

**Kabul Journal**  
by  
**Guy Fipps**

**Chapter 14 – Saving the City of Kunduz from Flooding**

Kunduz is the capital of Kunduz Province in Northern Afghanistan; a regional center surrounded by vast expanses of agricultural land. Every trip out is eye opening, but in Kunduz, I saw something really extraordinary - the construction of an irrigation diversion dike using methods and materials that have not changed for centuries, maybe for thousands of years. I also learned that the city is now facing sure flooding this summer due to the good-intentions but misguided activities of a NGO (non-profit organization).

**April 11, 2006 - The diversion dike**

For thousands of years people have lived along the rivers of what is now Afghanistan, and diverted water into hand dug canals to irrigate their crops. Taking advantage of the mountains and slopes, a single canal can run many miles and provide water to many villages, tens of thousands people and large irrigated areas.

Afghans construct earthen dikes extending out into the river to divert water. Unfortunately, these dikes frequently washed out when the rivers rise in the spring and early summer as the melting of the mountain snow accelerates. It is the snow that falls in winter that gives water and life to this arid land.

Such was the case of the KZ canal. A weekend rainstorm just 3 days ago caused the river to rise high enough to completely wash out the existing diversion dike. Now, very little water is flowing into their canal, and approximately 20,000 families cannot irrigate their crops. It's early in the growing season, plants are short and cannot go more than a week without water. As of today, the local farmers have only five days to get the dike rebuilt before facing the danger of crop failure.

This is my first trip to Kunduz. I flew up yesterday on the UN flight from Kabul. My host is the Department of State representative at the Kunduz PRT, Bill. When Bill and I arrive at the construction site, we're amazed at the size of the operation, approximately 400 men and adolescents hard at work.

And what an operation it is. The men are divided into several different work crews. One crew digs up large dirt clogs, each weighing around 50 pounds. They find what they are looking for about a mile away. Here, they can dig dirt clogs covered with grass and with deep roots. The Afghans hope that the grass will take root and help hold the dikes together



In one concession to modern technology, the farmers have hired a tractor and trailer to transport the clogs to the construction site, much quicker than the traditional transport method of donkeys.





A group of men are busy weaving ropes from a thick straw that looks like dried water reeds, large piles of straw brought in from 50 km away. Some of these ropes are used by the men to cradle the dirt clogs on their backs.



A group of men lift the dirt clogs and help secure them on the backs of the workers who then carry them to the river and wade out into the moving water to drop them onto the expanding dike. Layers of clogs and straw are built up, and the dike is extended farther into the river.



The work is very hard and demanding, it must be extremely difficult, first carrying a large load of dirt on your back, then wading through the water with the thick under footing of river bottom silt.

A foreman continually encourages the men to hurry. He holds a long stick which he occasionally uses to strike an adolescent. The young men are obvious afraid of him, but the grown men just laugh and smile as they pass the foreman with their loads.

We watch as the dike quickly forms and extends farther into the river. Such a massive and organized operation is amazing and fascinating to watch. Each farmer along the canal contributes labor or money proportionally to the size of their land.





I watch as the straw men make huge rectangular bales of dried reeds held together by the thick ropes of woven straw. Finally, their purpose becomes clear. As the dike is constructed, gaps are left in the dike in order to reduce the pressure and erosion caused by the moving water in the river. It takes 20 men to roll the huge bales into the river and to float them out to the dike to plug these gaps. Dirt clogs are then layered on the straw bales to complete the dike.



Several farmers ask if we could build them a permanent diversion dam to replace this one made out of dirt and straw. Bill comments that the current system of building earthen dikes is sustainable. I think about the hard work and major expenditure of time, materials and money. The dike will wash out a few times a year, taking money and labor away from cultivation and harvesting of crops, further hurting the subsistence agriculture of the region.

Three weeks later, I visit the site. The dike is still standing even though the river has already risen a foot since my last visit. The dike is working perfectly and diverts large amounts of water into the KZ canal.







### **Saving Kunduz from Flooding**

Because of the hard labor, time, and expense, it's no wonder that farmers always ask for help with their diversion dikes. A different group of farmers that live along the Gawash Canal sought help from a NGO, Mercy Corps. They wanted a more permanent diversion dike, more resistant to flooding. They also complained that they did not have enough water in the canal and wanted extend their diversion dike farther into the river.

Mercy Corps using USDA funding fortified the existing dike with gravel, sunk large shipping containers and filled with gravel and rocks to extend the dike, hoping that these heavy, immovable structures could withstand the summer floods. Mercy Corps extended the dike all the way to an upstream dam. The end result was that most of the river's water now flows into the Gawash Canal.

About two weeks after Mercy Corps completed the diversion dike for the Gawash Canal, it rained. This is the same storm that caused the river to rise and wash out the KZ diversion dike (see above). The rising river also filled the Gawash Canal to its banks. It turns out that the Gawash Canal is one of two canals that provide water to the city of Kunduz. Low areas of the city flooded for a couple of days until the river and Gawash Canal receded. No real damage was done, but people here are now concerned. This summer, the river will rise not just one inch as it did this time, but 3 feet as snow melt reaches its peak.



Personnel from the Kunduz River Basin Project, an European Union funded project, are also worried, mainly because their compound is in low laying area of the city. They believe that there will be large-scale flooding of the city this summer lasting 2 months. They say that the US will be blamed since it was USDA money that was used to pay for the work done by Mercy Corps.

Bill is worried and asks me to help. First he wants me to inform the Ambassador. He's sure that the Ambassador does not want the US to be blamed for major flooding in Kunduz. He also wants me to help find a solution.

My analysis is that, while it's impossible to know for certain that Mercy Corps' renovation of the diversion canal will result in massive city flooding, it does seem likely. Finding a solution proves to be difficult. Mercy Corps denies that their renovations caused the flooding that occurred. The villagers do not want the dike removed fearing that they would have insufficient water for their crops, and they would have to rebuild the dike themselves in the fall.

If there was more time, a solution would be easy. But the river will begin rising in just weeks. A group of people representing different NGO's meet with the Director of Irrigation and discuss the issue. For some reason, they all look to me to come up with the solution. Apparently blame is the name of this game. If nothing is done, Mercy Corps and the US will be blamed. If I propose a solution and it doesn't work, then both me and the US will be blamed; a sticky situation for sure.



**View across the river from the Gawash Canal Diversion Dike**

I hatch a scheme. Back in Kabul, I meet with Nezami, the First Deputy Minister for Water. I propose that he used his staff and the EIRP engineers to study the problem and recommend a solution. The EIRP (Emergency Irrigation Rehabilitation Program) is a World Bank funded project being implemented by the FAO and MEW. They have established 6 regional centers where they are training Afghans in engineering design and project implementation (see Chapter 16 for more information). One regional office is in Kunduz.

Nezami and I agree on which approaches show the most promise and should be investigated. Even though I help decide on the short list of approaches and will be asked to concur on the selected approach, this will actually be the recommendation from the Ministry of Energy and Water, not from me, not from the US Embassy.

### **May 2, 2006 – in Kunduz Again**

It's been 3 weeks since I was up here last. This morning I flew up on PRT Air. Bill is on R&R, but had his Afghan assistant pick me up at the Kunduz airport and take me to the PRT. Bill is letting me use his hooch, a combination office and residence on "Civilian Row" at the PRT.



After lunch at the PRT, I'm picked up by Sarif, the Chief Engineer for the EIRP. Sarif actually works for the FAO and is also an advisor to the First Deputy Minister for Water. Over the last two weeks, Sarif and I have been evaluating various proposals. We're all here today to come up with a consensus on what should be done.

We ride in a 2-car convoy of UN vehicles out to the Gawash Canal diversion dike. Waiting for us are the Irrigation Department Director, several contractors and representatives from the villages along the Gawash Canal.

Following Afghan traditions, we all set down on the diversion dam to discuss the issue. The consensus is that it's too risky to try anything on the dike or dam. I'm relieved at the decision, as indeed it would be very dangerous to try a major rework here just weeks before the river begin rising.



We head down the Gawash canal about 20 km to a diversion structure and spillway. Here is the obvious solution to the problem. Repair the gates on the dam that protects Kunduz. The gates on this dam are not operational. Once they are repaired, they can be lowered, diverting the flow to a spillway and back into the river. The Irrigation Department Director agrees, so do the villagers.



Sarif drop me off at the Kunduz PRT about 7 pm. I take a shower, then head over to the mesh hall for dinner, arriving just before they stop serving at 7:30. This is a German PRT and the food is, well German. But then it's to the bar.

Yes, the Germans are civilized and have a regular bar at the PRT, with a wide screen TV and fuzball tables. A regular bar except they take only euros, and there's a two drink limit.

I sit at the bar thankful that beer is pronounced the same in German. I toast to Sarif, Nezami, the Irrigation Director, and what the hell, to myself. We saved the city of Kunduz from flooding. "*Hec! This deserves a second beer,*" I think as I search my pockets for another euro.

