



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
HELMAND ARGHANDAB VALLEY DEVELOPMENT PROJECT
LASHKAR GAH, AFGHANISTAN
May 14, 1973

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DESIC

From: J. K. Shankland, Project Manager, Bureau of Reclamation,
Lashkar Gah, Afghanistan

Subject: End of Tour Report - Afghanistan, Project No. 4

I arrived in Afghanistan on November 16, 1970, and will conclude my two and half year tour on or about May 15, 1973. At the time of my arrival there were two Bureau of Reclamation groups in the country - a four-man team in Kabul and a ten-man team in Lashkar Gah. The Kabul office was closed in August 1971. The Lashkar Gah Team consists of 11 men at present. Five are Grant Funded and 6 Loan Funded. Both of these teams were under the supervision of the Project Manager.

The principal duties of the teams are to advise and train the Afghans to prepare engineering designs, and to perform construction supervision, inspection and contract administration functions in the constructing of irrigation facilities. In addition 3 men are assigned to advise and train IMA's personnel to operate and maintain existing equipment and irrigation facilities. The Kabul group worked mainly with the Ministry of Agriculture and the Lashkar team with personnel of the Helmand-Arghandab Valley Authority (HAVA), and the Helmand-Arghandab Construction Unit (HACU).

One of the more important vehicles for training is the design and construction of distribution and drainage systems and the land development on the Shamalan Project which contains about 42,000 acres. At the time of my arrival, designs for the first 4.6 Kilometers and the headworks for the S10.7 Lateral were underway. The construction contract for this first reach was executed March 2, 1971 and a token construction start made in May 1971. Prior to May, extensive work with HAVA and HACU officials was carried out to complete the Conditions Precedent to disbursements (CP's) under Loan 306-H-012.

The CP's plus a letter from Governor Bessa stating that the Shimalan area farmers were generally in accord with the Project were approved by AID/W on August 26, 1971. Construction started in earnest on the SLO.7 Lateral September 1, 1971. Taking into consideration the age and condition of the construction equipment, progress has been good. As of May 15, 1973, approximately 17 KM's of the Lateral had been essentially completed. Through weekly meetings a spirit of cooperation has been developed between HACU Construction personnel and HAVA's engineers, inspectors and contract administration.

The quality of the design and construction on the SLO.7 Lateral has been excellent. A hard core of engineers, inspectors and surveyors competent in their fields has been trained and developed. These skills will benefit HAVA and Afghanistan for many years to come.

A source of disappointment and worry to me has been the reluctance of HAVA to hire significant numbers of trainable engineers or TCM engineers under the loan. I have consistently pointed out to HAVA and AID personnel the need for such additions if the proposed schedule for Shimalan was to be met. AID has backed the Bureau in this respect, but little action was produced by HAVA. In any event the lack of survey data and design personnel forced the engineering design on the SLO.7 Lateral to proceed in a manner that would not normally be followed. For example turnouts had to be located before locations of the distribution systems main laterals and drains were known. The lateral, as designed, will serve the lands, but not in as orderly and efficient way as desired.

From the inception of the project both AID and the Bureau of Reclamation feared that HAVA would or could not carry out the land development phases of the project. The necessity for producing a full "package" was stressed in the feasibility report and in subsequent letters and meetings. To insure that this was accomplished the construction schedule submitted in the CP's required sequential construction of the SLO.7 Lateral units and the development on adjacent farm lands. On the basis of construction progress it was necessary that land development be initiated on the first land unit in the summer of 1972 if the sequential pattern was to be adhered to. Topographic surveys had been initiated in May 1971 and by July 1972 sufficient topographic mapping had been completed to permit laying out the distribution and drainage systems, land leveling and consolidation of the farm holdings in the northernmost 2,000 acres. Sufficient engineers were not available to design the facilities for this large an area. Accordingly, it was agreed to develop a demonstration area of approximately 150 acres which would at least surface

the problems involved. A plan was prepared and HAVA commenced negotiations with the affected farmers. It soon became apparent that the necessary clearing of land titles and farmer's acceptance of the project could not be obtained in any reasonable length of time. Ownership records were sketchy and in some cases, the person of record owning the lands has long since been dead, and his heirs or others were farming the parcel.

I feel the inability to gain farmer's acceptance was due in a large part to failure by HAVA to properly explain the project and its benefits to the farmers. Other factors are:

- a)-Farmers distrust of Government officials and fear that they would not get paid for crop damages or not get back their property. In this connection it is noted that no payment has as yet been made for R/W on the S10.7 Lateral.
- b)-The requirement that farmers would have to repay construction costs and pay O&M charges. This is a new concept never required before in Afghanistan.
- c)-Some major Khans would lose a portion of their lands that they have been farming and not paying taxes on.
- d)-HAVA would have control of the water distribution which is contrary to age-old customs and the farmer believes he will be placed at the mercy of the officials for his vital water supply.

Although the Governor maintains that land leveling and costs form the basis of the farmer's objection the above factors are, in my opinion, controlling.

After many hours of discussion with the parties concerned including the Ambassador and his staff, the Prime Minister, AID/Kabul, HAVA and the Bureau of Reclamation it was concluded that, in view of the severe socio-economic problems, the project would have to be re-designed. Accordingly by Implementation letter dated April 21, 1973, the Minister of Planning and Governor Reza, were notified by AID that the equipment loan would return to its original proposed status i.e., separated from the Shamalan Project Construction. This action in effect, removes the project from the stipulations of the Foreign Assistance Act that requires a favorable Benefit/Cost ratio on U.S. Standards.

HAVA has repeatedly mentioned verbally and in writing that they will proceed with the Shamalan Construction. They have stated that

the distribution and drainage system, roads and "spot" leveling will be constructed. Their plan entails pushing through the S10.7 Lateral to the water short areas and constructing the distribution and drain systems prior to settlement of land titles and land consolidation. It will be very interesting to see how far they go on this route as I foresee much dissension and resistance on the farmers part. This will come to a head when the farmers see their lands being severed and points of water receipt being changed. Further, without the land leveling and development I do not see any equitable way of assessing construction costs. Further discussion on these points are contained in the "Recommendation" portion of this paper.

I have gone into considerable detail on the above in order to provide a background for the following observations for use in future projects of this nature in Afghanistan:

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1)-The Socio-political-religious customs make it practically impossible to superimpose a modern irrigation system on an area such as the Shamalan that is extensively farmed or not in complete distress. Developed areas require gradual installation of improved distribution systems and the land development. Pilot water control projects and demonstration farms should be set up. When the benefits derived from modern techniques are evident on the ground for the farmers to see, they will accept and utilize them in the same manner in which they accepted and adopted the use of new wheats and fertilizer.

2)-Complete modern irrigation systems such as proposed for the Shamalan area should be installed only on lands wholly or in the large part owned by RGA. Conditions precedent to issuance of land titles must include the acceptance of water control and management and O&M charges. Without the O&M charges the burden on the RGA budget will continue to increase without compensatory revenues. Without proper water management and adequate maintenance, lands can be expected to decline in productivity.

In the past several months I have noted ~~an~~ improvement in the maintenance of heavy duty and vehicular equipment. Money was made available in 1972 for the purchase of spare parts (\$47,000). These spare parts have been arriving and heavy equipment is being repaired and returned to duty. However, the age and obsolescence of most of the

equipment provides obtaining a satisfactory use-availability percentage. The office for the American Mechanic Adviser was completed and occupied in March. This has permitted better on the job training as well as a safe place for storage of instruments, manuals and catalogues. Strong efforts have been made to implement the preventative maintenance program. However, the program has not operated adequately, due principally to cumbersome administration procedures and fast dragging by HAVA officials.

Maintenance of irrigation structures and facilities has also improved somewhat in the past year. This has resulted principally from four factors: (a) Better scheduling of work; (b) O&M received more funds this year making it possible to hire more HACU equipment during the annual shutdown period; (c) The "Food for Work" program, and (d) Large forces of farmers participated in cleaning of laterals and canals during the shutdown period.

There still exists a need for systematic cleaning schedules for collector and outfall drains. As double cropping continues to increase and more lands adjacent to existing projects are brought under cultivation there will be additional burdens placed on the existing systems and without maintenance and some additional drains large tracts will lose productivity.

AID has proposed a loan to purchase new equipment for the HAVA O&M Division and the Asian Development Bank has expressed interest in such a loan. Equipment lists have been prepared and priced, but it is recommended that this list be scrutinized very carefully before equipment purchases are finalized. Further, no loan should be made without an iron-bound commitment for employing foreign heavy duty equipment repair and maintenance adviser and assurance that in the future HAVA would budget for spare parts.

A pending alternative would be to have HACU perform the repair work on HAVA's heavy equipment. HACU has a much better equipped shop and more expertise.

Problems still remain in the water management field. The 1970-71 drought forced a certain amount of control in the Arghandab Valley. The local government and the water users formed a committee and with the advice of HAVA did regulate and rotate the limited supply. However, with a more plentiful supply available in 1972 the emergency need for the Committee no longer existed and it ceased to function.

Strong efforts have been made in the past 2 years to activate a Pilot Water Project in the Nad-i-Ali area. The Project would demonstrate to the watermasters and the benefits to be obtained

from proper water control and farm application. HAVA's cooperation and willingness to implement has been minimal. We should continue to press on this as in my opinion it is only through demonstrations such as this that water control and management will be implemented.

During my tour the Project Development Division has been relatively inactive in the Helmand-Arghandab Valleys. They did however furnish valuable assistance to our team and the U.S.G.S. team during the drought period. Their efforts have been hampered by lack of operable vehicles and a shortage of trained personnel. The proposed program starting in FY-75 contemplates additional American assistance in project development activities. Emphasis will be placed on inventory of land and water resources including underground water investigations. The Bureau's Feasibility Report on the Central Arghandab area was issued in December 1970 and very favorably received.

Considerable effort has been expended in on-the-job training. Formal classroom training has been given in design engineering and surveying through classes conducted by Mr. Ronald Thompson and Mr. Robert Haase. The courses upgraded the learning potential so that day by day training on the job has been much more productive. On the whole there has been a noticeable increase in the skills of designers, surveyors, inspectors, and contract administrators.

Since I arrived, Mr. Wardak, Survey Chief, Mr. Rayeq, Design Engineer and Mr. Formali, Head of Project Development have had 6 month training tours on Bureau Projects in the U.S. Mr. Shuja, Head of the Engineering and Technical Department had a 3 month tour. Mr. Sarsam, Soil Scientist, is now in the American University in Beirut studying for a Masters Degree and Mr. Niami, Hydrologist is in the states on a 6 month training tour.

Eight O&M Technicians along with farmers and HAVA's extension agents attended a two-week water management training course in Turkey.

Seventy weekly training and work coordination sessions have been held with designers, inspectors, contract administration, surveyors and construction (HACU) personnel. The principal purposes of the sessions were to train in scheduling of work, coordination of efforts and to spot trouble areas before they surface.

RECOMMENDATIONS

1. Insofar as politically feasible the Shamalan Project development should follow the plan and actions contained in the Feasibility Report. There is a distinct danger that the SLO.7 Lateral will be completed without the distribution or drainage systems installed in many

areas. This, as has been pointed out on many occasions, would of course in time only aggravate existing conditions. All possible persuasion should be made to provide a complete package. With proper control and delivery of water, adequate drainage, soil amendments, reasonable land leveling and technical advice to the farmers the increase in productivity could equal or surpass that obtained from the use of fertilizers and improved seeds.

2. A major vehicle for selling the above to the farmers would be a series of demonstration farms. The farmers apparently do not have sufficient confidence in HAVA to accept verbal recommendations and advice. Also, many who are completely dependent on an adequate crop if they are to eat, are understandably reluctant to take even a minor gamble. However, I am positive that when they see the results they will be quick to adapt.
3. Installation of drains must continue, especially in out-of-project lands recently settled. Depth to ground water table networks should be established in Marja, Nad-i-Ali, Shamalan and Darweshan Projects and monitored on a scheduled basis.
4. Curtail development of out-of-project lands near Shamalan, Marja and Nad-i-Ali. These developments are not on the best lands and will aggravate distribution and drainage problems to the point where the losses could offset gains.
5. There is a critical need for basic data in almost all fields. I recommend the following actions as a minimum: (a)-Establishment and monitoring of snow pack measurement stations. (b)-Reactivation of Stream Gaging on a regular schedule. (c)-An accurate census of the acres of land in cultivation and the cropping pattern. (d)-Monitoring the salinity of the drains and river on a scheduled basis.
6. A), b) and c) above are necessary if intelligent overall management of water is to be effected. Also as water demands increase, Kajakai Power Plant goes on the line and definite contractual commitments are made for delivery of water to Iran, an overall River Control Branch will

be necessary to properly schedule releases. I have recommended this in the past with negative results. However, it should continue to be pressed.

7. An inventory of the land and water resources (including underground water) should be initiated by the Project Development Division with the aid of foreign advisors. There is more arable land available than water to serve and the inventory would provide a basis for the highest use of the limited water supply. Where possible the inventory should be conducted on a basin wide basis. HAVA has proposed starting this in the Fourth-Five Year Plan and should be actively supported by AID and the Bureau.
8. Pressure should be maintained on HAVA to employ more engineers if full benefits are to be obtained from the Bureau advisors.
9. As HAVA seems unable to clean drains on a scheduled basis it appears logical and workable to have farmers do this to the extent possible during the shutdown period. In the past the farmers have concentrated their work on the delivery system.
10. Although considerable resistance by HAVA will surface, strong efforts should be made to consolidate the HACU and the HAVA heavy duty equipment repair shops.

My tour in Afghanistan has been challenging and rewarding in many respects. There have been frustrations and in the case of the Shamsan Project extreme disappointment. However, I think the Bureau of Reclamation Team has contributed heavily towards the build-up of the institutional capacity of HAVA. I feel it is now much more qualified to perform its functions.

I am very appreciative of the cooperation and assistance provided by AID. Working relation at all levels has been excellent. Mr. Albert Baron and Mr. David Levintow, Assistant Directors for HAVR have been most cooperative and helpful. Messrs. Harvey and Brown and the other members of the AID/Kabul Staff have rendered valuable guidance and assistance.

Last but not least I would like to give thanks to the Bureau of Reclamation's Foreign Activities Division for its back-up support.

J. K. Shankland

cc: Mr. Vincent W. Brown, Director, USAID/Kabul
Mr. David Levintow, Assistant Director, AD/HAVER