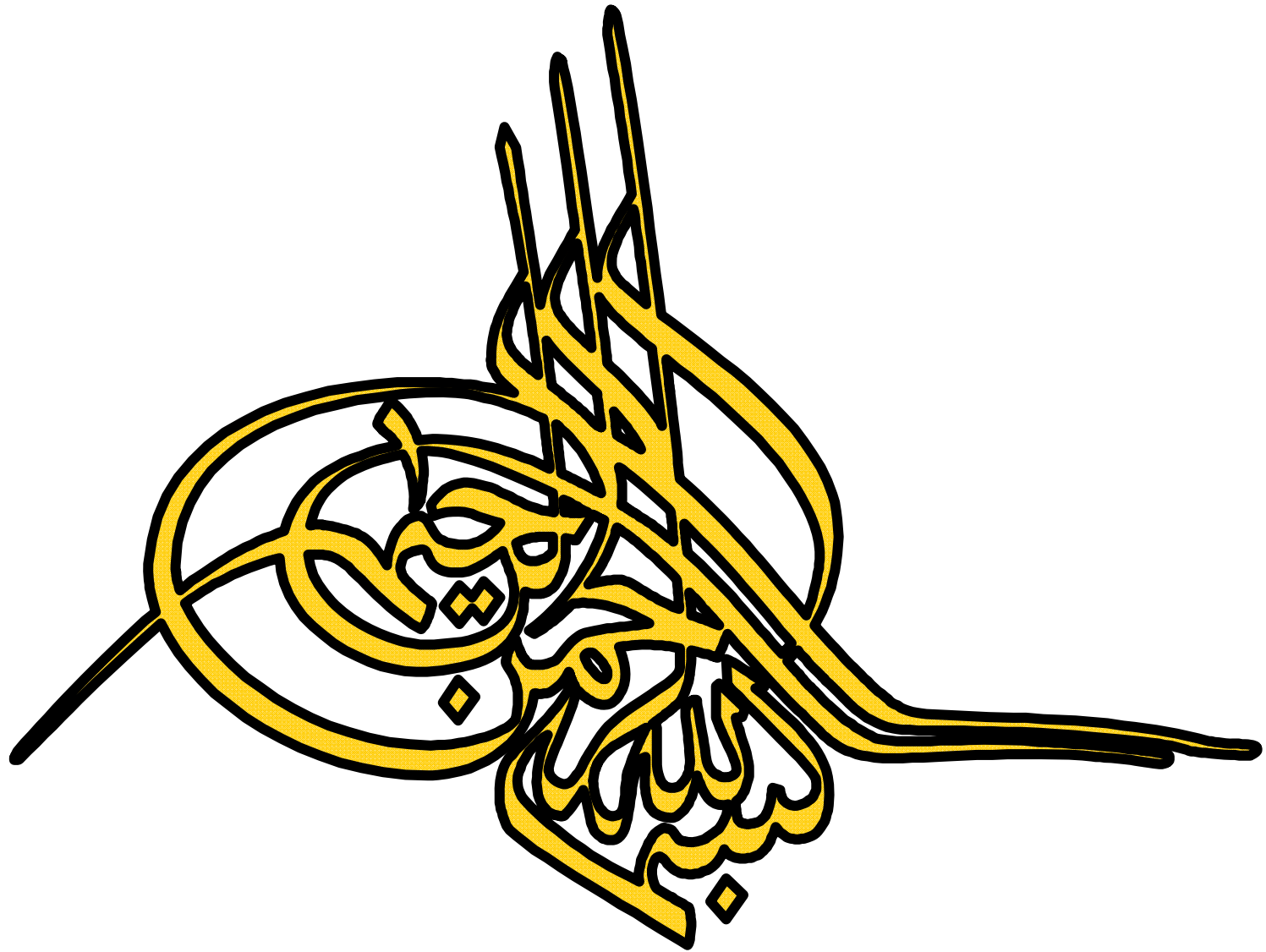


Integrated Water Resources Management in Afghanistan

Presenter: Dr. M. Hassan Hamid & Dr. M.Q. Seddeqy; Professors in Water Supply & Environmental Engineering Dep. Of Kabul Polytechnic University and member of National Hydrological Committee of Afghanistan(NHCA)







Integrated Water Resources Management (IWRM) is a participatory planning and implementation process, based on sound science, that brings stakeholders together to determine how to meet society's long-term needs for water and coastal resources while maintaining essential ecological services and economic benefits.





IWRM helps to protect the environment, foster economic growth and sustainable agricultural development;



promote democratic participation in governance, and improve human health.



IWRM is emerging as an accepted alternative to the sector-by-sector, top-down management style that has dominated in the past.

IWRM in Afghanistan is the integrating concept for a number of water sub-sectors such as hydropower, water supply - sanitation, irrigation ,drainage and environment.



The key policies and strategies of IWRM in Afghanistan:



Vision: poverty reduction and unemployment, economical and social development and public welfare through effective management of water resources in Afghanistan.

Goal: gradually decentralize the relevant activities to main river basin and sub river basin institutions to access maximum utilization of water resources for social – economical development, environmental protection and sustainable development.





Afghanistan:



Location: Southern of Tajikistan, Uzbekistan, Turkmenistan north and eastern of Pakistan & western of Iran;



Area:

total: 652,000 sq km

Land boundaries:

total: 5,5 km

border countries: China 76 km, Iran 936 km, Pakistan 2,430 km, Tajikistan 1,206 km, Turkmenistan 744 km, Uzbekistan 137 km

The Map of





Terrain: mostly 75% mountains; plains in north and southwest

Elevation extremes:
lowest point: Amu Darya 258 m asl
highest point: Nowshak 7,485 m asl

Population:

32,700,000 (July 2008 est.)

(*The World Fact book*) and population growth rate is 2.6 %.



Land use:

Arable land 12%, permanent pastures 46%, forest and woodland 3% and other is about 39%. The total area of irrigated land is more than 30,000 sq km.



Environment - current issues:

Soil degradation; overgrazing;
deforestation (much of the remaining
forests are being cut down for fuel and
building materials); desertification.

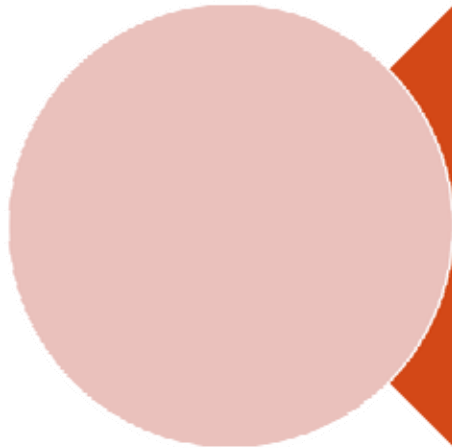


Afghanistan Climate:

The climate is typical of an arid & semiarid steppe, with cold winters and dry summers. The mountain regions of the northeast are sub-arctic with dry and cold winters.



34 provinces of Afghanistan covers an area of **652,000** square km, nearly; average elevation about **1300m**.



Generally semi-arid steppe, with wide regional variations, the climate varies sharply between highlands and lowlands.



**Lowest
Recorded
Temperature: -
26C in the
Hindu Kush**



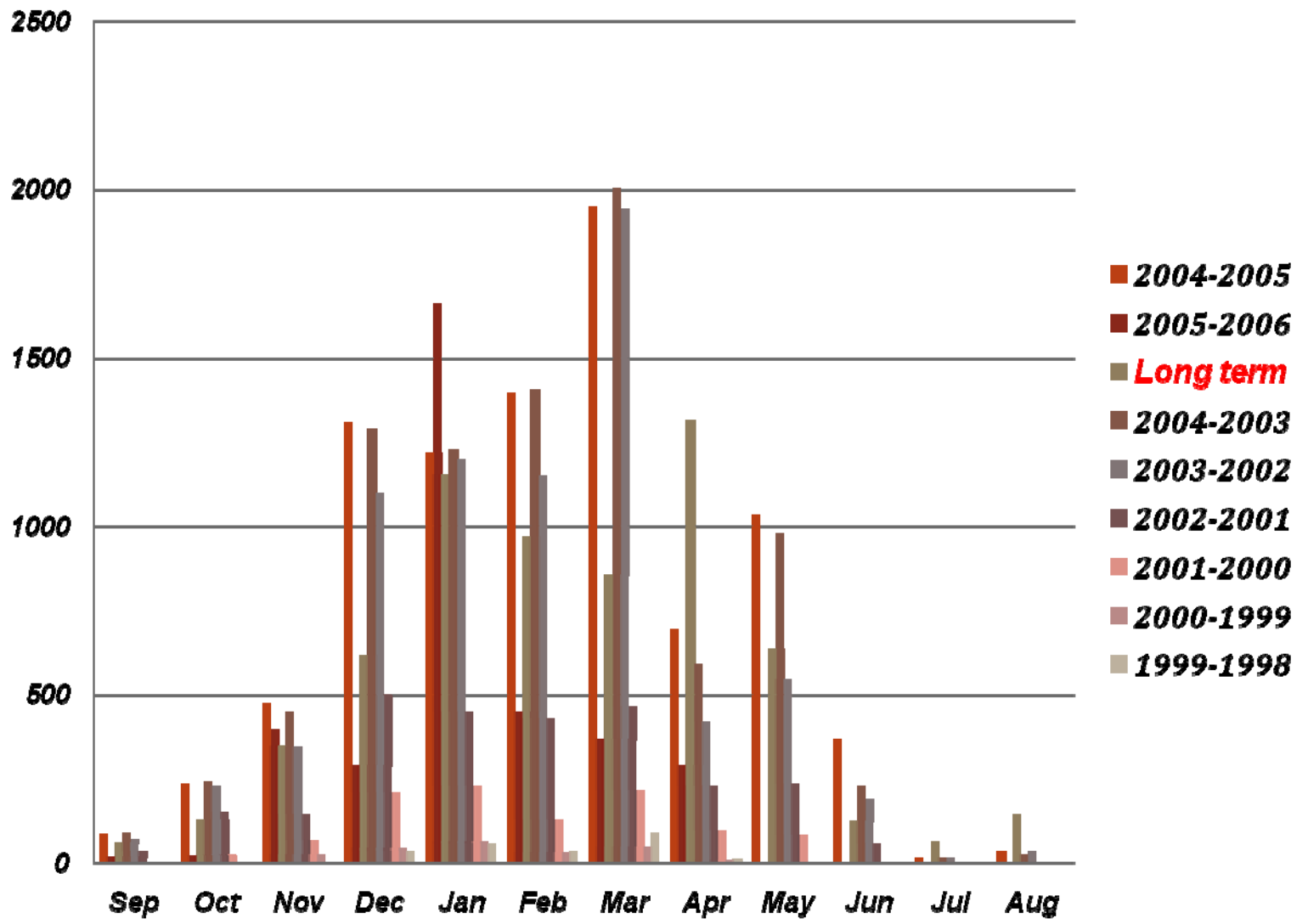
**Highest
Recorded
Temperature:
49C recorded in
Jalalabad**

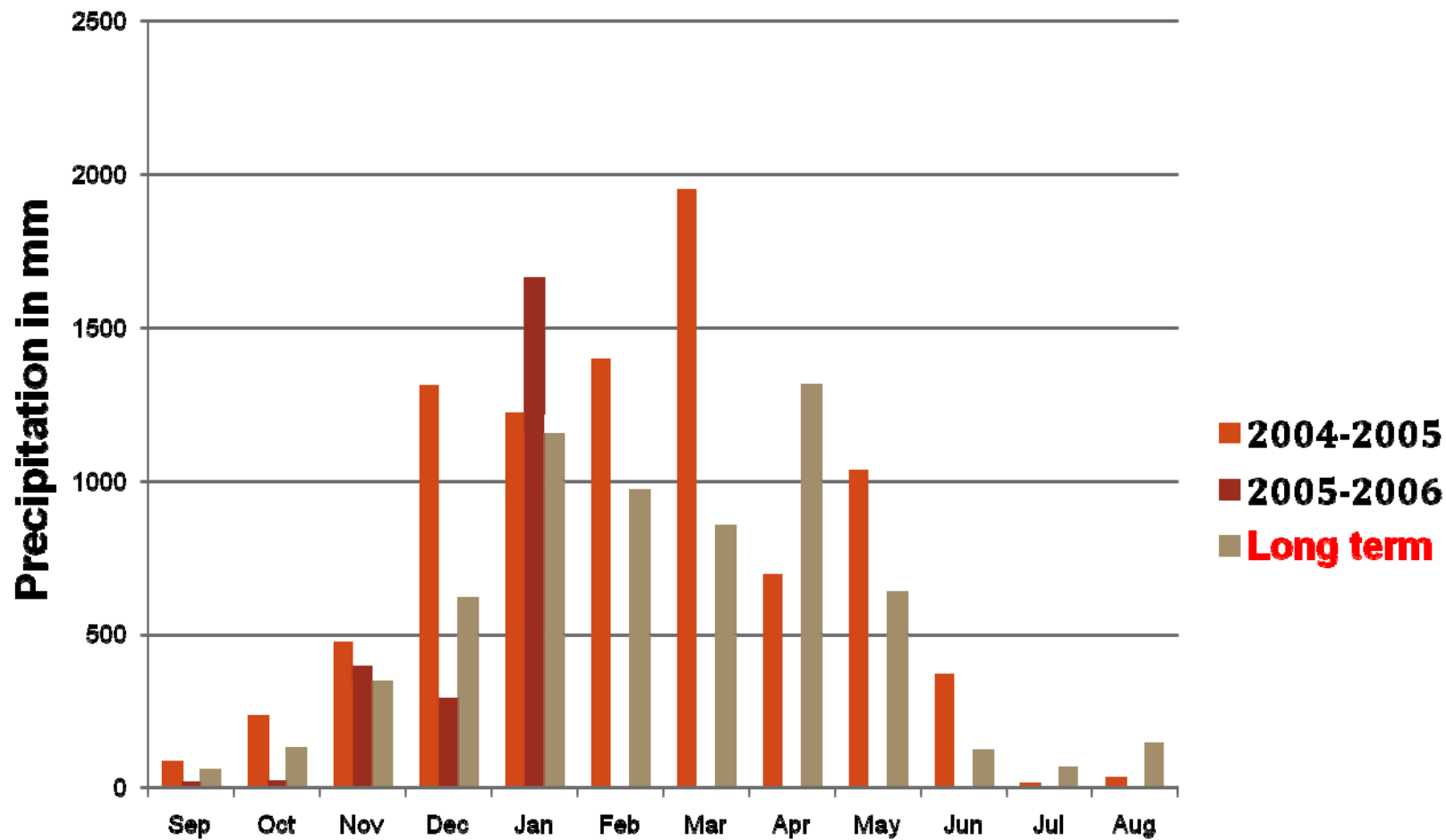


**Mean Annual
Precipitation:
[250mm p/year]**

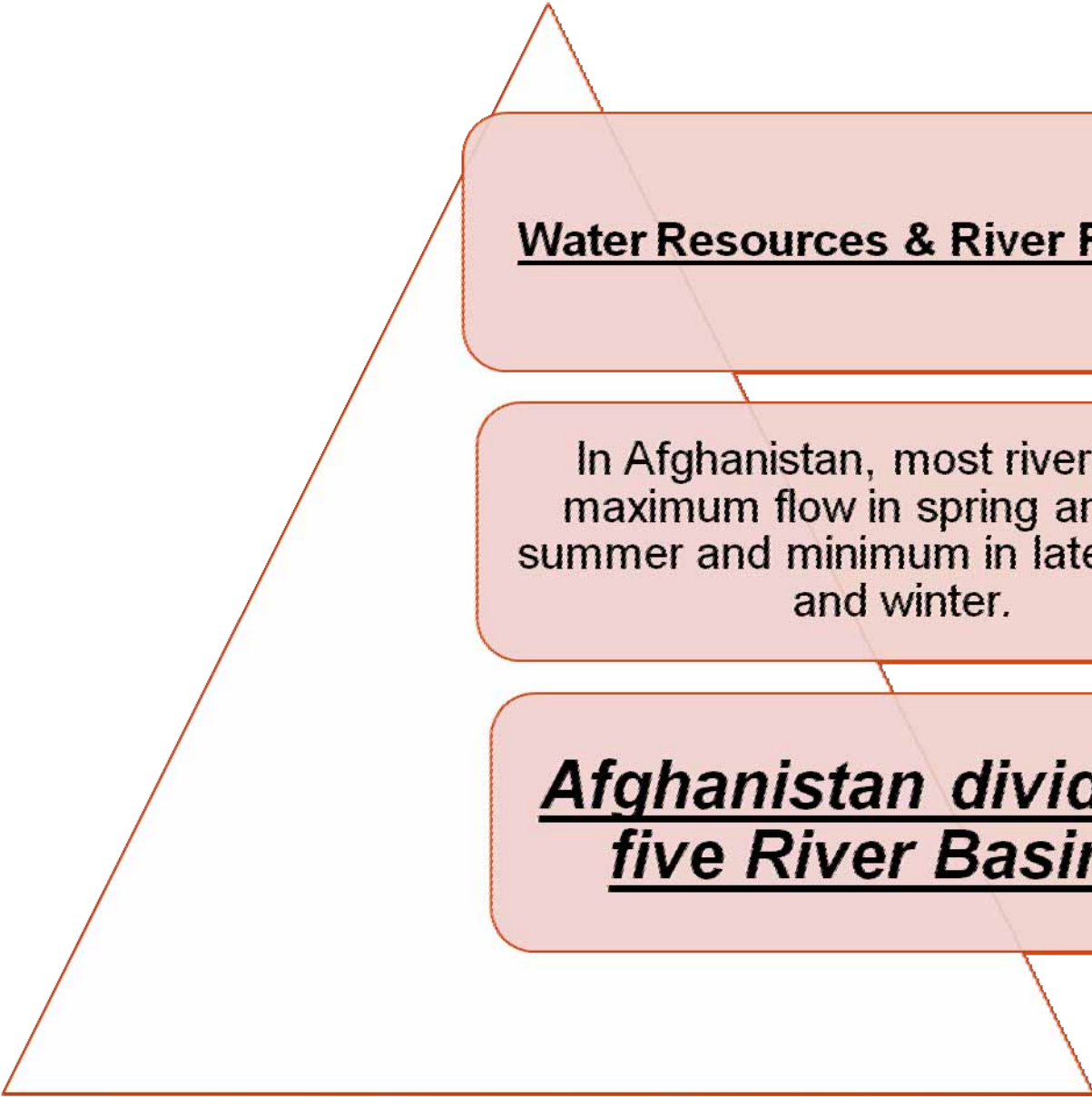


Precipitation in Afghanistan from 1998-2006





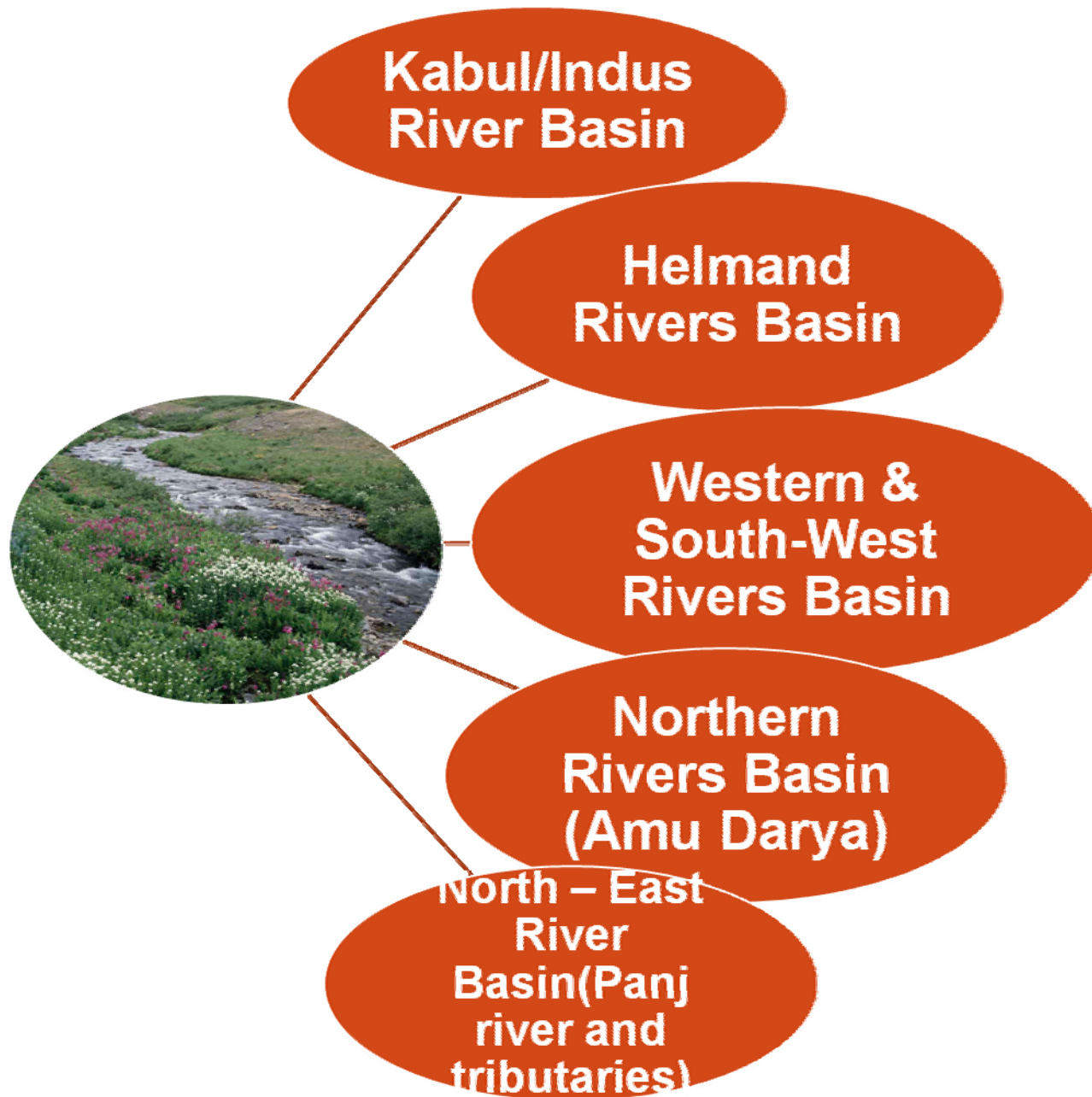
Compare of precipitation 2004,2005, 2006 with mean long term precipitation of all country



Water Resources & River Regimes:

In Afghanistan, most rivers have maximum flow in spring and early summer and minimum in late summer and winter.

**Afghanistan divided in
five River Basins :**



Map 2. River Basins in Afghanistan

