

Importance of Water to the Development of Afghanistan

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- Served as Senior Advisor for Water
- Dec 2005 – Oct 2006
- Lived and worked at the Kabul Embassy
- “limited, non-career” appointment with the Dept of State (DOS)

Afghan Proverbs

Water is good, more water is better

*Better to be a servant upstream
than a king downstream*

Afghanistan Suffers from "Feast or Famine"

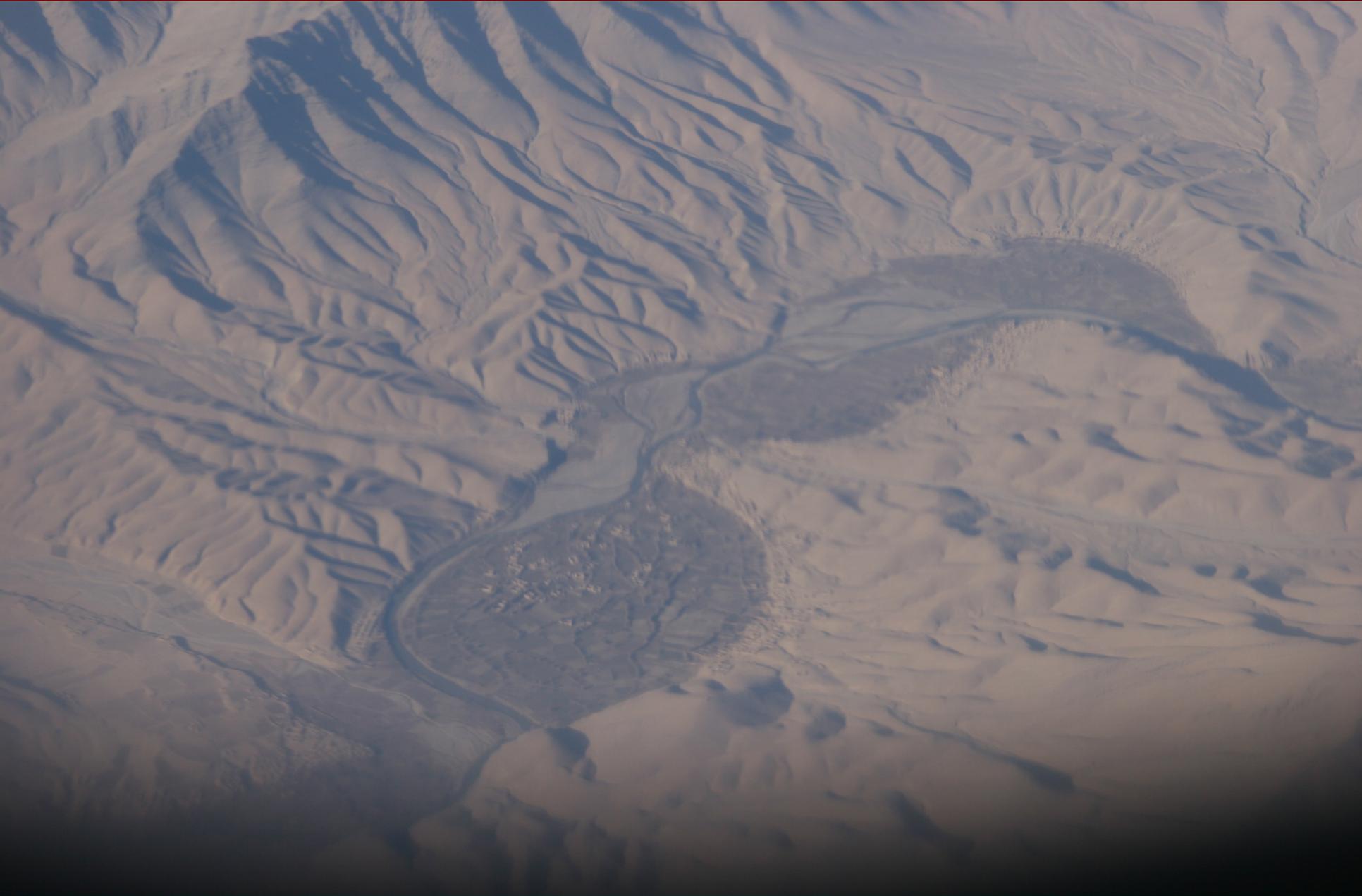
- Water supplies depend primarily on snow melt
- Snow fall varies from year to year, resulting in reoccurring droughts and floods

Afghanistan Suffers from "Feast or Famine"

- The population lives primarily in river valleys and flood plains
- Water is diverted from the rivers into canals
- Canals often run for many miles and carry irrigation water as well as drinking water to most of the population



















Afghanistan Suffers from "Feast or Famine"

- As the snow melts, rivers/stream swell dramatically in spring and early summer
- Few dams and similar structures exist, resulting in uncontrolled flow in rivers and streams
- Erosion and flooding are serious problems
- Melting snow combined with occasional spring rains cause flash floods



Afghan Water Basics

- Afghanistan has insufficient water supply to meet current demand
- Increasing population and returning refugees are increasing the need for additional agricultural land and irrigational development
- Existing water infrastructure is in serious state of disrepair, threatening the livelihood of many rural Afghans

Afghan Water Basics

- Agriculture employs ~80% of the population
- Except for winter wheat and minor crops that mature in early spring, all crops must be irrigated
- Less than 30% of existing farmland receives adequate water

Afghan Water Basics

- 98% of all water diverted from the rivers is used in agriculture
- 60% or more is lost in the canal systems to seepage and poor on-farm efficiency
- These canal systems supply drinking water to the majority of the population
- Few modern drinking water and wastewater treatment systems exist

Afghan Water Basics

Groundwater

- Little is known about groundwater resources outside of the Kabul Basin
- Kabul Basin has falling water tables and areas of water contamination and high salinity

Afghan Water Basics

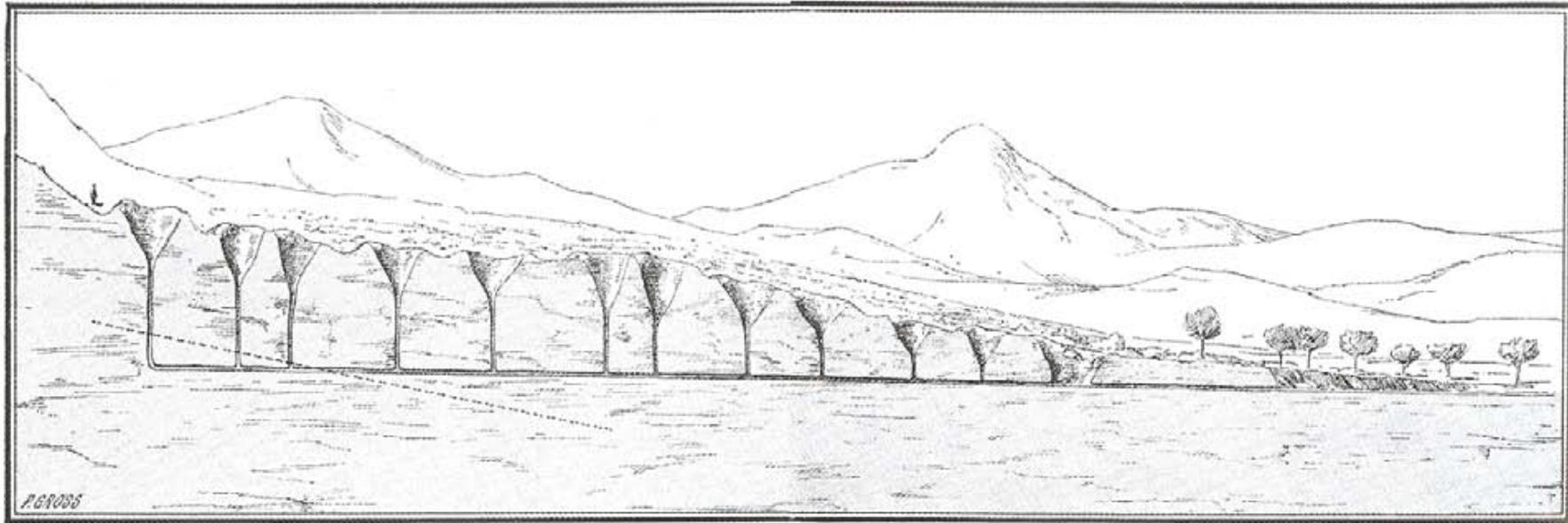
Groundwater

- Many of the wells put in by NGOs since 2001 are now dry
- The official policy of the Afghan government is that wells can only be used for drinking water supplies

Afghan Water Basics

Groundwater

- Karezes are widespread and an important source of irrigation and drinking water
- Sections frequently collapse and have to be re-dug



HydroPower

- Afghanistan has developed ~10% of its potential
- New development is slow
 - Salma Dam under-construction (near Herat)
 - numerous feasibility studies and proposals

HydroPower

- Funding??Afghanistan has developed ~10% of it potential
- A large Hydro Dam on the Amu Darya River (between Tajikistan and Afghanistan) may be economically feasible

Water Laws and Regulations

- In most of Afghanistan, water is still managed through the traditional tribal system
- The traditional system cannot resolve upstream-downstream water disputes which is an increasing and serious problem

Water Laws and Regulations

- At least 4 Afghan Ministries have responsibilities for some aspects of Water
 - Energy and Water
 - Rivers, dams, diversions, major canals
 - Agriculture, Irrigation and Livestock
 - On-farm
 - Public Health
 - Drinking Water
 - Mines
 - Groundwater

Water Laws and Regulations

- At least 4 Afghan Ministries have responsibilities for some aspects of Water
- Since 2001, progress has been hampered by competition among ministries and lack of capacitance
- In 2006 the National Water Secretariat was created to address these problems

Water Laws and Regulations

- Afghanistan is in the process of developing its water law and policy
- Laws and policies enacted to-date are broad in nature
- Detail regulations and enforcement mechanisms have not been put into place at this time

Transboundary Water Issues

- Afghanistan provides the headwater for four major rivers that flow into other nations
- As Afghanistan develops its water resources, disputes with downstream nations are likely

Transboundary Water Issues

- Iraq
 - Existing disputes on the Helmand and the Hari Rud Rivers
- Turkmenistan
 - Potential: Hari Rud, Murghab and Amu Darya Rivers
- Uzbekistan
 - Potential: Amu Darya Rivers
- Pakistan
 - Some current concern: Kabul River

US Water Programs

- 1950's – the US built Kakaji Dam and the down stream irrigation scheme in Helmand Province
- In the mid-2000s USAID increased the capacity of the dam for power generation



US Water Programs

- 1950s – 1960s: Kajaki dam and irrigation scheme is reported to have been a success and created a economic boom in Helmand Province
- Since 2001, Water has not been a major focus of USAID programs

Random Thoughts

- EIRP (Emergency Irrigation Rehabilitation Project)
 - Best Water Project in Afghanistan
 - Funding by the World bank, implemented by the UNFAO through MEW

Random Thoughts

Support for the Long-term Development of Water Resources

- USGS – resource assessment, groundwater studies, snow pack monitoring and modeling, mesonet, stream gauging, capacity building, etc.
 - Agrometeorological Bulletin

<http://afghanistan.cr.usgs.gov/>