys, although the funds are originally earmarked for surveys. Currently, the entire burden of DEAPA's survey operations fall on CAPP. Any meaningful scenario for the continuation of DEAPA's services must take into account the above realities. The level of activity must be such that it can be sustained by what the government can afford in salaries and office space rental only, if this is what the parties should agree on. Additional funding from outside sources is imperative to continue the survey operations unless the GOC takes drastic action in its staffing policies, lay off superfluous staff, release funds and use them to finance the survey.

VI. LESSONS LEARNED AND RECOMMENDATIONS

6.1 Lessons Learned

6.1.1 Technical Assistance

Operating a statistical system is a very intensive management responsibility which, if needed, can be complemented with short-term TA for the technical tasks, such as sampling and even data processing. It appears to be a delicate task to select and appoint long-term statisticians to environments which require both statistics and other complementary skills.

If CAPP is to be carried into the future, consideration should be given to the appointment of purely technical staff such as data processing advisors and sampling specialists on a short-term basis, which presents a possibility of getting a variety of skills rather than a concentration of skills in some narrowly defined areas. These specialists would make an even better impact if procured for short and succinctly defined missions.

6.1.2 Censuses and Surveys

Serious consideration should be given in Cameroon as to how censuses can be separated from annual surveys by assigning specialized agencies to each. The mixing of the two functions as well as the economic decline Cameroon started experiencing in 1987 are the principal reasons why annual surveys have not successfully followed the 1984 agricultural census.

Some of DEAPA's problems are understandable because resources have in fact been dwindling while the census ambition manifest itself in the overall management and data collection approach. Since DEAPA did not significantly reduce its work load, it confronted the difficult task of doing the same/or sometimes more with less. One should not take this observation as an unconditional critique of the DEAPA for trying to do more with less. The remark does not pertain to the act as much it pertains to the consequences of the act. What is important to note is that the management of DEAPA's data collection and processing systems was being unduly strained resulting in delayed publications, reduced employee morale, erosion of confidence in the system, chances missed for learning from annually published results and an accumulated agenda of methodological issues all of which need to be addressed now rather than be distributed over the years. The greatest loss is evidenced in the erosion of confidence in the system. DEAPA must now rebuild its reputation as a reliable source of information. For this to happen it has to make some internal adjustments so as not to relapse into the same problem.

Under pressure to reduce costs, DEAPA must define a base survey for itself which it should undertake only if adequate funding and support is available. This should be separated from the user related data collection efforts that need not be continued every year.

6.1.3 Too Much Emphasis in Sampling Methods

There seems to be too much emphasis on sample design, variances and even some theoretical considerations (such as self-weighted sampling attempted by Perry which aimed at equalizing the expansion factors for all farmers sampled in a division) while the true problem of DEAPA usually resides outside of the immediate technical domains of sampling.

What really is, or was, at the roots of the problem in agricultural statistics in Cameroon after the 1984 census? For the most part, we can address this question by making reference to implementation and management problems and the high cost of running the surveys in the face of ever diminishing funds. The first symptom of a problem was the non-publication of reports. Since management is also a technical area, it is possible to state that the problem was technical, but not in a strictly sampling sense. The non-sampling problems mostly consist of organizational/technical issues in getting things done on time (questionnaires distributed, training conducted, data summarized, reports issued etc), lack of adoption of improved field data collection techniques (almost complete absence of innovativeness in this area) and very lengthy delays in data processing. However, outside of Jim Otto's contributions in getting the data backlog cleared at DEAPA, the other two technical interventions in statistics proper at DEAPA, that of Wallace and Perry, were both in sample design and frame construction.

During the past four years, we note that while technical interventions resulted in the improvement of the frame and the clearing of AMP's unprocessed data backlog, which are the most important statistical accomplishments under CAPP, other statistical improvements (new ideas for data collection, refinements in questionnaires etc) outside of sampling and data processing have been scarce.

6.2 Recommendations

DEAPA's sampling methodology and field level data collection techniques are basically sound. The data collected should give reliable results if processed properly. The only conceivable manner through which the system can be made more cost efficient is by reducing coverage, the work load and by taking the necessary administrative measures for eliminating unnecessary staff at all levels. Most of the cost saving measures described here are organizational and not methodological.

The major recommendations of this study can be summarized as follows:

- o Preserve the two stage cluster sampling, frame, the three-pass field data collection technique and core staff to run annual surveys at DEAPA.
- o Do not implement new ideas on a national scale whose results may be disappointing. Do not introduce questionnaires or formulas without first doing a field test for some time. Collaborate with IRA.
- o Consider an early release of reports based on seasonal data (one pass only) which would cover production and areas only.
- o Reduce level of operation and do fewer things better by reducing sample size again by 50 percent, doing lighter surveys for a few years and resuming existing sample size, dropping the urban and large farm stratum and defining a base data set which must be kept separate from the rest of the surveys and given priority in data processing.
- o Hire an international accounting firm for up to 2 months to audit resource use (staff and funds) at the MINAGRI and develop a severance scheme for superfluous staff at

all levels for MINAGRI in order to save on resources which should be freed up for use in surveys or other areas of greater importance.

- o Assess funding levels and terminate all survey related activities unless at least CFA 90 million can be provided annually to run the survey with half sample size. Likewise do not attempt to do national surveys in Cameroon with fewer than 2000 farm households.
- o Avoid making abrupt and unannounced methodological changes unilaterally at DEAPA by DEAPA staff only. Consult with data users Cameroonian technicians, scientists and donor representatives before changing methods. Conduct a national colloquium to discuss methods used, those newly introduced and recommendations from this report. Get engaged in this debate with or without an outside consultant's involvement.
- o Prepare as soon as possible the four documents (methodology, quality control, data processing and training) suggested in this report and upgrade DEAPA's capabilities by organizing periodic short courses using these documents.
- o Be responsive to data users without jeopardizing or destroying base data collection systems and avoid overburdening the data processing facility with dissimilar questionnaires for each round.
- o Maintain conditionalities on data processing not to relapse into a problem of unmanageable unprocessed data backlog once again.
- o Consider creation of an autonomous data collection unit. Think about how this unit can be self sufficient or at least cover some of its operating expenses.
- o Consider wider dissemination of reports by making mailing lists, a short newsletter about DEAPA/CAPP activities every 6 months or so. Provide information to users on what data is being collected and give some summary results to include farm counts, production and areas for crops for the past 9 years.
- o Publicize results: use graphic presentations, hold workshops, seminars, do newsletters and mailing lists. Sell special data-sets on diskette.
- o Always measure farmer fields if any field data is collected at all. It is the only objectively measured variable and helps verify the farmer declared production. Without areas quality controls over production and sales will lose an objective basis for assessment. The allocation of areas to individual crops may present some biases or problems, but the total area farmed by the household is a very important variable and cannot be dropped.
- o Do not overemphasize sampling considerations. Try to master non-sampling errors which are more important.
- o Concentrate only on 1984 crops list. Six CHC, nine seasonal crops and four cash/export crops. Drop all others (vegetables, fruits, fisheries, forestry etc) from the base survey while trying to develop good methods to measure these aspects. If other

data is needed make a separate budget for them and try to charge users. Administer other data questionnaires separately, like the fertilizer survey.

- o Do not consider an all out agricultural census. It is expensive. What is currently doing is already a mini census. Maintain core institutional capacity within DEAPA, provincial offices and divisional offices for possible future expansion of the system.
- o Seriously consider data collection by rapid appraisal methods for some of the specific studies (études ponctuelles) involving mostly qualitative data while continuing basic data collection and other small scale specific studies. Maintain a 50-50 balance between base surveys and specific studies.
- o Do not process data for a farmer if all of his three passes are not complete. Make all the effort to edit and retain all the information available on the questionnaires. Drop a questionnaire that is too expensive to correct.
- o Improve measurement techniques and estimation formulas. Perry's sample allocation formula has proven very difficult to implement. It also appears counter-intuitive. Discontinue it and go back to the fixed size subsample size in the segments.
- o Track all fields with the same farmers on an experimental basis.
- o Standardize measures by giving away plastic basins and obtain estimates for other units which do not have standard measures.
- o Do not collect price data without consulting with FAO. They are doing it.

ANNEX A: Terms of Reference

CAMEROON AGRICULTURAL POLICY & PLANNING PROJECT (CAPP)

from U.S.: Yaounde/ AID, Washington D.C. 20521-2520
outside U.S.: c/o USAID, B.P. 817 - Yaounde, Cameroon

Tel/fax:
(237) 23-38-22

TERMS OF REFERENCE FOR A COMPREHENSIVE ASSESSMENT OF THE DATA COLLECTION AND PUBLICATION SYSTEM IN AGRICULTURE

General aim

The general aim of this mission is to make a thorough assessment of the whole data collection and publication effort and to determine what kind of data is most needed on crops and by whom, and how these needs can best be met. There are two particular issues which must be addressed: (1) economic: the survey's high annual cost (2) methodological: the difficulty of obtaining reliable data on the production of continuously harvested crops and on sales and prices of all crops. The assessment will be carried out by a short term consultant, paid for by USAID through the CAPP project, working closely with DEAPA staff. All involved should feel free to consider solutions radically different from the existing system.

Specific tasks

1. Contact data users to find out what kinds of statistics they need, for what purposes, and what their priorities are. The users to be contacted must include but need not be limited to following:

Ministry of Agriculture (MINAGRI)

- Dept. of Agro-Economic Surveys and Agricultural Planning (DEAPA)
- Division of Agricultural Projects (DPA)
- Department of Agriculture (DIRAGRI)

Ministry of Planning and Regional Development (MINPAT)

- Department of Planning (DP)
- Department of Statistics (DSTAT)

Ministry of Finance (MINFI)

- Department of Forecasting

Ministry of Scientific and Technical Research

- Institute for Agronomic Research (IRA)
- Institute for Animal Research (IRZ)

Donors: CCCE, World Bank, USAID, UNDP, FAO, GTZ, EEC, CARE

Private sector/agribusiness users.

2. Examine the methodologies employed in both collecting and processing data and evaluate the reliability and timeliness of the published figures.

3. Assess the staff and equipment available for data collection and processing in DEAPA, taking into account staff sent to the U.S. under the CAPP project for long term training whether they have returned yet or not.
4. Examine the costs of the existing system.
5. Come to conclusions on the following issues and any other important points that present themselves in the course of the assessment:
 - A. Whether there should be any regular data collection in agriculture at all. If so:
 - B. What kinds of data should be collected, how often, and what their most important uses and users would be.
 - C. Bearing in mind the need for accuracy, cost effectiveness and timeliness,
 - whether the current system for collecting, processing and publishing the data is fundamentally sound and, if so, what modifications to it would improve its performance.
 OR
 - whether other, quite different systems for collecting, processing or publishing data should be adopted, (the large fixed investment in the current system notwithstanding), and if so, providing a detailed description.
 - D. Whether any additional training or equipment is necessary based on A.,B. and C.
 - E. What the budget for the recommended system would be.
 - F. What part of this budget the government can realistically be expected to bear in the foreseeable future and the implications for donors.

The role of the short term consultant, deliverables and time frame - The study is expected to take six weeks, with a possible extension to eight. During this period the short term consultant will:

1. Carry out the above assessment in collaboration with the DEAPA personnel, in particular the Heads of the Statistical Operations Service and the Data Processing Service.
2. Present an interim oral report four weeks after arrival in Cameroon to DEAPA, CAPP and USAID.
3. Submit a complete written draft of his report at the end of five weeks and his final report after six weeks. These times may be extended by up to two weeks, in which case a second oral report may be required when the final written draft is delivered.

The consultant's reports may be in English or French, with a preference for French in the oral reports.

4. The CAPP project will be responsible for reproducing 15 copies of the final report, distributing 5 to each entity.

The role of CAPP long term technical assistants will be to provide the consultant with such information, either oral or written, as the consultant may request, to the best of their ability.

The CAPP chief of party will also ensure that logistical support is available for transport, photocopying, etc.

The role of DEAPA personnel, in particular the Heads of the Survey Operations Service and the Data Processing Service, will be to collaborate with the consultant in carrying out the assessment. They will ensure that the necessary information is made available and offer their views on alternative systems or methodologies.

The Heads of Service or other responsible staff they designate will also:

- assist the consultant to make contact with data users in government, among donors and in both public and private sector enterprises, and accompany him on visits;
- arrange for and accompany him on field trips to view survey operations at each level of administration.

The budget and payment mechanism: The budget is attached. The consultant will be paid his salary directly by WSU according to the contract drawn up directly between him and CID. The CAPP office in Cameroon will pay in country per diem and travel expenses for the consultant and DEAPA staff.

ANNEX B: List of Persons Contacted

Name	Agency
Abdel Magid Abdel Hamid	Pioneer Seed Company
Ayissi Timothy	DEAPA
Baker Doyle	IRA
Balima Michel	UNDP
Benedict Peter	USAID
Bonte Emile	Coffee-Cacao Seed Project
Conte Stephane	CAPP Project
Diop Aliou	UNDP/FAO CEPSTA Project
Dominic Sam N.	UNDP
Fometeu Pierre	SDSA Southern Province
Fongep Mr.	MINPAT
Gauche Michel	European Communities
Harvey Ron	USAID
Kembou Jean-Pierre	SPEAPA Central Province
Lapointe Yvan	ACDI
Manga Bell P. Bebe	MINPAT DP
McMahon John	USAID
Nagash Kifle	USAID
Ngassam Andre	MINPAT
Nigour Mr.	MINFI
Njejou Jonatta	SPEAPA North West Province
Njinyam Steven	MINAGRI
Ntsam Sebastien	SPEAPA Northern Province
Nwaha Jean Claude	UNDP
Ondoua Owono J.	DEAPA
Perevet Zacharie	MINPAT
Pouansi Jean-Pierre	DEAPA
Rifflet Mr.	Belgium Aid
Rigouzzo Luc	French Coopertaion
Ring Sieglinde	FAO
Roider Werner	World Bank
Schroder Peter	GTZ Cacao Marketing Project
Serno Abdoulaye	MINAGRI Northern Province
Siewe Emmanuel	Chamber of Agriculture
Takou Pierre	DEAPA
Tanifum Ambe	USAID
Tchatat Clobert	DPA
Tchomte Vincent	DEAPA
Tentchou Jean	UNDP/FAO IAMI Project
Tollens Eric	University of Leuven, USAID consultant
Toze Emmanuel	SPEAPA Western Province
Washington Elzadia	USAID
Wyeth Peter	CAPP Project
Zehraoui Mohammed	FAO/DEAPA SNAR Project

QUESTIONNAIRE SUR LES BESOINS, LES PRIORITES ET L'EMPLOI DES DONNEES AGRICOLES

(2 pages)

Nom de l'organisme _____	
<input type="checkbox"/> Privé	<input type="checkbox"/> Public
Nom de la personne qui répond _____	
Titre _____	
Date _____	

1. Avez-vous besoin des données sur les cultures suivantes?

(Veuillez cocher les cases appropriés. Les listes entre parenthèse indiquent les cultures qui figurent actuellement sur les questionnaires d'enquête).

Oui	Non		
<input type="checkbox"/>	<input type="checkbox"/>	Cultures vivrières	(arachide, banane, canne à sucre, haricots, huile de palme, igname, macabo, maïs, manioc, mil, palmistes, plantain, pomme de terre, riz, sorgho, taro, voandzou).
<input type="checkbox"/>	<input type="checkbox"/>	Cultures pour l'exportation et l'industrie	(banane d'exportation, cacao, café, canne à sucre, caoutchouc, coton, huile de palme, tabac, thé)
<input type="checkbox"/>	<input type="checkbox"/>	Fruits	(ananas, avocat, citron, goyave, kola, mandarine, mangue, orange, pamplemousse, papaye, safou)
<input type="checkbox"/>	<input type="checkbox"/>	Légumes	(carrotte, concombre, gombo, haricot/niebe, melon, oignon, persil, tomate)
<input type="checkbox"/>	<input type="checkbox"/>	Autres	<u><i>(Veuillez préciser).</i></u>

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ANNEX C2: List of Respondents to Data Users Study

Name of Entity	Type
Caisse Commune Epargne et Investissement	Private
CAMER Industriel	Private
Chamber of Commerce	Public
Credit Agricole du Cameroon	Private
Department of Economy	Public
Department of Geography	Public
Directorate for Cooperatives (2)	Public
Directorate for Community Development (2)	Public
Directorate for Territorial Management	Public
Directorate for Forecasting	Public
Directorate for Community Development	Public
Division of Agricultural Projects (2)	Public
FAO	Donor
SAPROC	Private
Societe des Provenderies du Cameroun	Private
Societe Camerounaise de Metallurgie	Private
Societe Etudes pour Developpement Africain	Public
Societe Ader Cameroun	Private
SODECAO	Parastatal
Sub-directorate for Crop Protection	Public
UNDP	Donor
University of Yaounde (2)	Public
USAID	Donor
World Bank	Donor

Note: The numbers in parentheses show that the same entity submitted two completed questionnaires.

Questionnaire sur les besoins, les priorités et l'emploi des données agricoles (suite)

2. Le tableau suivant demand le TYPE d'information demandé, la PRIORITE que vous y attachez, la FREQUENCE de collecte préfé et L'EMPLOI principal de ces données. *(Veuillez cocher les cases qui s'appliquent).*

Type d'info. demandé	Type d'info. demandé		Priorité						Fréquence de collecte préférée						Emploi principal					
	Oui	Non	Haute	Moyenne	Faible/non réponse	Tous les 6 mois	Chaque année	Autre réponse/non réponse	Rapport pour le gouvernement	Planification	Prévision	Conception des projets	Suivi des projets	Prêt bancaire	Commerce	Recherche & analyse	Sécurité alimentaire	Enseignement		
Production																				
No. de producteurs	24	4	13	8	3	5	16	3	5	4	7	13	7	2	4	3	1	2		
Superficie	24	4	10	10	4	6	15	3	3	4	5	13	9	2	2	3	1	2		
Production	24	4	14	6	4	5	18	1	3	5	3	12	9	2	3	3	1	2		
Rendement	24	4	9	13	2	6	14	4	3	3	4	10	5	1	1	3	1	2		
Ventes sur ferme	15	13	6	8	1	4	7	4	1	2	3	9	2	1	3	2	1	1		
Prix producteurs	22	6	13	6	3	5	13	4	2	5	3	11	5	1	3	3	1	2		
Revenue producteu	19	9	10	6	3	4	11	4	2	5	3	10	5	1	1	2	1	1		
Prix en gros	20	8	6	6	8	7	8	5	1	3	4	8	3	1	3	3	1	2		
Prix en détail	19	9	6	9	4	7	8	4	1	3	4	10	4	1	1	3	1	2		
Prix d'exportation	22	6	6	10	6	4	10	8	3	3	5	9	4	1	1	3	1	2		
Intrants																				
Main d'oeuvre	20	8	10	6	4	7	12	1	3	3	4	10	8	3		2	1	2		
Engrais	23	5	12	6	5	2	13	8	3	4	7	9	7	4	2	3	1	2		
Produits chimiques	20	8	9	7	4	6	13	1	1	3	4	8	5	3	2	3	1	1		
Matériel	24	4	10	8	6	7	12	5	3	4	5	10	8	3	1	2	1	2		
Semence	23	5	9	7	7	7	12	4	3	4	5	9	6	3	1	3	1	1		

ANNEX C3: Frequency Table of Responses

ANNEX D: Price Data Collection Efforts and Methodology

Types of Agricultural Price Data

There are two types of agricultural prices for the purposes of this study. The first one is the farm gate price and the second one is a succession of market prices for different levels. The farm gate price is collected from the farmer as it should. The other market-related prices are collected at the market. Thus, to collect price data two types of targets are needed: farmers and the market operators (truckers, wholesalers, warehouse operators, retailers etc). Each country has its own particular marketing channels and there is no standard manner of conducting a market study for all circumstances. Also, it is possible that some of the farmer producers are themselves market operators. There are some specific issues related to both types of prices in Cameroon. Hence, a specialist must look into these matters for some time before developing a general methodology for the country. One excellent source of expertise to be considered is the Belgian University of Leuven whose staff have performed an outstanding job in Zaire between 1987-90 under contract with USAID. Another excellent source of expertise is with the FAO's SNAR project (1991-1993) which can be mobilized to define a manageable national price data collection system in Cameroon.

Below is some discussion of the price data collection methodologies in Cameroon as obtained from DEAPA and outside sources.

DEAPA's Farm Gate Prices from Traditional Farm Surveys

According to the End-of-Tour report of Dr. Rod Kite, AMP Chief of Party, "a more frequent window is needed "for price data collection. As both MINPAT and MINDIC were collecting prices at the time, which subsequently collapsed, he suggested that a more coordinated approach would be needed. Dr. Kite proposed a mini seminar on prices alone to include all the parties involved in price data use and collection. Apparently, this mini-seminar did not take place. The terms of reference for this consultant also explicitly recognized this problem and asked for advice as to how this problem can be handled.

The present farm gate price data collection method, still according to Rod Kite, has some deficiencies. The method involves asking the farmers what their actual sales were (and the price received) and what they expect to sell in the future. Total sales are then estimated from actual plus estimated sales. This has several weaknesses:

- a. the price received for expected sales is assumed equal to that received from actual sales,
- b. seasonality is not accounted for in calculating the value of all sales,
- c. prices are based on a very limited number of observations, and
- d. expectations data can be extremely unreliable.

The improvement in data reliability could be significant if some special marketing studies are undertaken. One particular case to cite is that in 1987, 65 percent of maize sales is accounted for by expected sales. This actual difficulty can sometimes be compounded by flaws in questionnaire design as evidenced in Form I and II of 1992 (one single pass) where

no data was collected on expected sales for maize, sorghum, millet, rice, peanuts, peas and other crops.

Estimation problems of sales is particularly important for seasonal crops which require both realized and expected sales. But the CHC (continuously harvested crops) are also affected by the process. If this evaluation was asked to assign a reliability ranking to crop sales data the following would be plausible.

- a. Continuously harvested crops: Sales data are collected from three observations. No expected sales data is collected. This category can be considered the most reliable.
- b. Seasonally harvested food crops: Sales data is collected on past season's recall plus expected sales. There are two observations. This has the second rank in reliability.
- c. Cash crops: Sales data (realized sales plus expected) are collected only once a year. These are the least reliable because it depends on a single observation and government announced prices may be very different from those actually received by the farmers.

Some observers contacted also indicated that there are some inconsistencies with the farm gate prices in the DEAPA series (the recent case of plantains prices not moving down as expected which was pointed out by the Division of Agricultural Projects).

This evaluation did not have the time to fully assess the impact of the method on the quality of the price data. However, the above signals, some which come from one of the original designers of the system, should be heeded in order to perform some inquiries.

Other Market Price Data Collection Efforts

Systeme National d'Alerte Rapide (SNAR)

SNAR is another DEAPA project implemented by the FAO acting as World Bank contractor. Its impact zone is the two Northern Provinces (North and Extreme North) as well as the Southern and Central Provinces. SNAR is very much like the FEWS (Famine Early Warning Systems) projects commonly found in the Sahelian countries. All CILSS (Comite Interetat de la Lutte contre la Secheresse Sahelienne) countries have programs like SNAR all of which share more or less the same data needs.

The principal targets for SNAR's intervention are the market operators and agricultural producers. Data is needed by SNAR to identify projects for intervention to alleviate the incidence of drought. It needs both sector and crop level data for a semiannual publication it produces under the title of Note de Conjuncture where the sector's (agriculture) economic behavior is studied. SNAR also needs uninterrupted series in most of the variables covered by the Agriculture Surveys. Through SNAR's insistence, the Agriculture Survey system was expanded to include data on fruits and vegetables quantities produced, sold, and unit prices in 1991. Data needs regarding processing of crops are difficult to obtain because the national system does not deal with this aspect. The Agriculture Surveys are published too late to be of maximum use to SNAR.

SNAR's Chief Technical Advisor, Mr. Zahraoui, and his colleagues have prepared documents of excellent quality for the implementation of a regional MIS system. The

methodology involves data collection at the producer, semi-wholesaler/wholesaler and retailer levels. The method is to collect the information at the beginning, mid-day and at the end of the market. Transactions at the operators level are recorded to get information on type of product, quality of product, minimum volume etc. The questionnaire is organized to collect data on plantains, cassava, peanuts, yams and palm oil, which are by far the most important agricultural products in Cameroon. Price data is to be collected from up to five operators for each level. The data collection effort has not yet officially started although the pilot surveys have been tested on the following markets: Abang Minkoo, Ebolowa, Kribi and Zoetele.

Except for the number of crops covered, SNAR's methodology is sound, comprehensive and professionally designed. However one possible drawback with this approach is that it will require full time enumerators and add substantially to costs in per diem etc., if implemented on a full scale in Cameroon. For one thing, the processing of weekly data from all over the country will pose problems of logistics in questionnaire transmission and central office processing and publishing. Thus, a lower-cost, lighter and restricted national price data collection system still needs to be defined in Cameroon.

The Northern and Extreme Northern Provinces will soon be integrated into a Market Information System. Corn and rice will be included for these two provinces. The MIS developed in the Western and North Western Provinces will be taken over by SNAR.

CEPSTA Project

This is a joint FAO/UNDP supported project (UNDP/FAO CMR/92/001). Its full title is: Promotion of Post Harvest Systems and Small Scale Food Processing Industries (CEPSTA). The project started in 1988 as a pilot operation to collect in the Western and North Western provinces. Its initial title was Reduction of Post Harvest Losses for Cereal, Root and Tuber Crops. The project is now operating in full scale and contemplating coverage for added provinces of Adamoua, Center and South West.

One of the lessons learned by the CEPSTA project was that the initial area of intervention which was defined to be controlling post harvest losses did not prove to be the sole critical area for participating farmers. Further critical elements facing the farmers were food processing and marketing, which resulted in reorienting the project towards market price data collection and dissemination.

Estimates of supply for food crops is provided by the CEPSTA as expressed in trader counts and estimated volume offered for sale. The project covers 11 markets (10 rural) in the North West and 9 markets (8 rural) in the Western province. There is no forecasting component for this project. Data collected at various market levels are broadcast on the radio.

The CEPSTA project prefers SNAR, another FAO project, to take over the North Western and Western provincial price data collection while they concentrate only in post harvest aspects in the same provinces. The reported aim is to have a sole MIS agency in Cameroon to better coordinate the activities.

The markets where prices are collected are selected on the basis of two criteria. The first one is the presence of the major crops on the markets, export possibilities, number of traders

etc., all of which are indicators of the importance of the market. The second criterion was staff limitations which did not allow the coverage of more than two markets per enumerator.

Prices are collected on 18 categories of crops some of which are different varieties of the same crop. The questionnaire is designed to collect data both on supply and demand for diffusion to users. CEPSTA administers a second questionnaire to monitor the effects of its market news programs.

The market news program announces which markets have been covered during a particular week and updates the information on supply and prices provided the previous week. The most abundantly supplied crops are mentioned as well as what the traders are willing to buy. Then, prices are provided for the different crops. Finally next week's program is announced with reference to the markets to be covered.

ANNEX E. Legal Texts

DECRET N° 89/140 DU 27 JANVIER 1989

portant réorganisation du Ministère de
l'Agriculture complète par Décret N° 89/359 du
6 MARS 1989 portant additif à ce Décret.-

LE PRESIDENT DE LA REPUBLIQUE,

VU la Constitution ;
VU le décret n°88/772 du 16 Mai 1988 portant organisation du Gouvernement ;
VU le décret n°84/162 du 13 Avril 1984 créant une Cellule Juridique au
sein de certains Départements Ministériels ;

D E C R E T ETITRE I : DISPOSITIONS GENERALES

ARTICLE 1er.- 1°)- Le Ministère de l'Agriculture est placé sous l'autorité
d'un Ministre assisté d'un Secrétaire d'Etat.

2°)- Il comprend :

- Le Secrétariat Particulier du Ministre ;
- Le Secrétariat Particulier du Secrétaire d'Etat ;
- Trois Inspecteurs Généraux ;
- Trois Conseillers Techniques ;
- Une Administration Centrale ;
- Des Services Extérieurs.

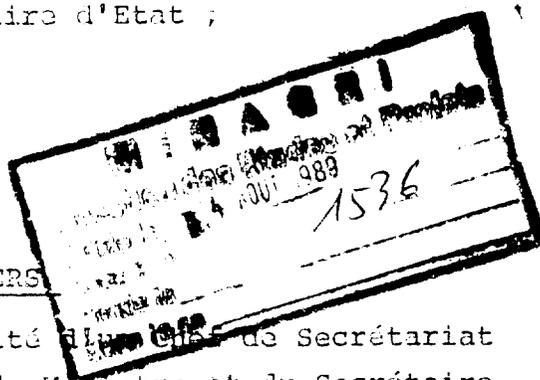
TITRE II : DES SECRETAIRES PARTICULIERS

ARTICLE 2.- 1°)- Placés chacun sous l'autorité d'un Chef de Secrétariat
Particulier, les Secrétariats Particuliers du Ministre et du Secrétaire
d'Etat suivent les affaires réservées.

2°)- Leur organisation et leur fonctionnement sont fixés par des
textes particuliers.

TITRE III : DES INSPECTEURS GENERAUX

ARTICLE 3.- 1°)- Les Inspecteurs Généraux sont chargés de toutes missions
d'évaluation, d'inspection ou de contrôle qui leur sont confiées par le
Ministre ou le Secrétaire d'Etat. Ces missions s'exercent dans les Services
Centraux, dans les Services Extérieurs, ou auprès des Organismes autonomes,
placés sous la tutelle du Ministère de l'Agriculture.



ARTICLE 39.- 1°) - Placé sous l'autorité d'un Chef de service assisté éventuellement d'un Adjoint, le service des Etudes et des Statistiques forestières est chargé :

- des statistiques forestières ;
- du suivi de l'évolution des prix des produits forestiers sur les marchés national et international ;
- de la législation ;
- de l'évaluation de l'ensemble de l'économie forestière et de la conjoncture internationale du bois ;
- du suivi de la promotion commerciale des essences forestières.

2°)- Il comprend :

- le Bureau des études et de la documentation ;
- le Bureau des statistiques.

ARTICLE 40.- (1°)- Placé sous l'autorité d'un Chef de service, éventuellement assisté d'un Adjoint, le service des Industries et de la Promotion de Bois est chargé :

- de la planification des industries forestières ;
- de l'instruction des dossiers et du suivi de la mise en place des industries forestières ;
- du contrôle des installations industrielles et du suivi de la transformation locale du bois ;
- du suivi des programmes d'assistance aux forestiers nationaux.

2°)- Il comprend :

- le Bureau des agréments ;
- le Bureau du contrôle des installations et de la transformation locale

ARTICLE 41.- 1°)- Placé sous l'autorité d'un Chef de Brigade ayant rang de Chef de service d'administration centrale, la brigade de contrôle des exploitations et des industries forestières, animée par une équipe de 10 (dix) contrôleurs ayant rang d'adjoint au chef de service d'administration centrale est chargée :

- du contrôle des chantiers d'exploitation et des industries forestières notamment en ce qui concerne le respect de la réglementation forestière, la réalisation des clauses des cahiers de charges et le paiement des taxes forestières ;
- de toutes investigations à la demande du Ministre chargé des forêts.

CHAPITRE VI : DE LA DIRECTION DES ENQUETES AGRO-ECONOMIQUES ET DE LA

ARTICLE 42.- 1°)- Placée sous l'autorité d'un Directeur assisté d'un Adjoint, la Direction des Enquêtes Agro-Economiques et de la Planification agricole est chargée :

- de la collecte, du traitement et de la publication des statistiques du secteur agricole et forestier ;

- des études techniques et économiques du secteur agricole et forestier ;
- de la planification du secteur agricole et forestier ;
- de la gestion de la documentation et des archives du département ;
- de l'organisation des stages de formation en matière de statistiques, d'études, de planification et de documentation en relation avec les services concernés.

2°) Elle comprend :

- le Service des études statistiques et agro-économiques ;
- le Service des opérations d'enquêtes ;
- le Service de traitement des données ;
- le Service de la planification agricole et forestière ;
- le Service de la documentation et des archives ;
- le Bureau des affaires générales.

ARTICLE 43.- 1°)- Placé sous l'autorité d'un Chef de service assisté d'un

Adjoint, le service des Etudes Statistiques et Agro-économiques est chargé :

- de la définition des enquêtes et des recensements agricoles à réaliser par le service des opérations d'enquêtes ;
- de la collecte des statistiques agricoles provenant d'autres sources ;
- de l'élaboration et de la publication des annuaires des statistiques agricoles ;
- de l'exploitation des enquêtes ;
- de l'analyse statistique des données du secteur agricole ;
- de la définition des besoins et de l'organisation de la formation ou du recyclage des agents de la statistique agricole en liaison avec les autres services compétents.

2°)- Il comprend :

- le bureau de la collecte et de l'exploitation ;
- le bureau d'analyse ;
- le bureau de la publication.

ARTICLE 44.- 1°)- Placé sous l'autorité d'un Chef de service assisté d'un

Adjoint, le service des opérations d'Enquêtes est chargé :

- de la réalisation des enquêtes et des recensements agricoles
- de la gestion du fond cartographique et photos aériennes ;
- de la gestion du matériel technique d'enquête ;
- de la mise au point des méthodes pratiques d'enquêtes.

2°)- Il comprend :

- le Bureau du dépouillement ;
- le Bureau de saisie et de gestion de données ;
- le Bureau de programmation.

ARTICLE 44 bis.- 1°) Placé sous l'autorité d'un Chef de Service assisté d'un

Adjoint, le service de traitement des données est chargé :

- de la définition et de la mise en oeuvre du plan de traitement des données des secteurs agricoles et forestiers,
- du dépouillement des enquêtes et recensements agricoles ;
- du traitement manuel et automatique des statistiques agricoles et forestières ainsi que des enquêtes et recensements agricoles ;
- de la gestion de la banque et des données des secteurs agricoles et forestiers ;
- de la définition des besoins en formation et de l'organisation des séminaires et stages dans le domaine de l'informatique appliquée à la statistique agricole et forestière.

2°)- Il comprend :

- le Bureau de dépouillement et de saisie ;
- le Bureau de traitement et de la programmation informatique ;
- le Bureau de gestion de données des secteurs agricole et forestier.

ARTICLE 45. - 1°) - Placé sous l'autorité d'un Chef de service assisté d'un Adjoint, le service de la planification agricole et forestière est chargé :

- de la planification du secteur agricole et forestier ;
- de l'élaboration des programmes et des comptes rendus d'activités annuels du Ministère de l'Agriculture.

2°)-Il comprend :

- le Bureau de la planification agricole ;
- le Bureau de la planification forestière ;
- le Bureau des études et de la programmation.

ARTICLE 46. - 1°) - Placé sous l'autorité d'un Chef de Service assisté d'un Adjoint, le service de la Documentation et des archives organise et gère la documentation et les archives centrales du Ministère de l'Agriculture. A ce titre, il est chargé ;

- de la collecte et de la tenue à jour de la documentation et des archives du Ministère ;
- de l'exploitation de tous rapports d'études ayant trait au secteur agricole et forestier ;
- de l'abonnement aux publications à caractère technique concernant le Ministère.

2°)- Il comprend :

- le Bureau de la documentation ;
- le Bureau des archives.

CHAPITRE VII : DE LA DIRECTION DE LA COOPERATION ET DE LA MUTUALITE

ARTICLE 47. - 1°) - Placé sous l'autorité d'un Directeur assisté d'un Adjoint, la Direction de la Coopération et de la Mutualité est chargée de la promotion du mouvement coopératif et mutualité sous toutes ses formes notamment :

CHAPITRE VIII. DE LA DIVISION DES PROJETS

ARTICLE 53. 1°) - Placée sous l'autorité d'un Chef de Division ayant rang de Directeur de l'Administration Centrale, la Division des Projets est chargée :

- de l'identification et de la préparation des projets d'investissement du Secteur Agricole et Forestier ;
- du suivi et de l'évaluation des projets en cours d'exécution ;
- de l'appui à la gestion et du suivi des Sociétés et Organismes placés sous la tutelle du département ;
- de l'organisation des stages de formation en matière de préparation d'analyse et de gestion des projets en liaison avec les services concernés.

2°) - Elle comprend quatre chargés d'études et quatre chargés d'études assistants ayant respectivement rang de sous-Directeur et de Chef de service de l'Administration Centrale et un bureau des affaires générales ;

TITRE VIDES SERVICES EXTERIEURS

ARTICLE 54. - Les services extérieurs du Ministère de l'Agriculture comprennent :

- les délégations provinciales de l'Agriculture ;
- les délégations départementales de l'Agriculture ;
- les délégations d'arrondissement (à l'échelon des arrondissements et des districts) ;
- les Postes Agricoles et Forestiers (à l'échelon de base) ;
- les Unités techniques opérationnelles ;
- les Etablissements de formation.

CHAPITRE I. DE LA DELEGATION PROVINCIALE DE L'AGRICULTURE

ARTICLE 55. - 1°) - Placée sous l'autorité d'un Délégué Provincial, la délégation provinciale de l'agriculture est chargée de la coordination des activités de l'ensemble des services du Ministère de l'Agriculture dans la Province.

2°) - Elle comprend :

- le Service Provincial de l'Agriculture ;
- le Service Provincial des Enquêtes agro-économiques et de la Planification Agricole ;
- le Service Provincial de la Coopération et de la Mutualité ;
- le Service Provincial du Développement Communautaire ;
- la Conservation des Forêts ;
- la Base Provinciale Phytosanitaire ;
- le Service Administratif et Financier ;

ARTICLE 56. - 1°) - Placé sous l'autorité d'un Chef de service, chaque service provincial est chargé de l'exécution locale des programmes de la Direction Centrale dont il relève sur le plan technique.

2°)- Par dérogation aux dispositions du paragraphe 1 ci-dessus, le Service du Développement Communautaire est placé sous l'autorité d'un Chef de service assisté d'un Adjoint.

ARTICLE 57.- Les Unités techniques Opérationnelles suivantes relèvent de l'autorité directe :

- 1°)- des Chefs de services Provinciaux de l'Agriculture ;
 - les bases phytosanitaires provinciales ;
 - les fermes d'essais et de Multiplication du matériel végétal.
- 2°)- des Conservateurs des Forêts ;
 - les jardins botaniques ;
 - les Unités de gestion des Forêts aménagés.
- 3°)- des Chefs de services provinciaux du développement Communautaire ;
 - les pools d'engins lourds ;
 - les Brigades opérationnelles des travaux.
- 4°)- des Chefs de Base Provinciale Phytosanitaire ;
 - les postes de police phytosanitaire aux frontières ;
 - les Brigades Phytosanitaire Départementales.

CHAPITRE II : DE LA DELEGATION DEPARTEMENTALE DE L'AGRICULTURE

ARTICLE 58.- Placée sous l'autorité d'un délégué départemental chargé de la coordination des activités de l'ensemble des services du Ministère de l'Agriculture dans chaque département, la délégation départementale de l'Agriculture comprend les sections ci-après :

- la section départementale de l'Agriculture ;
- la section départementale des Forêts ;
- la section départementale de la Coopération et de la Mutualité ;
- la section départementale du développement communautaire ;
- la section départementale des Statistiques Agricoles ;
- la Brigade Phytosanitaire ;
- le Bureau des Affaires Générales ;

ARTICLE 59. Placée sous l'autorité d'un Chef de Section, chaque section départementale est chargée de l'exécution locale des programmes du service provincial dont il relève sur le plan technique.

ARTICLE 60.- Les Unités techniques opérationnelles suivantes relèvent de l'autorité directe du délégué départemental

- les sections départementales du développement communautaire
- les Centres d'Education et d'Action communautaire (C.E.A.C.)

CHAPITRE III : DE LA DELEGATION D'ARRONDISSEMENT DE L'AGRICULTURE

ARTICLE 61.- Le Délégué d'Arrondissement de l'Agriculture assure sous le contrôle du Délégué départemental de l'Agriculture, la coordination des activités du Ministère de l'Agriculture au niveau de l'Arrondissement.

Article 5 : Les renseignements individuels d'ordre économique ou financier figurant sur tout questionnaire d'enquête statistique, ne peuvent, en aucun cas, être utilisés à des fins de contrôle ou de répression économique.

Article 6 : Toute personne impliquée dans la réalisation d'un recensement ou d'une enquête statistique est astreinte au secret statistique.

Article 7 : Les informations relatives à une entreprise détenant plus de 50% du chiffre d'affaires de sa branche ne peuvent être publiées sans l'accord préalable de celle-ci.

CHAPITRE II - COORDINATION

Article 8 : L'Etat assure la coordination et le contrôle sur l'activité statistique dans les conditions fixées par voie réglementaire.

CHAPITRE III - DISPOSITIONS PENALES ET DIVERSES

Article 9

(1) A défaut de réponse après mise en demeure ou en cas de réponse sciemment inexacte aux recensements et enquêtes visés à l'article 3 ci-dessus, les contrevenants sont passibles des peines d'amende dont le maximum pour une première infraction, ne peut dépasser 200 000 francs.

(2) - En cas de récidive dans un délai de trois ans suivant la date à laquelle la première condamnation a acquis l'autorité de la chose jugée, le montant de l'amende varie de 750 000 à 1 000 000 francs pour chaque infraction. Dans ce cas, pour les entreprises employant plus de 10 salariés, cette amende varie de 20 000 francs à 100 000 francs par salarié et sans pouvoir dépasser 5 000 000 de francs.

LOI N° 91/023 DU 16 DECEMBRE 1991 RELATIVE AUX
RECENSEMENTS ET ENQUETES STATISTIQUES

CHAPITRE I - DISPOSITIONS GENBRALES

Article 1er : Toute personne physique ou morale, exerçant une activité économique, sociale, culturelle organisée ou dans le cadre des professions libérales, est astreinte à l'immatriculation statistique.

Article 2

(1)- Les recensements et enquêtes statistiques initiés par les pouvoirs publics doivent obtenir le visa préalable de l'autorité compétente dans les conditions fixées par voie réglementaire.

(2)- Les personnes physiques ou morales interrogées au titre des recensements et enquêtes statistiques dûment revêtus du visa prévu à l'alinéa (1) sont tenues de répondre avec exactitude et dans les délais impartis.

(3)- Les travaux statistiques d'ordre intérieur à une administration et ne concernant pas les personnes étrangères à celle-ci ne sont pas soumis au visa préalable prévu à l'alinéa (1) ci-dessus.

Article 3 : Les personnes physiques ou morales désirant sous-traiter l'exécution des recensements et enquêtes statistiques visés à l'article 2 alinéa (1) ci-dessus doivent être agréées dans les conditions fixées par voie réglementaire.

Article 4 : Sous réserve des dispositions relatives à l'obligation de discrétion incombant aux agents publics dans l'exercice de leurs fonctions, les renseignements individuels figurant sur tout questionnaire d'enquêtes statistiques et ayant trait à la vie personnelle et familiale et, d'une manière générale, aux opinions, aux faits et comportements d'ordre privé, ne peuvent être l'objet d'aucune communication de la part du dépositaire.

Article 10 : La violation du secret statistique visé à l'article 6 ci-dessus est passible d'un emprisonnement de six mois à un an et d'une amende de 300 000 francs à 1 000 000 de francs ou de l'une de ces deux peines seulement ; sans préjudice, le cas échéant, de tous dommages-intérêts.

Article 11 : Les modalités d'application de la présente loi sont, en tant que de besoin, fixées par voie réglementaire.

Article 12 : Sont abrogées toutes dispositions antérieures contraires, notamment celles de la loi N° 83.17 du 21 Juillet 1983 relative aux obligations et secret en matière statistique.

Article 13 : La présente loi sera enregistrée, publiée suivant la procédure d'urgence, puis insérée au Journal Officiel en français et en anglais.

BEST AVAILABLE COPY

ANNEX F. Survey Budgets

ESTIMATED COST OF ANNUAL AGRICULTURAL SURVEY

FIELD SUPPORT OPERATIONS:

EXISTING SAMPLE: DEAPA PROPOSITION

(After substituting motorcycles for 4x4 vehicles at the section level)

Item	Unit Cost	Total		First Visit		Second Visit		Third Visit	
		No.	Cost	No.	Cost	No.	Cost	No.	Cost
			FCFA		FCFA		FCFA		FCFA
Training									
In Yaounde									
Travel									
9 provincial chiefs			1,200,000		400,000		400,000		400,000
Per diem in Yaounde (days each)									
10 provincial chiefs	15,000	10	1,500,000	4	600,000	3	450,000	3	450,000
In provincial centers									
Travel									
9 C.O. cadres			1,200,000		400,000		400,000		400,000
39 section heads	3,000	3	351,000	1	117,000	1	117,000	1	117,000
39 assistant section heads	3,000	3	351,000	1	117,000	1	117,000	1	117,000
80 enumerators	3,000	3	720,000	1	240,000	1	240,000	1	240,000
32 enum. to measure fields	3,000	3	288,000	1	96,000	1	96,000	1	96,000
Per diem (days each)									
9 C.O. cadres	15,000	13	1,755,000	5	675,000	4	540,000	4	540,000
49 section heads	10,000	13	6,370,000	5	2,450,000	4	1,960,000	4	1,960,000
49 assistant section heads	10,000	13	6,370,000	5	2,450,000	4	1,960,000	4	1,960,000
100 enumerators	6,000	13	7,800,000	5	3,000,000	4	2,400,000	4	2,400,000
42 enum. to measure fields	6,000	13	3,276,000	5	1,260,000	4	1,008,000	4	1,008,000
			31,181,000		11,805,000		9,688,000		9,688,000
Per diem: administering questionnaires									
Listing									
		days each							
10 provincial cadres	10,000	2	200,000						
49 section heads	10,000	2	980,000						
49 assistant section heads	10,000	2	980,000						
100 enumerators	6,000	2	1,200,000						
10 drivers	6,000	2	120,000						
Basic data									
10 provincial cadres	10,000	13	1,300,000	4	400,000	4	400,000	5	500,000
49 section heads	10,000	13	6,370,000	4	1,960,000	4	1,960,000	5	2,450,000
49 assistant section heads	10,000	13	6,370,000	4	1,960,000	4	1,960,000	5	2,450,000
100 enumerators	6,000	10	6,000,000	3	1,800,000	2	1,200,000	5	3,000,000
10 drivers	6,000	13	780,000	4	240,000	4	240,000	5	300,000
Central Office quality control									
9 C.O. cadres travel to provinces			1,200,000		400,000		400,000		400,000
10 C.O. cadres	15,000	21	3,150,000	8	1,200,000	8	1,200,000	5	750,000
10 provincial drivers	6,000	21	1,260,000	8	480,000	8	480,000	5	300,000
Measure fields									
10 provincial cadres	10,000	8	800,000	4	400,000	4	400,000		
49 section heads	10,000	8	3,920,000	4	1,960,000	4	1,960,000		
49 assistant section heads	10,000	8	3,920,000	4	1,960,000	4	1,960,000		
142 enumerators	6,000	5	4,260,000	3	2,556,000	2	1,704,000		
10 drivers	6,000	8	480,000	4	240,000	4	240,000		
Central Office quality control									
10 C.O. cadres	15,000	10	1,470,000	5	735,000	5	735,000		
10 provincial drivers	6,000	10	588,000	5	294,000	5	294,000		
			42,810,000		15,316,000		13,864,000		10,150,000

Vehicle purchase									
Pickups	4,800,000	2	9,600,000						
Motorcycles	555,000	33	18,315,000						
<i>Motorcycles to measure fields</i>	555,000	7	<u>3,885,000</u>						
			31,800,000						
Vehicle maintenance incl. tires									
Pickups			4,800,000						
Motorcycles			9,157,500						
<i>Motorcycles to measure fields</i>			<u>1,942,500</u>						
			15,900,000						
Gasoline (liters)									
Listing	195	11,140	2,172,300						
Basic data	195	47,700	9,301,500	15,900	3,100,500	15,900	3,100,500	15,900	3,100,500
C.O. quality con. (30/day)	195	6,300	1,228,500	2,400	468,000	2,400	468,000	1,500	292,500
<i>Measuring fields</i>	195	23,555	4,593,225	13,120	2,558,400	10,435	2,034,825		
C.O. quality con. (30/day)	195	3,870	<u>754,650</u>	1,470	<u>286,650</u>	2,400	<u>468,000</u>		
			18,050,175		6,413,550		6,071,325		3,393,000
Printing questionnaires & manuals									
Form O			597,400						
Manuals			217,500						
Pages for basic data			5,220,000	1,740,000		1,740,000			1,740,000
<i>Pages to measure fields</i>			<u>2,784,000</u>	<u>1,392,000</u>		<u>1,392,000</u>			
			8,818,900	3,132,000		3,132,000			1,740,000
Other									
Supplies for field offices			2,000,000						
<i>Equipment to measure fields</i>			2,499,750						
TOTAL (excluding salaries)			153,059,825	36,666,550		32,755,325			24,971,000
U.S. dollars @ FCFA	270		566,888	135,802		121,316			92,485
<i>Cost of measuring fields</i>			35,461,125	13,738,050		12,291,825			1,104,000
U.S. dollars @ FCFA	270		131,338	50,882		45,525			4,089

checks: 153,059,825

35,461,125

EXISTING SAMPLE: DEAPA PROPOSITION

OPTIONS: OPERATIONAL COSTS

	FCFA	\$
3 visits, MEASURING fields	153,059,825	566,888
3 visits, NOT measuring fields	117,598,700	435,551
2 visits, NOT measuring fields	92,627,700	343,066

EXISTING SAMPLE: DEAPA PROPOSITION

OTHER COSTS

Item	CURRENT			PROPOSED		
	Unit Cost	No.	Cost	Unit Cost	No.	Cost
	FCFA		FCFA	FCFA		FCFA
Field Staff Salaries						
Chiefs SPEAPA	350,000	10	42,000,000	350,000	10	42,000,000
Chiefs SDSA	240,000	49	141,120,000	240,000	49	141,120,000
Cadres	200,000	149	357,600,000	200,000	59	141,600,000
Drivers	60,000	60	43,200,000	80,000	10	7,200,000
Miscellaneous	150,000	26	46,800,000	250,000		0
Enumerators for basic data	100,000	109	130,800,000	100,000	99	118,800,000
<i>Additional en. to measure fields</i>	<i>100,000</i>			<i>100,000</i>	<i>43</i>	<i>51,600,000</i>
Total field staff salaries			761,520,000			502,320,000
U.S. dollars @ FCFA	270		2,820,444			1,860,444

NOTES

Per diem:
 The numbers of days specified here are lower than the total which personnel will spend in the field.
 * If there are 142 enumerators, the same amount of per diem will be spread out among them.

Vehicle Purchase:

	Number	Life (years)
Basic data pickups:	10	5
motorcycles:	99	3
<i>Measure fields motorcycles:</i>	<i>21</i>	<i>3</i>

One pickup per province and 1 motorcycle per 2 enumerators.

Vehicle maintenance: estimated at half the annualized capital cost.

Fuel consumption per vehicle

liters/ 100 km:	pickups:	20			
	motorcycles:	5			
Distance		Total	1st visit	2nd visit	3rd visit
Listing pickups:	2,600				
motorcycles:	1,200				
Measuring fields pickups:	4,600	2,600	2,000	0	
motorcycles:	2,900	1,600	1,300	0	
Basic data pickups:	9,000	3,000	3,000	3,000	
motorcycles:	6,000	2,000	2,000	2,000	
Total pickups:	16,200	5,600	5,000	3,000	
motorcycles:	10,100	3,600	3,300	2,000	

Printing questionnaires:

pages for form 0:	20,600 (515 seg. x 10 copies x 4 pages)	Printing Manuals:	pages:	30
questionnaires:	4,000		copies:	250
pages to measure fields:	12		cost per page:	29
basic pages:	15			
cost per page:	29			

Field office supplies: 200,000 x 10 provincial offices

Field equipment:

		FCFA
tapes	\$65	965,250
55 units of each compasses	\$55	816,750
One third replaced each year. scales	\$180	2,673,000
poles	\$55	816,750
calculators	\$150	<u>2,227,500</u>
		7,499,250

ESTIMATED COST OF ANNUAL AGRICULTURAL SURVEY

FIELD SUPPORT OPERATIONS:

half sample: DEAPA proposal

(After substituting motorcycles for 4x4 vehicles at the section level)

Item	Unit Cost	Total		First Visit		Second Visit		Third Visit	
		No.	Cost FCFA	No.	Cost FCFA	No.	Cost FCFA	No.	Cost FCFA
Training									
In Yaounde									
Travel									
9 provincial chiefs			1,200,000		400,000		400,000		400,000
Per diem in Yaounde (days each)	15,000	10	1,500,000	4	600,000	3	450,000	3	450,000
In provincial centers									
Travel									
9 C.O. cadres			1,200,000		400,000		400,000		400,000
39 section heads	3,000	3	351,000	1	117,000	1	117,000	1	117,000
39 assistant section heads	3,000	3	351,000	1	117,000	1	117,000	1	117,000
80 enumerators	3,000	7	720,000	1	240,000	1	240,000	1	240,000
32 enum. to measure fields	3,000	3	288,000	1	96,000	1	96,000	1	96,000
Per diem (days each)									
9 C.O. cadres	15,000	13	1,755,000	5	675,000	4	540,000	4	540,000
49 section heads	10,000	13	6,370,000	5	2,450,000	4	1,960,000	4	1,960,000
49 assistant section heads	10,000	13	6,370,000	5	2,450,000	4	1,960,000	4	1,960,000
100 enumerators	6,000	13	7,800,000	5	3,000,000	4	2,400,000	4	2,400,000
42 enum. to measure fields	6,000	13	3,276,000	5	1,260,000	4	1,008,000	4	1,008,000
			31,181,000		11,805,000		9,688,000		9,688,000
Per diem: administering questionnaires									
Listing		days each							
10 provincial cadres	10,000	2	200,000						
49 section heads	10,000	2	980,000						
49 assistant section heads	10,000	2	980,000						
100 enumerators	6,000	2	1,200,000						
10 drivers	6,000	2	120,000						
Basic data									
10 provincial cadres	10,000	7	700,000	2	200,000	2	200,000	3	300,000
49 section heads	10,000	7	3,430,000	2	980,000	2	980,000	3	1,470,000
49 assistant section heads	10,000	7	3,430,000	2	980,000	2	980,000	3	1,470,000
100 enumerators	6,000	6	3,600,000	2	1,200,000	1	600,000	3	1,800,000
10 drivers	6,000	7	420,000	2	120,000	2	120,000	3	180,000
Central Office quality control									
9 C.O. cadres travel to provinces			1,200,000		400,000		400,000		400,000
10 C.O. cadres	15,000	11	1,650,000	4	600,000	4	600,000	3	450,000
10 provincial drivers	6,000	11	660,000	4	240,000	4	240,000	3	180,000
Measure fields									
10 provincial cadres	10,000	4	400,000	2	200,000	2	200,000		
49 section heads	10,000	4	1,960,000	2	980,000	2	980,000		
49 assistant section heads	10,000	4	1,960,000	2	980,000	2	980,000		
142 enumerators	6,000	3	2,556,000	2	1,704,000	1	852,000		
10 drivers	6,000	8	240,000	2	120,000	2	120,000		
Central Office quality control									
10 C.O. cadres	15,000	6	900,000	3	450,000	3	450,000		
10 provincial drivers	6,000	6	360,000	3	180,000	3	180,000		
			25,446,000		8,584,000		7,132,000		6,250,000

Vehicle purchase									
Pickups	4,800,000	2	9,600,000						
Motorcycles	555,000	33	18,315,000						
Motorcycles to measure fields	555,000	7	3,885,000						
			31,800,000						
Vehicle maintenance incl. tires									
Pickups			4,800,000						
Motorcycles			9,157,500						
Motorcycles to measure fields			1,942,500						
			15,900,000						
Gasoline (liters)									
Measuring	195	11,140	2,172,300						
Basic data	195	23,850	4,650,750	7,950	1,550,250	7,950	1,550,250	7,950	1,550,250
C.O. quality con. (30/day)	195	3,300	643,500	1,200	234,000	1,200	234,000	900	175,500
Measuring fields	195	11,778	2,296,613	6,560	1,279,200	5,218	1,017,413		
C.O. quality con. (30/day)	195	2,100	409,500	900	175,500	1,200	234,000		
			10,172,663		3,238,950		3,035,663		1,725,750
Printing questionnaires & manuals									
Form O			236,640						
Manuals			217,500						
Pages for basic data			3,915,000	1,305,000		1,305,000			1,305,000
Pages to measure fields			2,088,000	1,044,000		1,044,000			
			6,457,140	2,349,000		2,349,000			1,305,000
Other									
Supplies for field offices			2,000,000						
Equipment to measure fields			2,499,750						
TOTAL (excluding salaries)			125,456,553	25,976,950		22,204,663			18,968,750
U.S. dollars @ FCFA	270		464,654	96,211		82,239			70,255
Cost of measuring fields			25,061,363	8,468,700		7,161,413			1,104,000
U.S. dollars @ FCFA	270		92,820	31,366		26,524			4,089
			checks: 125 456 553	25 061 363					

half sample: DEAPA proposal

OPTIONS: OPERATIONAL COSTS

	FCFA	\$
5 visits, MEASURING fields	125,456,553	464,654
3 visits, NOT measuring fields	100,395,190	371,834
1 visits, NOT measuring fields	81,426,440	301,579

OTHER COSTS

Item	CURRENT			PROPOSED		
	Unit Cost	No.	Cost	Unit Cost	No.	Cost
	FCFA		FCFA	FCFA		FCFA
Field Staff Salaries						
Chiefs SPEAPA	350,000	10	42,000,000	350,000	10	42,000,000
Chiefs SDSA	240,000	49	141,120,000	240,000	49	141,120,000
Cadres	200,000	149	357,600,000	200,000	59	141,600,000
Drivers	60,000	60	43,200,000	80,000	10	7,200,000
Miscellaneous	150,000	26	46,800,000	250,000		0
Enumerators for basic data	100,000	109	130,800,000	100,000	99	118,800,000
<i>Additional en. to measure fields</i>	<i>100,000</i>			<i>100,000</i>	<i>43</i>	<i>51,600,000</i>
Total field staff salaries			761,520,000			502,320,000
U.S. dollars @ FCFA	270		2,820,444			1,860,444

NOTES

Per diem:
 The numbers of days specified here are lower than the total which personnel will spend in the field.
 * If there are 142 enumerators, the same amount of per diem will be spread out among them.

Vehicle Purchase:

	Number	Life (years)
Basic data pickups:	10	5
motorcycles:	99	3
<i>Measure fields motorcycles:</i>	<i>21</i>	<i>3</i>

One pickup per province and 1 motorcycle per 2 enumerators.

Vehicle maintenance: estimated at half the annualized capital cost.

Fuel consumption per vehicle

liters/ 100 km:	pickups:	20			
	motorcycles:	5			
Distance		Total	1st visit	2nd visit	3rd visit
Listing pickups:	2,600				
motorcycles:	1,200				
Measuring fields pickups:	2,300	1,300	1,000	0	
motorcycles:	1,450	800	650	0	
Basic data pickups:	4,500	1,500	1,500	1,500	
motorcycles:	3,000	1,000	1,000	1,000	
Total pickups:	9,400	2,800	2,500	1,500	
motorcycles:	5,650	1,800	1,650	1,000	

Printing questionnaires:

pages for form O:	8,160	(204 seg. x 10 copies x 4 pages)		
questionnaires:	3,000			
pages to measure fields:	12			
basic pages:	15			
cost per page:	29			

Printing Manuals:

pages:	30
copies:	250
cost per page:	29

Field office supplies: 200,000 x 10 provincial offices

FCFA

Field equipment:

tapes	\$65	965,250
55 units of each compasses	\$55	816,750
One third replaced each year. scales	\$180	2,673,000
poles	\$55	816,750
calculators	\$150	2,227,500
		<u>7,499,250</u>

ESTIMATED COST OF ANNUAL AGRICULTURAL SURVEY

FIELD SUPPORT OPERATIONS:

EXISTING SAMPLE: CAPP PROPOSITION

(After substituting motorcycles for 4x4 vehicles at the section level)

Item	Unit Cost	Total		First Visit		Second Visit		Third Visit	
		No.	Cost FCFA	No.	Cost FCFA	No.	Cost FCFA	No.	Cost FCFA
Training									
In Yaounde									
Travel									
9 provincial chiefs			1,200,000		400,000		400,000		400,000
Per diem in Yaounde (days each)									
9 provincial chiefs	15,000	13	1,755,000	5	675,000	4	540,000	4	540,000
In provincial centers									
Travel									
9 C.O. cadres			1,200,000		400,000		400,000		400,000
0 section heads	3,000	3	0	1	0	1	0	1	0
0 assistant section heads	3,000	3	0	1	0	1	0	1	0
80 enumerators	3,000	3	720,000	1	240,000	1	240,000	1	240,000
32 enum. to measure fields	3,000	3	288,000	1	96,000	1	96,000	1	96,000
Per diem (days each)									
9 C.O. cadres	15,000	13	1,755,000	5	675,000	4	540,000	4	540,000
0 section heads	10,000	13	0	5	0	4	0	4	0
0 assistant section heads	10,000	13	0	5	0	4	0	4	0
100 enumerators	6,000	13	7,800,000	5	3,000,000	4	2,400,000	4	2,400,000
42 enum. to measure fields	6,000	13	3,276,000	5	1,260,000	4	1,008,000	4	1,008,000
			17,994,000		6,746,000		5,624,000		5,624,000
Per diem: administering questionnaires									
Listing									
		days each							
30 provincial cadres	10,000	4	1,200,000						
0 section heads	10,000	4	0						
0 assistant section heads	10,000	4	0						
100 enumerators	6,000	4	2,400,000						
10 drivers	6,000	4	240,000						
Basic data									
30 provincial cadres	10,000	34	10,200,000	13	3,900,000	11	3,300,000	10	3,000,000
0 section heads	10,000	34	0	13	0	11	0	10	0
0 assistant section heads	10,000	34	0	13	0	11	0	10	0
100 enumerators *	6,000	34	20,400,000	13	7,800,000	11	6,600,000	10	6,000,000
10 drivers	6,000	34	2,040,000	13	780,000	11	660,000	10	600,000
Central Office quality control									
9 C.O. cadres travel to provinces			1,200,000		400,000		400,000		400,000
10 C.O. cadres	15,000	20	1,617,000	10	1,470,000	5	73,500	5	73,500
10 provincial drivers	6,000	20	117,600	10	58,800	5	29,400	5	29,400
Measure fields									
30 provincial cadres	10,000	8	2,400,000	4	1,200,000	4	1,200,000		
0 section heads	10,000	8	0	4	0	4	0		
0 assistant section heads	10,000	8	0	4	0	4	0		
142 enumerators	6,000	8	6,816,000	4	3,408,000	4	3,408,000		
10 drivers	6,000	8	480,000	4	240,000	4	240,000		
Central Office quality control									
10 C.O. cadres	15,000	10	1,470,000	5	735,000	5	735,000		
10 provincial drivers	6,000	10	588,000	5	294,000	5	294,000		
			48,630,600		19,016,800		15,670,900		10,102,900

Vehicle purchase									
Pickups	4,800,000	2	9,600,000						
Motorcycles	555,000	33	18,315,000						
Motorcycles to measure fields	555,000	7	3,885,000						
			31,800,000						
Vehicle maintenance incl. tires									
Pickups			4,800,000						
Motorcycles			9,157,500						
Motorcycles to measure fields			1,942,500						
			15,900,000						
Gasoline (liters)									
Listing	195	11,140	2,172,300						
Basic data	195	47,700	9,301,500	15,900	3,100,500	15,900	3,100,500	15,900	3,100,500
C.O. quality con. (30/day)	195	5,880	1,146,600	2,940	573,300	1,470	286,650	1,470	286,650
Measuring fields	195	23,555	4,593,225	13,120	2,558,400	10,435	2,034,825		
C.O. quality con. (30/day)	195	2,940	573,300	1,470	286,650	1,470	286,650		
			17,786,925		6,518,850		5,708,625		3,387,150
Printing questionnaires & manuals									
Form 0			597,400						
Manuals			217,500						
Pages for basic data			5,220,000		1,740,000		1,740,000		1,740,000
Pages to measure fields			2,784,000		1,392,000		1,392,000		
			8,818,900		3,132,000		3,132,000		1,740,000
Other									
Supplies for field offices			2,000,000						
Equipment to measure fields			2,499,750						
TOTAL (excluding salaries)			145,430,175		35,413,650		30,135,525		20,854,050
U.S. dollars @ FCFA	270		538,630		131,162		111,613		77,237
Cost of measuring fields			31,595,775		11,470,050		10,694,475		1,104,000
U.S. dollars @ FCFA	270		117,021		42,482		39,609		4,089

checks: 145,430,175

31,595,775

EXISTING SAMPLE: CAPP PROPOSITION

OPTIONS: OPERATIONAL COSTS

	FCFA	\$
3 visits, MEASURING fields	145,430,175	538,630
3 visits, NOT measuring fields	113,834,400	421,609
2 visits, NOT measuring fields	92,980,350	344,372

EXISTING SAMPLE: CAPP PROPOSITION

OTHER COSTS

Item	CURRENT			PROPOSED		
	Unit Cost	No.	Cost	Unit Cost	No.	Cost
	FCFA		FCFA	FCFA		FCFA
Field Staff Salaries						
Chiefs SPEAPA	350,000	10	42,000,000	350,000	10	42,000,000
Chiefs SDSA	240,000	49	141,120,000	240,000	0	0
Cadres (prov. & dept.)	200,000	149	357,600,000	200,000	30	72,000,000
Drivers (prov.)	60,000	60	43,200,000	80,000	10	7,200,000
Miscellaneous	150,000	26	46,800,000	250,000		0
Enumerators for basic data	100,000	109	130,800,000	100,000	99	118,800,000
Add'l enum. to measure fields	100,000			100,000	43	51,600,000
Total field staff salaries			761,520,000			291,600,000
U.S. dollars @ FCFA	270		2,820,444			1,080,000

NOTES

Per diem:
 The numbers of days specified here are roughly the total which personnel will spend away from home.
 * If there are 142 enumerators, the same amount of per diem will be spread out among them.

Vehicle Purchase:

	Number	Life (years)
Basic data pickups:	10	5
motorcycles:	99	3
Measure fields motorcycles:	21	3

One pickup per province and 1 motorcycle per 2 enumerators plus one additional per department.

Vehicle maintenance: estimated at half the annualized capital cost.

Fuel consumption per vehicle

liters/ 100 km:	pickups:	20			
	motorcycles:	5			
Distance		Total	1st visit	2nd visit	3rd visit
Listing pickups:		2,600			
motorcycles:		1,200			
Measuring fields pickups:		4,600	2,600	2,000	0
motorcycles:		2,900	1,600	1,300	0
Basic data pickups:		9,000	3,000	3,000	3,000
motorcycles:		6,000	2,000	2,000	2,000
Total pickups:		16,200	5,600	5,000	3,000
motorcycles:		10,100	3,600	3,300	2,000

Printing questionnaires:	Printing Manuals:	
pages for form 0:	20,600 (515 seg. x 10 copies x 4 pages)	pages: 30
questionnaires:	4,000	copies: 250
pages to measure fields:	12	cost per page: 29
basic pages:	15	
cost per page:	29	

Field office supplies: 200,000 x 10 provincial offices

		FCFA
Field equipment:	tapes	\$65 965,250
5 units of each	compasses	\$55 816,750
one third replaced each year.	scales	\$180 2,673,000
	poles	\$55 816,750
	calculators	\$150 2,227,500
		7,499,250

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ESTIMATED COST OF ANNUAL AGRICULTURAL SURVEY

FIELD SUPPORT OPERATIONS:

half sample: CAPP proposal

After substituting motorcycles for 4x4 vehicles at the section level)

Item	Unit Cost	Total		First Visit		Second Visit		Third Visit	
		No.	Cost FCFA	No.	Cost FCFA	No.	Cost FCFA	No.	Cost FCFA
Training									
In Yaounde									
Travel			1,200,000		400,000		400,000		400,000
9 provincial chiefs									
Per diem in Yaounde (days each)									
9 provincial chiefs	15,000	13	1,755,000	5	675,000	4	540,000	4	540,000
In provincial centers									
Travel			1,200,000		400,000		400,000		400,000
9 C.O. cadres									
10 section heads	3,000	3	0	1	0	1	0	1	0
10 assistant section heads	3,000	3	0	1	0	1	0	1	0
80 enumerators	3,000	1	720,000	1	240,000	1	240,000	1	240,000
32 enum. to measure fields	3,000	1	288,000	1	96,000	1	96,000	1	96,000
Per diem (days each)									
9 C.O. cadres	15,000	13	1,755,000	5	675,000	4	540,000	4	540,000
10 section heads	10,000	13	0	5	0	4	0	4	0
10 assistant section heads	10,000	13	0	5	0	4	0	4	0
100 enumerators	6,000	13	7,800,000	5	3,000,000	4	2,400,000	4	2,400,000
42 enum. to measure fields	6,000	13	3,276,000	5	1,260,000	4	1,008,000	4	1,008,000
			17,994,000		6,746,000		5,624,000		5,624,000
Per diem: administering questionnaires									
Listing		days each							
30 provincial cadres	10,000	2	600,000						
10 section heads	10,000	2	0						
10 assistant section heads	10,000	2	0						
100 enumerators	6,000	2	1,200,000						
10 drivers	6,000	2	120,000						
Basic data									
30 provincial cadres	10,000	18	5,400,000	7	2,100,000	6	1,800,000	5	1,500,000
10 section heads	10,000	18	0	7	0	6	0	5	0
10 assistant section heads	10,000	18	0	7	0	6	0	5	0
100 enumerators *	6,000	18	10,800,000	7	4,200,000	6	3,600,000	5	3,000,000
10 drivers	6,000	18	1,080,000	7	420,000	6	360,000	5	300,000
Central Office quality control									
9 C.O. cadres travel to provinces			1,200,000		400,000		400,000		400,000
10 C.O. cadres	15,000	11	840,000	5	750,000	3	45,000	3	45,000
10 provincial drivers	6,000	11	66,000	5	30,000	3	18,000	3	18,000
Measure fields									
30 provincial cadres	10,000	4	1,200,000	2	600,000	2	600,000		
10 section heads	10,000	4	0	2	0	2	0		
10 assistant section heads	10,000	4	0	2	0	2	0		
142 enumerators	6,000	4	3,408,000	2	1,704,000	2	1,704,000		
10 drivers	6,000	8	240,000	2	120,000	2	120,000		
Central Office quality control									
10 C.O. cadres	15,000	10	1,470,000	5	735,000	5	735,000		
10 provincial drivers	6,000	10	588,000	5	294,000	5	294,000		
			25,914,000		10,204,000		8,527,000		5,263,000

Vehicle purchase									
Pickups	4,800,000	2	9,600,000						
Motorcycles	555,000	33	18,315,000						
Motorcycles to measure fields	555,000	7	3,885,000						
			<u>31,800,000</u>						
Vehicle maintenance incl. tires									
Pickups			4,800,000						
Motorcycles			9,157,500						
Motorcycles to measure fields			<u>1,942,500</u>						
			15,900,000						
Gasoline (liters)									
Listing	195	11,140	2,172,300						
Basic data	195	23,850	4,650,750	7,950	1,550,250	7,950	1,550,250	7,950	1,550,250
C.O. quality con. (30/day)	195	3,300	643,500	1,500	292,500	900	175,500	900	175,500
Measuring fields	195	11,778	2,296,613	6,560	1,279,200	5,218	1,017,413		
C.O. quality con. (30/day)	195	2,370	462,150	1,470	286,650	900	175,500		
			<u>10,225,313</u>		<u>3,408,600</u>		<u>2,918,663</u>		<u>1,725,750</u>
Printing questionnaires & manuals									
Form O			236,640						
Manuals			217,500						
Pages for basic data			3,915,000	1,305,000		1,305,000			1,305,000
Pages to measure fields			<u>2,088,000</u>	<u>1,014,000</u>		<u>1,044,000</u>			<u>1,305,000</u>
			6,457,140	2,349,000		2,349,000			1,305,000
Other									
Supplies for field offices			2,000,000						
Equipment to measure fields			2,499,750						
TOTAL (excluding salaries)			<u>112,790,203</u>	<u>22,707,600</u>		<u>19,418,663</u>			<u>13,917,750</u>
U.S. dollars @ FCFA	270		417,741	84,102		71,921			51,547
Cost of measuring fields			23,644,013	7,418,850		6,793,913			1,104,000
U.S. dollars @ FCFA	270		87,570	27,477		25,163			4,089
			checks: 112,790,203	23,644,013					

half sample; CAPP proposal

OPTIONS: OPERATIONAL COSTS

	FCFA	\$
3 visits, MEASURING fields	112,790,203	417,741
3 visits, NOT measuring fields	89,146,190	330,171
2 visits, NOT measuring fields	75,228,440	278,624

OTHER COSTS

Item	CURRENT			PROPOSED		
	Unit Cost	No.	Cost	Unit Cost	No.	Cost
	FCFA		FCFA	FCFA		FCFA
Field Staff Salaries						
Chiefs SPEAPA	350,000	10	42,000,000	350,000	10	42,000,000
Chiefs SDSA	240,000	49	141,120,000	240,000	0	0
Cadres (prov. & dept.)	200,000	149	357,600,000	200,000	30	72,000,000
Drivers (prov.)	60,000	60	43,200,000	80,000	10	7,200,000
Miscellaneous	150,000	26	46,800,000	250,000		0
Enumerators for basic data	100,000	109	130,800,000	100,000	99	118,800,000
Add'l en. to measure fields	100,000			100,000	43	51,600,000
Total field staff salaries			761,520,000			291,600,000
U.S. dollars @ FCFA	270		2,820,444			1,080,000

NOTES

Per diem:
 The numbers of days specified here are roughly the total which personnel will spend away from home.
 * If there are 142 enumerators, the same amount of per diem will be spread out among them.

Vehicle Purchase:

	Number	Life (years)
Basic data pickups:	10	5
motorcycles:	99	3
Measure fields motorcycles:	21	3

One pickup per province and 1 motorcycle per 2 enumerators plus one additional per department.

Vehicle maintenance: estimated at half the annualized capital cost.

Fuel consumption per vehicle

liters/ 100 km:	pickups:	20
motorcycles:	5	

Distance

	Total	1st visit	2nd visit	3rd visit
Listing pickups:	2,600			
motorcycles:	1,200			
Measuring fields pickups:	2,300	1,300	1,000	0
motorcycles:	1,450	800	650	0
Basic data pickups:	4,500	1,500	1,500	1,500
motorcycles:	3,000	1,000	1,000	1,000
Total pickups:	9,400	2,800	2,500	1,500
motorcycles:	5,650	1,800	1,650	1,000

Printing questionnaires:

pages for form 0:	8,160 (204 seg. x 10 copies x 4 pages)	pages:	30
questionnaires:	3,000	copies:	250
pages to measure fields:	12	cost per page:	29
basic pages:	15		
cost per page:	29		

Printing Manuals:

pages: 30
 copies: 250
 cost per page: 29

Field office supplies: 200,000 x 10 provincial offices

FCFA

Field equipment:

tapes	\$65	965,250
55 units of each compasses	\$55	816,750
One third replaced each year. scales	\$180	2,673,000
poles	\$55	816,750
calculators	\$150	2,227,500
		7,499,250

ANNEX G: Some Cost Cutting Measures

Rotation of Segments

This evaluation recommends that rotation of sampled farmers be done only within the segment, rather than rotating the segments themselves that destroys any continuity in the data as well as generating added costs and delimitation efforts. As field staff acquire more experience operating within a segment, there will be some savings in time due to the learning curve effect. That is to say, every time the same segment is surveyed, it should take us a little bit less time to do so. Doing the same segments every year will save on the cost of maps which an important expense item. The amount involved is about CFA 1.5 million per year. If a census is to be done a new sample of segments can be selected and following the census, a subsample of the census segments can be retained for annual surveys.

The Large Farm Survey

Sufficient argument is provided in the text of the report to discontinue this aspect. DEAPA estimates that the large farm survey will only add about 20 percent of the variable costs needed for a single pass. This is equal to CFA 6 million. This consultant thinks that the above figure grossly underestimates the need. Every large farm is essentially like a segment because it is outside of all the existing segments. The project plans an average of 20 large farms per division (problem of over representation here as well) in addition to the 8 segments already covered for the small scale farm survey. The actual costs are unknown because the activity is new. We can safely assume that this survey will need up to a half of the existing funds normally spent for each round under the existing survey because the greatest cost item is getting to a segment or a large farmer than how much time it takes to interview one.

Hence the large farm stratum will represent an economy of up to CFA 30 million a year if done on an annual basis and at least 10 million if done once a year. This item is new and was not included in the budget.

Enumerators and Cost Cutting

This discussion pertains only to those enumerators used by DEAPA for data collection. There has been some mention about excess capacity in the provincial and departmental offices for the execution of the surveys. If assigned tasks in the field for data collection, it is certain that the enumerators will be occupied by the surveys up to 6 months a year. The rest of the year they are not involved in the surveys, but this does not mean they are idle. The departmental agricultural offices (not provincial) have discretion over these personnel and they may be assigned any other task outside of data collection. Therefore, it is more pertinent and useful for us to think of ways of gainfully employing this off-season excess capacity of high caliber rather than getting rid of it, which incidentally cannot be done in a partial sense. That is, if we want to get rid of the 50 percent excess capacity, we must terminate all of the enumerators. The excess capacity arises because the surveys have to be conducted at the same time in accordance with the agricultural calendar. During the execution of the survey it is very difficult to have any significant excess enumerator capacity as budgeted in this study.

Dropping the Urban Stratum

There are 107 urban strata whose coverage accounts for about 10 percent of the national total. Correction factors can be applied on the rural stratum results to find the total estimates. If the urban stratum is dropped and the rural stratum coverage is halved, there will be only 204 segments to cover for the small scale traditional farm survey (i.e., the half sample). The existing number of segments is 515. The reduction is substantial both in effort and costs.

As to question of whether or not the urban stratum related information is really needed or used, we notice that there are four tables out of 230 with urban/rural distinction in the 1984 census report and two tables out of 120 with rural/urban distinction in 1986/87 reports. Only 12 percent of agricultural households in Cameroon are urban based. This strengthens the argument that we should seriously consider covering only the rural stratum (i.e., annulling the strata) and adjusting it by appropriate factors from the 1984 census or 1987 population count. This would be a useful distinction to retain in a census and not necessarily in an annual survey. If urban stratum is to be retained at any rate, its present coverage rate must be scaled down such that it always corresponds to 12 percent of the national coverage in order to avoid problems of over representation.

Under the reduced sample, the number of urban segments is 27 against a total of 204 rural segments. This represents a reduction of 11 percent which in turn will translate into an approximate 6 or 7 percent reduction in costs, thus yielding a saving of about CFA 6 million per year.