

Subject: Planning for Reconstruction of Helmand-Arghandab Valley  
Irrigation Schemes in Afghanistan.

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The Need. It is time to begin planning for what the U.S. could contribute to the reconstruction of the Helmand-Arghandab Valley irrigation schemes in Afghanistan. By all indications, the Soviets have made the decision to withdraw from Afghanistan. The time schedule by region for this withdrawal is not clear but if and when they withdraw, the Kandahar (Arghandab) and Helmand regions are likely to be among the first to be free. Many of the more isolated military posts along the Helmand River have already been left or lost to the resistance. It is likely that some the refugees (the men) will begin to return to the region soon. Planning for this early return now will save valuable time and will eliminate the need for hurried planning with all its disadvantages at some later date when planning for the country as a whole will be the overburdened focus. A Helmand-Arghandab Valley Reconstruction Plan can be done now.

The Sources. The U.S. worked in the Helmand-Arghandab Valley for more than thirty years. There is a mass of useful information and experience working in that region that can be put to use in planning for its reconstruction. There are Afghans in the U.S., Pakistan and Europe that played key roles in the Helmand-Arghandab Valley Authority (HAVA) through the years that could put their knowledge to work on this plan. There are many Americans

with years of experience in that region also that could be tapped to contribute to such a plan. It is a matter of bringing this information and knowledge together to produce a reconstruction and re-settlement plan. I will only highlight a few of the many elements necessary to develop the plan and indicate some of the sources.

The Area and Problems. The Helmand-Arghandab Valley Region was estimated at 360,000 acres cultivated in 1971 with some 540,000 acres total potential irrigable land. Virtually all cultivated land in this region requires irrigation and except for the foothill regions like Musa Kala and Zemen Dawar that have korez systems, most of the land is irrigated from the two rivers. At least some of this potential irrigable land was developed and settled during the accelerated settlement program instituted after the 1973 coup, and much of this newly settled land was in the Darwishan area. It is not clear what happened with the settlement program since 1978 but it is my understanding that there has been major de-population in some areas with refugees going to Pakistan, mostly to regions in Baluchistan. Some early reports indicated that many of the families migrated to Pakistan leaving some members of the family behind to farm, the produce (wheat) being forwarded to support the households in the refugee camps. There is no basic information on present land use or settlement patterns.

The first step in developing a reconstruction plan for this

region is to determine where the people are living and how much land they are cropping. This can be done fairly quickly and accurately with an analysis of present satellite imagery as has been proposed by Prof. Jack Shroder at the University of Nebraska. His original proposal, as I understand it, was to study Afghanistan as a whole in terms of settlements, agriculture and destruction. A study of the Helmand-Arghandab Region at this time would be much quicker and more useful. The settlement patterns and agriculture in this region are fairly clear cut. The settled areas are mostly surrounded by stark desert and would be easily demarcated. A reliable source with the alliance has indicated that he could have any additional questions on irrigation structures and crops answered by personnel on the ground, ie. ground-truth the imagery observations.

If the satellite data had been collected before the wheat harvest which started in May, this year's main cropping season could have been studied. May begins the wheat harvest season in Helmand. This year's cropping pattern could have been compared with some year of the past, eg. 1978 which may be considered one of the last maximum cropping seasons for the region. In July or August the second cropping season can be studied. This would show present patterns of double-cropping. Double-cropping in this region would indicate two possible variables: control of the water coming out of Kajakai Dam for areas like Nad-i-Ali, Shamalan, Darwishan and Marja; and condition of the irrigation system and intakes. The second crop, being planted at the height

of the hot season demands that all elements of the system function in a timely manner. While some of this second crop in the past was cotton (an over-lapping crop from the previous crop season or a late second crop), the traditional consumable second crop was mostly corn and mung bean.

Surface salt will likely mark many of the previously farmed areas that have now been abandoned. This salt indicates the direction of movement of any moisture in the soil, ie. the evaporation rate is so much higher than the light annual rain fall.

Cotton as a cash crop for the farmers must not be ignored in the planning stages. Cotton was a very unpopular crop in Helmand into the 1970's until the government, the only buyer, raised the price paid to the farmers and made it popular. Cotton production was growing rapidly thru 1978 until the coup. The British helped establish the original cotton gin in Lashkar Gah early in the region's development history and completed a second gin in Girishk about the time of the Soviet invasion in response to the increased cotton production. Cotton can bring cash to the farmers, hard currency to the government, raw materials to the cotton mills (if they still function) and cooking oil to the local market. Given the past restrictions on U.S. involvement with overseas cotton production, this element of the planning should be coordinated with the British. The last chief British engineer who completed the Girishk gin presently resides in Scotland.

From past information, it would be possible to determine some of the characteristics of the population that has remained on the land. For example, has there been a difference between indigenous tribal populations, long-term settlers and recent settlers in property abandonment and migration or has migration been determined by purely area factors? Answers to these and other questions would help in planning for the returning refugees, ie. the levels of support required for the different areas. The other major variables in this equation are location on the irrigation system and war damage to the system. Farm-economic surveys have been completed for the Helmand-Arghandab region through the years (1965, 1970 and 1975).

The Irrigation Systems. The heart of the Helmand-Arghandab Region is the two dams (Kajakai and Arghandab) and the associated canal and drainage systems. The largest of the canals is the Boghra with its large intake structure on the Helmand River. - The Boghra Canal has a capacity of some 2,550 cfs and is some 120 miles in length. It furnishes water to the Shamalan, Nad-i-Ali and Marja areas, major cropping areas before the war. The intake structure was reported damaged earlier in the war and it is not clear how efficiently it now functions. In the past, the major irrigation systems, like the Boghra, were shut down for maintenance for 40 days during mid-winter when the few over-cast days of the year occur and when the little annual rain normally falls. During this time, heavy equipment was used to clean the

main canals with some farmer hand-labor support. All secondary and the farm ditches were cleaned and repaired by the farmers who benefitted. The cleaning of the main drains was more or less of a continuous process mostly using heavy equipment (drag-lines) but the process never seemed to keep up with the need. By the mid to late 1970's, malaria was making a re-appearance. Assuming the canals and drains have not been systematically cleaned for the past 6 to 8 years, this activity must be part of the reconstruction process. Much of the heavy equipment in use in 1978 was ancient at that time, some dating from the early '50's. The equipment maintenance shop at Cha-i-Anjir (some miles from Lashkar Gah) are not likely operational, and most of the trained technical staff of both this HCU equipment shop and the HAVA offices in Lashkar Gah have migrated, died or retired.

To put the Helmand irrigation systems back into efficient working order is going to require skilled technical staff. These are big, complex, engineered systems. In 1978 HAVA had a relatively large staff but not enough skilled technical staff to do the job required. Presently HAVA is a shell of what it had been in 1978. Apparently the HAVA building is still there. A half of a generation of young men have either been killed, injured or left out of an educational system required in training technical skills. Some of the older engineers from the past may return but many will not return and not return to work in the demanding conditions of the Helmand. This will mean planning for the selection of foreign technical advisors must be done extra

carefully. In short, the advisors must have the basic skills to do the necessary work in the office and in the field quickly and efficiently as well as have the skills to train a new generation of technicians. There is no need to dwell on this key point at this time. The requirement is obvious.

It is not clear how many elements of the irrigation systems have been badly damaged in the fighting through the years. There have been some battles in the plains like those at Marja, but clearly the most severely damaged agricultural areas will be found along the Arghandab especially those in the vicinity of Kandahar. Kandahar will likely require such an intensive effort of reconstruction over an extended period of time that plans should be made to establish a Kandahar or Arghandab reconstruction unit in that immediate area with its own administrative and design teams. This would be something similar to the division of function that occurred in the 1970's when Kandahar took over agriculture services in that province from HAVA. To plan a regional reconstruction center that would include both Helmand and Kandahar would probably be an error. The distances are too great for an efficient operation.

As much emphasis should be placed on the cleaning and reconstruction of the drainage systems in the region as on the canal systems to insure that past problems of water-logging and salting do not appear with the first crop.

Hand-Labor Reconstruction. It is not clear what percentage of the population in this region has been killed or maimed and if this will be a factor in labor availability. Hand-labor was used to some limited degree in the past in the annual maintenance cycle, as noted. During the final USAID project in the region, the Helmand Drainage Project, hand-labor was used in the construction of some of the drains and they proved competitive with some of the heavy equipment. While many of the local farmers did not participate in this paid labor activity, many laborers came in from neighboring regions, in some cases following traditional patterns of labor migration established for farm-labor. The use of hand-labor in the reconstruction process, hopefully combined with some heavy equipment, would serve several functions. It would provide immediate food and income for farmers before their first crop is planted and harvested, a productive alternative to a hand-out. It could benefit a much wider area than just the immediate region, drawing labor from snow areas to the north in the winter months when work is not possible at home. And it would bring the irrigation systems back into full operation. Depending on the condition of the heavy equipment and how quickly some of it may be made operational, the Helmand may be required to depend heavily on hand-labor in the early stages of reconstruction.

In Summary, the Helmand-Arghandab Region is one about which a great deal is known in detail. It is a large area in which a great deal of development energy has been spent in the past. It



is perhaps the largest irrigation scheme in the country. It is a productive area where a very high percentage of the farmers have had experience with modern, high-yielding agriculture. For example, by 1978, the majority of the farmers were using fertilizers and high-yielding varieties of wheat. Cotton was fast becoming a major cash-crop and the British were just completing a second cotton-gin as war erupted. Helmand had one of the highest concentration of tractors in the country. It was one of the major wheat producing regions. The Helmand region produced a surplus of wheat during the drought years of the early 1970's. - Arghandab had a major concentration of grape and fruit production. The Helmand-Arghandab Region was the site of a major land-settlement scheme. It could continue to be the site of re-settlement for the returning refugees and for new settlement.- There is already a long-term set of experiences associated with re-settlement of people on the land (in some cases the settlement of nomads) in this region, including food programs and the supply of farm tools. This experience should not be ignored in planning for the present.

Some might suggest that the U.S. not support the resettlement of the Helmand region because of the many problems faced there in the past. The erroneous assumption here is that if resettlement is not supported, much of the region would not be resettled and the problems of a major desert irrigation system would not have to be faced. But the refugees who did leave the area will return along with many others. The previously landless farmers see the

region differently from foreign bureaucrats.

A plan for reconstruction and resettlement in the Helmand-Arghandab Region should be started now. One of the starting points is with the study by satellite imagery of present cropping patterns which would say much about the present population distribution and the irrigation systems. A second starting point would be with the contact with the numerous knowledgeable individuals that could positively contribute to such a reconstruction plan.

I worked with and in the Helmand-Arghandab Region for some years during the 1970's. I have maintained many Afghan and American contacts through the years that were associated with that region. I could make a positive contribution to the proposed plan discussed above.