



Water Secure and Resilient
Asia and the Pacific

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Water Financing Partnership Facility



Kingdom of the Netherlands

Innovative Groundwater Irrigation management in Nepal

Via

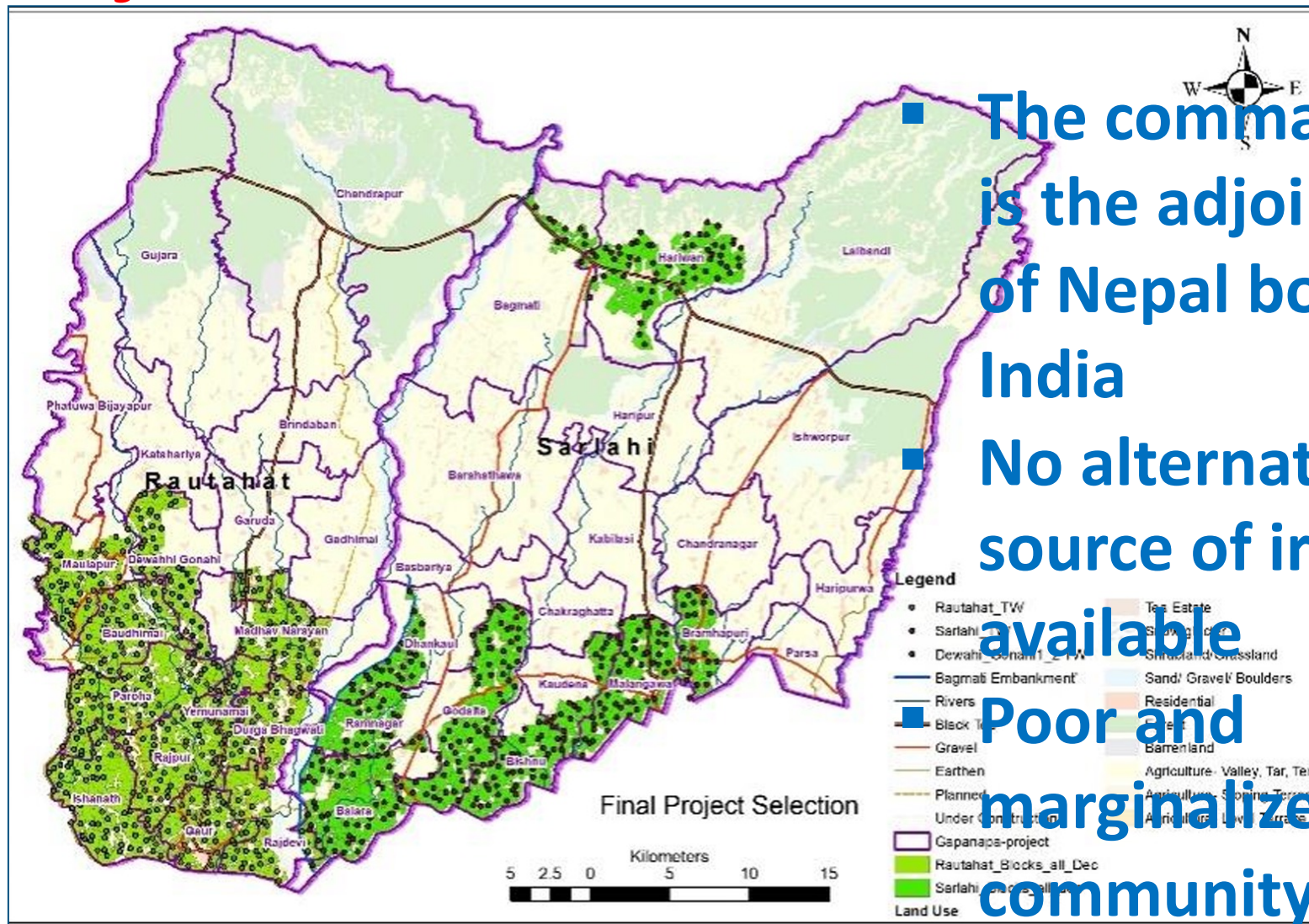
MECHANIZED IRRIGATION INNOVATION PROJECT (MIIP)



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Project Area



■ The command area is the adjoining land of Nepal bordering India

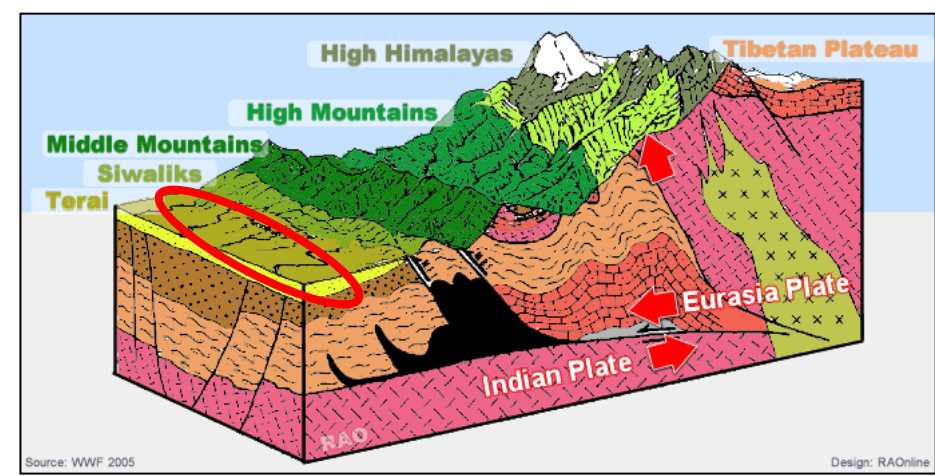
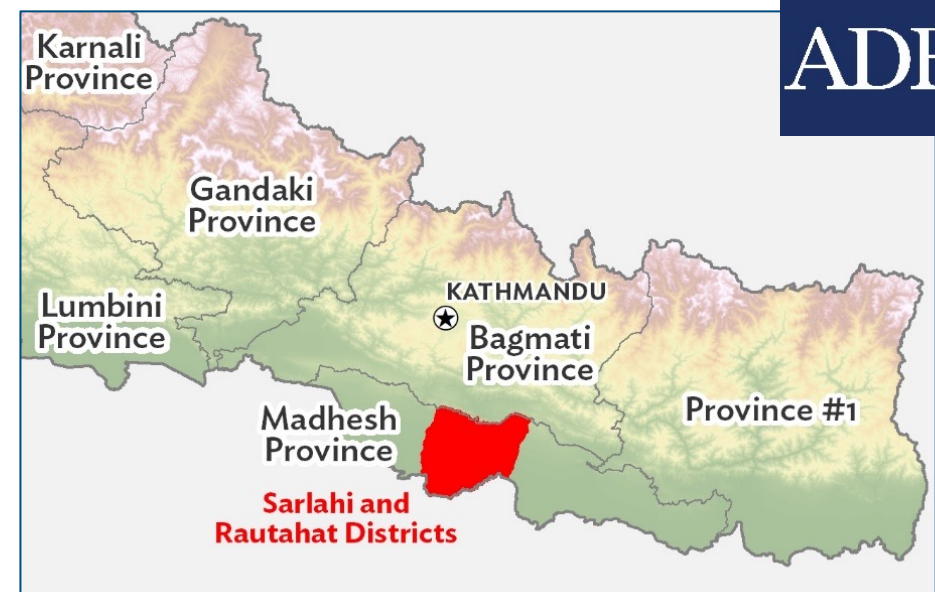
■ No alternative source of irrigation available

Poor and marginalized community



Main Project components

- Madhesh Province in Terai, Nepal
- 22,400 ha
- 500 GWIS , 40-60 ha each
- Low voltage distribution network and TL
- Replacing ad-hoc planned shallow tube well systems





Critical conditions for a successful project

- Sustainable groundwater **withdrawals**
- Sustainable **financing mechanism** to meet higher operational costs
- Farmer **willingness to pay based on profitability**
- **Improved farming practices**: increase crop water productivity, generate higher incomes
- Availability of **affordable and reliable energy**



Madhesh Pradesh is the grain basket of Nepal



Consultation with farmers



Innovation

ADB

- First **DBO modality** in irrigation sector in Nepal
- Establishment of an independent **irrigation management company**
- **Variable speed drive pumps** and **buried pipe** distribution network → adoption of pressurized irrigation
- **Prepaid meter system** with smart card for water fee collection
- **Supervisory control and data acquisition system** to monitor energy & water consumption, groundwater levels
- **Farmer support program**



Example of VSD



Example of pre-paid meter



Farmers can irrigate through flexible pipe or by mechanical sprinklers



Paradigm Shift in Irrigation

ADB

- Operation and Maintenance Assured with **DBO** and Company Modality
- Assured Irrigation Water supply
- Capable of using non conventional technology like drip and sprinkle system
- Company can operate its business in commercial basis
- Company with the help of FSP and other support programme in the beginning and independently later on can assure the market for produce from farmers
- Prepaid Irrigation Service Fee Collection makes the system self sustainable
- Farmers Diversification toward market responsive crops



Example of VSD



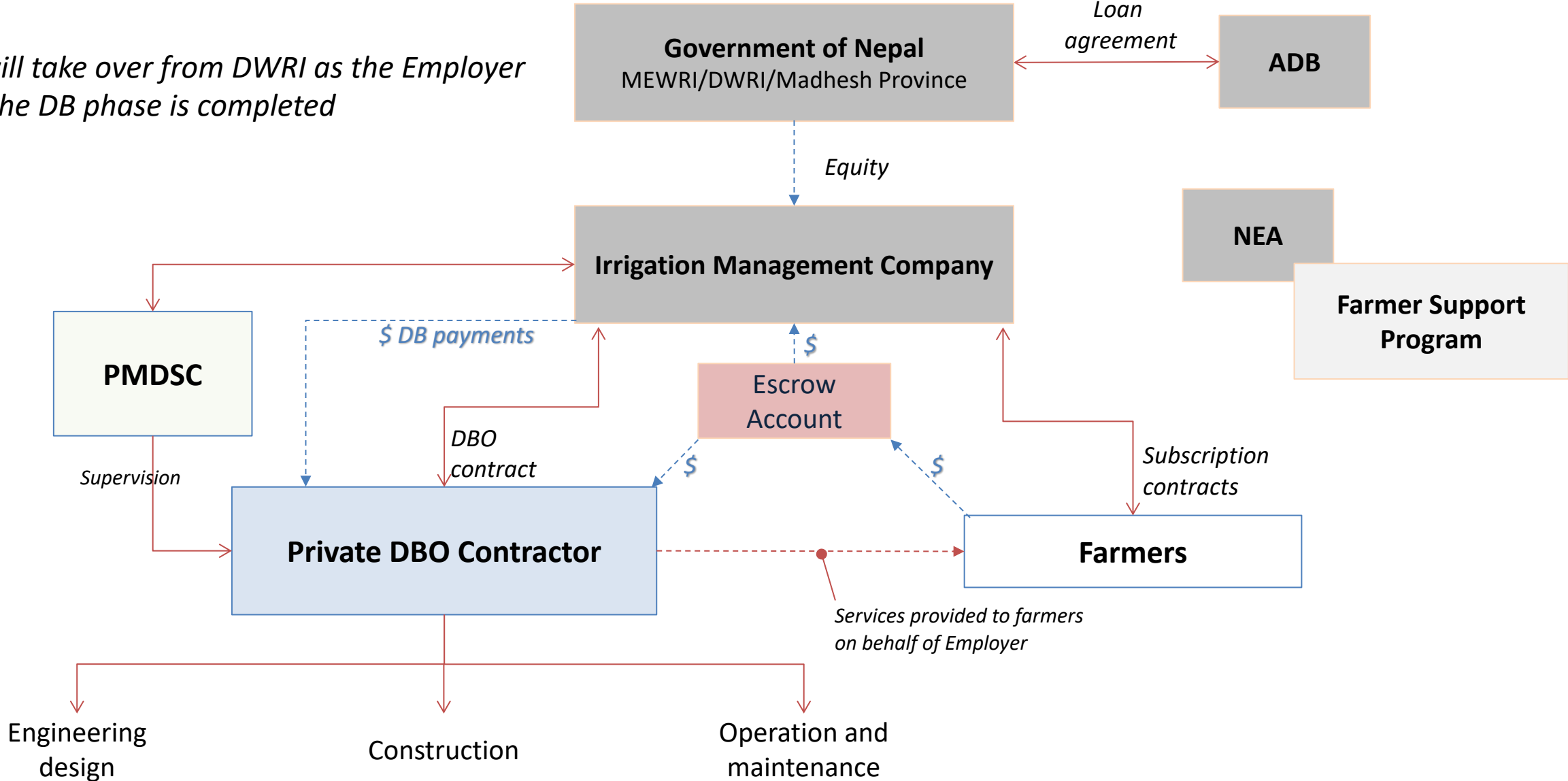
Example of pre-paid meter



Farmers can irrigate through flexible pipe or by mechanical sprinklers

Organizational Structure

IMC will take over from DWRI as the Employer once the DB phase is completed





Challenges

ADB

- First of its kind in Management Operation & Maintenance
- Conventional GWIS- except electricity, nearly all cost is borne by GoN
- Some local government has even paid for electricity cost
- During Transition i.e. subsistence based agriculture to industrial agriculture subsidy is necessary
- As of now subsidence in the form of Asset Replacement and Operation and Maintenance seems necessary.
- Such subsidy can reduce the ISF to those of conventional system and helps the farmers to adopt new agricultural practices swiftly



Example of VSD



Example of pre-paid meter

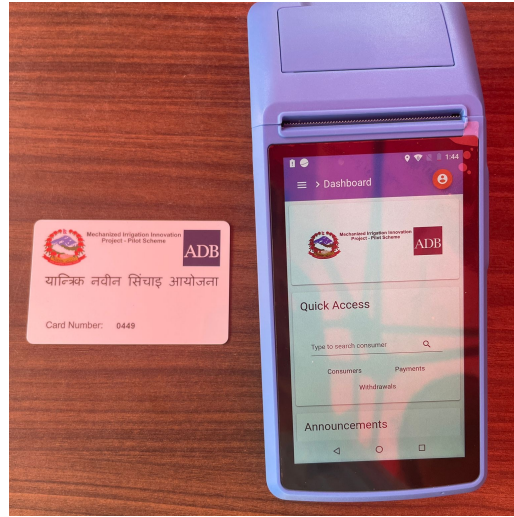


Farmers can irrigate through flexible pipe or by mechanical sprinklers



Pilot scheme to showcase the concept

Pump house and tube well

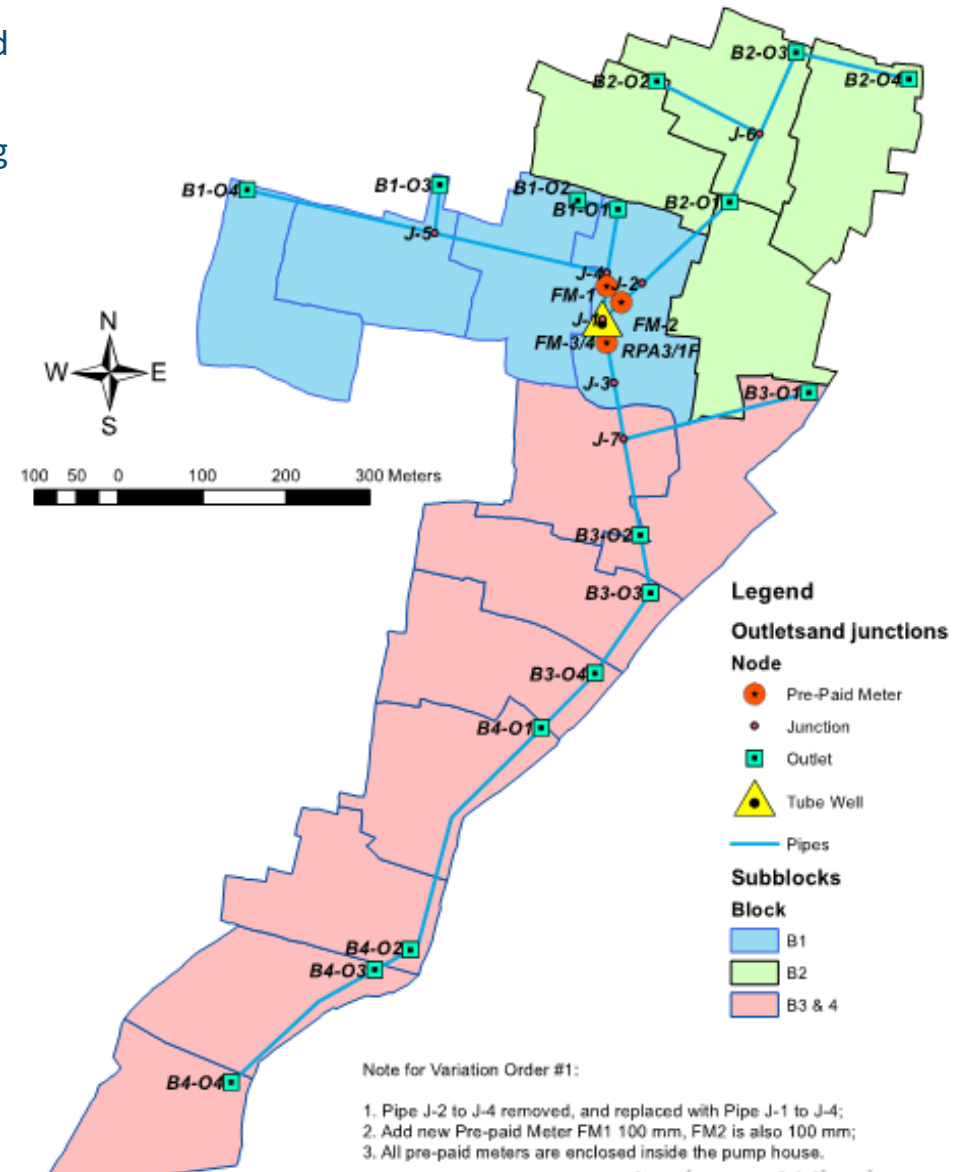


Prepaid card and mobile unit vending machine

Buried pipe distribution system



Outlet



Thank you!

ADB

