WELCOME

Ministry of Federal Affairs' and Local Development

Department of Local Infrastructures Development and Agricultural Roads

Rural Village Water Resources Management Project Phase

Achieving sustainable water services through climate smart multiple use water services –A practice from rural area of far-west, Nepal.

25th February 2016

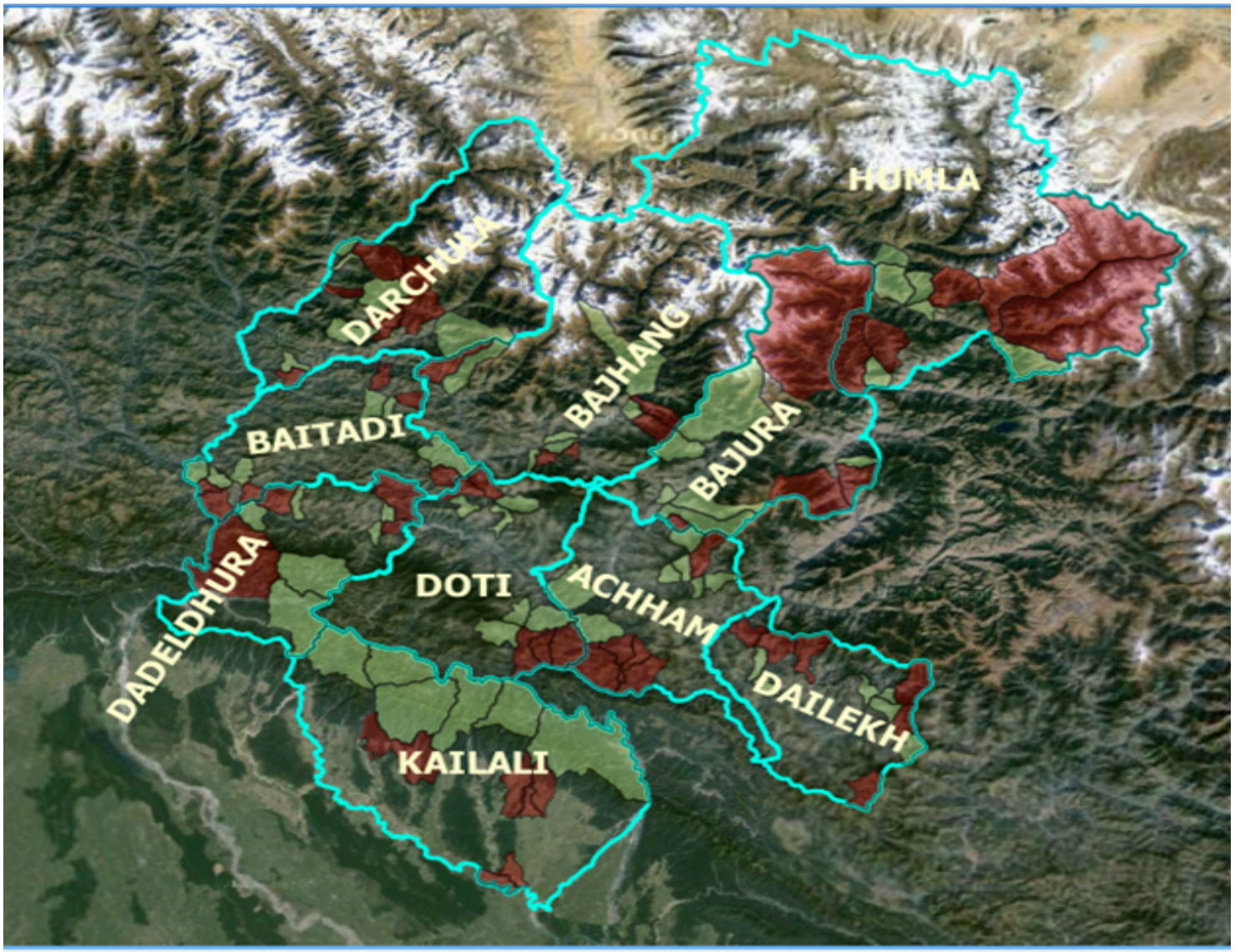
Kathmandu

Er. Parikshit Shrestha, Technical Specialist
Rural Village Water Resources Management Project (Nepal Finland Cooperation)

PRESENTATION OUTLINE

- LOCATION & TREND
- WHY MUS ?
- MUS OPTIONS IN RVWRMP
- PRACTICES
- DIFFICULTIES IN MUS IMPLEMENTATION
- CONCLUSION
- RECOMMENDATION

RVWRMP working area



Characterized by

REMOTE

UNREACHED

NEGLECTED

DEPRIVED

POVERTY

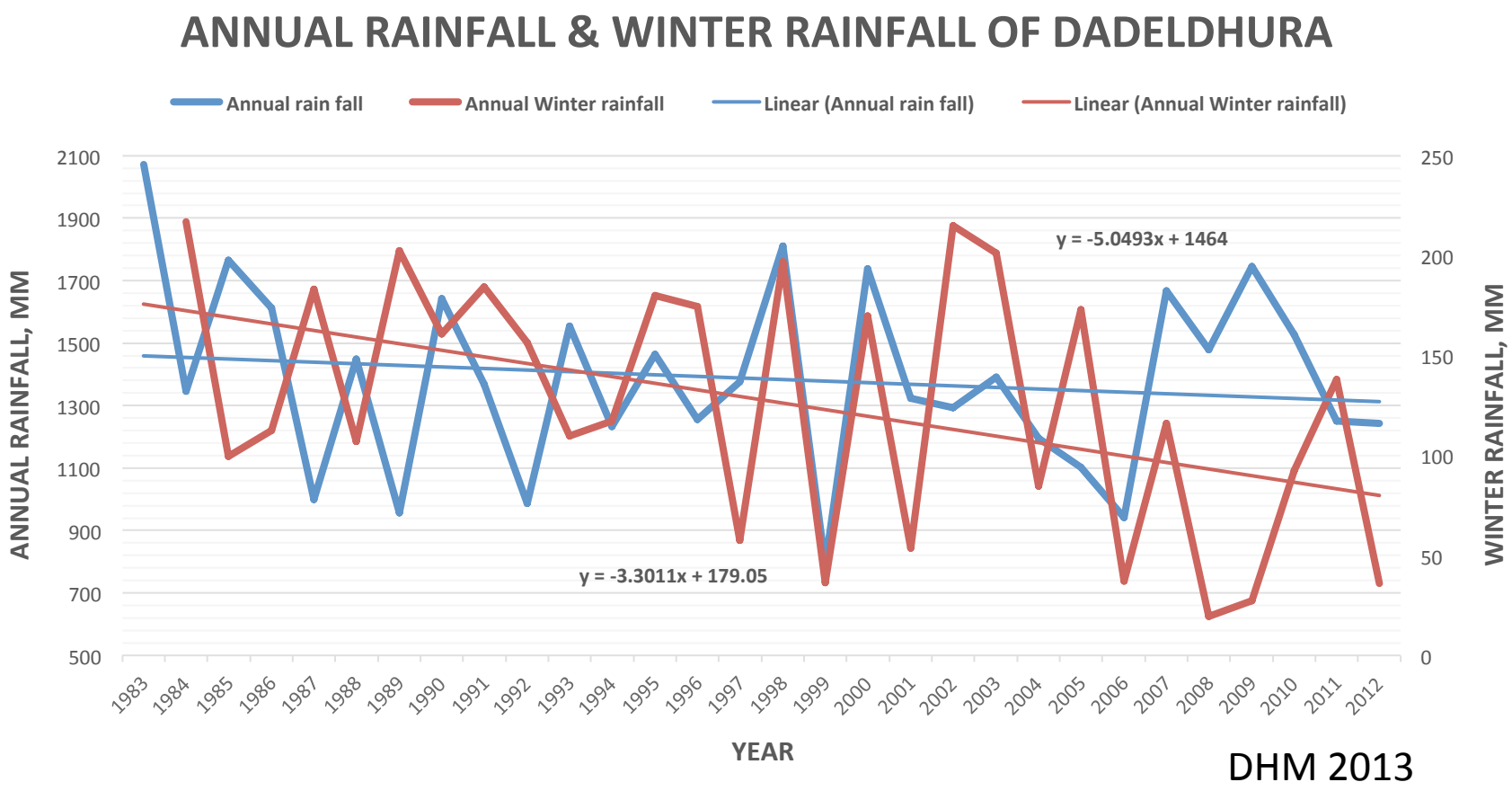
VULNERABLE

TO CLIMATE

CHANGE

EFFECTS

What signs do we see of climate change?



DHM 2013

A study by RWSSP-WN, nearly 2,400 sources between the years 2004 and 2014 in Tanahun district. The study showed that there is 50% reduction in average yield of point sources in ten years.

What signs do we see of climate change?

- Climate change impacts are experienced on water-related events, such as flooding and drought.
- Rains frequency reduced (winter rains) and less but more intense in monsoon.
- More runoff due to land use changes.
- Water is running out - sometimes water demand has increased and therefore the earlier adequate water supply is not sufficient…
- In other schemes villagers report that there is a decline of spring discharge.

Too much or too little water causes problems

- Stand alone water schemes: “Water letting go”
- Water drying up leads to ->
  - Conflict in use
  - Drudgery and hardship
  - Lack of other services
  - Poor nutrition & food security as agriculture impacted
  - Health & hygiene problems
  - Large investment need for replacement
  - Migration for livelihoods/cash
- Too much water (over a short period) -> Management problems & Environmental degradation
  - Structures washing away
  - Water Quality degradation

Why is MUS climate smart?

- A single use system is a risk in the face of weather and climate variability & uncertainty
- Those closest to water point using water for agriculture – MUS acknowledges & plans for it
- Instead of thinking in one technology only (eg. just water supply, micro-hydro or just irrigation), MUS allows communities to maximise the use of the existing water in a fair manner
- In the face of drought, the Uc (MUS) can plan quotas
- The same water can be reused many times through different systems (Livestock watering, waste water for watering plants….)
- Encouraging **low-input agriculture** & **efficient use of water** in home gardening (drip irrigation, using tap stand flow for small irrigation, and other water smart practices) have proven highly effective

Multiple Water Use Services practiced: combination of….

SANITATION

WATER SUPPLY

80

4840 HH

WASTE/SPILLED WATER USE

24

MICRO-IRRIGATION

7

2

IMPROVED WATER MILL

3

2

8

CONVENTIONAL IRRIGATION

6

MICRO-HYDRO

All water supply schemes are Defacto MUS


MUS: Water Supply
& Micro-Irrigation
-priority to water
supply
Sobigada, Rupal,
Dadeldhura
RVWRMP_DRR_parikshit

Planning for MUS – livestock watering troughs (Reuse of used water)

Gotri, Bajura

Kusapani, Dailekh

Sarmoli, Darchula

Dewal, Dadeldhura

RVWRMP II
Nepal-Finland Cooperation

Planning for MUS – Water Supply and Conventional Irrigation

Sarmoli, Darchula

Planning for MUS – Micro-hydro and Conventional Irrigation

Bhatakatiya, Achham

Planning for MUS – Improved water Mill and Micro-hydro

Mahadevstan, Baitadi

MUS can support Climate Change Adaptation & Environmental Sustainability

- Using water for tree nurseries & fodder production protects the watershed
- Using water for improved water mills, Solar, hydram pumps, micro-hydro produces clean energy

Bhatakatiya, Achham

Dungachalna, Achham

Mahadevstan,Baitadi

Shirsha, dadeldhura

RVWRMP II
Nepal-Finland Cooperation

www.**rvwrmp**.org.np

Some climate hazards can't be avoided but we can maximise the chance of infrastructures surviving & service continuing

From different project VDCs

RVWRMP II
Nepal-Finland Cooperation

Sustainability: Linking to cooperative

Financial Status of affiliated UCs in Cooperatives

As of Fiscal Year 2071/72 (July 16, 2015)

S.N	Cooperative VDC	District	# of affilliated UCs	Balance of UCs savings (principal+interest) in NPR	Provision & allocation of yearly net income to O&M fund		Remarks
					Allocation of net profit (%), after deducation 25% from annual net profit	Accumulated fund in NPR	
1	Chhatara	Bajura	4	32,872.00	10%	Not regulated	
2	Bishalpur	Baitadi	5	693,841.00	Not provisioned yet		1-Non RV
3	Bhatakatiya	Achham	13	130,547.00	10%	30,262.00	
4	Rupal	Dadeldhura	0	0	Not provisioned yet	0	
5	Belapur	Dadeldhura	4	23,314.00	10%	2,949.00	
6	Kuwakot	Baitadi	9	130,134.00	10%	13,680.00	2 Non-RV
7	Kusapani	Dailekh	12	431,544.00	10%	28,324.05	
8	Sipti	Darchula	11	192,238.00	10%	7,943.00	
9	Pauwagadhi	Bajhang	2	4,264.00	10%	26,628.00	
10	Mastmandu	Dadeldhura	3	30,401.00	5%	2,712.00	
11	Lalikanda	Dailekh	14	299,070.00	10%	49,106.00	
12	Mahakali	Baitadi	8	331,815.00	10%	11,647.00	
13	Masta	Bajhang	5	59,913.00	10%	9,127.00	
14	Sirsha	Dadeldhura	19	422,138.76	5%	49,325.69	3 Non-RV
15	Simchaur	Doti	13	557,756.00	10%	8,053.00	
Total			122	3,339,847.76		239,756.74	

Ws scheme only included.

Difficulties of MUS implementation in the face of climate uncertainty & variability

- Lack of information available to all on the quantity & quality of water available
- If water management committee doesn't behave equitably, in times of shortage of water, some groups or water uses may miss out -> conflict
- Sector working approach of GoN agencies reduces cooperation in integrated planning for water resources schemes
- Users lack understanding of the MUWS approach
- If MUWS is too effective, too much water could be used – leading to depletion and eco-system damage
- Attitude to tap all available water at source.
- Continuation of MUWS as designed (turning to easy way of watering- conventional or from livestock trough)

Conclusion

- WUMP and MUWS could be means for climate change adaption and mitigation leading to risk reduction and preparedness
- Optimum utilization of available water in sources for improving general living condition of rural people.
- WASH sector development plan of Nepal has acknowledged MUWS under improving functionality (page 48, draft 2, Aug 30, 2015)
- Sustainability and functionality of constructed water services is linked with affordability to contribute for O & M.

Recommendations

- Water sources should be monitored regularly for changes in output, so that there is information available for planning
- Needs adaptive management & flexibility
  - Water management committees must pay attention to climate variability.
  - Equitable shortage-sharing agreements must be built into the rules
  - Priority for domestic water needs
- Share information on MUWS approaches
- Better coordination between sector actors
- Watershed issues need even more consideration
  - more attention to aquifer recharge & soil conservation structures, planting grasses & trees around water sources, recharge ponds and pits
- Water Use Master Plan as bottom line for integrated WR development in rural area. DoLIDAR could be an option for integration of different services planning
- Paying attention to **adaptation & building resilience to climate change** & to **disaster risk reduction**, as well as to **securing water** for the future.

Reference

- RVWRMP: *MIS, published or unpublished documents*
- SEIU/MoUD/GoN, 2015: *WASH national sector development plan*
- Pamela White, Indra Raj Badu and Parikshit Shrestha; *practical paper Achieving sustainable water supply through better institutions, design innovations and water safety plans-an experiences from Nepal*: journal of water, sanitation and hygiene for development, IWA publishing, Sep 2015;
- Rautanen, S.L; van Koppen, B. and wagle, N. 2014; *Community-Driven Multiple Use water Services: Lesson Learnt by the Rural Village Water Resources Management Project* – Water-Alternatives vol 7, issue 1
- Khatiwada, L: *multiple use services (mus) of water for livelihood improvement and reduction of climate change vulnerability; A Case of Sirsa (RVWRMP project VDC), Dadeldhura (2014) Msc. thesis*

DHANYABAD

THANK YOU

RVWRMP II
Nepal-Finland Cooperation

www.**rvwrmp**.org.np