STATISTIC 1

ESTIMATION OF AGRICULTURAL PRODUCTION STATISTICS - A PROJECT PROPOSAL

NOVEMBER 1977

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1. Background.

A series of meetings were held during the month of August with Messrs SOOKRAJ and TELFER to discuss the Project of the Resource Development and Planning Division on "Agriculture Statistics".

The nature of discussions were based on two main objectives of the Project.

1.1. The Development and production of statistical estimates using as a basis, the population frame developed by the Resource Development and Planning Division; and

1.2. Provision of a training programme on basic statistics, survey methods and interviewers methodology.

Seeing the need for action along these lines, a project proposal is now presented to cover these two objectives. It is understood, however, that these cannot be done without appropriately staffing the Resource Development and Planning Division with the necessary per-

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Mention was also made of the need to compile and analyse the 1968 agricultural census, but this was given a lower priority than the estimation of agricultural production statistics. There is, however, in the planning horizons of this project the purpose to co-operate with the Ministry in the development of the technical capability to compile, analyse and publish data, using census methodology.

This Project, on Agricultural Production statistics, is, therefore, a partial response to the request made by the Ministry to the Inter-American Institute of Agricultural Sciences (IICA) as part of its co-operation Programme with the Government of Guyana. It is partial in the sense that it covers just the beginning of a project which was set to deal with the agricultural statistical problem. This will be, however, the results of further developments and after some basic

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accomplishment in the field of agricultural production statistics. On the other hand, the Project on statistics is in line with the objectives of the programme of the Inter-American Institute of Agricultural Sciences (IICA) in Guyana as part of its institutional building policy and compliments the National Grain Legume and Cassava Programme, in which Inter-American Institute of Agricultural Sciences participates, in the actual development and publishing of production statistics.

The following presentation then, can be used as a basis for further development on the subject.

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2. OBJECTIVES AND GOALS:

2.1. Objectives: The general objectives of the project is to co-operate with the Resource Development and Planning Division of the Ministry of Agriculture to develop the technical capability to estimate agricultural production statistics on a continuous basis.

2.2. Intermediate Objectives:

2. 2. 1. Develop production statistic studies to allow for the establishment of an estimating programme to be carried out on a continuous basis.

2. 2. 2. Training of Staff and Crop Reporters on statistical techniques in order that the proposed programme can be implemented.

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2.3. Targets for the period July, 1977 - June, 1978:

2. 3. 1. Up-date and publish the existing population frame.

2. 3. 2. Develop the methodology of estimating production statistics.

2. 3. 3. Carry out a pilot estimation on pre-selected crops.

2. 3. 4. Carry out a training programme on basic statistics and interviewer techniques, with Staff of Resource Development and Planning Division, Crop Reporters and other related agencies.

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3. Programmed Activities:

3.1. Up-date information on population frame and accurate mapping of the areas covered by the sketches.

3.2. Development of a general land used map.

3.3. Carry out In-Service Training for Crop Reporters on basic statistics interviewer techniques, and problems of crop estimation.

3.4. Carry out training course on statistical analysis for Ministry Staff, and related agencies (G.R.B., GUYSUCO, Regional Administration, G.M.C., Statistical Bureau).

3.5. Implement a pilot study to develop methodology and production statistics for selected crops.

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4. Procedure:

4.1. Up-date and improve population frame of agricultural farmers. A population frame has been completed for most of the country. There still remains to be completed areas in the Rupununi District.

The existing frame consists of a list of farms with information concerning acreages devoted to the various crops. There also exists a series of sketches organised on a Village basis where every farm is identified with the distribution of crops and land marks, where possible, though not at Scale.

Improving the existing sketches to a level of a cartographical map drawn to scale and in reference to the required land marks can be readily completed on the basis of the existing information.

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This information will be utilized in the development of "land used maps". The availability of these maps will improve the information base required for statistical estimation of agricultural variables and will provide a sound basis for agricultural planning and policy making.

Along with Staff of the Resource Development and Planning Division and of the Land Survey Department, a project will be developed so that the objectives can be accomplished. The improvement of the maps, therefore, will result from a detailed project to be developed at a later stage. This activity should end with the development of a land used map.

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4.2. Training Programme:

A specific Training Programme is developed with the Staff of the Resource Development and Planning Division and other agencies to improve the capability for analysing the collected information and producing estimates with a sound statistical basis. This programme includes basic statistics and interviewer techniques. The relevant programme and the mechanism of the courses is presented on an Appendix.

4.3. Pilot Study:

Along with Staff of the Resource Development and Planning Division, a pilot study will be developed to produce a methodology to estimate agricultural production statistics. This programme will compliment the training course so that it can be used as a practical demonstration of the course's work. Initially this pilot study will be set up to work with two crops: rice and coconut -

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and aimed at developing the methodology and the statistics on acreage, yield and production.

A second aspect of this pilot study will deal with marketing information to develop methodology and data on volumes of agricultural products marketed in the Georgetown area.

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TRAINING PROGRAMME

TRAINING PROGRAMME IN STATISTICS WITH EMPHASIS ON SAMPLING SURVEY METHOD

1. Introduction.

The training programme to be divided into two parts. One designed mainly for persons having to collect data and the other is directed to those having to analyse data.

The first part provided with a general introduction to the statistical sciences along with Training on interviewer techniques and recording of statistical data. The course requires participants with high school level or equivalent.

Part two courses provided with an introduction to statistical analysis and sampling techniques.

For both courses, a refresher in mathematics is offered at the level required for the statistical subject.

Participants of Part Two course require a higher academic level or have had

some experience analysing data for statistical purposes.

2. Part One:

Collection of Statistics:

2.1. Description of the Courses:

2. 1. 1. Review of Mathematics:

A basic review of mathematics, as needed to improve the understanding of the statistical techniques. The level will be equivalent to that of high school standard.

2. 1. 2. Basic statistics:

Introduction to the understanding of statistics and its uses in today's world; basic concept, mean, mode, range, frequency, variance, standard deviation. Elements of probability. Techniques for statistical analysis. Elements of sampling.

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2. 1. 3. Techniques of data collection:

Survey and the survey research centre. Interviewer principles and procedure. Administering procedures and general information.

2. 1. 4. Problems in data collection and recording:

Development of a practical system to record data from various sources and for various products. These will include several crops, pigs, poultry, cattle, etc., and will cover production records at farmers level, processing and marketing records at the market level. Interpretation of data for recording, types of measures, crop yield statements.

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3. Part Two:

Statistical Analysis:

3.1. Description of the Course:

3. 1. 1. Mathematics:

Introduction to algebra. The real numbers. Activities, functions and graphs. Systems of equations, metrices.

3. 1. 2. Statistical Methods:

Attributes. Measurements. Sampling distributions. Comparisons of two samples. Regression. Time series analysis. Correlation. Binominal distributions.

3. 1. 3. Elements of sampling and sampling techniques:

Main uses of sampling methods. Design and analysis of sampling. Sampling for agricultural production statistics.

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4. Procedure:

The training programme is divided in two parts. A duration of ten hours is provided as a minimum for each subject so that each part could last a maximum of ten days - one hour/day/subject. The final enactment should result from a more accurate planning of the operational aspect of the programme.

A Professor of known academic standard will be responsible for each course, or specific topics.

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5. Participants:

Participants will be selected from the Staff of the Resource Development and Planning Division; a selected number of Crop Reporters (no more than ten) whose stay in Georgetown will be financed and participants from other Government Agencies, not to exceed a total number of thirty participants.