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PROJECT PAPER (PP)
SOIL AND WATER RESOURCES SURVEY OF THE
HELMAND-ARGHANDAB VALLEYS

38p.

306-11-120-145

KABUL, AFGHANISTAN
February 14, 1975

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**PROJECT PAPER (PP)
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**SOIL AND WATER RESOURCES SURVEY OF THE
HELMAND-ARGHANDAB VALLEYS**

306-11-120-145

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PROJECT PAPER

SOIL AND WATER RESOURCE SURVEY OF THE HELMAND-ARGHAND VALLEYS

PART I - SUMMARY

A. Summary Information

- | | |
|-------------------------|---|
| 1. Project Title: | Soil and Water Resource Survey of the Helmand-Arghand Valleys |
| 2. Project No. | 306-11-120-145 |
| 3. Cooperating Country: | Afghanistan - Helmand-Arghandab Valley Authority |
| 4. Obligation Span: | Fiscal Year 1975 |
| 5. Implementation Span: | Fiscal Year 1975-1976 |

Note: If it is decided to make this more than a Soil and Water Resource Survey, i.e., a modified Basin Study, the Obligation and Implementation Spans would have to be increased.

B. Project Purpose

The goal of U.S. assistance in Afghanistan is to increase farm incomes. Under the first phase of this project, a soil and water survey of the areas drained, irrigated, or both, by the Helmand-Arghandab Rivers will be conducted with special reference to possible irrigation/drainage/conservation projects already identified as well as to possible projects or project areas discovered during the survey to determine how these resources can best be used and to establish priorities for further investment and development. A preliminary study of agro-industry and marketing opportunities will also be done in Phase I with a view to identifying specific activities for later development.

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Later phases of the project would continue investigation of the soil and water resources of the area and determination of their best possible use and would be expanded to include further studies of and recommendations for the continued industrial, economic, agricultural and social growth of the Helmand-Arghandab Valleys. The later phases of the project will depend on the results of the evaluation conducted after the first nine months of work.

C. Financial Data

1. <u>Total Project Cost</u>	<u>First Phase</u> <u>FY 1975</u> \$000
GOA Contribution	195
USAID Contribution	850
Other Donors	<u>-</u>
Total	\$1,045

Note: In addition to the GOA contribution shown, the HAVA-GOA will be spending upwards of \$2 million on Valley development.

2. <u>A.I.D. Project Cost</u>	<u>First Phase</u> <u>FY 1975</u> \$000
Personnel Costs	525
Commodities	75
Pre-Feasibility Studies	180
Other Costs	<u>160</u>
	\$ 860

3. This project will be financed through a grant to the Government of Afghanistan for the Helmand-Arghandab Valley Authority.

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PROJECT PAPER

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PART I - SUMMARY

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Personnel Costs	525
Commodities	75
Pre-Feasibility Studies	180
Other Costs	100
	\$ 880

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II. PROJECT DESIGN

A. Sector Goal

The goal of this project is to help increase food production over the long run by providing a sound basis for decisions to be made regarding future investment in the Helmand-Arghandab Valleys (HAVR) and to maximize the returns from the soil, water and other resources available. It is expected that this project will result in an over-all report on the soil and water resources of the Arghandab, Tarnak and Helmand River systems down to below Desha which will outline the optimum use of the region's soil and water resources including the potential for new agro-businesses and markets. Later phases of the project will focus on the utilization of other resources and the further economic and social development of the valleys.

It is expected that, as the team evaluates alternatives and establishes priorities, several pre-feasibility surveys may be produced in Phase I. The idea is to conduct a practical, action oriented survey which will clearly identify and form the foundation for the next steps to be taken in preparing sound development projects.

The indicators of progress will be the number and quality of reports produced in the first instance, followed by actual successful completion of a number of the projects recommended in the survey.

B. Project Purpose

The purpose of this project is to help the Government of Afghanistan decide on future programs and investments to be made in the Valley by providing a sound professional basis for such decisions and to establish specific priorities for these programs and investments.

In the first phase, all soil and water resources in the area will be catalogued and evaluated and preliminary determinations will be made as to the optimum use of these resources. This will be particularly important to the settlers in the Valley, many of whom are still without adequate water control, adequate drainage, roads, industry, alternative employment, schools and hospitals and other social

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infrastructure. It will result in recommendations in the first phase as to what investments should be made to improve the irrigation and drainage of the area and what marketing opportunities and agro-industries should be further investigated.

In order to accomplish these purposes, it is assumed that:

1. The farmers will cooperate in improving their own lot in the Valley;
2. The Government of Afghanistan and HAVA will make people available to help conduct the survey;
3. Enough money will be available to pay the local costs of such a survey; and
4. The reports resulting from the survey will be used by the HAVA and the Government to improve its current operational priorities and to focus its future investments more productively.

C. Project Outputs

Under the first phase, a series of recommendations will be made on how the soil and water resources of these Valleys should be used, and a preliminary look at agro-industry and marketing potentials will be carried out. These recommendations will be in the form of:

1. A comprehensive quantitative and qualitative report on the soil and water resources of the area included in the study and their best use. Other reports will be prepared on construction needed to control surface water; the roads and other civil works needed in the area; irrigation methods and techniques recommended; soil and water classification maps; hydrology of the rivers; underground water; quantity and quality of surface and ground water; business and market opportunities; crop recommendations; uses of the land besides for crop production; watershed hydrology; snow pack augmentation; estimates of agricultural inputs needed; etc.;

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2. Pre-feasibility surveys on a few of the most promising projects or project areas, particularly agro-industrial opportunities;

3. A priority listing of all identified projects or project areas, either already identified or identified by the team, which will take into account the potential profitability of the project and its value to the country; and

4. A preliminary survey of agro-industry and marketing potentials will be carried out. It should identify specific activities to be acted upon under Phase II, or to be the subject of separate feasibility studies.

An indicator of outputs will be the reports and recommendations prepared and submitted to HAVA, the Government of Afghanistan and USAID, as well as the action taken over time to carry out the projects identified.

A second phase of this project would result in the publication of reports on other aspects of the region, eventually resulting in a total Basin Survey.

D. Project Inputs

1. Personnel

a. USAID

No. of Man-Months

(1) Agricultural Economist
(Chief of Party and responsible for making judgments on economic feasibility of ideas prepared by other team members) 12

(2) Irrigation Engineer
(Checks on feasibility of proposed construction and aspects of water storage, collection, transport and removal) 12

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No. of Man-Months

- | | |
|--|--------|
| (3) Irrigation Engineer
(Responsible for information developed on water use on the farm and for livestock) | 12 |
| (4) Soil Surveyor and Land Classifier
(Collects soil and water samples, tests them for physical and chemical properties, makes soils maps and recommends optimum use of soil and water) | 12 |
| (5) Ground Water Hydrologist
(Investigates underground water availability, depth, quality, flows and recharge rates) | 6 to 9 |
| (6) Agro-Industry Expert
(Looks at industrial potential of the area in relation to agriculture) | 6 |
| (7) Marketing Expert
(Determines domestic and export market potential of agricultural products from the area) | 6 |

In addition to these seven people, two years of short-term consultants' time in disciplines such as agronomy, food processing, horticulture, animal husbandry, demography, agricultural credit, agricultural engineering, agricultural economics, rural sociology, etc. will be made available as needed.

u. Government of Afghanistan, HAVA and the Government of Afghanistan will supply two or three counterparts for each of the foreign experts mentioned above. It is expected that:

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- (1) One of the Afghan counterparts for each American will be an experienced technician;
- (2) One of the Afghan workers in each discipline will be a new employee who has recently graduated from a recognized university in an appropriate faculty (See Appendix A); and
- (3) Experts on short-term assignment to the project will be procured from other ministries of the Government of Afghanistan and with the exception of the college graduates, (2) above, all should have at least 10 to 15 years' practical experience and should be well trained and qualified.

2. Equipment

Two or three Rotary Drills for Water Well drilling.

Blueprinting machine

Spare parts for office equipment

Calculators

Typewriters

Stationery

Laboratory equipment for Soil and Water Testing

Electronic tape for measuring DM 30 (Cubic Corporation or equivalent)

Surveying equipment, transits and levels

Field equipment for Soil and Water Testing

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House trailers or tents (for out-stations - Garmse)l

Water measurement equipment

Scientific equipment for groundwater investigations

Small bore-drilling rig for groundwater tests

The Government of Afghanistan and HAVA will supply practically all of the above, with the exception of (1) vehicles, (2) electronic measuring tape, (3) calculators, (4) some equipment for soil and water testing, (5) small-bore drilling rig, and (6) some of the scientific equipment for ground water testing. We expect that the vehicles will be rented from a local source* and would expect to supply a few calculators, the electronic tape and some of the other scientific equipment needed and not available in the country at a level not to exceed \$75 thousand.

All of the imported equipment would have to be brought in at the same time as the survey team so as to be available when work on the project is started.

It is also likely that an instrument repair man or two would be needed for a short time to make some of the existing equipment operational.

The project will be monitored by personnel already on the USAID staff, or to be employed under another project currently being considered.

3. Housing and Other Support

While not yet negotiated with the HAVA, that organization is expected to furnish housing and office space.

E. Justification for the Project

A.I.D. has assisted with the development of the Helmand Valley for over twenty years. During this time, hundreds of specialized

* or supplied from USAID sources.

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reports have been prepared but most of them have been based on two or three reports prepared in the late 1940's or early 1950's. During this time, HAVA, the Government of Afghanistan and USAID have cooperated to build a large irrigation system. Much of the infrastructure has been completed, the dams have been built and many settlers have been and are being put on the land. Now, there is a critical need for a new base line study to evaluate the soil and water resources of the Valleys and to establish priorities for its further development. It is believed that it would be a mistake to rely on some of the projections contained in the old reports which are out of date and which could be highly misleading.

F. Significance of the Project

At present the Government of Afghanistan does not know what the real over-all situation in the Valley is. Many experienced people, of course, believe that in many ways the progress has been excellent; others say that the project has not been as successful as it should have been; all agree that the development job in the Valley has not been completed. However, apart from the need to complete the drainage and related irrigation works, there is little agreement as to what should be done next. There is general agreement that the drainage of the area should be improved, that salinity should be controlled, that more roads should be built, that schools and hospitals should be established, that export crops and crops lending themselves to the development of industry should be produced, and so on. Unfortunately, there is no firm data which can be used as a basis for making sound decisions on which kind of activity should be embarked on next, in what time phase and how large the effort should be. There is no information as to the size of the problems facing the Valley and its inhabitants, and there has yet been little effort to establish an agro-industry base in the area. Therefore, this project is designed to supply needed accurate information on the present situation in the Valley concerning its soil and water resources and to suggest the best line of attack to solve the area's development problems and to increase incomes of the farmers.

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III. IMPLEMENTATION AND EVALUATION

A. The Implementation Plan

This is expected to be a one-year project (Phase I) with the possibility that if the results achieved are up to the expectations of the Government of Afghanistan and USAID, the survey will be continued and enlarged to cover all aspects of the Valley's development. The first phase of the project would yield a soil and water resource study. The study will include both an inventory of existing resources and a series of recommendations for their optimum use, plus some preliminary information on specific agro-industry and marketing opportunities.

As soon as the project is approved by AID/Washington and a Project Agreement is signed with the Government of Afghanistan, we would expect to advertise for a Request for Proposal (RFP) shortly before the end of Fiscal Year 1975. The responses to the RFP would be studied in detail by the Joint HAVA/USAID Planning Committee and would be reviewed by the Government of Afghanistan. We would then request AID/W to negotiate a contract with the successful proposer. With his proposal, each bidder would be expected to submit bio-data on the long-term employees they expect to put in the field. The qualifications of the employees proposed would be an important factor in the decision as to which prospective contractor would be selected. Immediately upon selection and signing of the contract, the contractor would commence getting his people ready for overseas service. He would be authorized to purchase up to \$75 thousand worth of equipment as needed for conducting the survey. Upon arrival in Afghanistan the team would be briefed by the Ministry of Planning and the Ministry of Agriculture and Irrigation of the Government of Afghanistan and by the USAID and the American Embassy in Kabul. They would then proceed to Lashkar Gah where they will be established in housing belonging to HAVA, but supplied to USAID, with household furnishings and maintenance supplied by USAID. Upon their arrival they would immediately get together with their counterparts (two for each

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American technician), to plan their detailed course of work. Regarding the project's geographic parameters, the survey will cover the soil and water resources of the whole Helmand Valley from central Bamyan through Orusgan to Helmand down to a point about mid-way between Desbu and Kwaja-Ali. It would cover the Arghandab and Tarnak Rivers from their points of origin in Wardak and Paktia, through Ghazni, Kabul and Kandahar Provinces, to the junction of the Arghandab River with the Helmand River near Qali-Bist.

The precipitation and snow pack data will be gathered in the higher areas in these river valleys and the soils and water in all of the areas will be tested and evaluated for quantity and quality. Proceeding down stream, the soils in Kandahar and Helmand will be tested and the underground water supply will be evaluated in the area generally between the Helmand and Arghandab Rivers.

After collecting the necessary data, which we estimate will take about six to nine months, the team will evaluate the data collected and begin making their recommendations as to optimizing the use of these resources. As they proceed with the analysis of the data collected, they will undoubtedly discover possible projects or project areas which look especially promising. If sufficient detail upon which to make decisions is not available on the potential project, the Team will prepare a pre-feasibility survey on the area. When the pre-feasibility survey is finished, it will be turned over to the HAVA and USAID for their judgment as to the potential value of conducting a full feasibility survey.

As the work progresses and interesting projects suggest themselves, the team - with the concurrence of HAVA and USAID - will bring in up to 24 man-months of consultants' time for detailed examination of some of the more promising looking projects and activities which, while not a part of the soil and water survey, would be closely allied to it and would be a part of the final report.

After 10 months of work the project will be jointly evaluated by USAID, HAVA, the Government of Afghanistan and AID/Washington

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to determine if the results warrant a second phase to dig more deeply into the related aspects of a basin survey. The second phase might include a study of the human resources in the area as well as the geological resources, and provide specific studies for appropriate agro-industries which could and should be initiated in the valleys.

B. Reporting

This project will be monitored by a full-time direct hire employee of USAID/Afghanistan and in addition, the project leader will submit a monthly report in five copies each to USAID and HAVA.

Quarterly reports will be prepared by each technician which will in turn be consolidated into a team report and submitted in 10 copies each to the USAID, HAVA and the GOA. Upon completion of the Third Quarter a report, due within 10 days after the end of the quarter, of progress to date and expected success in accomplishing the objectives of the project will be submitted in 10 copies to each agency. This report is to be used as the basis for evaluation of the project and for making a determination as to whether the project is to be continued into the second and succeeding phases.

Upon completion of the project, the final report including the complete inventory of the soil and water resources of the area and specific recommendations as to their best use as well as suggestions for agro-industry and marketing development will be made in 20 copies to each of the above-mentioned agencies.

In addition, special pre-feasibility and other reports as requested by AID and HAVA will be submitted in 20 copies to each agency.

C. Evaluation

Upon completion of nine months of work, the contractor will prepare a report (third quarter report) utilizing the progress to date and expected progress during the final three months of the contract.

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This report is to be used as a basis for evaluating the project and determining whether it should be continued for one or more additional years. Upon completion of the project and the submission of all reports, a final evaluation will be held of the project to determine what course of action should be taken in regard to recommendations made by the contractor. All special reports and other activities engaged in by the contract team will be considered in the evaluations.

In addition to these formal evaluations, the project will be monitored on an almost daily basis by a U.S. direct-hire employee of AID and by the Chief of the Technical Division of HAVA. Any problems discovered during the process of monitoring or evaluation will be taken up promptly by appropriate officers in HAVA and USAID.

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IV. PROJECT ANALYSIS

A. Background

1. Development of the Proposal. Over the last year and a half, the Mission has been asked several times by the President of the Republic, the Deputy Prime Minister, the Minister of Plan and the Deputy Minister of Agriculture and Irrigation to consider "going back into the Valley." In response, we have said that we would be happy to look at a proposal but that we were not inclined "to go back in" playing our previous role, i.e., that of general caretaker and supporter.

The President of HAVA then suggested an assessment of the work done in the Valley to be used as a base point from which to consider new project possibilities. A.I.D. assigned a team of technicians to work on the assessment along with the Afghans. However, when the work was about finished, the President of HAVA, because of internal difficulties, was unable to forward the assessment to the central government.

Later on, it was suggested to the Minister of Plan that while the USAID might not be able to finance it, the Government of Afghanistan should consider conducting an over-all Basin Study of the Helmand River System. This study should include an inventory of all resources of the Valley and make a determination as to how these resources could best be used. The Indus Basin and the Mekong Delta studies were used as examples of the type of study that might be done. It was made clear that while USAID probably would not finance such a study, we would be glad to help them plan for it and to find other donor financing.

The Minister of Plan said that he wanted the U.S. to conduct the study and, with the concurrence of the Cabinet, asked Assistant Administrator Nooter, during a recent visit to Kabul, for help. The Assistant Administrator said that AID might be able to help with such a study but would not be able to do the whole job - which as described might have taken three or four years and cost \$4 million. He suggested that a reduced geographical area (the

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three eastern rivers of the Helmand system) and a reduced number of items be studied.

This suggestion was accepted by the central government. The proposal was reviewed then with the Governor of Helmand Province and President of HAVA, Mr. Sherzai, and by the USAID Director. They formed a joint committee to draft a project design and a brief scope of work including the outputs expected and the inputs needed. This Project Proposal is built around the joint report of this committee.

2. Cooperating Country Activity. For a detailed history of the Helmand-Arghandab Valley Region, please see the following reports: Helmand-Arghandab Valley - General Overview, Project Areas, Past and Present Irrigation, Cost Estimates for Completion, by Sanford Candill, Irrigation and Planning Advisor, USAID/Kabul, December 1974; Audit Report, Comprehensive Review of United States Assistance in the Helmand-Arghandab Valley Region (HAVA), Afghanistan, October 31, 1972, Office of the Auditor General, Area Auditor General - Near East, A.I.D.; Sector Analysis, Helmand-Arghandab Valley Region, An Analysis by Lloyd Baron, and Project Proposal by David Levintow, USAID, Kabul, February 1973.

Briefly, the GOA has been interested in developing the Helmand Valley since 1902. Prior to World War II, with the assistance of the Japanese and the Germans, work was started on the system by just building the Seraj and part of the Bogra Canals. After the war, the government borrowed \$39.5 million from the U.S. Export-Import Bank, hired Morrison-Knudsen to build two dams and to continue with the development work. Shortly after these loans were consummated, A.I.D. began to be involved in the development, assuming a larger and larger role in the irrigation and agricultural aspects of development.

The Helmand-Arghandab Valley Authority (HAVA) was established as a fully autonomous organization but over the years it has lost a great deal of its autonomy and at various times has reported to the Government through the Ministry of Plan, the Ministry of

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Agriculture and Irrigation and/or the Ministry of the Interior. Up to June 30, 1974, the Government has spent the equivalent of about \$120 million in developing the area. HAVA's budget currently is running about 134 million afi, and it expects to have a budget of 155 million afi next year (1354). Past budgets have included all development activities in the Valley including health, education and other social services, as well as the purely agricultural and irrigation development activities. This year the education budget is separated out so that the perspective budget represents an actual increase of about \$1 million over previous budgets.

3. Prior A.I.D. Experience. Over the 20-year period that A.I.D. has been involved in this project area, we have spent in the neighborhood of \$90 million, \$20 million of which has been in the form of grants. Of the loans, about \$25.5 million have been in support of electric power generation and transmission systems, most of which will not begin to pay off for another two or three years. As a result of this large investment, Afghanistan now has two large dams, the Kajakul and Arghandab, a hydro-power plant soon to go into production, roads, canals, drains, schools and a hospital, a functioning administrative organization (the HAVA) and a construction organization rated as the best in the country (HACU).

The irrigated area has increased from 180 thousand acres in 1950 to about 396 thousand acres in 1974; double cropping has increased from 34,000 acres to 185,000 acres during the same period. As the water supply has been extended to new areas, HAVA, with A.I.D. assistance, has taught the farmers new techniques and production has increased rapidly. Fertilizer sales have expanded to the point that about one-third of the fertilizer used in the country is consumed in this area. Crop production has increased three and four-fold, both because of increased yields and increased area, and the production of high value crops has increased dramatically.

Insofar as other donors are concerned, to date they have made a very small contribution. The Asian Development Bank (ADB) has approved loans to construct a highway through the area and to

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install flood control gates on Kajakai Dam. The early Japanese and German experience resulted only in the construction of parts of two major canals, and was done so long ago that little record of their activities exists today.

4. Studies. Literally hundreds of limited and specialized studies have been conducted on the area, many of them very good. (See especially the three mentioned in Para 3 above). In addition, the Asian Development Bank is planning a survey of the Upper Helmand to determine which areas are best suited for irrigation, rehabilitation and irrigation extension as a result of the installation of the Kajakai flood gates. The feasibility of the gate project depends on rehabilitation of about 26,000 hectares and extension of irrigation on about 20,000 hectares in the present project area. Steps will be taken to ensure that this proposed survey project does not overlap with the ADB study. Close liaison and coordination will be maintained with the ADB effort.

As mentioned elsewhere, this present study is designed to establish a base line for determining what the real situation is in the Valley and how the available resources can best be used.

5. View of The Country Team and Other Donors. The Country Team and other donors are unanimous in believing that a base line study of the total resources in the Valley is needed and approve of this project as a start in that direction.

6. Project Development Team

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Mr. Vincent W. Brown

Director, USAID

Governor Sherzai

Governor and President
of HAVA

Mr. Abdul Ghaffar Shuja

Director General of
Operations &
Maintenance, HAVA

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Mr. Rashid	Maintenance, HAVA
Mr. A. Z. Morshidi	President of Planning, Ministry of Plan
Mr. Mohammad Sufi	Director General, Agriculture Dept, HAVA
Mr. Aziz Gul	Director General of Planning & Statistics, HAVA
Mr. Mehrabuddin Formali	Director General, Planning, Technical Department, HAVA
Mr. Mir Ayub	USAID/Kabul, Program Specialist
Mr. Enayet Seraj	USAID/Kabul, Special Assistant to the Director
Dr. Raymond Hooker	USAID/Kabul, Senior Economist
Mr. Zariel Tyson	Agricultural Engineering Advisor, USAID/Kabul
Mr. John Wilson	Chief, Food and Agriculture Officer, USAID/Kabul

B. Economic Analysis

It is very difficult to ascribe a definite economic return to this project, since its objective is to produce reports that will improve the decision-making capability of the Government in regards to the development of the Southeastern quarter of the country. As a result of this project, we expect that 1) better and more economic projects will be identified for external financing and relative priorities will be established; 2) donor confidence will be increased so that money will be more readily available for projects in the area; 3) sound projects

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will be planned, financed and executed; 4) labor will be used more productively; 5) new crops will be introduced; 6) since there will be less chance for error, and the projects undertaken will be complementary, utilization of resources will become more efficient.

C. Financial Analysis

It is anticipated that A.I.D. will supply during the first phase of the project about seven and a half man-years of time worth about \$525,000, about \$75,000 worth of commodities, \$150,000 for pre-feasibility studies on projects having a very high potential pay-off, and \$100,000 for project support and other costs.

The HAVA will supply about 25 man-years of time worth the equivalent of \$20,000; housing worth \$25,000 per year; equipment worth about \$75,000; and miscellaneous contributions of about \$75,000 to this specific activity. In addition, it will backstop the whole effort, providing reports, secretarial services, administrative support and other services. As noted earlier, the development budget of HAVA is expected to be about 155 million afa during the year 1954. This will all be used in the area covered by this survey.

For this investment, it is expected that several times its value will be received through more efficient use of resources required for the most promising projects; from increased production, new crops and industries; and by savings to GOA and foreign donors in a reduction of low pay-off projects.

D. Social Analysis

While the HAVR is one of the richest regions in the country, the farmers, especially the settlers, are among the poorest. Many of them are former landless peasants and nomads who are being put on land for the first time. Other settlers are sons of large families being forced off their family's usual land by the pressure of population growth and others are being forced out of their original home lands by such factors as waterlogging, salinity or construction projects. As a result, the settlers are generally of mixed origins in each segment of the

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project and most are very poor, without family relations to help support them. This project will help identify the most pressing problems of these people and the solutions to them which might be amenable to external financing. This project, in the long run should improve the social situation in the Valley materially.

E. Policy and Administration Analysis

This project will help ^{improve} the policies affecting the Valley and the administration of its affairs.

F. Technical Analysis

While this project will cover a number of technical disciplines, its main thrust is to be a rather straight forward inventory of the soil- and water resources of the region and the development of recommendations as to their use, and on the development of agro-industry and marketing opportunities suitable to the region. Therefore the technical- professional aspects of the project are not expected to be particularly troublesome.

However, because of the elevation of the catchment areas and the lack of roads in the region, most of the work at elevations above 6000 feet will have to be done in the summer and fall. During the winter and spring the roads are impassable. Food and water will also have to be carried whenever the experts are away from the main towns of Kabul, Kandahar and Lashkar Gah. It is also true that some types of production help for preparing reports, such as artists, editors, typists, etc., are not easily available.

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APPENDIX A

The HAVA Government has requisitioned the following number of new employees who will graduate from Kabul University in 1975.

(Application to CSO for Personnel Required in the Year 1354)

1.	Faculty of Agriculture	6
2.	Faculty of Engineering	8
3.	Faculty of Science, Minns, Chemistry	2
4.	Faculty of Economics	6
5.	Faculty of Law	2
6.	Faculty of PolyTechnic- Civil	3

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APPENDIX B

Illustrative List of
POSSIBLE PROJECTS IDENTIFIED BY THE HAVA STAFF

<u>Item</u>	<u>Projects</u>	<u>Total Area in Hectares</u>	<u>Location</u>
1	Kajakai (Irrigation)	1,000	Upper Helmand
2	Garm-Ab-Saraj (Catchment Basin & Diversion)	41,000	Upper Helmand
3	* Kala-i-Gasto Shamalan (Irrigation)	14,945	Upper Helmand
4	Nad-i-All (including T.O. Si Beghra) (Irrigation and drainage)	11,825	Upper Helmand
5	Marja (including outside project) (Irrigation and drainage)	14,275	Upper Helmand
6	Shamalan (Irrigation and drainage)	32,305	Upper Helmand
7	Darveshan (Irrigation and drainage)	35,193	Upper Helmand
8	Khanashin & Doshoo (Diversion and Irrigation)	33,766	Upper Helmand
9	Musa Kala (Flood control)	21,000	Tributaries of Helmand
Total of Upper Helmand		205,309	
10	North Arghandab (Drainage)	28,207	Arghandab
11	Tarnak (Irrigation and drainage)	42,920	Arghandab
12	Arghandab New Reservoir above existing reservoir (Dam)		
Grand Total		274,436 Hectares	

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Note: Central Arghandab is not included.

* Kala-i-Gas, Sheerabi, Dah Adaw Khan, Malgeer, BaBa-G

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APPENDIX C

LOGICAL FRAMEWORK

Goal

To increase the level of Agricultural Productivity and Production in Afghanistan (especially in the HAVR) by providing a sound base for rational selection on a priority basis of projects for economic and social value.

A. Indicators

1. Selection of sound projects for financing and implementation which will result in increased production in the valleys as measured by:

a) wheat and maize exports; b) increased exports of fruit, vegetables and miscellaneous horticultural products; c) increased production of cotton to the extent that additional ginneries are required; d) introduction of new agro-industries to use surplus productive capacity such as canneries, drying plants and best sugar mills.

B. Assumptions

1. That the water supply in the area will be at least 90 percent of normal;
2. No disease or insect epidemic will develop to reduce yields of the better varieties more than 5 percent below that now received;
3. It will continue to be profitable to use fertilizers on all commercial crops.
4. Investment capital for agro-industry and marketing ventures is available.

THE PROJECT

A. Project Purpose

To provide a sound basis for decisions regarding future investments to be made in the area to maximize the returns from the available soil and water resources.

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B. Indicators

1. A detailed operational report on the quantity and quality of water and soil available in the region and detailed recommendations as to how they can best be used.

2. PFT-Feasibility surveys completed on several high priority project areas with a good potential for profit to the farmers in the region and the country as a whole.

3. Complete feasibility surveys conducted on one or two possible projects which offer promise of having a very high pay off - say a benefit-cost ratio of at least 2:1 in a short time - less than three or four years.

4. Projects started on the basis of information developed by this project.

C. Assumptions

1. That the HAVA and the GOA will accept the recommendations made by the survey team.

2. That the HAVA can find local experts to help in conducting the survey and to guide the recommendations into channels achievable by the Afghans.

3. That the Government of Afghanistan will provide the funds necessary to carry out at least the highest priority recommendations of the survey team.

4. That the farmers in the area will cooperate in carrying out the recommendations of the team.

5. That money necessary for credit and other implementation costs will be available as needed.

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OUTPUTS

A. Project Outputs

The major output of this project will be a report encompassing a quantitative and qualitative inventory of the soil and water resources of the area and a series of recommendations as to how they can best be used. An overall look at agro-industry and marketing prospects including specific activities to be followed up will be included. A secondary output will be a trained staff.

B. Indicators

Reports on:

1. Soil and water availability and quality.
2. Pre-feasibility surveys on actual potential projects.
3. Overall survey and report on agro-industry and marketing.
4. Recommendations as to best use of resources.
5. Acceptance of suggestions.
6. Staff of at least 10 trained to conduct reconnaissance and pre-feasibility surveys.

C. Assumptions

1. That counterpart staff will be available as programmed.
2. That equipment as needed will be made available.
3. That the HAVA budget will be adequate to conduct the survey.
4. That the reports will be accepted and acted upon.

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2/14/1975PAGE **26** of **33** PAGES**INPUTS**

In view of rapidly rising costs, the estimates below are preliminary and may be subject to change during project development:

A. 1. U.S. Inputs. We expect that the U.S. will make available the services of up to seven technicians during the year, five for the full year, and up to two years of short-term consultants' time to consummate the project. The full-time consultants are expected to be recruited in the following disciplines:

- a. Economics
- b. Civil Engineering
- c. Irrigation Engineering
- d. Soil Survey and Classification
- e. Groundwater Hydrology
- f. Agro-industries
- g. Marketing

In addition, we expect to make up to 24 man-months of short term consultants' time available.

In terms of commodities, we expect the U.S. to supply vehicular, in-country transportation (routed), some instrument spare parts, an electronic measuring tape, calculators, office equipment and other scientific equipment and repair facilities up to the value of \$75,000. It may be necessary to supply a small bore rotary drill, either hand held or jeep mounted, for underground water exploration costing about \$20,000.

The personnel are expected to cost around \$525,000, commodities about \$75,000 or more depending on whether a small bore drill is available in-country or not. In addition, about \$150,000 will be made available for conducting one or two high payoff pre-feasibility surveys and about \$100,000 will be needed for project support costs.

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2. Government of Afghanistan Inputs. The GOA and/or HAVA will supply two or three counterparts for each American technician. One of the counterparts in each discipline will be a newly-employed university graduate from an appropriate faculty and at least one of the counterparts will be a fully trained experienced officer in the corresponding discipline. In addition, the Government of Afghanistan/HAVA will supply the necessary drilling rigs, drafting and surveying equipment, most office equipment, and the necessary laboratory equipment to accomplish the team's mission.

B. Indicators

1. U.S.

- The presence of the survey team in-country;
- Commodities in-country;
- Project budget obligated.

2. Afghanistan

- Office space and equipment provided;
- Counterparts in place;
- Budget approved;
- Ministry of Planning approval of project.

C. Assumptions

1. Some counterparts will not be regular employees of HAVA;
2. All counterparts will be highly knowledgeable about the area and experienced in their own disciplines;
3. Counterparts and equipment will be the best available;

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4. All counterparts will be English speaking, otherwise the GOA will provide translators/interpreters;

5. All equipment supplied can/will be made operational during the first month of the project.

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APPENDIX D

Environmental Impact

The net effect of the project itself will be nil as far as the environment is concerned. However, if the proper recommendations are made and followed, the physical environment of the Valleys as well as their social and economic environment will be improved.

APPENDIX E

DIRECTOR'S CERTIFICATION OF 25 PERCENT REQUIREMENT

HAVA's development budget for 1353 (1974/75) is a/s 134 million (\$2.23 million). A development budget of a/s 155 million (\$2.58 million) has been agreed to by the Ministry of Planning for 1975/76 and a budget of a/s 188 million (\$3.13 million) is projected by HAVA for 1355 (1976/77).

The development expenditures that are relevant to this project are shown below.

Projected HAVA Development Budget Line Items

GOA (HAVA)	1353 <u>1974/75</u>		1354 <u>1975/76</u>		1355 <u>1976/77</u>	
Planning		4.4		5.5		8.0
Land Development		49.0		54.9		80.0
Maintenance		21.0		20.0		20.0
Agricultural Development		15.0		20.0		20.0
Green Forces		3.5		3.7		4.0
Marja Farm		-		3.6		4.0
Settlement Program		<u>0.7</u>		<u>1.6</u>		<u>1.6</u>
TOTAL (a/s millions)		92.6		109.3		137.6
TOTAL (\$ millions equivalent)	1.54	45.4%	1.82	31.8%	2.29	53.4%
AID (\$ millions)						
Drainage & Water Mgt		1.0		54.6%		
Soil & Water Survey		.85		3.9		68.2%
TOTAL		<u>3.39</u>		<u>5.72</u>		<u>4.29</u>

The value of the Afghanistan Government's contribution through HAVA which is supportive of the Drainage and Water Management and the Soil and Water Sources Survey projects equal 42.2 percent during the FY-1975-1977 period of active AID involvement. A written assurance that this contribution will not decrease below 25 percent of the total project cost will be received prior to or as part of the Project Agreement.

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Vincent W. Brown
 Vincent W. Brown, Director
 USAID Mission to Afghanistan
 (date)

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2/14/1975PAGE **31** of **33** PAGES**APPENDIX F****COPY****MINISTRY OF PLANNING
SECRETARIAT****February 12, 1975****No. 88****Republic of Afghanistan
Kabul****Mr. Vincent W. Brown
Director
United States Aid Mission to Afghanistan
Kabul, Afghanistan****Dear Mr. Brown:**

As a result of suggestions made by the Joint Afghanistan-United States Helmand Planning Committee set up during the visit of Mr. Parker and Mr. Nooter, we request that the United States of America give us grant assistance leading to the further development of the Upper Helmand and Arghandab Valley Region.

The assistance so requested will have to meet the urgent requirement of the two important objectives explained hereunder.

(a) As was pointed out to Mr. Parker and Mr. Nooter, the drainage situation in the Valley is quite serious, and more assistance is needed in order to complete this vital part of the work. We, therefore, request that you assist us in the Upper Helmand Drainage and Irrigation Improvement Project which would involve rehabilitating many of the lateral and farm drains, building new farm drains, revising and bringing up to date the major drainage plan and installing new major drains.

In order to accomplish this task we will need the services of your experts to provide technical assistance, some old equipment repaired and new equipment purchased, and some training with emphasis on-the-job training. Any assistance that you can give us over the next few years in this regard will be greatly appreciated.

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We expect that, when this improved drainage system is completed and when the farmers are taught how to better manage the use of water, yields will be increased by over 100 percent.

(b) As you are aware, the United States has assisted in the development of the area for over twenty years but the job is not yet completed. However, it is recommended that the creation of a system to select a project for completing work in the Upper Helmand and for determining priorities of investment in that area seems to be an urgent requirement. We, therefore, request that you assist us in conducting a soil and water survey of the Upper Helmand, Arghandab and Tarnak River Basins, including their draining areas on the high plateau which serve as a source of the water for these rivers down to Deahu. In the first phase, we would like to have this survey inventory the soil and water resources of the river basin and make recommendations as to their optimum use. Since we would like to have this survey be immediately useful, we would expect the team conducting it to not only do the main survey but, as useful projects are unearthed, we would like them to do the pre-feasibility surveys and, perhaps, a number of feasibility surveys on the project areas that look to be highly profitable immediately.

In the second and later phases of this survey, other aspects of the area could be investigated which, hopefully, would lead to something approaching a total basin survey over time and would include not only the soil and water resources but all resources in the Upper Helmand area. The recommendations made would include plans for the optimum development of the Upper Helmand and would focus on Agriculture, Agro-based Industries, Power, Irrigation and other Social Services including Education and Public Health.

In order to complete this work we will need several experts to provide technical assistance, and some survey and other necessary equipments.

This project should be started as soon as possible because its completion is essential to establish priorities among possible

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future investments in the Upper Helmand and we need the recommendations to guide our own future development actions.

In view of the fact that intensification of development activities in the Upper Helmand has the top priority with the Republic Government of Afghanistan, we would, therefore, appreciate your early consideration of our request.

Yours sincerely,

/s/ A. A. Ferogh

A. A. Ferogh
Deputy Minister of Planning

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