END OF TOUR REPORT

Statistical Advisor

Economic and Policy Analysis Project

Economic Wing

Ministry of Food, Agriculture and Cooperatives

Islamabad, Pakistan

Chemonics International Consulting Division

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END OF TOUR REPORT

Statistical Advisor

1.0. INTRODUCTION

Prior to 1990, MINFA obtained economic information about Pakistan Agriculture from three principal sources: APCom, PARC, and the PU. APCom, organized in 1981 by a MINFA resolution, is an autonomous MINFA unit responsible for making recommendations on commodity procurement prices. PARC is involved primarily with identifying and coordinating priority research areas relating to technology assessment. Its staff is composed of sociologists, economists, and anthropologists. The PU primarily conducted technical monitoring activities associated with agricultural development plans. In a 1990 reorganization, the PU became the Directorate of Economic Research (DER) in the Economic Wing.

Within the above structure, USAID and MINFA initiated the Food Security Management project in 1985 with a component on Economic Policy Analysis (EPA), one on Agricultural Data Collection (ADC), and a third on Post Harvest Management (PHM). The main purpose of the EPA component was to assist the PU by providing a well defined and sound institutional framework for conducting economic sector analysis. The component was also designed "to strengthen the analytical capabilities of the MINFA as well." The primary purpose of the ADC component is to develop and implement national area frame surveys at the provincial level in order to provide statistically sound estimates of crop area and yield for major crops on a timely and cost effective basis. These two components provide the scope for collection and assembly of improved agricultural data and an expanded capability for policy related staff analysis and economic research. The PHM component conducts research on vertebrate pests and strengthens MINFA's capability to manage its grain storage system. In 1989, the FSM umbrella project was replaced by the Agricultural Sector Support Project (ASSP).

Under the EPA component, two projects were initiated: a Special Studies Project coordinated by the International Food Policy Research Institute (IFPRI) and an Economic Analysis Network project administered by Chemonics. The ADC component was implemented by the National Agricultural Statistics Service of the USDA. The interest here is primarily with the EAN, which directly preceded this EPA Phase II project (EPA).

Through the EAN project, 15 special technical reports were published covering both substantive and methodological topics, and more than 100 shorter technical articles were written. A Directorate of Agricultural Policy (DAP) was organized and staffed with project-supported local staff. Some 450 economists, representing both the private and public sectors, joined a national network of agricultural economists. They served as a panel of experts available to carry out research and review work of others. A bi-monthly newsletter, "Econogram," was sent to all EAN members, providing the basis for information interchange and dialogue on current research activities.

Ten special brochures on "Talks with Economic Experts" were published and 52 computers installed in various public and private institutions. The project supported 65 Pakistanis on long- and short-term training and conducted local seminars and workshops for 249 participants in the areas of agricultural policy, agricultural marketing, economic research policy, technical writing, and applied economic analysis.

A series of long-term studies was commissioned to be conducted by mostly private sector consulting firms using competitive bidding procedures. Short-term studies were carried out directly to address additional policy-sensitive issues.

The long-term, contracted studies covered eight high- priority policy-related research areas. They were designed to provide a database for assessing important policy issues and provide data for use in more formal analytical models of the Pakistani economy. Topics covered included:

- o Fertilizer application and response rates;
- o Impact of mechanization on productivity;
- o Marketing margins for major crops;
- o Farm productivity in the Punjab;
- o Farm productivity in NWFP;
- o Farm productivity in Shind and Baluchistan;
- o Marketing of perishable commodities; and
- o Constraints to developing cooperatives.

The short-term studies program provided MINFA with additional flexibility as EAN staff and short-term consultants could be used, and quality control and timely completion could be assured. Topics under this category included:

- o Productivity of irrigation operation and maintenance investments;
- o Policy analysis of the poultry, sugar cane, and dairy sub-sectors;
- o An inter-industry analysis of agriculture's contribution to the national economy; and
- o An economic analysis of SCARP tube wells.

In addition, methodological studies were undertaken by EAN to develop an analytical framework to support staff analysis responsive to policy needs of MINFA. An input/output model for the Pakistani economy was developed along with a spreadsheet-based budget generator to provide estimates of crop and livestock production costs and a spreadsheet model to estimate national and provincial farm income. Supply and demand functions were estimated for poultry and sugar.

The project created an effective editing and publishing capability, including desk top publishing, capable of producing high-quality reports on a timely basis, introduced new computers to the PU and DAP, and provided computer training and maintenance capabilities.

In the final year of the EAN project the DAP staff were paid from a MINFA PLA account but to date, no EAN staff have been hired as staff members of the EW.

Organized as task forces comprising EAN and DAP staff, three new activities were initiated within the PU: commodity situation reporting, national food marketing bill estimation, and national farm income and cost estimation. Additional staff analysis and studies were undertaken including a description of the food and fiber sector of the Pakistani economy and assessing the impact of farm taxation.

Development of a policy-relevant research and information base has enabled project and MINFA staff to take the lead in current ministry efforts to prepare a revised agricultural policy paper for submission to the National Assembly in mid-1990..

Perhaps equally important to the above direct accomplishment of the EAN project was its instrumental role in the GOP dialogue that resulted in the Economic Wing (EW) formation. The EW, with its three directorates of Agricultural Statistics (DAS), Economic Research (DER) and Agricultural Policy (DAP) (Figure 2), will bring much of the information system necessary for agricultural policy support under one senior manager, the Director General of the EW. It will be essential, however, for the EW to coordinate its activities very closely with the Central Bureau of Statistics, Agricultural Data Collection Project, APCom, the newly formed MINFA Agribusiness Cell and other GOP and private sector organizations instrumental in the Pakistan agricultural policy process.

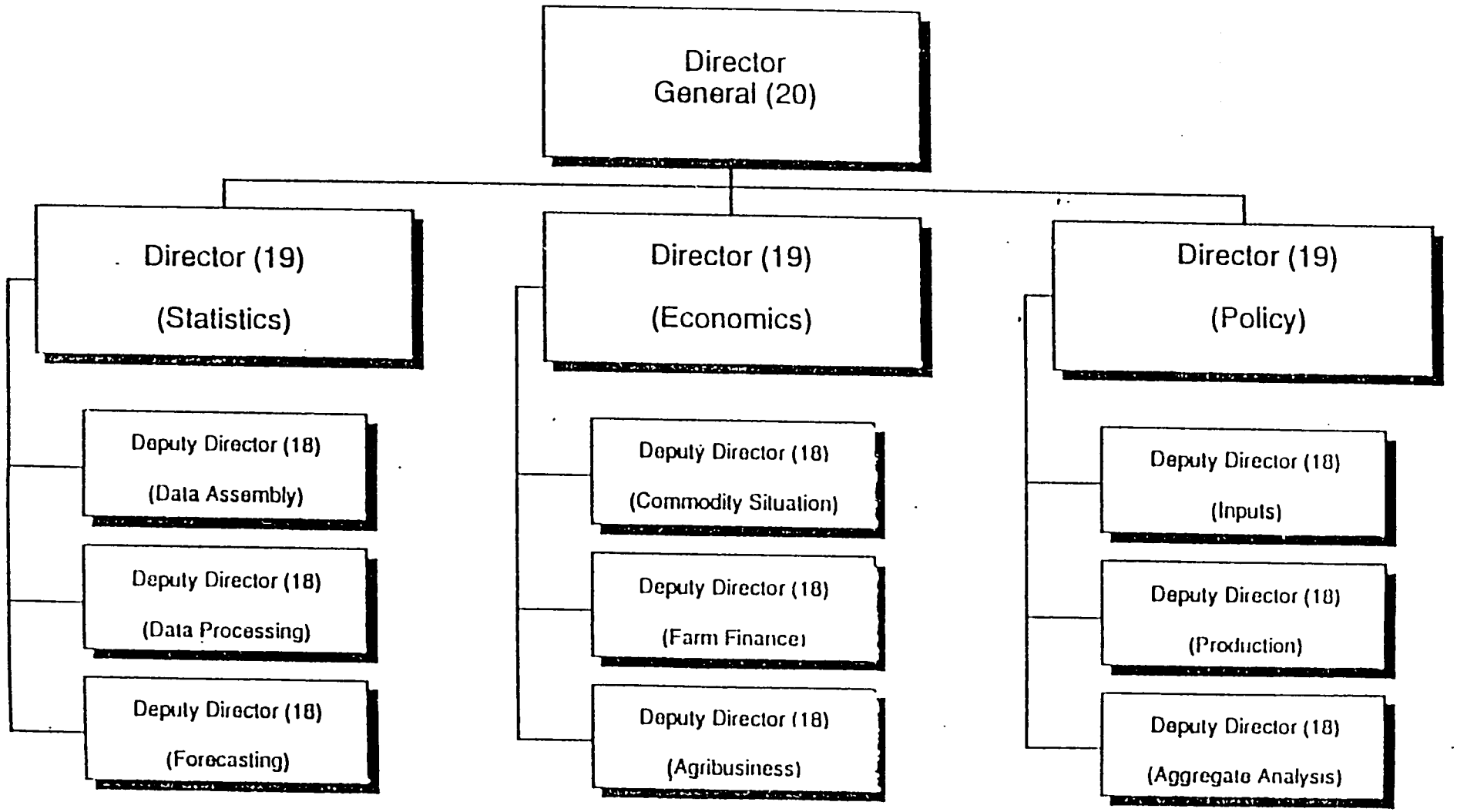
1.1. ORGANIZATION OF THE ECONOMIC WING

The EW has a classic functional organization following the information system paradigm for food and agriculture. Illustrated in Figure 1, under the overall direction of the Director General, the EW is organized with three Directorates or Divisions and nine sections.

The Directorate of Agricultural Statistics (DAS) is headed by a Division Director and has one Deputy Director. The three sections of the DAS are Data Assembly (DAAS), Data Processing (DAPR), and Data Forecasting (DAFO). Due to the limited number of EW staff,

Figure 1

ıomic Wing Organization Chart



the DAPR and DAFO sections are operated as a combined Data Processing and Data Forecasting section (DAPF).

The Directorate of Economic Research (DER) is headed by a Division Director and has a Deputy Director over each of its three sections: Commodity Situation (COSI), Farm Finance (FAFI), and Agribusiness (AGBU).

Thye Directorate of Agricultural Policy (DAP) is headed by a Division director and has one Deputy Director. The three sections of DAP are: Farm Inputs (FAIN), Farm Production (FAPR) and Aggregate Analysis (AGAN).

1.2. RESPONSIBILITIES AND TIME FRAME

The Statistical Advisor was one of two long term advisors appointed to implement the Economic and Policy Analysis Project. The Statistical Advisor arrived in Islamabad on September 3, 1990, along with the Chief of Party. Both long term advisors were evacuated during the Gulf War from January 15, 1991 to April 1, 1991. The Statistical Advisor completed his assignment and left Pakistan on May 28, 1993.

The primary responsibility of the Statistical Advisor was to assist the Chief of Party in supporting the Director General, EW, and to provide technical support to the Directorate of Agricultural Statistics. Other major areas of work of the statistical Advisor included the development of an EW management information system, developing the training plan, monitoring of EPA supported training, assisting the EW in developing a commodity situation and outlook program, and developing and using the Pakistan Agricultural Sector Model.

2.0. ACCOMPLISHMENTS

2.1. MANAGEMENT INFORMATION SYSTEM

To effectively implement the EPA Project and work of the EW, the first task was to develop the first EPA annual work plan. It was decided to take a life of project approach to annual work planning with the first AWP specifying what was expected to be a set of interrelated activities that would materializes over the three year EPA project life and would progressively contribute to an effective and sustainable institutionalized agricultural statistics, economic research and agricultural policy analysis capability within the EW. Each successive AWP would then specify the current year priorities and activity detail.

A data base management systems approach was taken to the AWP development such that the AWP became the first component of an EW Management Information System (EWMIS). Other EWMIS components include: purpose statements, job descriptions, training plan, and

computer plan.

2.1.1. ANNUAL WORK PLAN

The successive Annual Work Plans and their mid-year revisions represented a combined effort of the Economic Wing and the EPA Advisors to develop a single Annual Work Plan (AWP). They represented the integrated plan of the EW's three directorates and seven sections for managing their limited staff and financial resources to provide relevant economic intelligence to the MINFA, other GOP organizations, and the broader Pakistan food and fiber system over the three year EPA project life.

The original 1991-92 AWP originated out of an EPA work plan prepared by the EPA Advisors for 1990-91 in consultation with EW Officers. As that original work plan has undergone successive revisions, it has gradually become more of an EW work plan. This version of the work plan still retains a broad outline of some of the activities envisioned to be accomplished over the three year life of the EPA project but emphasizes those activities that constitute the planned statistical, economic research and policy analysis activities of the EW for 1991-92. And although the AWP contains some EPA contractual requirements such as EPA quarterly and end of project reports, it is the work plan of the Economic Wing.

The EPA project work plan was developed and is being maintained in a computerized information file that facilitates preparation, monitoring, evaluation, revision and reporting work plan activities. Figure 1, Appendix I, contains the information that was developed, stored and retrievable according to desired format for each activity to facilitate project planning monitoring and evaluation. Information from these activity files can be retrieved in a variety of formats such as the tables contained in the various annual work plan reports.

2.1.2. PURPOSE STATEMENTS

Building on the PC-1 issued by the GOP for establishing the EW according to the organizational chart in Figure 1 above, a statement of the purpose or mission of the EW, each of the three directorates in the EW and each of the three sections within each directorate was developed by the EW management and staff working with the two long term advisors. The formate for the purpose statement

file is found in Appendix I, Figure 2. For each unit and subordinate unit of the EW, the purpose statements contain the policy background or rationale for the unit, the unit purpose, and operational products expected from the unit. The idea was to develop a clear, concise statement of the purpose of each directorate and section of the EW, how each unit purpose contributed in an integral way to the EW mission, and to enhance each EW officer's understanding of the purpose of the EW and of each directorate and unit within the EW.

2.1.3. JOB DESCRIPTIONS

The objective of the job descriptions was for each EW officer, in cooperation with his or her supervisor and Director, and with the assistance of the EPA long term advisors, a clear and written statement of his or her individual work responsibilities in terms of conducting specific professional tasks, contributing his or her area of expertise to a broader section, directorate and EW team effort to accomplish the section, directorate and EW missions. Job descriptions were developed and approved by EW management for the 39 professional officers of the EW according to the management information system file format in Appendix I, Figure 3.

2.1.4. TRAINING PLAN

After the purpose statements and job descriptions were developed, the next step was to evaluate the training background and needs of the EW officers relative to their unit purposes and job descriptions. To facilitate evaluate the development of the training plan, a job skills inventory was planned and conducted according to the format in Appendix I, Figure 4. The job skills inventory brought together information about the individual officers job description, formal degree and non-degree formal training an evaluation of all of the relevant skills held by the officers, those necessary to accomplish his or her assigned job, and the residual skills needed by the individual. this latter appraisal served as the basis for developing the EW/EPA Training Plan.

2.1.5. COMPUTER SYSTEMS

Computers are one of the most productivity enhancing but most difficult physical resource an organization can utilize. Computers are expensive, require continuous training, and maintenance in order to be managed effectively. Computer acquisition, training, maintenance and use within the EW has been one of the highest EPA priorities. Extensive formal and on the job computer skills training was conducted by EPA based on the job skills inventory and training plan mentioned above. To facilitate the evaluation of computer needs, computer management and maintenance, a computer inventory was initiated and periodically updated based on the file format in Appendix I, Figure 5.

2.2. MONITORING OF THE TRAINING PROGRAM

The Economic and Policy Analysis Project was provide 180 participant hours of on-the job training (OJT) to Economic Wing (EW) officers during its three year contract life. This training is designed and implemented to complement other, previously completed and ongoing formal and informal training by providing practical training experience in applying the theory and techniques acquired in the formal training. The training is effected by EPA short Term Advisors working with teams of EW officers from the various sections of EW Directorates in learning applied skills to effect a first generation institutionalized EW capability to routinely perform the statistical, economic research and policy analysis activities implied by the PS-1 and specified in the EPA/EW Annual Work Plan. Perhaps the most visible performance indicators of the training will be the prototype reports prepared by the training teams and the various seminars and briefings conducted by the EW officer teams under the guidance of the short and long term EPA Advisors.

Previously completed and on-going formal and informal training includes completed University degrees, a USAID sponsored nine month non-degree academic program in agricultural economics at Quaid-E-Azam University, USAID sponsored study tours, a limited number of USA University Masters Degree fellowships sponsored by USAID, and sort courses conducted or sponsored by the UNDP/FAO Agricultural Management Information System (AMIS) Project. And in the case of computer skills and agricultural sector simulation and analysis, EPA will offer a limited number of short courses.

Table 1. State of EPA Training Program as of March 31, 1993

Act.	Description	Training Completed: Prior to This Quarter	Training Completed: This Quarter	Total	Training Planned	Percent of planned training Completed
	Policy Analysis	8.0	8.0	16.0	8.0	200.0
DP01	Input/Output Analysis	7.0	.0	7.0	7.0	100.0
DP03	Aggregate Measures of Government's Support to Agriculture	5.0	.0	5.0	5.0	100.0
DP04	Wheat Policy Study	6.0	.0	6.0	6.0	100.0
DP05	Pakistan Agricultural Sector Model (PASM)	14.0	.0	14.0	14.0	100.0
DR01	Wheat Situation and Outlook	9.5	.0	9.5	8.0	118.8
DR02	Situation Reports for other Major Crops	8.0	.0	8.0	8.0	100.0
DR03	Situation and Outlook for Minor Crops	4.0	.0	4.0	4.0	100.0
DR04	Farm Income	16.0	.0	16.0	16.0	100.0
DR05	Farm Budgets	6.0	.0	6.0	5.0	120.0
DR07	Margins and Marketing Bill Estimates	8.0	.0	8.0	8.0	100.0
DR08	Farm and Agribusiness Inputs, Production and Productivity Index Updates	4.0	.0	4.0	4.0	100.0
DS01	Agricultural Data System	10.0	.0	10.0	10.0	100.0
EP04	EPA Interns	6.0	6.0	12.0	6.0	200.0
EW01	Annual Work Plan	8.5	.0	8.5	8.0	106.3
EW03	Purpose Statements	4.0	.0	4.0	4.0	100.0
EW04	Job Descriptions	4.0	.0	4.0	4.0	100.0
EW06	Computer Plan	43.0	3.0	46.0	43.0	107.0
EW08	Seminars	12.0	.5	12.5	12.0	104.2
	Total:	183.0	17.5	200.5	180.0	111.4

Six EW officers were recommended for USA Master of Science degree programs at Universities in the United States.

OJT provided by EPA was determined based on a survey of the EW officer training needs as estimated given the EW officer job descriptions, AWP and existing job skills of EW officers described above.

As Table 1 indicates, EPA has exceeded its target of providing 180 participant months (PM) of training by 11.4 percent or 20.5 participant months. In addition to the above mentioned computer maintenance training, 10 EW officers and EPA Interns completed a short course in advanced Wordperfect and Quatro techniques. Further, the EPA interns and Directorate of Economic Research staff continue to receive on the job training in policy analysis under the direction of the EPA Chief of Party.

2.3. STATISTICAL SYSTEMS

The Directorate of Agricultural Statistics has a very good agricultural data assembly, processing and publications capability. In addition, DAS has the capability to forecast wheat area and production in the four provinces. This capability, called the Agricultural Management Information System (AMIS) was developed initially under the an FAO/UNDP project but EPA has continued to help DAS maintain and use the agricultural data system. And EPA has developed a PC based world agricultural data system called AGDAT. AMIS contains a User interface, system software, system hardware, and six real data systems: crop production, weather, prices, and publications.

2.3.1. CROP PRODUCTION

The crops production data component contains historical time series data on the area, yield and production of 70 crops, vegetables and condiments by district, province and at the national level.
It also contains data on inputs such as fertilizer offtake and irrigation water.

2.3.2. PRICES

Agricultural prices included in the data system include the wholesale and retail prices of 26 agricultural prices in 11 major cities of Pakistan and the support and procurement prices of major agricultural commodities since 1971.

2.3.3. WEATHER

Rainfall, maximum and minimum temperature from 37 weather stations around Pakistan and the temperature from 16 stations.

2.3.4. PUBLICATIONS

The publications component contains all of the data tables included in the various Economic Wing statistical publications such as:

- o Agricultural Statistics of Pakistan (annual)
- o Fruits, Vegetables and Condiments Statistics of Pakistan
- o Crop and Weather Report
- o Pakistan Agricultural Data (pocketbook)

Each data table in the publications system can be easily accessed for updating, compiling the above publications, combining in any desired order for compiling a special statistical report and for printing. A copy of the table of contents for Agricultural Statistics of Pakistan is included in Appendix II to illustrate the breadth and depth of agricultural data included in the data bank and accessible to the publications system.

2.3.5. AGDAT

AGDAT is a personal computer based, stand alone world agricultural data base that includes

* PAKSTAT - includes the production and price data components of the AMIS data system, thus providing a detailed statistical description of agricultural production in Pakistan.

* P S and D - A USDA, Economic Research Service data base containing supply and utilization data on a time series basis for the major agricultural traded crops for all major countries of the world.

* AGROSTAT - An FA0 data base covering data on the population, land use, agricultural inputs, agricultural commodity production, supply and utilization; and food balance sheets for most world countries.

Data from all AGDAT components can be easily selected, retrieved, transferred to a data base file, printed out and transferred to other statistical and analytical software such as lotus 123, through the AGDAT User Interface and applications software components.

After the first version of AGDAT was produced by Syed Shah under the direction of the Statistical Advisor, demonstrated and installed at a few user locations, the EPA Chief of Party assumed responsibility for AGDAT in December, 1992.

2.3.5. WHEAT CROP FORECASTING

Although separate from the AMIS data system, the DAS has developed a capability to forecast the area planted to wheat by January 15 and February 15 of each year and the wheat yield by March 15, April 15 and May 15 of each year. Forecasts are made at the four provincial levels by irrigated and Barani areas and aggregated to the national level. Independent variables include the price of wheat relative to the price of cotton, fertilizer offtake, rainfall, irrigation water availability, and temperature. This model works reasonably well and is routinely used by DAS to generate the above forecasts. Two serious problems are that there is only one DAS Officer, Mr Rashid, that can perform the forecasting work and often the data on such important independent variables as fertilizer is late in arriving from the Provinces.

2.4. COMMODITY SITUATION AND OUTLOOK PROGRAM

The Statistical Advisor worked with the Commodity Situation Section of The Directorate of Economic Research during the early months of EPA to develop supply and utilization accounts for the major commodities. And, on February 14, with the assistance of Bill Spencer, Colorado State University, the Commodity Situation Section produced the Prototype Wheat Situation and Outlook Report for Pakistan. The Chief of Party then assumed responsibility for the Situation and Outlook Program.

2.5. THE PAKISTAN AGRICULTURAL SECTOR MODEL (PASM)

In the late 1980's, the USAID sponsored Economic Analysis Network (EAN) Project started developing estimates of Provincial and National gross and net farm income. These estimates were based on agricultural commodity, farm level, costs and returns estimates provided by various colleges, universities, and research organizations across Pakistan and on data assembled by the Directorate of Agricultural Statistics.

Under another MINFA project sponsored by USAID, the "Analysis of Corporate Sector Constraints in Agriculture (ACSCA) Project, the Pakistan Agricultural Sector Model (PASM) was developed by a RONCO Consulting Corporation activity team led by Stephen P. Davies of Colorado State University. PASM was based on the enterprise costs and returns estimates and other data provided by the EAN Project and the EW.

The evolution of the EW, its three functional directorate structure, and their statistical, economic research and policy analysis mission oriented activities provided a logical home for the PASM on the completion of the ACSCA Project.

PASM is a classic agricultural sector linear programming model. It includes 12 crops, fruit, and five livestock commodities. Production takes place on farms of three sizes in eight production zones subject to traditional constraints such as land, irrigation water, family labor, aggregate fertilizer supplies, and other limited resources. This technology or farm size cost increasing supply capability, augmented by marketing margins and trade activities, interact with elasticity derived commodity demand functions to provide the sum of consumers' and producers' surpluses as a maximized objective function.

Since assuming responsibility for the PASM, and with the assistance of Steve Davies, the EW has updated the models base year to from 1986-87 to 1989-90; converted the model from the original LP88 to LINDO linear programming software; made numerous improvements in model structure; made explicit use of the EW's estimates of aggregate measures of support (AMSs) as GOP policy instruments to drive the simulated scenario specification; added the calculation of several important performance indicators such as net farm income to the model output; and made the model more "user friendly" by further developing the Lotus 123 based user interface.

Similar to the basic data and economic research components upon which it is built, the PASM can and will be improved upon. And the output from PASM will always need to be carefully interpreted and formulated into reasonable and practical policy recommendations by competent analysts. Yet, PASM, as demonstrated by the eight policy scenarios studied using PASM demonstrated, PASM provides a reasonable simulation of the Pakistan food and agricultural system. Its use could be enhanced by using the type of "constant price" commodity costs and returns data recently generated by the Directorate of Economic Research for assessing the recent flood damage and the impact of improved fertilizer policies, as shifters of the very "short run", inelastic commodity supply functions in PASM.

3.0. TOWARD AN ECONOMIC WING POLICY INFORMATION SYSTEM

In summary, over the last eight years, a series of FAO and USAID funded projects, culminating in the Policy Analysis Project (EPA), has provided the necessary foundation for a modern information system in the form of the Economic Wing. The EW thus has the potential to provide the Government of Pakistan and the larger Pakistan Food and fiber system with timely relevant and reasonable accurate agricultural policy information and analysis. This foundation includes:

- o A functional organization, approved by a GOP PC-1, providing for agricultural statistics assembly, processing, and distribution; economic research; and policy analysis;

- o A set of mission statements and job descriptions that detail the purpose of each

component unit of the EW and the role of each officer in fulfilling the organization mission;

- Computer systems, including both hardware and software, that permit efficient, and rapid data and information assembly, processing analysis and reporting.

- Both short and long term training of EW officers have given them the academic background, applied statistical, economic research and policy analysis skills that will permit them to perform at international standards of expected of agricultural statisticians and economists.

- Prototype reports to guide the EW in the formative period of becoming an independent, fully institutionalized policy information system within the GOP.

Further necessary developments for the above potential to be realized include:

- GOP expediency in recruiting and maintaining a full cadre of qualified and experienced Directors and Deputy Directors that will work under the aggressive leadership of the Director General to manage the economic wing as an agricultural policy information system;

- The completion of the long term academic training abroad and the return and placement in responsible postitions of the six EW officer participants in the EW; and

- The provision by the GOP of an annual EW budget adequate to cover the salaries, filling of officer vacancies, reasonable promotions, and further training of EW officers; necessary travel; and computer, office furniture and supplies and other operating cost of the EW.

4.0. DOCUMENTS

AGDAT/PC User's Guide

EPA/EW Annual Work Plans, 190-91, 1991-92, and 1992-93, with mid term revisions.

EPA Quarterly Reports.

Computer Plan (Revised), December 23, 1991.

Economic Wing Computer Inventory, March, 1993.

Economic Wing Mission, Organization, Staffing Plan and Job Descriptions, December 3, 1991.

Pakistan Agricultural Sector Model, 1989-90 Base Year (PASM90), Users Manual, December 10, 1992.

Prototype Wheat Situation and Outlook Report for Pakistan, February 15, 1991.

Purpose of the Economic Wing and Its Subordinate Units, February 15, 1991.

Summary Analysis if Eight Policy Scenarios Using the Pakistan Agricultural Sector Model (PASM90), January 31, 1993.

Training Plan, March 26, 1992.

APPENDIX I

FILE FORMATS FOR THE

ECONOMIC WING MANAGEMENT INFORMATION SYSTEM

Figure 1. Economic Wing Information System Work Plan Activity File Format

```
Directory - AMIS                                File-ACTIVITY
                          I. Identification
ACT. NO.:    DIRECTORATE:     SEC.:     PRIORITY: DATE:
STRATEGY:                    TITLE OR DESCRIPTION:
                          II. Resources
EW STAFF:
SHORT TERM PAKISTANI STAFF (STPS):        PERSON MONTHS STPS:
SHORT TERM EXPATRIATE STAFF (STES):       PERSON MONTHS STES:
PROGRAM CONSTRAINT (None, EW Resources, or GOP initiative):
                          III. Coordination
COORDINATOR:                ADVISOR:
COOPERATING EW - DIRECTORATES/SECTIONS/KEY PERSONS:
COOPERATING ORGANIZATIONS AND/OR PROJECTS/KEY PER
                          IV. Program Detail
POLICY SITUATION AND/OR EW BACKGROUND:  ACTIVITY OBJECTIVE(S):
                          Expected Outputs
ON THE JOB TRAINING:          STUDY TOURS:      SHORT COURSES:
OTHER TRAINING (Explain):           TOTAL TRAINING:
PROTOTYPE REPORTS: SOURCE OF PROTOTYPE REPORTS: OTHER OUTPUTS:
                          Time Frame
START DATE:           COMPLETION DATE:
TIME LINE (Key-W=Working;P=Performance Target;D=Deliverable)
YEAR/MO.-90/JASOND/91/JFMAMJJASOND/92/JFMAMJJASOND/93/JFMAMJ
      Plan:
       TDY:
WORK TO BE UNDERWAY OR COMPLETED THIS QUARTER OR NEXT?:
                          V. EPA Deliverables (D)
1990-91 D:             1991-92 D:             1992-93 D:
                       VI. Monitoring and Evaluation
                          PERFORMANCE TARGETS (PT)
1990-91 PT:            1991-92 PT:            1992-93 PT:
QUARTERLY SUMMARY (Progress this quarter or plans next quarter
EVALUATION OF OUTPUTS RELATIVE TO EXPECTATIONS:
```

Figure 2. Economic Wing Information System Work Unit Purpose Statement Activity File Format

```
==========================================================================
Directory - EWMIS                                        File - PURPOSE
--------------------------------------------------------------------------
Directorate Name                                          Section Name
--------------------------------------------------------------------------
POLICY BACKGROUND:




--------------------------------------------------------------------------
UNIT OBJECTIVES:




--------------------------------------------------------------------------
OPERATIONAL PRODUCTS:




--------------------------------------------------------------------------
UNIT PURPOSE:




==========================================================================
```

Figure 3. Economic Wing Information System Work Unit Purpose Statement Activity File Format

```
================================================================================
                ECONOMIC WING MANAGEMENT INFORMATION SYSTEM
================================================================================
Directory - EWMIS                                  File -JOBDESCR(IPTIONS)
================================================================================
                            IDENTIFICATION
--------------------------------------------------------------------------------

NAME:                       DIRECTORATE:                    SECTION:

POSITION TITLE:

SUPERVISOR:                         TITLE OF SUPERVISOR:

================================================================================
                            UNIT MISSION
--------------------------------------------------------------------------------
DIRECTORATE MISSION:



--------------------------------------------------------------------------------
SECTION PURPOSE:



================================================================================
                            JOB DESCRIPTION
--------------------------------------------------------------------------------
SUMMARY JOB DESCRIPTION:




================================================================================
                            COMMENTS
--------------------------------------------------------------------------------
COMMENTS:

================================================================================
```

Figure 4. Economic Wing Information System Work Unit Purpose Statement Activity File Format

```
)irectory - EWMIS                                                File - JOBSKILL
                          I. IDENTIFICATION
AME:            DIRECTORATE:       SECTION:       POSITION TITLE:
                       II. SUMMARY JOB DESCRIPTION
OB DESCRIPTION:
                       III. TRAINING BACKGROUND
EGREE TRAINING:
THER FORMAL TRAINING (SHORT COURSES ETC.):
                       IV. TRAINING INVENTORY
CODES -- HBY - Held by incumbent; FPL - Needed for full job performance;
         ITN - Incumbent training need.
      -- BAS - Basic level; INT - Intermediate level; SPC - Specialist level
TATISTICS
BASIC DATA CONCEPTS (BDC) - BDC-FPL:        BDC-HBI:        BDC-ITN:
TIME SERIES ANALYSIS(TSA) - TSA-FPL:        TSA-HBI:        TSA-ITN:
CONOMICS
MICROECONOMIC THEORY(MIC) - MIC-FPL:        MIC-HBI:        MIC-ITN:
MACROECONOMIC THEORY(MAC) - MAC-FPL:        MAC-HBI:        MAC-ITN:
PRODUCTION ECONOMICS(PEC) - PEC-FPL:        PEC-HBI:        PEC-ITN:
MARKETING ECONOMICS (MEC) - MEC-FPL:        MEC-HBI:        MEC-ITN:
INTERNATIONAL TRADE (TRD) - TRD-FPL:        TRD-HBI:        TRD-ITN:
AG. PRICE ANALYSIS -(APA) - APA-FPL:        APA-HBI:        APA-ITN:
ESEARCH METHODOLOGY
RESEARCH METHODOLOGY(RMT) - RMT-FPL:        RMT-HBI:        RMT-ITN:
ANAGEMENT
MANAGEMENT.....(MGT) - MGT-FPL:             MGT-HBI:        MGT-ITN:
OMPUTER SKILLS
WORD PROCESSING.....(WDP) - WDP-FPL:        WDP-HBI:        WDP-ITN:
SPREADSHEET.....(SPD) - SPD-FPL:            SPD-HBI:        SPD-ITN:
GRAPHICS.....(GRF) - GRF-FPL:               GRF-HBI:        GRF-ITN:
DATA BASE MANAGEMENT(DBM) - DBM-FPL:        DBM-HBI:        DBM-ITN:
AMIS.....(AMS) - AMS-FPL:                   AMS-HBI:        AMS-ITN:
PPLIDED ECONOMIC RESEARCH AND POLICY ANALYSIS
COMMODITY SIT & OUT.(CSO) - CSO-FPL:        CSO-HBI:        CSO-ITN:
COSTS AND RETURNS.. (CAR) - CAR-FPL:        CAR-HBI:        CAR-ITN:
FARM INCOME EST.... (FIE) - FIE-FPL:        FIE-FPL:        FIE-ITN:
AG. SECTOR ANALYSIS (ASA) - ASA-FPL:        ASA-HBI:        ASA-ITN:
INPUT/OUTPUT ANALYS.(IOA) - IOA-FPL:        IOA-HBI:        IOA-ITN:
MARK. MARG. & BILL..(MMB) - MMB-FPL:        MMB-HBI:        MMB-ITN:
AGRI. PRODUCTIVITY..(AGP) - AGP-FPL:        AGP-HBI:        AGP-ITN:
S THE INCUMBENT PASSED THE "TOFLE" ENGLISH LANGUAGE TEST?:
MMARY TRAINING NEEDS:                  COMMENTS:
```

igure 5. Economic Wing Information System Computer Systems
File Format

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================================================================
IRECTORY - AMIS                                    File - COMPSYST
----------------------------------------------------------------
 SYSTEM NO.:              DIRECTORATE:            SECTION:
 SOURCE:                DATE ACQUIRED:         OWNERSHIP:
 PRINCIPLE USER:              TYPE OF WORK USED FOR:
 COMPUTER BRAND:                COMPUTER MODEL:
 COMPUTER SERIAL NUMBER:        COMPUTER VOLTAGE:
 MEMORY:        HARD DISK SIZE:      MATH CO-PROCESSOR?:
 NUMBER OF INTERNAL FLOPPY DISK DRIVES:
 NUMBER OF EXTERNAL FLOPPY DISK DRIVES:
 OTHER CARDS OR BOARDS:
----------------------------------------------------------------
 KEYBOARD BRAND:                KEYBOARD MODEL:
 KEYBOARD SERIAL NUMBER:
----------------------------------------------------------------
 MONITOR BRAND:                  MONITOR MODEL:
 MONITOR SERIAL NUMBER:
----------------------------------------------------------------
 PRINTER BRAND:                  PRINTER MODEL:
 PRINTER SERIAL NUMBER:          PRINTER VOLTAGE:
----------------------------------------------------------------
 STABILIZER BRAND:               STABILIZER MODEL:
 STABILIZER VOLTAGE:
----------------------------------------------------------------
 UPS BRAND:                      UPS MODEL:
 ELECTRIC BOARD?:                NUMBER OF COMPONENT COVERS:
----------------------------------------------------------------
 COMPONENT SUMMARY:
----------------------------------------------------------------
 MAINTENANCE CONTRACT WITH:
 TELEPHONE NUMBER OF VENDOR:              DATE OF CONTRACT:
 TYPE OF MAINTENANCE CONTRACT (REGULAR OR CALL BASIS):
 DATE COMPUTER WAS LAST SERVICED:
 NUMBER OF TIMES COMPUTER WAS SERVICED DURING THIS CONTRACT PERIOD:
 PARTS REPLACED IN THE COMPUTER SYSTEM:
 COMPUTER BACKUP CAPABILITY:
----------------------------------------------------------------
 COMMENTS:

================================================================
```

APPENDIX II

CONTENTS OF

PAKISTAN AGRICULTURAL STATISTICS

AGRICULTURAL STATISTICS OF PAKISTAN

CONTENTS