

PROGRAM SCHEDULE SHAMALON UNIT (31,399 ACRES)

A Report of Contract Services Performed  
for the  
U. S. Agency for International Development  
(Contract: AID/nesa - 141 - Afghanistan)  
and the  
Helmand-Arghandab Valley Authority  
Royal Government of Afghanistan

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### SUMMARY

The accompanying schedule and this descriptive report cover work of the Program Scheduling Specialist of The J. G. White-Engineering Corporation for the two-year period starting November 10, 1965, completing scheduling services for the U. S. Agency for International Development (USAID) under Contract AID/nesa - 141 (Afghanistan), as amended, and the Helmand Arghandab Valley Authority (HAVA), Royal Government of Afghanistan (RGA).

The schedule shows the major elements of projected operations thought by most to be necessary in the Shamalon Unit for achieving full irrigation development and early economic returns. The projected operations and programs are tabulated in the left column of the schedule with bar lines superimposed on the seven-year quarterly-divided calendar to the right showing when each particular action is to take place.

The Shamalon Unit is located on the west bank of the Helmand River in the Helmand Arghandab Region, in the vicinity of Lashkar Gah in Southern Afghanistan. It consists of 31,399 acres of irrigable land on the first and second terrace levels bordering the river in a gross area approximately 40 miles long by 2-1/2 miles wide.

The schedule has two phases dealing with development of the Shamalon Unit. Phase I is concerned with the physical betterment of lands, including construction, resettlement of the developed lands following construction, and the operation of the irrigation system. Phase II deals primarily with programs for implementation after construction and resettlement are complete, so that prompt and effective utilization of the developed land may be made.

Unresolved Issues. Certain issues remain to be resolved. The issues consist of a broad complex of political, social and economic matters all of which are important to the success of agricultural and rural development in the Shamalon area. While the issues are described in more detail elsewhere in this report, in general they involve population displacement during construction, charges for land improvement, delivery of water to farmers and assessments against users, settlement policies, public health, education, and rural women's activities. The most pressing need is for a sound plan for moving and relocating the rural population before construction begins in early 1968, but preparing such a plan may be difficult to do without solving other related issues.

It is obvious that expanded activity lies immediately ahead for HAVA and RGA in which significant increases in personnel, facilities, and budget will be required.

Recommendations. Because the many unresolved issues are tied up with Afghanistan laws, customs, and regulations it is felt that solutions can best be made by HAVA and RGA. For this reason, it is recommended that the Program Scheduling Committee (described later in the report) be given the continuing responsibility to study the unresolved issues in a thorough, systematic manner and develop early specific recommendations for concurrence by RIA and others.

## BACKGROUND

The scope of services of the Program Scheduling Specialist are described in the original contract as follows:

Within twelve months he shall have completed preparation of a development schedule for the cultivated and uncultivated land of the valley which takes specific account of the current development of processing industries, community services, roads, need for and availability of manpower and budget resources, and the desirability for rapid increase in land productivity.

Under normal circumstances, such an assignment might have been possible. In the Helmand-Arghandab Region, however, detailed programs and clearly defined objectives did not exist. The development of substantive programs, per se was clearly not within the scope of services of the Program Scheduling Specialist.

A long standing major obstacle to the development of the Valley has been the lack of a well-conceived specific plan with clearly defined goals and supporting programs required to achieve the goals. Preparation of plans is slowly materializing but much work of this nature remains to be done. The HAVA Planning and Statistics Division was created in 1966 and is undertaking some planning work, but it has not yet become fully effective. No over-all HAVA-HAVR\* planning agency exists for the preparation of jointly agreed upon plans.

The PIO/T relating to the extension of the contract of The J. G. White Engineering Corporation as well as the amendment modified the services to be performed by the Program Scheduling Specialist to the preparation of:

A complete program schedule of the work required for land development of the 13,310 acre West Shamalon tract. (The West Shamalon schedule will constitute compliance with the scheduling requirement of the previous contract.)

To support the scheduling work, H. E. General President Safi formally appointed a committee on April 12, 1967, replacing an ad hoc committee which had existed earlier. The new committee consists of HAVA officials and the Program Scheduling Specialist and is chaired by Mr. Tawab Assifi, head of the HAVA Technical and Engineering Division. The assignment of the committee as stated in the appointment letter is as follows:

\*Helmand-Arghandab Valley Region (HAVR) is an agency of USAID.

The committee will consider and weigh all available facts, conditions and reports in order to identify the full range of programs and actions necessary to bring the West Shamalon from the present stage through its development to the point where final and effective utilization of the land is realized. This will include for each program or action a starting date, the rate of which the activity is expected to proceed and its anticipated completion date, all properly phased and integrated into a realistic schedule.

The committee has been actively engaged with programs, problems, and solutions. Committee members have been enthusiastic. Several have devoted considerable extra time making special studies bearing on the work of the committee. The committee has done much to bring problems and issues into the open for free discussion. The result has been to stimulate thinking by Afghans toward seeking satisfactory solutions, especially for the broad complex of unresolved social, political, and economic issues affecting all people of the Shamalon area.

Since 1964, a U.S. Bureau of Reclamation water resources team has been on the site carrying out detailed field investigations and technical studies to determine feasibility of development of the Shamalon Unit. The Draft Feasibility Report of the Shamalon Unit, consisting of 31,399 acres of irrigable land in the Helmand-Arghandab Region of Afghanistan, was published in September 1967, and the final edition is expected by January 1, 1968.

The Shamalon Unit is the first area to be ready for physical land betterment under the USAID assistance program to HAVA. Since the intention now is to develop the Shamalon 31,399 acre tract as a unit, and the full energies of both USAID and HAVA are being applied in this direction, it was suggested that the preparation of a realistic schedule of programs for this area would be more meaningful than for the West Shamalon 13,310 acre tract. HAVA has requested such a schedule. USAID has concurred that preparation of a schedule of programs for the whole Shamalon Unit consisting of 31,399 acres would be acceptable as fulfillment of the contractual terms of the Program Scheduling Specialist, since it includes the lesser West Shamalon 13,310 acre tract.

## PHASE I. LAND AND IRRIGATION DEVELOPMENT

Land and irrigation development embraces all of the work required for physically improving and bettering the Shamalon land to make it ready for intensive agricultural use. It starts with examination of the soils to determine which lands are feasible for betterment. It includes construction of the water distribution system, drainage lines, roads, domestic water wells, and preparation of the lands for uniform application of irrigation water. It includes displacement and resettlement of the population, settlement of surplus government lands, and the operation and maintenance of the irrigation system. A great deal of time goes into the preparation of plans for the projected operations required to complete land and irrigation development and most of the cost of development is for construction done in this phase.

### LAND DEVELOPMENT (line 1)

#### FEASIBILITY STUDY (line 2)

A water resources team of the U.S. Bureau of Reclamation has studied the Shamalon area in detail. The record of their work and findings is reported in the Draft Feasibility Study of the Shamalon Unit published September 1967. The final report is expected to be issued by January 1, 1968 showing essentially that development of the Shamalon 31,399 acre tract is economically sound and technically feasible, if carried out in accordance with plans offered in the report.

#### ENGINEERING (line 3)

Topographic surveying (line 4) The field surveying work required to produce the topographic maps of the Shamalon Unit is about 45 percent complete and is expected to be completed by July 1968. These maps will be required for the design and field layout of all irrigation structures.

Design and construction supervision (line 5) Design is concerned primarily with the sizing and shaping of the conduits for carrying water and the leveling of agricultural land for the uniform application of irrigation water. Design is followed by field layout, which construction machinery follows in building the required irrigation structures. Construction supervision provides for periodic field inspections to assure that essential design features and specifications are fulfilled. Design work has not yet started for the Shamalon, although sufficient basic information exists. The decision on how the responsibility for design and construction supervision will be assigned and the personnel required has not been made, but it is anticipated this will be settled at an early date so that design work may be started as soon as possible. By its very nature, design and construction supervision should continue until all project structures have been completed, now estimated to be about January 1, 1973.

HELMAND-ARGHANDAB CONSTRUCTION UNIT (HACU)(line 6)

Loan negotiation (line 7) A \$4.6 million loan has been approved by USAID to provide equipment and technical service for use in a land betterment program in the Helmand-Arghandab Valley. Negotiations between USAID and RGA on the use of this loan is already under way. It is expected that negotiations will be completed by March 15, 1968 making funds available from the loan at that time.

Loan funds become available (line 8) The date that funds from the equipment loan become available is critical. Firm steps in tooling up HACU for performing the required construction are geared to the date that funding begins.

Procuring materials and equipment (line 9) The preparation of detailed lists of spare parts and repair materials required to rehabilitate old construction equipment now on hand will constitute the major part of this activity. Some new equipment and materials are also needed and these lists and the specifications must also be prepared. Following the preparation of lists, bids must be requested from U.S. suppliers and orders placed. The greatest time lag will be consumed in filling the orders by suppliers plus transit time by ocean, rail and truck to the headquarters of HACU. From the beginning of the preparation of lists and specifications until arrival of significant amounts of materials and equipment in Afghanistan at least 12 months will be required, or until about April 1969.

Rehabilitation of old equipment (line 10) During the past year, HACU has been rehabilitating old equipment but because of the shortage of critical spare parts and repair materials, little of this work has been done with the thoroughness required for sustained heavy construction work. Much of the rehabilitation work will have to be redone, following arrival of new spare parts anticipated under the loan. Some equipment remains to be rehabilitated in entirety. Such equipment as is operational can be used now and with its release from other construction projects it can be diverted to the Shamalon area, starting about February 1, 1968. The need for rehabilitation and major repairs of construction equipment will continue through the construction phase of development.

Recruiting foreign personnel (line 11) Both American and third country national (TCN) technicians will be required to reinforce HACU in the technical, administrative, supervisory, and construction fields. Some personnel will be recruited immediately after loan funds become available for use in building up the capability of HACU. Others will be recruited as project requirements demand. Most, if not all, of the foreign personnel will be needed throughout the construction period.

Staffing up and training (line 12) HACU is very short of Afghan personnel, engineers, skilled equipment operators, mechanics, and supervisors. Organizational requirements should be determined at an early date and recruiting and

training of Afghan nationals initiated so that the proper number of people with the right kinds of skills will be on hand when needed. This is a time consuming job of considerable magnitude.

CONSTRUCTION OF CONDUITS, ROADS, LAND LEVELING AND MISCELLANEOUS STRUCTURES (line 13)

Construction of water distribution system, the drainage collection lines, inter-project roads, and the leveling of land constitute the major construction effort and cost of improving the 31,399 acres of land in the Shamalon Unit. Construction cost is expected to average about \$337 per acre, including engineering, overhead, and interest during construction. This work is required so that modern agricultural techniques may be introduced. Construction of a modern irrigation system of itself will not increase agricultural production substantially. It must be followed by a well-conceived plan for increasing agricultural production, using proven techniques and new inputs. Construction, using present HACU equipment, can begin on a modest scale during the first quarter of 1968. The tentative schedule for completion of land improvement is as follows:

1968	1570 acres
1969	6280 acres
1970	7850 acres
1971	7850 acres
1972	7850 acres

Total of 31400 acres to be completed by January 1, 1973.

The general plan is to take over a block of land of a size that can be finished in one year. The population will be relocated during this period so that machinery may operate freely. Upon completion of construction, the people will be returned to the land by a scheme yet to be prepared. During the first year land leveling will start in the south end of the West Shamalon block. Simultaneously the lateral feeding this area will be built. This plan will permit the maximum amount of farm land to be brought into early use with the least disturbance of population.

HANDLING POPULATION DISPLACEMENT DURING CONSTRUCTION (line 14)

There are no accurate records or maps of the Shamalon area showing present owners and the location of land. It is estimated, however, that over 90 percent of the land to be developed is privately owned and that many farms have

been held in the same families for centuries. It is the intention of HAVA to relocate the people on other land during construction, probably in the Darweshan and Marja areas where out-of-project land could be made available for this purpose. The general plan for handling the population seems to be understood by HAVA officials, but details have not been worked out. Hopefully this plan can be prepared in advance of construction, along with the solutions to numerous other problems associated with separating large numbers of people from their lands. Several months advance warning of the government's intention to relocate the population should be given so that wasteful croppings may be avoided and new crops planted in the areas of temporary occupation. This and other sound plans assuring the welfare of the people during construction and prompt return of lands will do much to give agriculture a head start following construction. Since these people will be looked to later for providing dramatic increases in agricultural production, fair and equitable plans, in writing, agreed to in advance by RGA, HAVA, and the land owners and complied with by all concerned will lay the foundation for faith, trust and goodwill needed for progressive development of the area. Moreover, this approach makes good management sense.

Complete Cadastral survey and maps (line 15) Teams from the Cadastral Survey of Afghanistan have been working in the Shamalon area off and on over the past two years. Their purpose is to accurately measure and locate the land using modern survey techniques, to determine present living owners of the land, to issue accurately prepared maps locating farms by metes and bounds, and ultimately through an established court-procedure to issue incontestible registered titles to present owners. The field work of locating boundaries and determining owners in the Shamalon area is about 45 percent complete and some maps have been prepared. It will be important that Cadastral crews complete the records of boundaries and owners in successive blocks ahead of construction for land leveling and new irrigation structures will obliterate most of the land marks presently used by owners to delineate property boundaries. An accurate record of holdings prior to construction is essential for the orderly application of the water rights law and resettlement of the land. Coordination with officials of the Cadastral Survey of Afghanistan will be very important.

Complete plan for relocating population (lines 16 through 19) Only general plans about handling the population during construction have been discussed. No plan for moving the population has been prepared. Since such a plan will require land, personnel, equipment, and funds to implement it, as well as the concurrence of RGA and others, it should be prepared in detail at an early date. In the Shamalon area there may be 30,000 or more people, an equal number of animals, and substantial personal belongings - all of which will require transporting to the area of temporary relocation and back to the place of resettlement upon completion of construction. A system for compensating land owners for crop and livestock losses and loss of land and improvements should be settled on. Construction of laterals, drains, and roads require space and

will use up good land, often buildings, vineyards, and orchards that have required several years to develop and improve. Owners in this category should be compensated for losses. Many of the displaced persons will require assistance with housing, subsistence, and perhaps other needs during construction. An action program should be planned in detail along with the requirements for implementing and carrying out the required action.

#### RESETTLEMENT OF LAND OWNERS (lines 20 through 23)

and

#### SETTLEMENT OF GOVERNMENT LAND (lines 24 through 28)

It is suggested that broad policies and basic principles for settlement of the improved land following construction be determined at an early date. A number of complex issues require attention. Resettlement of present land owners should have first priority, including policy decisions on assignment of land, size of farm, issuance of title, and consolidation of holdings. HAVA now says it intends to apply the Afghanistan law on the exchange of land for water rights. If this is done, the government will come into possession of substantial quantities of land, estimated to be between 9000 and 15,000 acres of Shamalon land. The plan for settling the land obtained under this law should be worked out in detail, including settlers' qualification, land purchase arrangements, size of farm, and assistance to be given. Land tenure rules as applied to both types of settlers should be prepared, including obligation of owners to establish residence on the land, to erect buildings, to pay taxes and assessments, to repay loans, to cultivate and harvest crops and grow live-stock, and accept technical guidance. Further the government should establish conditions under which owners can sell and transfer land, and set the policies for handling changes in land classification, and for dealing with water waste and excessive use of water on land. Further the government should warrant that the condition of land turned over at the time of settlement will meet certain minimum standards, such as the inclusion of turnout structures, roads, and bridges, and assurance that fields are properly leveled and treated for farming, and perhaps other standards as may seem pertinent. If the government intends to recoup the cost of land improvement some system for doing this should be considered in broad terms, even though its application may be some years away.

#### IRRIGATION WORKS OPERATION (lines 29 through 37)

Of continuing importance is the efficient operation and adequate maintenance of the irrigation system which is to be constructed. Numerous policies and basic decisions should be made as to how this will effectively be carried out. The first block of land will be ready for settlement in early 1969. Policies on delivery of water to farms and assessments against water users are yet to be made. Administrative and accounting procedures require planning and organizing. Staffing up of both field and office workers and their training

will require early decision and action. Additional equipment and vehicles will be required for maintenance and operation of the new system being built. An action plan for operation and maintenance (O&M) of the irrigation system and the means for implementing it are urgently needed.

## PHASE II. MAKING EFFECTIVE UTILIZATION OF LAND FOLLOWING DEVELOPMENT

A well-conceived plan for making effective utilization of the developed land is vital to the economic success of the Shamalon Unit. Agricultural, social, and industrial progress must be realized. Objectives of each should be determined and the detailed program requirements planned.

### AGRICULTURAL DEVELOPMENT (line 38)

#### PLANNING INTENSIVE ACTION PROGRAM FOR LAND OWNERS AND SETTLERS (lines 39 through 45)

Significant increases in agricultural production have never been realized in any developing country without a sound agricultural plan backed by an aggressive implementation effort. A general plan for agricultural development in the HAVR is being prepared, but more attention should be given by HAVA to a specific development program for the Shamalon area. With the first group of people being scheduled for settlement in early 1969, it is not too early to give thought to such questions as the agricultural pattern to follow, the package of practices to promote, arranging for material inputs, making credit available, marketing and farmer organizations. If dramatic increases in agricultural production are to be stimulated, these matters require early consideration and a sound intensive action program for land owners and settlers.

#### ORGANIZING IMPLEMENTING EFFORT (Lines 46 through 49)

Failure can be the result of not properly organizing to carry out the action program with farmers. This requires staffing up with the right kind of people, training, organizing, and equipping the agricultural organization to do the job. Six months would be a minimum for putting together the organization required to work effectively with farmers.

#### IMPLEMENTING OF ACTION PLAN (line 50)

Implementation plans should be ready for early 1969, at the time when farmers are being resettled on the first block of newly developed land.

#### RESEARCH (lines 51 through 56)

Initially, the action program for farmers and settlers of the Shamalon area will be determined using the best information available. But many problems will remain which best can be solved by intensive research, feeding the results into the action program as proven results become available. Some research is being done on crop varieties, horticultural plants, and fertilizers. A program to develop hand tools, animal-drawn implements, and simple types of mechanization is intended to be undertaken in 1968. On-the-farm programs in water management practices and improved livestock should be considered. All HAVA agricultural research programs should be reviewed to determine if they are oriented toward developing a viable agriculture for the Shamalon area.

SOCIAL DEVELOPMENT (lines 57 through 66)

Social development envisages the enrichment of the way of life of the rural people. This should be its central theme. It involves improvement of health and sanitary conditions, eliminating illiteracy, making education available to children, and helping rural women achieve their role in bringing about better conditions of home life, more nutritious food and balanced diets. The dual purpose domestic water wells planned for the Shamalon area as part of the land development program will improve the quality of water for human consumption but plans for eliminating human wastes and programs for disease prevention should be combined with it to make an effective health program. The school facilities required to achieve educational objectives should be decided and plans prepared. These needs should be coordinated with the needs of agriculture, O&M, health, and other departments so that maximum multiple use of facilities can be realized. Plans for social development of the Shamalon area should be prepared at an early date so that facilities required in the block of land to be developed in 1968 may be included in construction plans.

INDUSTRIAL DEVELOPMENT (lines 67 through 79)

While irrigated agriculture is the dominant economy of the HAVR and increasing agricultural production will be the central goal for some years to come, further industrial studies should be undertaken at an early date. With installation of hydroelectric generators scheduled to begin in 1973, a course of adequate electric power will be available for industries. Agro-industries, access roads and bridges, and marketing systems and facilities are included on the list of pre-project studies.