

# New Frontiers in Sustainable Hydropower Development

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### **Water and Hydropower Development - the Role of Transboundary Cooperation**

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# The Role of Transboundary Cooperation

- **Transboundary waters are water resources that are shared by two or more Sovereign States comprising Rivers, Lakes and Aquifers by virtue of them crossing, flowing across and contacting the territory of the concerned states.**
- **cooperation refers to the joint and organized management and use of freshwater resources at local, national, regional and international levels among various players and sectors.**
- **Optimal utilization and effective protection of transboundary waters are only possible if the riparian states cooperate in line with the principles of Integrated Water Resources Management (IWRM).**

# The Role of Transboundary Cooperation

## Facilitates sound Legal Framework for Governance

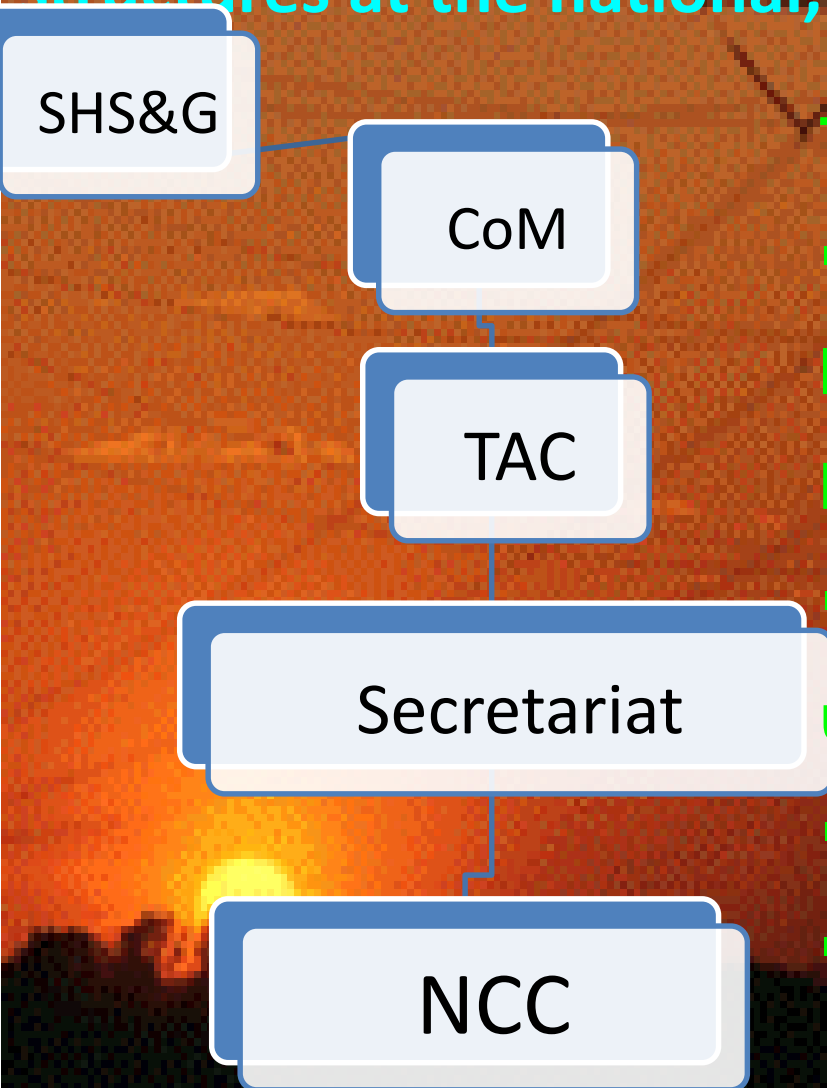


### Basin cooperation:

- Leads to genuine negotiation among the basin countries that could culminate in the establishment of appropriate legal regime
- Clear rights and obligation of member states
- Provides investment security
- commits States to certain behavior they would not be legally bound to in absence of the agreement.

# The Role of Transboundary Cooperation

- Enables the establishment of the right institutional structures at the national, transboundary and regional levels



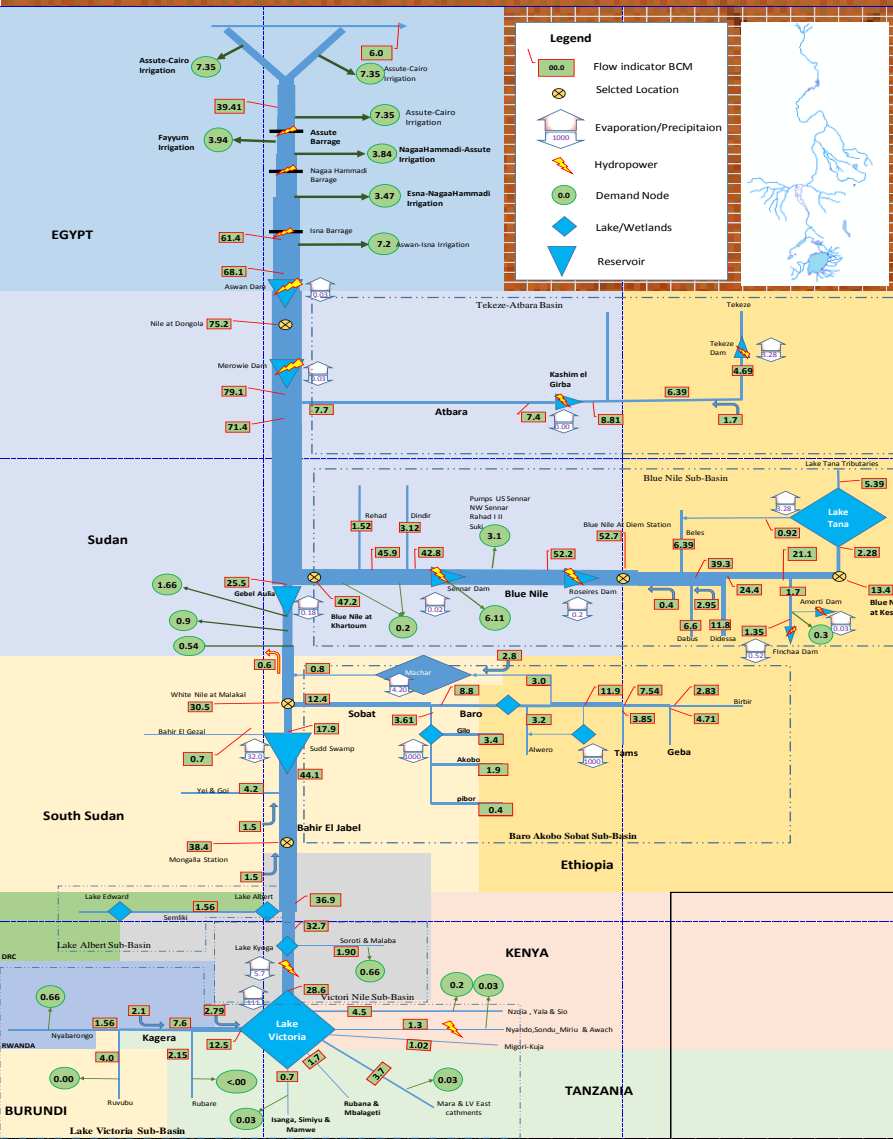
## Transboundary Cooperation:

- can lead to the establishment of Institutions that can manage the basin
- Facilitate basin wide understanding, planning, devt
- Minimize conflict
- Ensures compliance



# The Role of Transboundary Cooperation

■ An Integrated basin-wide approach can be achieved for optimal utilization of the resource base

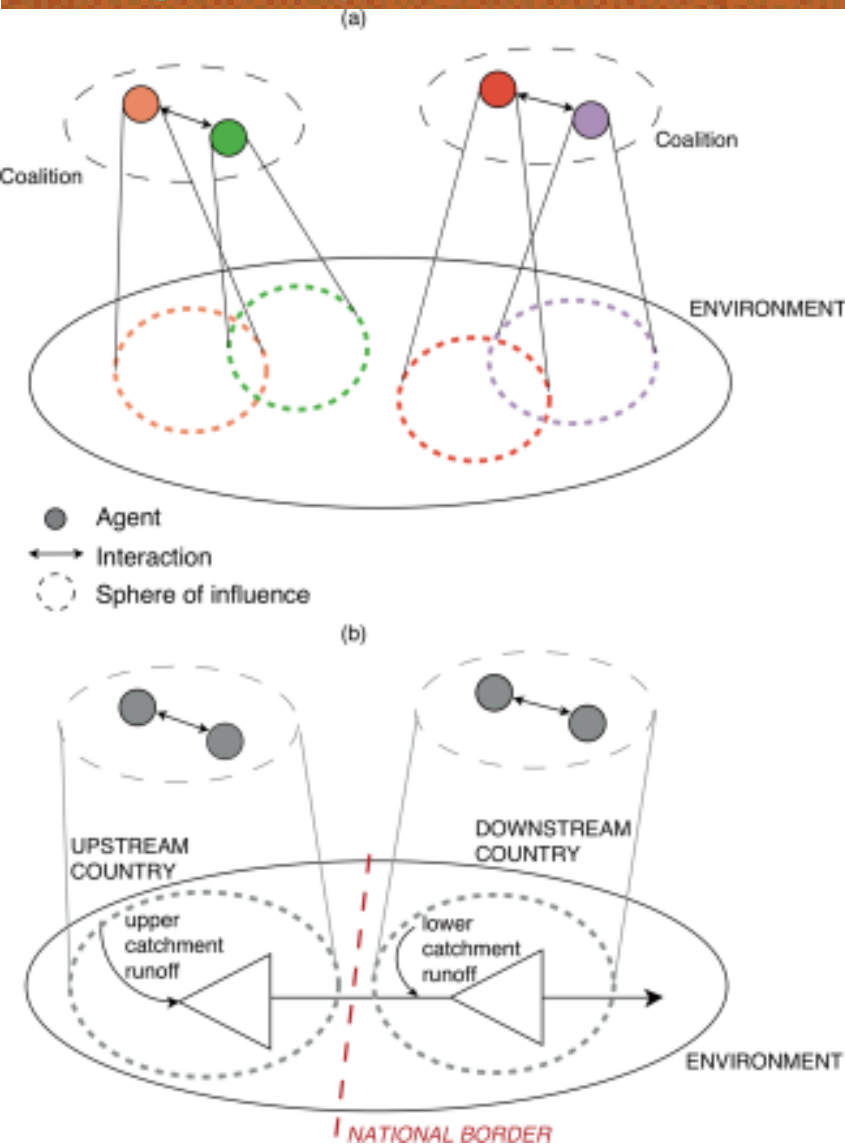


## Cooperation:

- Enables the balancing of water supply and demand
- Opportunity to optimize utilization of available resource
- Possibility of understanding upstream-downstream linkage
- Capture comparative advantage
- understanding of tradeoffs and synergies

# The Role of Transboundary Cooperation

▪ Exchange of data and information that is needed for design, implementation and operation



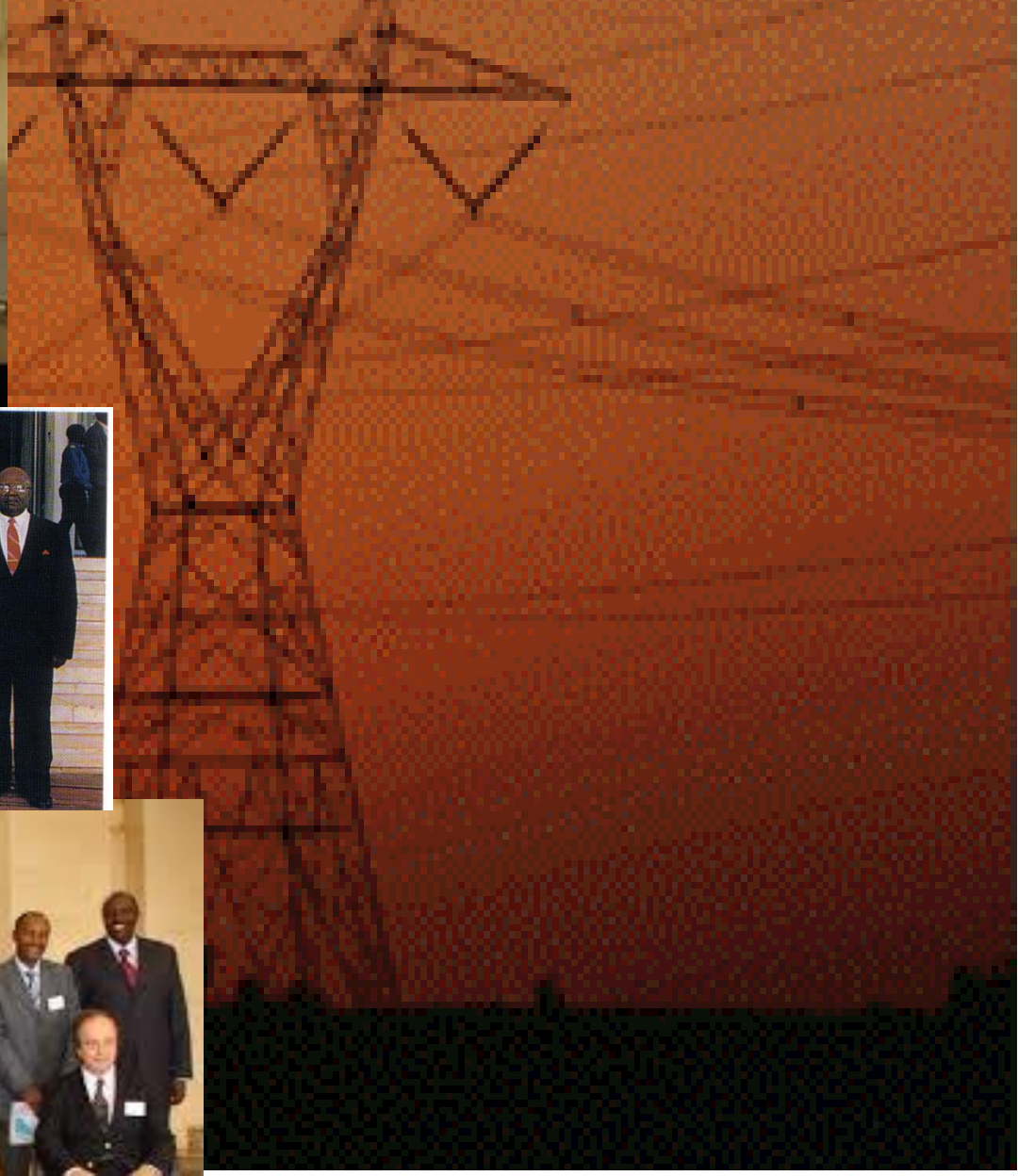
▪ Data and information sharing is the minimum level of cooperation basin states has to conduct

▪ Lack of data and information can lead to sub-optimal decisions

▪ Absence of accurate data and information could lead to over or under sizing of infrastructure, loss of opportunity and some times to disaster

# The Role of Transboundary Cooperation

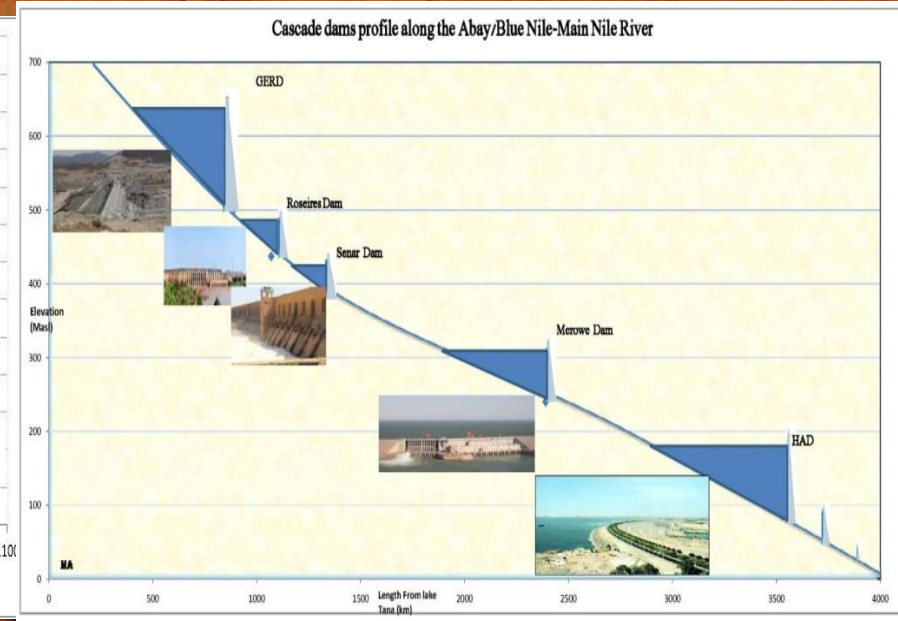
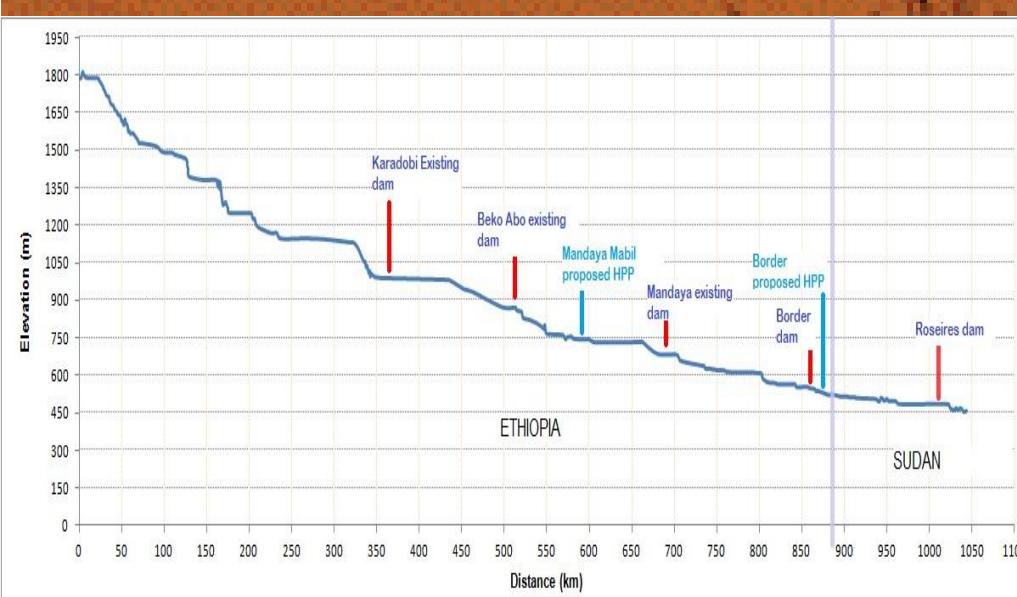
- Participation of stakeholders including downstream





# The Role of Transboundary Cooperation

- An Integrated basin-wide approach can be achieved for optimal utilization of the resource base



- Proper siting of infrastructure
- Sequencing and synchronization
- Harmonization of standards

# The Role of Transboundary Cooperation

## ▪ Jointly withstanding the impact of climate change

- No single developing country can withstand the impact of climate change alone
- Exchange of data and information on draught
- Flood Forecasting, Early warning and preparedness
- System wide storage capacity





# The Role of Transboundary Cooperation

## ▪ Sedimentation and siltation

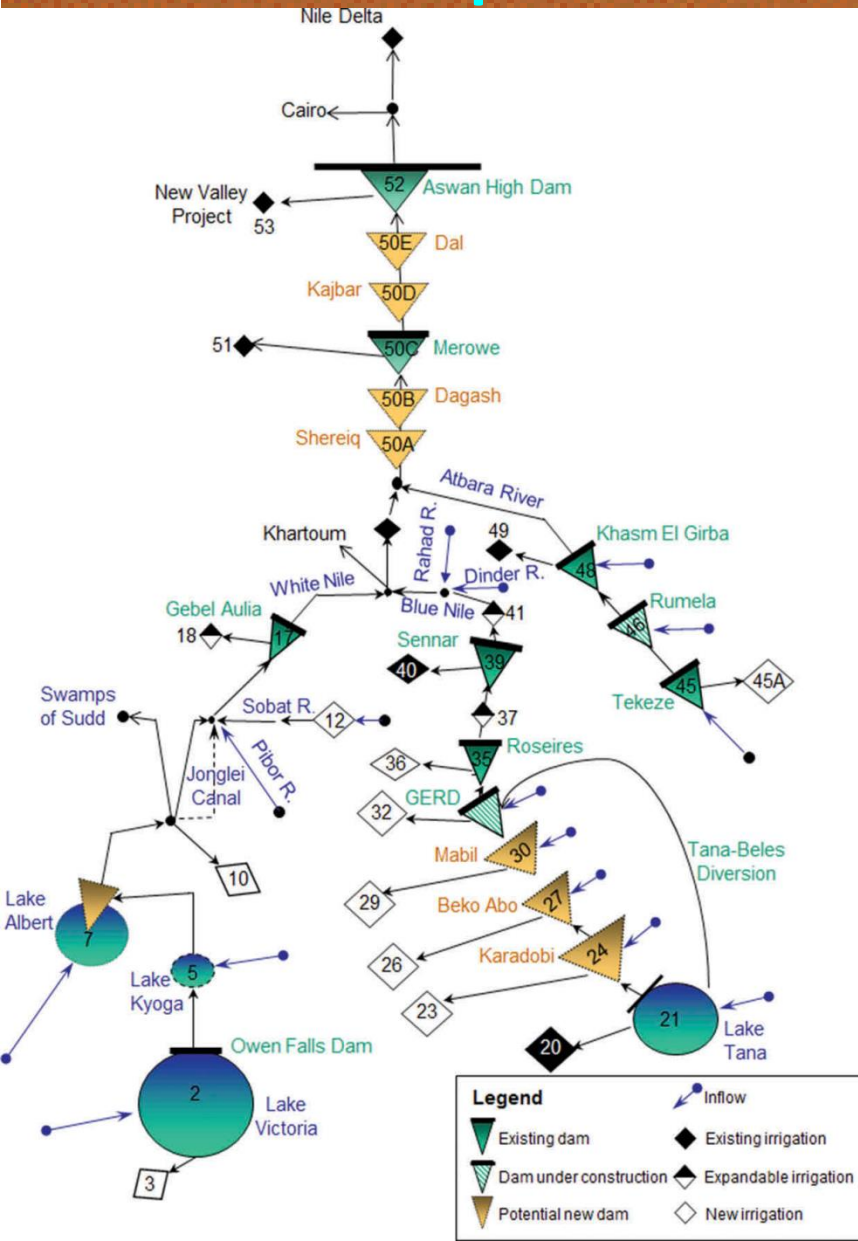


- Degradation on the highland and Siltation of Infrastructure downstream
- Watershed Management
- De-silting dams and related infrastructure has costs



# The Role of Transboundary Cooperation

## Coordinated Operation of infrastructure and Safety

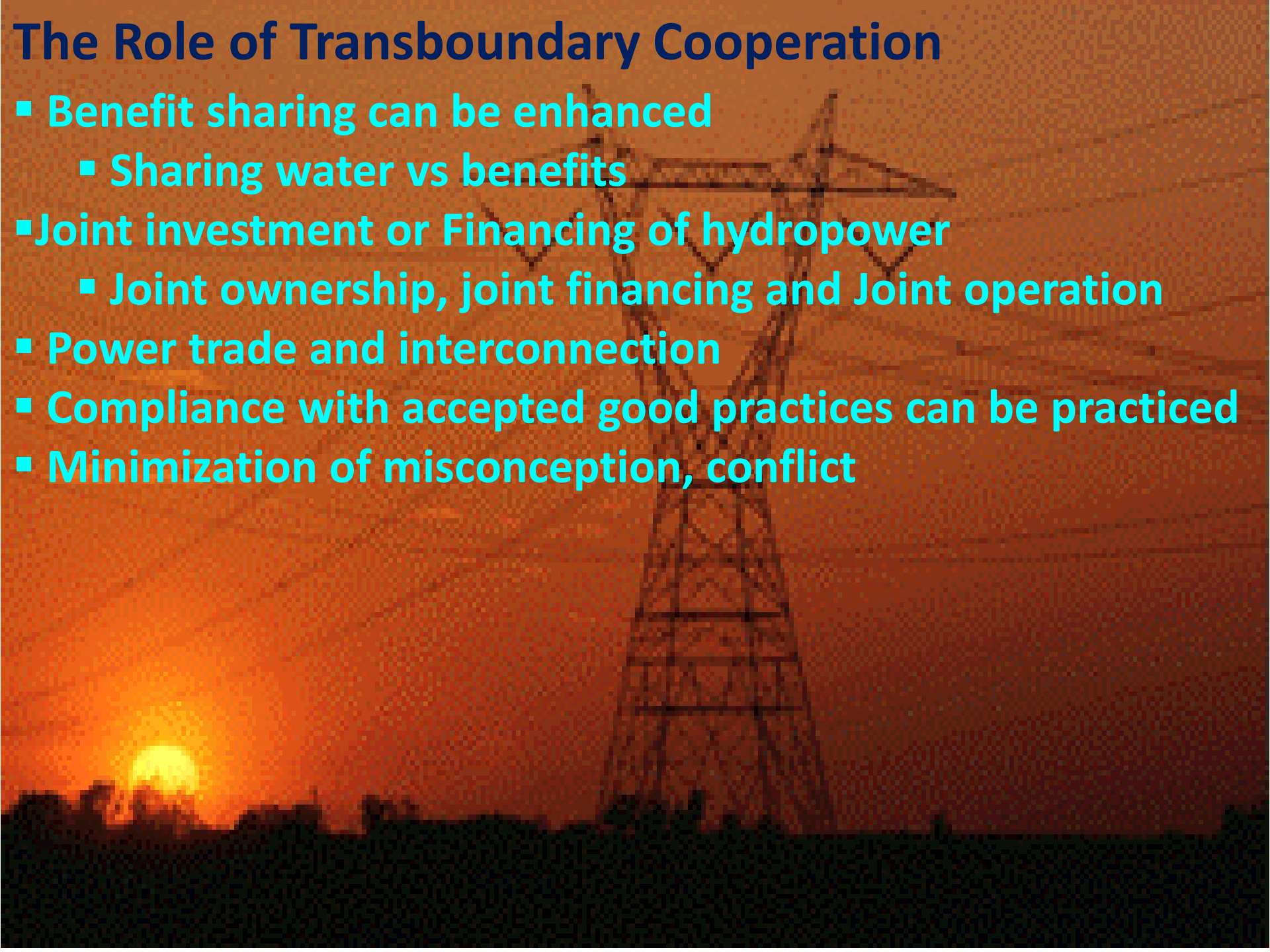


- Coordinated Operation of Reservoirs can generate huge benefits
- Safety of infrastructure can be ensured



# The Role of Transboundary Cooperation

- **Benefit sharing can be enhanced**
  - **Sharing water vs benefits**
- **Joint investment or Financing of hydropower**
  - **Joint ownership, joint financing and Joint operation**
- **Power trade and interconnection**
- **Compliance with accepted good practices can be practiced**
- **Minimization of misconception, conflict**



## Take Away Message

- **Hydropower is crucial for rapid socio economic development**
- **Development of hydropower in one part of the basin will have implication on the other**
- **Technical feasibility, environmental viability, social acceptability and economic considerations are corner stones of sustainable HP development**
- **An Integrated basin wide approach can be pursued for optimal utilization of the resource base**
- **Transboundary cooperation has key role in ensuring that hydropower development is sustainable.**
- **With Genuine cooperation it is possible to develop the right hydropower, and develop them right in the right time**



**THANK YOU**