

Challenges and Opportunities for Farmer Managed Irrigation Systems (FMIS) in Koshi Basin, Nepal

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General Characteristics of FMIS

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- Nepal has rich tradition of community effort in natural resources management (*water resources, forestry and pastures*)
- State policies and practices have historically been conducive
- Community role in natural resources management
- FMIS a national heritage, covers 70% of irrigated area

Role of Community

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- Where ever water resources are available in the Hills and Terai, people make effort to bring water through channel for cultivation
- These systems ensured food security and rural livelihood
- Provided job opportunity and contributed for poverty alleviation
- FMIS reflects local knowledge, local skill and local technology

FMIS in Koshi River Basin

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- Many FMIS exist in these Koshi Basin Districts
- *Indrawati* Sub-basin, a tributary of Koshi, in *Sindhupalchowk* (1986) within 200km³, 119 systems were identified with (2,100 ha) were identified
- An inventory of irrigation systems in *Dolkha* and *Okhaldunga* reported to be 237 and 292 units of systems were identified (FMIST, 2001)

Koshi Basin Districts

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FMIS in Central and Eastern Regions Koshi Basin Districts

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- DOI has partial record of **WUA registration** by districts. They are only those systems which have received assistance from the government for rehabilitation. **There are many other systems which are not yet recorded.**
- One of the challenges that is being faced now is about the **preparation of inventory** of this important resource for FMIS systems.

Assistance to FMIS

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- A number of donor driven projects have provided assistance for rehabilitation of the FMIS in the **Koshi Basin districts**
- They are **SINKALAMA**, Sector Irrigation Project-I, Second Sector Irrigation Project (SSIP), CMIASP, CMIASP-AF, KHARDP, etc.

Water Sources of these systems

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- The water sources of these systems are generally the tributaries of Koshi
- Water scarcity in these tributaries have become a big challenge in **irrigation water management**
- The **climate change** has also impact on the these **irrigation systems** in water availability, timing, cropping pattern and productivity

Big River systems and FMIS

- In Eastern part of Nepal, FMIS drawing water from big river do not exist like in *Rani Jamara Kulariya* of *Kailali* and *Rajapur* of *Bardiya* drawing water from *Karnali* in Western Nepal.
- Within Koshi basin, only a few systems have water source in Koshi river or bigger tributary like *Morang –Sunsari* and *Chandra Nahar* from *Trijuga* River, tributary of Koshi. Many FMIS were merged in the big systems.

Groundwater Utilization

- STW and DTW were also installed in the Koshi Basin Terai districts. Many of them are owned by the community of farmers or by the farmers themselves.

Concerns of FMIS

- FMIS are no longer only institutional, physical and technical concern, **climate change** causing water scarcity has become one of the major concerns of **FMIS sustainability**.

Challenges of FMIS are to be Considered

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- A. productivity of available resources
- B. reducing poverty and insecurity
- C. people's dignity and empowerment
- D. farmers organization as social capital to be used for their improvement
- E. innovation of farmers for their livelihood improvement
- F. "politics" something to be dealt with

Influenced by External factors and Changing social and value systems

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Then	Now and Future
<ul style="list-style-type: none">• Indigenous System• Self-reliance• Community focus• Traditional management• Peripheral	<ul style="list-style-type: none">• Changing System• Globalization• National and international economics• Management transfer• Mainstream/ central
<p><u>Orientation</u></p> <ul style="list-style-type: none">• Subsistence• Labor allocation• Community focus• Farmers less educated• Climate variable• Water relatively predictable• Agriculture main focus	<p><u>Orientation</u></p> <ul style="list-style-type: none">• Commercial• Access to resources• Labor scarcity and saving• Efficiency• Economics• Farmers more educated• Climate unreliable

Influenced by External factors and Changing social and value systems (cont..)

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- **Water – Key factor**
- **Water as resource**
- **Water allocation and distribution**
- **Government- a distant phenomena**
- **Can not depend on it**
- **Livelihoods are focus**
- **All resources critical**
- **water is natural resource**
- **Water productivity**
- **Government is weaker, but willing to help**
- **Migration**
- **Change in role of women**

Directions

- The identification of those features of then and now provides a basis to rethink about research priority, planning of irrigation development, investment, monitoring and evaluation of FMIS.

Thanks

