

I. PROJECT IDENTIFICATION

1. PROJECT TITLE

Disease and Demographic Survey (CDC)*

37p

3. RECIPIENT (specify) Upper Volta, Nigeria and a 3rd Country to be selected.

COUNTRY _____
 REGIONAL _____ INTERREGIONAL _____

4. LIFE OF PROJECT
 BEGINS FY 73
 ENDS FY 76

2. PROJECT NO. (M.O. 1055.2)
932-11-570-601
 5. SUBMISSION ORIGINAL 7/19/72
 REV. NO. 7 DATE _____
 CONTR./PASA NO. _____

II. FUNDING (\$000) AND MAN MONTHS (MM) REQUIREMENTS

| A. FUNDING BY FISCAL YEAR | B. TOTAL \$ | C. PERSONNEL | | D. PARTICIPANTS | | E. COMMODITIES \$ | F. OTHER COSTS \$ | G. PASA/CONTR. | | H. LOCAL EXCHANGE CURRENCY RATE: \$ US _____ (U.S. OWNED) | | | |
|---------------------------|-------------|--------------|--------|-----------------|--------|-------------------|-------------------|----------------|--------|---|------------|------------------|--|
| | | (1) \$ | (2) MM | (1) \$ | (2) MM | | | (1) \$ | (2) MM | (1) U.S. GRANT LOAN | | (2) COOP COUNTRY | |
| | | | | | | | | | | (A) JOINT | (B) BUDGET | | |
| 1. PRIOR THRU ACTUAL FY | | | | | | | | | | | | | |
| 2. OPN FY <u>73</u> | <u>567</u> | <u>279</u> | | <u>6</u> | | | <u>282</u> | | | | | | |
| 3. BUDGET FY <u>74</u> | <u>528</u> | <u>279</u> | | <u>12</u> | | | <u>237</u> | | | | | | |
| 4. BUDGET -1 FY <u>75</u> | <u>538</u> | <u>289</u> | | <u>12</u> | | | <u>237</u> | | | | | | |
| 5. BUDGET +2 FY <u>76</u> | <u>364</u> | <u>245</u> | | | | | <u>119</u> | | | | | | |
| 6. BUDGET +3 FY | | | | | | | | | | | | | |
| 7. ALL SUBQ. FY | | | | | | | | | | | | | |
| 8. GRAND TOTAL | <u>1997</u> | <u>1092</u> | | <u>30</u> | | | <u>875</u> | | | | | | |

9. OTHER DONOR CONTRIBUTIONS

| (A) NAME OF DONOR | (B) KIND OF GOODS/SERVICES | (C) AMOUNT |
|-------------------|----------------------------|------------|
| | | |

III. ORIGINAT. OFFICE CLEARANCE

| 1. DRAFTER | TITLE | DATE |
|---|----------------------------------|----------------|
| <i>R Kerchen for</i> Robert W. Babione | Consultant, Office of Population | <u>7/19/72</u> |
| 2. CLEARANCE OFFICER | TITLE | DATE |
| <i>R.T. Ravenholt</i> R.T. Ravenholt | Director, Office of Population | <u>7/25/72</u> |

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL

Prior to initiating work under this project in a third country, the government of that country must commit itself to take all necessary steps, in conjunction with CDC, to establish and manage the program described in this PROP.

2. CLEARANCES

| BUR/OFF. | SIGNATURE | DATE | BUR/OFF | SIGNATURE | DATE |
|-------------|--|-----------------|---------|---------------|-----------------|
| PHA/POP/AE | James W. Brackett | <u>7/19/72</u> | PPC/DPR | George Grande | |
| AFR/CWR | <i>Jean Pinder showed AFR approval</i> Bermino J. Spencer | <u>7/24/72</u> | | | |
| PHA/POP/AFR | <i>by M Fowler</i> Julius Prince | <u>11/13/72</u> | PHA/PRS | Mary Fowler | <u>11/13/72</u> |

3. APPROVAL AAs OR OFFICE DIRECTORS

SIGNATURE *Jerold A. Kieffer* DATE 11/22/72
 Jerold A. Kieffer, AA/PHA

4. APPROVAL A/AID (See M.O. 1022.1 VI C)

SIGNATURE *Therese Pultrius* DATE 11/25/72
 ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

NOV 23 1972

MEMORANDUM FOR AA/BPC, Mr. Philip Birnbaum

FROM: AA/PHA, *James A. Kieffer*
James A. Kieffer

SUBJECT: Approval of PROP for New Project
"Disease and Demographic Survey"

The attached new project is designed to develop and test a simple, practical system for the collection and use of data in planning, programming, implementing and evaluating population and health programs. It will be implemented through a PASA with the U.S. Public Health Service/Center for Disease Control (CDC) in three West African countries (Nigeria, Upper Volta, and a third country to be selected) in order to capitalize on the experiences gained by CDC in administering the small-pox/measles program in that area.

The plan for project development is to establish a functioning unit within the ministry of health in each country to collect and analyze data with a view to determining priorities for action programs in population and health. Data collection methodology will use cluster sampling techniques developed by CDC in an earlier testing experience in West Africa. In addition CDC will be responsible for collaborating with government authorities in determining and selecting pilot remedial action programs, and for assisting in the preparation of these pilot proposals, which may be submitted to AID for review and consideration for funding. The PROP specifies that these proposals should be consistent with AID's Title X funding policy.

Funding of the project is proposed for a four-year period beginning in FY 1973 at a cost to AID of about \$2 million. Pilot remedial action proposals developed under the project, if approved by AID, would be funded separately. Since it is probable we would fund at least one such action proposal, the total cost to AID of this activity would eventually exceed \$2 million. Thus the Administrator's approval is required, per M.O. 1025.1.

In addition to AID funding, cooperating governments are expected to defray a substantial portion of personnel costs necessary for the administration and conduct of the survey. Because these host country inputs are an important element of the project, we would not want to initiate activity under the project until reasonable assurance of cooperating country interest and commitment is obtained. PHA has received assurances from U.S. missions/embassies in Nigeria and Upper Volta that these cooperating countries are firmly committed to implementation of the project. With two of the three countries lined up it makes sense to proceed with FY 1973 funding. We recommend, however, that the following condition of approval be entered on the PROP facesheet:

Before initiating work under this project in a third country, the government of that country must commit itself to take all necessary steps, in conjunction with CDC, to establish and manage the program described in this PROP."

This project is considered interregional because it is expected that it will test the feasibility of an approach to data collection and use which could be applied in other African countries or other regions. As a pilot project to demonstrate how both population and health data may be jointly collected and applied in operational programs it is consistent with the current guidelines for use of Title X funds.

This project was among those reviewed during the FY 73/74 program and budget reviews. It is included in the listing of new population projects for the OMB submission. The project has been approved by the Africa Bureau and other appropriate offices. There are no outstanding issues.

Attachment.

September 8, 1972

DISEASE AND DEMOGRAPHIC SURVEY (DDSP)

1. Project Goal

a. Statement of the Goal

To assist LDCs to provide safe, effective, and acceptable family planning services based on knowledge of the need for child-spacing as a component of the entire health needs of their people and the development of economically feasible means of services delivery.

b. Measurement of Goal Achievement

Program reports will provide measures of progress through intermediate objectives toward the final goal:

- (1) Availability of the means/^{including trained local staff} to collect health and vital events statistics
- (2) Data upon which programming decisions can be based
- (3) Use of the data for investigational and operational priority setting
- (4) Decision for child-spacing as a functional activity in health services
- (5) Determination, by trial, of the contraceptive procedures and delivery systems that are safe, effective and acceptable within the circumstances prevailing
- (6) Reduction of fertility, and improvement of the health of mothers and children by widespread use of contraceptive services.

c. Basic Assumptions

(1) Paucity of reliable health information, absence of an adequate health delivery system, and limitations on funds and trained manpower are all factors contributing to failure of some LDCs to provide family planning services to their people.

(2) LDCs will accept assistance for health services (including child-spacing) if convinced of their need.

(3) Men and women in the LDCs will utilize contraceptive services for child-spacing if they are available, if they are understood, and if the contribution they will make to improvement of the health of mothers and children is recognized.

(4) The widespread use of contraception will permit the LDCs to complete the demographic transition to low birth and low death rates.

2. Project Purpose

a. Statement of the Purpose

This project is directed principally to West African countries where, particularly in the rural sectors, reliable data on basic disease and demographic indices are lacking, skilled personnel are limited, financial support and other resources are markedly limited, and where the need for the most basic information for the planning of population and health programs is urgent. Within that context, its purposes are:

(1) To develop an economically feasible methodology of rural sector sampling to enable Ministries of Health to collect operationally useful data on vital events, fertility, population change, and the major causes of morbidity and mortality.

(2) To develop competence within Ministries of Health and a functioning unit able to collect, analyze, and utilize data collected through random cluster sampling in the assessment of medical needs and in the planning, implementation and evaluation of population and health programs.

(3) To provide to the Ministries of Health included in the development project, data on current rates of natality, mortality, individual growth and development, and population growth and change, and to identify major causes of morbidity and mortality, with primary emphasis on preventable diseases, in order to establish priorities for action programs in the broad fields of population and health.

(4) To provide a framework within which countries may develop pilot action programs to test the feasibility, practicality, and effectiveness of selected programs, including the provision of child-spacing services, to correct identified health deficiencies.

b. Conditions Expected at End of Project

(1) A set of methods will have been tested and refined whereby Ministries of Health in West Africa and other developing countries of the world may, after appropriate adaptation to local conditions, collect basic health and demographic data at reasonable cost. Suitable modification should also permit use of the model for the collection of other types of social or economic data.

(2) Experience will have been gained, by personnel in Ministries of Health of project countries, in the establishment and management of a health and vital events sampling system, and in the collection and analysis of data from that system. Experience will have been gained by personnel of the CDC which will enable that organization to assist other countries in West Africa or elsewhere to establish such systems.

(3) Ministries of Health of project countries will have basic data on fertility, vital events, growth and nutrition, and selected disease categories which will provide the basis for rough estimates of population growth and approximate definition of the magnitude of certain health and nutritional problems. This information will have been used in a re-examination of the long-range plans and programs of the MOH's, and in modifications of those plans or the definition of further field studies.

(4) CDC will assist LDC authorities in the selection and formulation of pilot remedial action programs. Pilot programs developed through CDC auspices under the Participating Agency Services Agreement (PASA) executed between A.I.D. and the U.S. Public Health Service (CDC) will be consistent with the population funding policy of A.I.D. These pilot programs may be submitted to A.I.D. as project proposals for review and consideration for funding.

(5) The procedures having been developed, local personnel having been trained, and the experience having been gained by project MOH's, and the practicality, financial feasibility, and utility of the project having been demonstrated, the sample survey system is expected to be incorporated into the on-going program of the MOH's, as a continuing guide to the best utilization of their resources in health and family planning efforts. It is expected further that other MOH's will desire to establish similar systems for their countries.

c. Basic Assumptions

(1) Vital events and health and illness data are so limited in the poorly developed countries of West Africa as to be little more than educated guesses.

(2) MOH's in these countries desire to improve vital statistics and morbidity data in order to improve health program planning.

2

(3) MOH's are willing to invest limited resources in an economically feasible system to collect such data.

(4) Data collected by the methods developed will be of sufficient quality to improve MOH understanding of current demographic trends and of major causes of morbidity and mortality.

(5) The incorporation of demographic, vital statistics, and fertility information into health programming will lead to a greater understanding within Ministries of Health of the relationship of health and unrestricted reproduction.

(6) Such understanding may lead to effective action in provision of child-spacing and family planning services.

(7) Pilot remedial action programs tested will permit selection of the most effective approaches to the problems studied.

3. Project Outputs

a. Outputs and Output Indicators

| <u>OUTPUT</u> | <u>INDICATOR</u> |
|---|---|
| (1) A simple, inexpensive, practical <u>system</u> (including an organizational structure for the field, the laboratory, and central headquarters functions) developed, tested, and evaluated in 3 diverse West African countries, which will provide minimal, basic data and analysis of vital events, fertility, population change, and selected diseases or health parameters of major significance in the rural sector. | A published "Manual of Procedures" which includes a description of the organizational and personnel structure, the sampling methodology, the demographic and medical measurement instruments, the validation techniques employed, the analytic processes, and all forms used. |

- (2) An organization (for demographic and disease survey), in being and intended to remain an ongoing component of the Ministry of Health in each of 3 WA countries. Preliminary and final evaluation reports.
- (3) A trained cadre in each of three WA countries capable of independent management of the system, including all categories of field, laboratory, statistical, analytic, and administrative personnel. Preliminary and final evaluation reports.
- (4) A set of basic data derived from each of the 3 WA countries, on vital events, fertility, population change, and selected diseases and health parameters, useful for MOH planning and evaluation.
- (a) Initial and revised registration reports
 (b) Monthly data reports
 (c) Special survey reports
 (d) Evaluation and summary reports.
- (5) Use of the data derived from the DDSP by MOHs in the 3 WA countries for population and health program planning.
- (a) Relevant reports and documents of the MOHs.
 (b) Pilot remedial action projects to investigate the prevention or control of problems
- (6) Commitment to the DDSP system, evidenced by its continuation by incorporation into ongoing MOH activities after termination
- (a) Final evaluation report
 (b) Requests for information and/or assistance from other LICs.
- identified in the data collection and analysis phase. All such projects to be consistent with AID population funding policy.

of U.S. assistance in the
3 WA countries, and by the
interest expressed by other
LDCs.

- (7) Study sites available for
action program investigations
in family planning or/child-
spacing. Over 200 sample sites in
3 countries, mapped and
enumerated, with detailed
data on the contained clusters

- (8) Sympathetic understanding by local
medical authorities of the rela-
tion between health and level of
fertility.
- (a) Relevant reports and
other documents from
local physicians.
- (b) Expansion of child-
spacing services.

b. Basic Assumptions

(1) The CDC is competent to conduct the
described investigations, development and training, and the host governments
are willing to accept CDC assistance.

(2) Methodology proves to be technically valid and opera-
tionally feasible.

(3) Suitable local staff is available for training, in sufficient
numbers, and can be motivated to an acceptable level of performance.

(4) Professional and financial commitment of the Ministries of Health will be maintained through duration of the project.

(5) The local public will be cooperative in the provision of accurate and reliable data.

(6) The availability of suitable study sites, and the stimulus of the DDSP, will lead to a greater desire for well-designed/ field tests of practical remedial measures for the major population and health problems identified.

4. Project Inputs

a. U.S. Inputs

(1) General organizational support of the CDC

(2) Headquarters staff:

Project Director (50%): The Project Director is to provide general oversight, interrelationship with CDC and other activities in West Africa, medical guidance

Project Manager (100%): Responsible for overall project management, technical and administrative.

Chief, Technical Assistance and Evaluation, SEP (33%):

Provide these services to Project Manager, with particular emphasis on evaluation.

Administrative officer, SEP (50%): Provide administrative support to Project Manager.

Chief, Data Systems (100%): Supervise management and training for data handling and computer operations.

Secretarial and statistical supporting assistance.

(3) Headquarters Services

Computer Services

Laboratory service

Outside consultant services (including other Programs
at CDC and temporary consultants from out-
side CDC)

Travel costs

(4) Field support for each ^{Country} subproj

(a) U.S. medical or non-medical epidemiologist

(b) Support to local hire of field staff.

Since this is a development project with an element of risk and an experimental approach to methodology, the host governments will be required to fund only 50 percent of local locally hired field staff. It is anticipated that personnel costs of the final DDSP as it evolves will be less than that required at the outset. Host governments should then be able to fund the full cadre.

(c) Supplies and materials. This includes:

3 field vehicles (carry-alls or equivalent)

6 motor bikes for supervisors and assessors

bicycles

medical and laboratory equipment

data processing equipment/development of the host country of a type suitable for the stage of

(d) Participant training at CDC, for local counterpart

Subproject Director and Subproject Statistician where considered appropriate. Data handling by methods simpler than computers may be taught locally, e.g. marginal punched cards

(c) Contractual services, including computer services during development phase.

b. Host Country Inputs

(1) Personnel. The size and composition of the staff may vary among subprojects. The following illustrates the general personnel structure anticipated:

Subproject Director

Statistician

Assessors (3)

Surveillance Supervisors (2)

Surveillance Agents (12)

Clerks (2)

Statistical clerks/data proces. (4)

Special survey team personnel (4)

Drivers (3)

Temporary survey assistants - approximately 6 person-years per year

(2) Laboratory services

(3) Office accommodation

c. Budget

In addition to the Face Sheet, detailed budgets are appended for fiscal years 1973 and 1974. FY 75 is projected in summary to be the same as FY 74. During FY 76, field operations will be phased out and the project terminated, but budgets on a changing base can be given only as a reasonable estimate that far in advance.

d. Basic Assumptions

The administration by the CDC Smallpox Eradication Program of the smallpox/measles program in West Africa, for AID, has provided that organization with a unique experience in project-management in that part of the world. It may reasonably be assumed, therefore, that needed logistical and administrative support for the project herein proposed can be provided by a headquarters staff that is drawn in major part from that previous activity. Further, based on the successful performance of that headquarters in recruiting, training and providing technical support for professionals assigned overseas, it may be assumed that these functions will present no serious difficulties. Lastly, again based on past performance, it is assumed that the professionals assigned overseas, after appropriate training in Atlanta, and with support from headquarters, will be competent and able to provide training to host-country nationals.

The laboratory services in the CDC are world-renowned, and its computer facility provides extensive support for nation-wide programs. The DDSF should encounter no difficulty in obtaining services and training support for these two fields of activity.

The two countries selected for DDSF subprojects have already expressed their deep interest in this project, in the full realization of the personnel investments it will require; Katsina Province has, largely at Nigerian expense, already gone forward with a skeleton pilot project, adequate testament to its interest and dedication to the goals of this project. Since local staff to be utilized in each subproject are to be drawn, insofar as possible, from present MOH staff now engaged in programs of lesser priority, their availability is virtually assured.

Problem

5. Rationale

How serious is the problem? What is being done?

The improvement and rationalization of health services in developing countries requires accurate identification of the populations at risk and the current levels and trends of morbidity, mortality, and fertility. Such information is required for the determination of priority areas for program development and to establish baselines for program evaluation.

If this statement is true for health services, it is more urgently true for family planning services, whether the latter be directed to improving the health of mothers and babies or to the control of population growth for the benefit of the entire society.

In the countries of West Africa, and other areas in an early stage of development, data on these subjects are noteworthy for their paucity; for the rural areas, the figures now used for planning purposes are little more than crude guesses. Physicians and other qualified health workers are ^{in limited supply} and medical and health facilities are sparse. Most births, illnesses and deaths are both unattended and unreported. Such information as is available about the prevalence of illness is largely restricted to a few specific infectious diseases which are readily identified and have an epidemic potential; the incidence of these diseases in defined population subgroups, and of other diseases less readily diagnosed, is almost unknown. Little is understood about child growth and development in rural areas of most West African countries, and of malnutrition and its consequences. The uncertainties about birth rates, fetal wastage and maternal mortality rates are notorious in this part of the world, with direct consequences for official attention both to the provision of preventive services and the recognition of the potential hazards of population growth on economic development.

For rational planning and the setting of realistic priorities, both among the several development sectors and within the more restricted programs of the Ministries of Health, it is essential that this data gap be closed as much and as rapidly as possible. But, the conditions (shortage of funds, trained personnel, and technical facilities) that cause the data gap are obviously also impediments to closing it, short of massive and long-continuing outside assistance. Short cuts must be found, even at the price of a compromise with total detail and total accuracy.

It is in this spirit that the Demographic and Disease Survey Project is proposed. A set of sampling data is usually only second-best as compared to universal data. Cluster sampling of the sort herein proposed, with all the difficulties inherent in field work in rural West Africa, is distinctly third-best. Nevertheless, the ultimate test of a data product is its utility rather than its statistical purity. From an epidemiological standpoint, the data that could be generated by DDSP methodology, when interpreted in the light of practical experience in the West African bush, will provide a basis for analysis and understanding of relative program needs which is a many-fold improvement over what now obtains. It will, furthermore, provide a basis for continuing improvement in data collection, for pilot testing of preventive or curative approaches, and for the evaluation of changes introduced into the health programs.

The rationale of cluster sampling is simple. Using random procedures, a set of small household samples is selected as representative of the rural sector of the country as a whole. For the measurement of events which are more or less uniformly distributed throughout the area (such as births, deaths, physical growth and development, and certain diseases such as tuberculosis), the total sample will provide estimates within the imposed

limits of statistical probability and the tolerated limits of non-sampling error. Reduction of the latter to a minimum is a project goal, and is dependent upon efficient survey instruments and effective management and supervision: constant observation, evaluation, and improvement in methodology must be a hallmark of this project.

For events which are not uniformly distributed, such as diseases with focal distribution and dependent on variable geographic, climatic, and biological features (such as sleeping sickness and river blindness), special and non-random surveys and inquiries must be made. For this purpose, a special survey team is necessary to supplement the static survey.

Finally, provision must be made for collecting certain types of non-repetitive information (e.g., knowledge, attitudes and practice of fertility regulation) and for objective validation of as many as possible of the historical data obtained. The DDSP is structured to address all of these needs.

As a natural consequence of the information to be accumulated from these rural clusters of households, the latter will become uniquely well described. They will therefore provide opportunities for the study of preventive and remedial activities, including contraception where wanted by local authorities, under **development of proposals for** completely natural circumstances. The / such studies is included as an integral part of this project. However, because their nature and size, and therefore their cost, cannot be anticipated in advance of the survey, such projects will be reviewed by AID and may be funded by whatever means is determined to be appropriate.

The selection of the CDC to conduct the DDSP is a natural consequence of its past experience in West Africa. From

1966 to 1971, this organization, together with AID and 20 West and Central African countries, carried out a regional program of smallpox eradication and measles control. Smallpox prevalence was reduced from an estimated 200,000 cases in 1966 to none in 1971; as best as can be determined, eradication has been achieved. Measles prevalence throughout the area has been substantially reduced in most territories vaccinated in the mass campaign. Full measles control has been achieved in one country (the Gambia) and in several cities elsewhere. As part of the regional program, current surveillance systems have been evaluated, special surveillance projects have been implemented, and cluster sampling methods of assessment have been developed.

In the process of this successful accomplishment, almost as prerequisite to it, the CDC has developed a knowledge of and rapport with West Africa, West African officialdom, and the West African people.

This PASA will permit AID to exploit this ambience/ by using the technical competence of the CDC to develop a methodology for demographic and disease surveillance and follow-up studies of remedial actions.

6. Course of Action

The Smallpox Eradication Program of the CDC has used cluster sampling techniques in the evaluation of its programs in West African countries. It has now under way a pilot effort testing the method in a disease and demographic survey in Katsina Province, Nigeria, jointly with GON. This experience provides a basis for considering cluster sampling a useful method, but it requires testing on a larger scale, and in different types of countries. Three countries of different geography and social structure are proposed, each to be the site of a similar study. Each will be considered a subproject of this project.

(1) Phase 1. Preparatory

The Smallpox Eradication Project (SEP)

staff in Atlanta will be restructured to provide for assignments in the Disease and Demographic Survey Project (DDSP). American personnel will be recruited and/or trained as needed to head the three subprojects overseas. The Katsina Province experience already under way will be studied, an over-all implementation plan elaborated, consultants will be hired in aspects less familiar to CDC personnel, formal agreements will be made with participating countries, a detailed Manual of Procedures will be prepared, arrangements will be made for in-country and regional laboratory support as well as computer or other statistical analytical aids, and equipment with a long leadtime will be ordered. Contacts with collaborating Ministries of Health will be established early in this phase and assistance rendered in organizing and training their staff personnel at CDC and through working beside counterparts, and on-the-job training. Close collaboration will be maintained with AID/POP/AE/ and the AFR Bureau to ensure agreement as to approaches, procedures, etc. No later than 30 days prior to the end of this phase, DDSP will provide to AID a draft of the detailed operational plan and Manual of Procedures for information and comment.

(2) Phase 2. Implementation and Evaluation

a. Study Areas

This project will be carried out in 3 countries in West Africa: Nigeria (Katsina Province, population 2.5 million), Upper Volta (entire country, population 5.3 million), and a third not yet finally selected. These countries will represent three contrasting geographic and social situations. Nigeria and Upper Volta are in the savannah belt and extend into the dry sahara; the former is anglophone, relatively well developed, and has a relatively homogenous population and disciplined social organization; the

latter is francophone and very poor in natural resources, and its dispersed population is divided into a variety of tribal groups. The third project site will be a coastal country, probably including a substantial territory of rain forest. Nigeria and Upper Volta have expressed deep interest in remedying the known deficiencies in the vital statistics and morbidity information available to them, and this will be a condition of selection of the third country also.

b. Subproject Duration

The study conducted in each study area^(country or province) will be designated a subproject. Each subproject will be phased into activity over a period of time, as clusters are registered; it will continue until each cluster pair has been under observation for two full years, and then will be phased out over a period of time corresponding to registration (vide infra, Implementation Schedule).

c. Responsible Government Authority

The Ministry of Health in each country (and Katsina Province) will be the responsible agency for subproject implementation.

d. Sampling Procedure

The sampling procedure in each subproject will be adapted to the best available sampling frame in the rural sector. The latest census will be used as a starting point, supplemented by local tax lists, the extensive smallpox/measles vaccination records, and special surveys where available.

The sample size in each subproject will be 18,000 persons, divided into either 60 clusters of 300 people each, or 120 clusters of 150 people each (the protocol differing among the subprojects for investigational purposes). The clusters will be selected by a randomizing procedure which will give each person living in rural areas an equal opportunity for inclusion in the sample (within the limits of accuracy of the population data available). All rural

communities (less than 5,000 population) will be listed by geographic area of the country, and the total of sample sites will be selected by systematic sampling. Two lists of equal size will be prepared by alternate assignment of sites to List A and List B. The 30 (or 60) List A sites will form the immediate working group and the List B sites will serve as replacements for villages "retired" after a one-year observation period.

Within each of the sample sites, a cluster (of 300 or 150 persons) will be selected by a random procedure and their dwelling places mapped. At some time during the following year, the entire sample site from which the cluster was selected will be mapped and enumerated. This will permit both calculation of the proportion of the total village which is contained in the cluster and estimation of the overall error of the sampling frame.

e. Registration

Every permanent resident in each cluster will be registered, as a baseline for all future observations. "Permanent resident" will be precisely defined and criteria will be established for the registration or recording of additions (by birth and immigration), temporary visitors, changes in household structure and composition, and deletions (by death and emigration).

Registration will include all fixed demographic, physical and social data. The process of registration, including verification, will take approximately 6 months for the complete set of clusters in the initial study sample (List A) in a subproject, and essentially the same for List B a year later.

f. Data Collection

Routine Surveys (Monthly, by Surveillance Agents)

(1) The routine collection of data will be based upon monthly visits of Surveillance Agents who will complete a standard questionnaire and perform a set of standard measurements on each person in each cluster each month. The data to be collected will include population changes (births, deaths,

and migrations), fertility events/^(pregnancies, abortions) growth measurements, immunizations received, and symptomatic history relevant to selected significant illnesses, (cough, sputum, fever, diarrhea, measles, edema, etc.).

The data sheets prepared by a surveillance agent each month will be forwarded to his supervisor and will thus not be available to him at the time of his next visit. Certain repetitive measurements will therefore be made independently at each visit, serving as an internal control on accuracy and reliability.

Supervisory Surveys (Semiannual, by Assessors)

(2) A second, independent collection of data in each cluster will be made by assessors at approximately 6-month intervals. As a supervisory device, the assessor will use the Surveillance Agent questionnaire to collect the same data, covering the previous 1-month period. In addition, he will determine the occurrence of vital events, pregnancies, and population movements which have occurred during the 6-month interval from registration or his last visit, serving as an independent check on Surveillance Agent records. Significant discrepancies between the records of the Surveillance Agent and the Assessor will be investigated by the Surveillance Supervisor, for reconciliation and retraining and/or discipline as indicated.

The Assessors will have a third responsibility. From time to time, they will carry special questionnaires covering medical or social topics susceptible to accurate historical description, but for which repetitive recording is not necessary or desirable. This will include a one-time survey of Knowledge-Attitudes-Practices^(KAP) of fertility regulation, focusing on traditional concepts, desires, and practices. For the purpose of the KAP survey, the Assessor (a male worker) will interview only males, and he will be accompanied by a specially trained and recruited female worker for interviewing females.

(3) Special Surveys

Special investigative teams will be recruited and trained to carry out special surveys of an objective or laboratory nature, both in the clusters and in non-cluster areas. These will serve (1) to validate the historical, symptomatic data collected by Surveillance Agents, (2) to provide information about health and disease conditions not included in the routine data collection in clusters, and (3) to collect information about diseases with focal distributions (such as onchocerciasis, schistosomiasis, and trypanosomiasis), for which valid estimates of prevalence could not be derived from random cluster sampling. Examples of investigations contemplated include: tuberculin testing and sputum examination of reactors, blood smears for malaria parasitemia, fecal examinations for cysts and ova, and blood droplet collections for measles antibody.

Provision for local laboratory support for such surveys will be arranged at University Medical Colleges and the Centre Muraz of OCCGE in Bobo-Dioulasso. Laboratories at CDC will provide training where needed and back-up support for confirmation on a sampling basis.

g. Data Handling

Local tabulation and analysis of data will be accomplished as rapidly as feasible, within varying local limits of facilities and personnel experience. From the outset, Surveillance Agent and Assessor questionnaires will be reviewed locally for errors and inconsistencies, and corrections will be a responsibility of Surveillance Supervisors. Tabulation and analysis will be accomplished at two levels, ^{locally and at CDC,} both to accommodate to the need for gradual training and also to determine by experience the trade-off of information detail and cost between a simple manual system

and a sophisticated system utilizing electronic computers. The extremes of local sophistication are exemplified by Nigeria and Upper Volta. In the former country, the Ahmadu Bello University in Zaria now possesses computer capacity and has indicated an interest in managing the data system; there are no computers in all of Upper Volta, and a marginal punched card or other system will be used.

The project will provide facilities for punching, verifying and sorting of data locally. Manual or mechanical tabulation will be instituted immediately, local training for these functions being provided by GDC personnel. Data will be sent to Atlanta in duplicate, and computerized analysis will be undertaken, including a monthly update of registration data to provide rates. After comparison evaluation of the two systems has been made, computer analysis will be transferred to those countries where facilities are available.

h. Data Reporting

A detailed demographic profile will be constructed upon completion of registration in all clusters of List A. With this as a baseline, modifications will be made monthly to reflect changes introduced by births, deaths and migrations. Estimates of a national rural profile will be made when corrections are possible after total mapping and enumeration of cluster sites have been completed during the course of a year. Finally, a second independent profile will be constructed from the second set (List B) of cluster registrations, and the two profiles will be compared and appropriately integrated.

Cross-sectional reports will be prepared monthly to reflect data collected from each cluster and for the subproject country as a whole.

These will include vital events, fertility, growth and development measures, morbidity, and appropriate rates calculated for each.

Longitudinal reports will be prepared by computer at appropriate intervals to reflect individual or group histories of fertility, growth and development, and morbidity and its outcome.

Special reports will be prepared as appropriate to document special assessor survey results, special laboratory confirmation studies, and Special Survey Team investigations.

All of these reports will be continuously delivered to the Ministry of Health and assistance will be offered in interpreting their significance with respect to long-range plans for delivery of health services.

i. Retirement of Clusters

As described above, two cluster lists will be prepared by alternate assignment of the randomly selected sites. Since the sampling frame will have been constructed by geographic sub-area, this will result in rough pairing of clusters such that the first cluster of List A will be geographically related to the first cluster of List B, the second A with the second B, etc., and can be considered as cluster pairs.

List A clusters will be retired (sequentially, over a 6-month period after one full year of observation, to be replaced by the paired clusters from List B.

This retirement system/ ^{will:} (1)

avoid too-prolonged observation of any individual cluster, which might result in observee fatigue and observer laxity, (2) extend the total observed population to 18,000, and (3) provide independent estimates and rates based on separate subsamples of 9,000 each, to compare them with each other and with the combined group of 18,000. Statistical and epidemiological judgements can then be made as to the minimum cluster sample size that is to be recommended for the future DDSP protocol.

j. Evaluations

During the first year of field activities in any subproject,

evaluations of component elements of the DDSP and of the system overall will be a continual function of project headquarters staff and specially employed specialist consultants as necessary. Within one year and three months following the initiation of cluster visits in each subproject, the CDC will provide to AID a written summary of the data collected at an evaluation covering the total experience in that subproject emphasizing certain key program areas such as:

- (1) Sampling procedures, with particular emphasis on sampling errors and the relative validity of data from monthly and semiannual visits.
- (2) Interview techniques, with particular attention to non-sampling errors and internal and external controls for confirmation.
- (3) Personnel training, management, competence and availability.
- (4) Laboratory verification or validation of symptomatic histories by questionnaire.

During the fourth year of the Project, the CDC will review the entire experience to date in all three subproject countries and will survey other countries in West Africa and elsewhere to determine the need for and interest in a DDSP. Within six months prior to the termination date of the Project, CDC will submit to AID an overall evaluation, a description of the ongoing DDSPs which have been undertaken by subproject countries after the termination of AID/CDC assistance, a review of the pilot remedial/action programs that have been conducted and are recommended, (all such pilot action programs will be consistent with AID population funding policy), and its recommendations for additional countries where DDSPs should be initiated and supported.

k. Pilot Remedial Action Programs

Each active cluster on List A will be "retired" from routine observation after one year, to be replaced by its pair from List B. This will provide a set of well-studied households in communities that have been

mapped and enumerated (vide supra). Such communities provide an ideal opportunity to observe and evaluate on a pilot scale effectiveness vs. cost (cost/benefit ratio) as well as the operational feasibility of various remedial action programs or methods which the country might wish to include in its basic rural health programs, including family planning. Such pilot operational research programs would be selected from among those problems which accurate measurements had revealed to be of major importance to the country. They would be conducted either singly, or where feasible and desired by the government, in combinations of disease and family planning components. Selection would be based on need, priority, host country interest, and feasibility, giving due weight to the concept that in the long run, data generated by this project will have maximum use in the development of generalized health service for the entire population.

It is the intent of this PASA that the accurate knowledge of baseline disease and demographic data obtained by means of this project be incorporated in pilot remedial action programs which may subsequently be developed. It is expected that such programs will further extend evaluative capabilities in disease and demographic data analysis and utilization, as well as provide guidance for programs in family planning and health. CDC will be responsible for collaborating with local authorities in determining on the basis of concepts stated above which remedial action programs should be undertaken, and CDC will assist in preparing recommendations concerning such programs which host governments may submit to AID (in the form of written requests, protocols and budgets) for review and consideration for funding. Such project proposals will be consistent with the population funding policy of AID.

1. Implementation Schedule

The Preparatory Phase will extend for 6 months, approximately July-December, 1972. Most of the U.S. staff is already on board so no recruitment delays are expected.

The projected calendar for the Implementation and Evaluation Phase is shown below, at the end of this section. The subproject in Katsina Province, Nigeria can be initiated promptly, since registration has been completed and a skeleton organization has been in being for several months.

Each of the ^{other} subprojects will require two months for preparation before cluster registration is undertaken - for organization, initial recruitment and training, and selection of the cluster Lists. Routine surveillance visits will begin one month after cluster registration. The process of registration will take 6 months (except in Katsina Province) and thus clusters will be initiated into the subproject over this period of time.

Observation of each site in a cluster pair (one site each from List A and List B) will be continued for one year. Thus each pair will require two full years. Each subproject will therefore be phased out over the same period of time as was required for phase-in. The preliminary evaluation of each subproject will begin on the first anniversary of the initiation of monthly surveillance visits, and the report will be forwarded to AID within 3 months after the termination of the last cluster.

by CDC

Overall, formal project evaluation/will be instituted at the beginning of the fourth project year (i.e., after the termination of the first subproject but before termination of the second and third). The formal evaluation report will be due 6 months before project termination. During the last 6 months of the project, it is anticipated that DDSP headquarters staff will be heavily involved with pilot remedial action programs. During this time, this staff will also be concerned with final phase-out of the project or in exploration of countries which may be interested in assistance for developing new DDSPs, as may be determined by AID/CDC agreement.

| <u>Activity during indicated month</u> | <u>Katsina</u> | <u>Subproject</u> | |
|--|----------------|-------------------|-----------|
| | | <u>2</u> | <u>3</u> |
| Initiate subproject | - | Jan. 1973 | Apr. 1973 |
| Begin cluster registration | - | Mar. 1973 | June 1973 |
| Begin monthly visits | Oct. 1972 | Apr. 1973 | July 1973 |
| Begin full visit schedule | Dec. 1972 | Oct. 1973 | Jan. 1974 |
| First anniversary of visits | Oct. 1973 | Apr. 1974 | July 1974 |
| Preliminary evaluation due | Jan. 1974 | July 1974 | Oct. 1974 |
| Second anniversary of visits | Oct. 1974 | Apr. 1975 | July 1975 |
| Complete last monthly visit | Dec. 1974 | Oct. 1975 | Jan. 1976 |
| ----- | | | |
| Begin overall evaluation | | Apr. 1975 | |
| Evaluation report due | | Jan. 1976 | |
| Project terminates | | June 30, 1976 | |

m. Training Schedule

It is expected that training of local personnel will be an important element of the building of capacity within Ministries of Health for survey and evaluation, which may include training in public health administration. Perfection will come through continuous supervision of the workers on the job, and checking and correcting their work. Greatest attention will be given to the counterpart co-director, and the statistician, but field supervisors and assessors will also be directly observed by the subproject director.

A schedule of the basic initial instruction of surveillance agents follows. The basic training of the supervisory staff includes this plus additional training for their supervisory functions. Special investigating teams will be trained in techniques necessary for field collection of laboratory samples when these are added to the project.

Data handlers will receive special instruction pertinent to their duties and the type of machines available. It is contemplated that elementary and inexpensive equipment for key punching, verifying and sorting punched cards will be donated to Upper Volta, and training given to its use.

TRAINING PROGRAM SCHEDULE

- Week 1, Day 1 - A.M. Introduction to project background, methods, utilization, results
- P.M. Role of Surveillance Agent
- Day 2 - A.M. Sample Selection
Selection of Cluster Village
Identification of cluster start point
Cluster Numerator
- P.M. Initial Registration
1. format
2. interview techniques
3. smallpox scar
4. vaccination scar
- Day 3 - A.M. Monthly Surveillance
1. cluster identification
2. intracompound movement
3. in-migration
4. out-migration
- P.M. 1. birth
2. death
- Day 4 - A.M. Assessment
- P.M. Special Surveillance
- Day 5 - A.M. 1. data compilation
2. data analysis
3. data utilization
- P.M. Personnel Policies
1. supervision
2. job description
3. transport
4. finances
- Week 2, Day 1 - Cluster Selection
1. use of tax roles
2. hamlet selection
3. selection of households
- Day 2&3- Cluster Registration
- Day 4 - Monthly Interview
- Day 5 - Monthly Interview and Error Correction

BUDGET SUMMARY

(Thousands)

| <u>YEAR</u> | <u>TOTAL \$</u> | <u>PERSONNEL</u> | <u>PARTICIPANT TRAINING</u> | <u>COMMODITIES</u> | <u>OTHER \$</u> |
|-------------|-----------------|------------------|-----------------------------|--------------------|-----------------|
| FY 1973 | 567 | 279 | 6 | - | 262 |
| FY 1974 | 528 | 279 | 12 | - | 237 |
| FY 1975 | 538 | 289 | 12 | - | 237 |
| FY 1976 | 364 | 245 | - | - | 119 |
| TOTALS | 1,997 | 1,092 | 30 | - | 875 |

| Position | Class. Grade | FC Grade | Pcts | Man Years | Salary | Differ- ential | 11 | 12 | 21 | 22 | TOTAL |
|-----------------------|--------------|----------|--------|-----------|--------|----------------|--------|--------------------|----------------|--------------------------|--------|
| | | | | | | | TOTAL | Personnel Benefits | Int'l.* Travel | Transportation of Things | |
| Program Director | GS-15 | - | 29,848 | 1/2 | 14,924 | - | 14,924 | 1,493 | 2,500 | - | 18,917 |
| Asst. Technical Asst. | GS-14 | - | 31,478 | 1/3 | 10,492 | - | 10,492 | 1,050 | 3,000 | - | 14,542 |
| Project Manager | GS-14 | - | 25,620 | 1 | 25,620 | - | 25,620 | 2,562 | 5,500 | - | 33,682 |
| Admin. Officer | GS-13 | - | 18,737 | 1/2 | 9,368 | - | 9,368 | 937 | - | - | 10,305 |
| Asst. Data Systems | GS-13 | - | 19,362 | 1 | 19,362 | - | 19,362 | 1,937 | 1,500 | - | 22,799 |
| Secretary | GS-7 | - | 10,565 | 1/2 | 5,432 | - | 5,432 | 544 | - | - | 5,976 |
| Secretary | GS-6 | - | 9,513 | 1/2 | 4,756 | - | 4,756 | 476 | - | - | 5,232 |
| Secretary | GS-6 | - | 10,329 | 1/3 | 3,443 | - | 3,443 | 345 | - | - | 3,788 |
| Secretary | GS-5 | - | 7,807 | 1 | 7,807 | - | 7,807 | 781 | - | - | 8,588 |
| Secretary | GS-4 | - | 7,415 | 1 | 7,415 | - | 7,415 | 742 | - | - | 8,157 |
| Statistical Clerk | GS-4 | - | 7,415 | 1 | 7,415 | - | 7,415 | 742 | - | - | 8,157 |
| Statistical Clerk | GS-3 | - | 6,410 | 1 | 6,410 | - | 6,410 | 641 | - | - | 7,051 |
| 147,194 | | | | | | | | | | | |

| | |
|-----------------------------|----------------|
| 21 Local Travel | 5,000 |
| 22 Transportation of Things | 3,000 |
| 23 Communications | 3,500 |
| 24 Printing & Reproduction | 4,500 |
| *25 Contractual Services | 55,000 |
| 26 Supplies & Materials | 3,000 |
| Overhead 20% | <u>29,439</u> |
| | 250,633 |

*Includes Consultant costs for special surveys and laboratory and computer charges.

*Estimate & Per Diem

| | | | | |
|---|--|-------------------------|------------------|-------------------|
| PASA BUDGET PLAN By Object Class | PARTICIPATING AGENCY SERVICE AGREEMENT WITH: Public Health Service Department of Health, Education, & Welfare BUDGET PLAN FOR FY <u>1973</u> | AMOUNT APPROPRIATION | PASA CONTROL NO. | Page <u>2</u> |
| | | ALLOTMENT | PIO/T NO. | of <u>2</u> Pages |

| OVERSEAS | Class. Grade | FC Grade | Rate | Men Years | Salary | Differ- ential | 11 | 12 | 21 | 22 | TOTAL |
|--------------------------|-----------------|-------------|--------|--------------|--------|-------------------|--------|-----------------------|-------------------|-----------------------------|---------------|
| | | | | | | | TOTAL | Personnel Benefits | Int'l.* Travel | Transportation of Things | |
| <u>NERERIA</u> | | | | | | | | | | | |
| Ed. Epidemiologist | | FC-11 | 22,135 | 1 | 22,135 | 2,700 | 24,835 | 3,200 | 3,500 | 7,500 | 39,035 |
| <u>UPPER VOLTA</u> | | | | | | | | | | | |
| Public Health Advisor | | FC-9 | 18,272 | 1 | 18,272 | 3,700 | 21,972 | 2,200 | 1,500 | 2,000 | 27,672 |
| <u>1 SUBPROJECT AREA</u> | | | | | | | | | | | |
| 1. Epidemiologis | | FC-11 | 22,135 | 1 | 22,135 | 3,500 | 25,635 | 4,000 | 2,000 | 3,500 | <u>35,135</u> |
| | | | | | | | | | | | 101,842 |

TOTALS

| | |
|--------------------|----------------|
| Headquarters | 250,633 |
| Overseas | <u>316,235</u> |
| GRAND TOTAL | 566,868 |

| | | |
|--------------|-----------------------------------|----------------|
| 21 | Local Travel | 5,000 |
| 22 | Transportation of Things | 2,500 |
| 23 | Rent, Utilities, & Communications | 20,000 |
| 24 | Printing and Reproduction | 2,500 |
| *25 | Contractual Services | 61,000 |
| 26 | Supplies and Materials | 8,000 |
| *#31 | Equipment | 100,000 |
| Overhead 5% | | <u>15,393</u> |
| TOTAL | | 316,235 |

*Includes Local Hire and Participant Training charges.

**Includes vehicles, motorbikes, bicycles, and
purchasing, verifying and sorting equipment.

| | | | | | | | | | | |
|---|--|--|--|--|--|---------------|--|------------------|--|------------|
| AID-2-3 (8-64) PASA BUDGET PLAN By Object Class | PARTICIPATING AGENCY SERVICE AGREEMENT WITH Public Health Service Department of Health, Education & Welfare BUDGET PLAN FOR FY 1974 | | | | | AMOUNTS | | PASA CONTROL NO. | | Page _____ |
| | | | | | | APPROPRIATION | | ALLOTMENT | | PIO/T NO. |

| Position | Class. Grade | FC Grade | Rate | Man Years | Salary | Differ. ential | 11 | 12 | 21 | 22 | TOTAL |
|-------------------|--------------|----------|--------|-----------|--------|----------------|--------|--------------------|----------------|--------------------------|--------|
| | | | | | | | TOTAL | Personnel Benefits | Int'l.* Travel | Transportation of Things | |
| Program Director | GS-15 | - | 29,848 | 1/2 | 14,924 | - | 14,924 | 1,937 | 2,500 | - | 18,917 |
| Technical Asst. | GS-14 | - | 31,478 | 1/3 | 10,492 | - | 10,492 | 1,050 | 3,000 | - | 14,542 |
| Project Manager | GS-14 | - | 25,620 | 1 | 25,620 | - | 25,620 | 2,562 | 5,500 | - | 33,682 |
| Admin. Officer | GS-13 | - | 18,737 | 1/2 | 9,368 | - | 9,368 | 937 | - | - | 10,305 |
| Data Systems | GS-13 | - | 19,362 | 1 | 19,362 | - | 19,362 | 1,937 | 1,500 | - | 22,799 |
| Secretary | GS-7 | - | 10,565 | 1/2 | 5,432 | - | 5,432 | 544 | - | - | 5,976 |
| Secretary | GS-6 | - | 9,513 | 1/2 | 4,756 | - | 4,756 | 476 | - | - | 5,232 |
| Secretary | GS-6 | - | 10,329 | 1/3 | 3,443 | - | 3,443 | 345 | - | - | 3,788 |
| Secretary | GS-5 | - | 7,807 | 1 | 7,807 | - | 7,807 | 781 | - | - | 8,588 |
| Secretary | GS-4 | - | 7,415 | 1 | 7,415 | - | 7,415 | 742 | - | - | 8,157 |
| Statistical Clerk | GS-4 | - | 7,415 | 1 | 7,415 | - | 7,415 | 742 | - | - | 8,157 |
| Statistical Clerk | GS-3 | - | 6,410 | 1 | 6,410 | - | 6,410 | 641 | - | - | 7,051 |

147,194

| | | |
|-----|--------------------------|--------|
| 21 | Local Travel | 5,000 |
| 22 | Transportation of Things | 4,000 |
| 23 | Communications | 3,500 |
| 24 | Printing & Reproduction | 4,500 |
| *25 | Contractual Services | 85,000 |
| 26 | Supplies and Materials | 3,000 |

Overhead 20% 29,439

TOTAL 281,633

*Includes Consultant costs for special surveys and laboratory and computer charges.

| | | | | |
|---|---|---------------|------------------|-------------------|
| AID-333 (6-5-74) PASA BUDGET PLAN By Object Class | PARTICIPATING AGENCY SERVICE AGREEMENT WITH: Public Health Service Department of Health, Education & Welfare BUDGET PLAN FOR FY <u>1974</u> | AMOUNT | PASA CONTROL NO. | Page <u>2</u> |
| | | APPROPRIATION | | of <u>2</u> Pages |
| | | ALLOTMENT | PIOT Y NO. | |

| OVERSEAS Position | Class. Grade | FC Grade | Rate | Man Years | Salary | Differ- ential | 11 | 12 | 21 | 22 | TOTAL |
|---|-----------------|-------------|--------|--------------|--------|-------------------|--------|-----------------------|-------------------|-----------------------------|--------|
| | | | | | | | TOTAL | Personnel Benefits | Int'l.* Travel | Transportation of Things | |
| <u>NIGERIA</u> Med. Epidemiologist | | FC-11 | 22,135 | 1 | 22,135 | 3,320 | 25,455 | 3,780 | 2,000 | - | 31,235 |
| <u>UPPER VOLTA</u> Public Health Advisor | | FC-9 | 18,272 | 1 | 18,272 | 4,568 | 22,840 | 2,700 | 2,500 | 4,000 | 32,040 |
| <u>3rd SUBPROJECT AREA</u> Med. Epidemiologist | | FC-11 | 22,135 | 1 | 22,135 | 5,534 | 27,669 | 4,400 | 2,000 | - | 34,069 |

97,344

TOTALS

Headquarters 281,633

Overseas 246,212

*GRAND TOTAL 527,845

| | | |
|-----|-------------------------------------|--------------|
| 21 | Local Travel | 5,500 |
| 22 | Transportation of Things | 3,000 |
| 23 | Rent, Utilities, and Communications | 24,000 |
| 24 | Printing and Reproduction | 2,500 |
| *25 | Contractual Services | 95,000 |
| 26 | Supplies and Materials | 7,000 |
| 31 | Equipment | 7,000 |
| | Overhead 5% | <u>4,368</u> |

TOTAL 246,212

*Includes Local Hire and Participant Training charges.