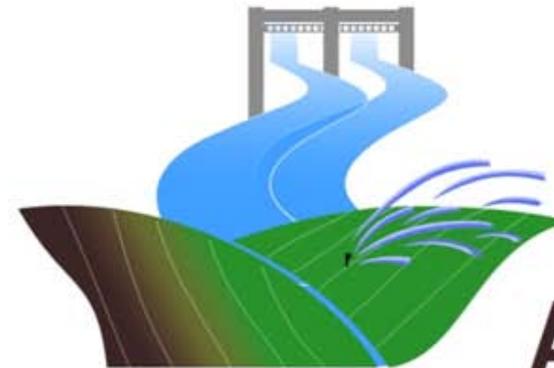


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Asia's Large-Scale Irrigation Systems: Challenges and Options

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ADB

This Presentation

- Are large scale irrigation systems (LSIS) relevant?
- What are key issues and major challenges to LSIS?
- What are the reshaping requirements of LSIS?
- Conclusions and the key questions.

Are LSIS relevant?

- Irrigate **over 100 millions** ha in Asia;
- Stabilized crop **yield** by bridging **rainfall gaps**;
- Increased cropping **intensity** producing more food;
- **17%** of irrigated area produce **40%** of world food;
- contributed to shallow **groundwater recharge**;
- **Doubled** the food production in nineteen's
- Contributing to doubling the food production challenge by 2050 for additional **2 billion** people
- Large storages helped reducing the impact of **flood and drought**, benefits from **hydropower** and flow **regulation** control;
- drive the development of **institutions**;
- brought overall development and **social uplifting**.

LSIS related key issues and major challenges?

1. Aging, Inadequate O&M, and high risk of failure
2. Outdated technology do not fulfill the requirements of a modern agricultural production system
3. Inequity, inefficiency and low water productivity



LSIS related key issues and major challenges?

4. Poor drainage, water-logging and salinity
5. Declined water and land quality and health and environmental consequences
6. Reducing water availability



Reshaping the LSIS future

- ❖ Preserve and modernize the existing LSIS
- ❖ Reshape LSIS for demand-driven water requirements
- ❖ Increase investment in drainage



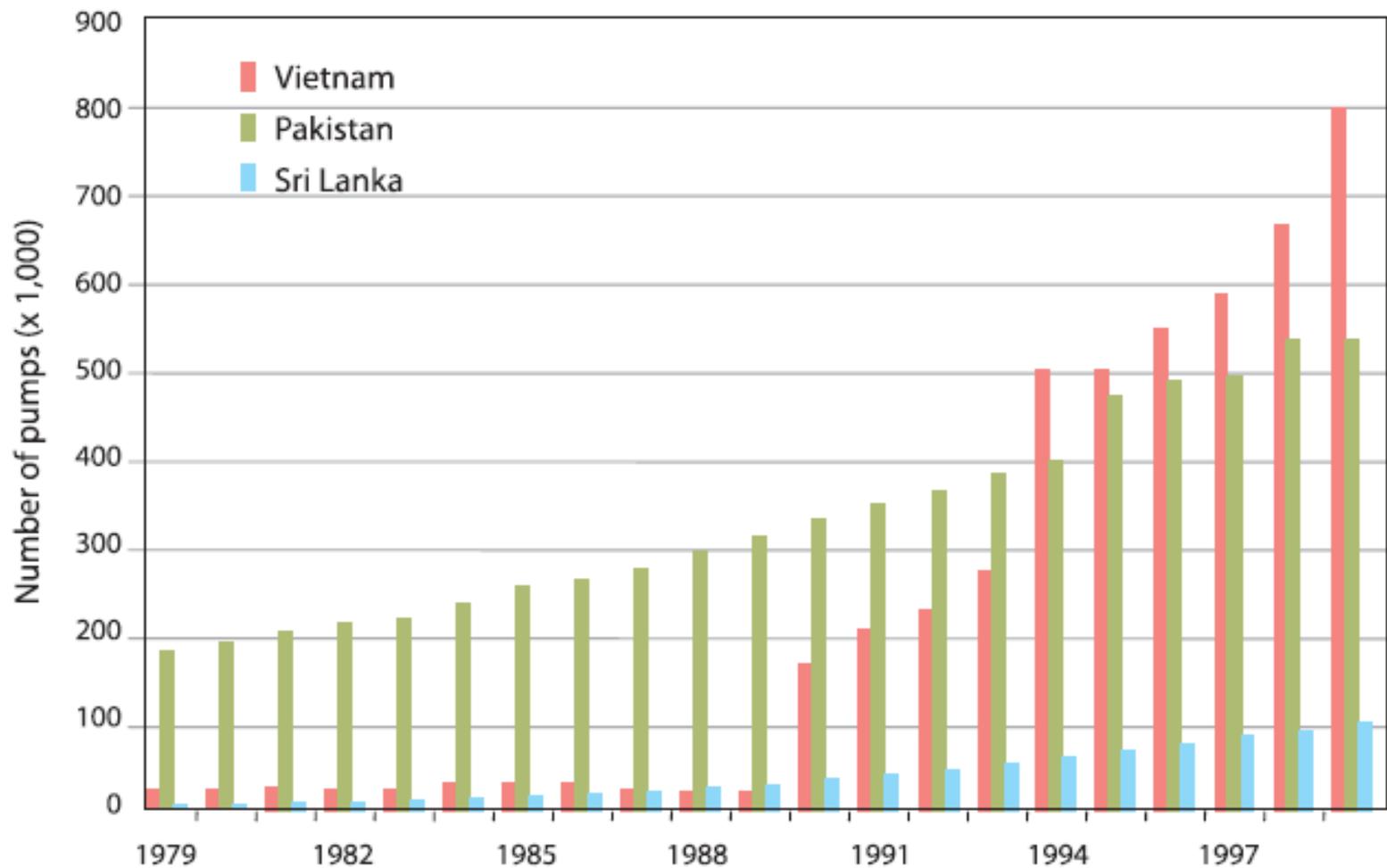
Reshaping the LSIS future

- ❖ Manage groundwater sustainably
- ❖ Improve water and land productivity
- ❖ Expand irrigation wherever opportunities exist
- ❖ Invest in LSIS
 - ❖ Estimated requirement US\$192 billion for Asia



Groundwater

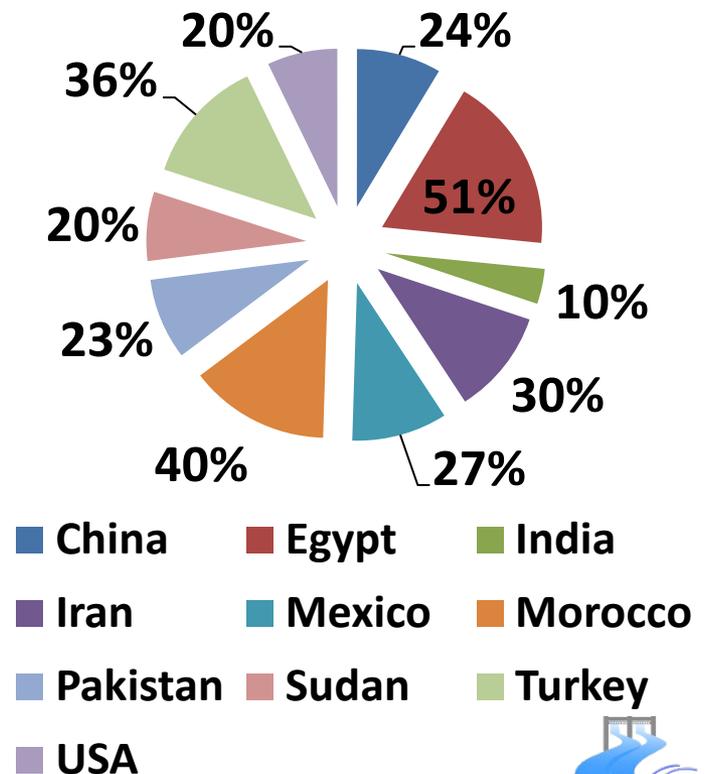
- Trends in groundwater extraction (1979-1999)



Drainage

- Saving an irrigated ha through proper drainage (US\$1000 per ha) is six times less expensive than creating a new irrigated ha (US\$6000)

- Drainage problem area as percentage of total irrigation area



Why drainage is important?

- ❖ Drainage protects the **natural resource base** for food production.
- ❖ Drainage sustains and **increases yields** and rural incomes.
- ❖ Drainage **protects irrigation** investment.
- ❖ Drainage infrastructure serves **rural** and **urban** and **industry**.
- ❖ Drainage protects human lives and assets against **flooding** and **high groundwater levels**.
- ❖ Drainage protect land and **water quality**.
- ❖ Drainage services improve **health** conditions.

Conclusions

- Irrigation alone cannot increase production without tackling the problems of drainage, water logging and salinity;
- The new LSIS development, if any, should be planned, built and operated considering equitable water distribution, efficiency and water productivity;
- Transformation of the LSIS to meet farmers' needs and changing water delivery service context is required. Farmer participation, efficient and technically competent institutions and effective water governance will be important elements;
- International financial support will be required in this massive undertaking;

The key questions

- Are the governments' ready to include drainage in their high priority agenda?
- Are the governments ready to introduce equitable water distribution interventions?
- Are governments ready to increase investments in on-farm water and agricultural management?
- Will the international donors and financing institutions fill the investment gap given many failed irrigation projects in the past?

Thanks

