Vulnerable communities along river basin inclusively engagement in the riverbed farming improved economic leadership

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Introduction to riverbed farming

- Rivers from hills ➔ narrow valley ➔ Tarai: 
  - *silt and sand deposition ➔ dry riverbeds* 
  - (November to May) ➔ spring vegetable cultivation
  - Measured **78,000** ha riverbed in 21 Tarai districts and it is in increasing trend
- **Landlessness** is widespread in Tarai region: more than **20%** households
- Income sources of landless and land-poor households are *sharecropping, wage labour* and *seasonal migration*
- Increasing trend of soil erosion and flooding - widening riverbed areas in Tarai region - agriculture land cut + Sand cover
Formation of riverbed

• Global warming and climate change, impacts on regional hydrological systems.

• Climate change induced events, flash/monsoon floods and glacial melting.

• Increasing rivers carry both more water and more sediments to fertile low land fields.

• Destruction/cutting of fertile land in the low land Tarai
Riverbed Farming implementation working districts
HELVETAS Swiss Intercooperation Nepal

- Swiss non-governmental organisation
- Started in Nepal - 1956
- Five working areas ➞ 15 Projects
  - Governance and Peace
  - Sustainable and Inclusive Economies (SIE) - Riverbed farming project
  - Skills Development and Education (SDE):
  - Water and Infrastructure (WIN):
  - Environment and Climate Change
River details of Nepal
Mahabharat :- Big rivers
Siwalik :- Medium rivers
Churia :- Small rivers

• 6000 rivers in Nepal (including rivulets and tributaries)
• Main rivers :- Koshi (Largest), Narayani (Deepest), Karnali (longest),
• Gandaki, Rapti, Bagmati, Mahakali
• 40 river flowing in Tarai districts
Goal of riverbed farming programme

Goal:
Improved *food security* and *incomes* of landless, land-poor and severely flood-affected households in Tarai region through seasonal cultivation in the riverbeds
Scope of riverbed farming in Nepal

➢ Riverbed farming alliance confirms

❖ 78008 hectare riverbed in 21 Tarai / inner Tarai districts.

❖ Land scarcity is high.

High Commission on Scientific Land Reform confirms

33.7% farming families resource poor

➢ (landless-10.13are land poor-23.64%) & are small farmers-22.86%
Engagement of vulnerable communities in the riverbed farming

- Riverbed farming programme 7917 (51% women and 91% ethnic groups) landless and land poor households vulnerable from climatic hazards

- Women and men riverbed farmers Leasehold contract
Inclusive representation of different Ethnic groups in riverbed farming programme

- **Dalit**: 713, 9%
- **Janajati**: 7046, 89%
- **Brahmin/Chhetry**: 158, 2%

Ethnic group wise representation in leadership position of riverbed farming groups

- **Chair person**: Dalit 4, Janajati 2, Brahmin/Chhetry 2
- **Secretary**: Dalit 3, Janajati 2, Brahmin/Chhetry 1
- **Treasurer**: Dalit 2, Janajati 2, Brahmin/Chhetry 1
Technical assistance on riverbed farming technology

- *Trained Local resource persons (LRP) ➔ extension services ➔ 23% women*

- *LRP ➔ Production technology ➔ Riverbed farmer ➔ environment friendly technologies*  
  (use organic manures, bio-pesticides).

- Technical assistance ➔ collaborating organizations
Riverbed farmer gained marketing skills

Gender market mapping

→ Capacity of women farmers

Women farmers improved marketing skills of (negotiation, cost benefit analysis, cleaning, packaging etc).
Key achievements

- **Women and men farmers** → market oriented vegetable production → localized extension system

- Riverbed farmers → **meaningful income** → **reinvested in productive alternatives (Vegetable production arable land)**
Key achievements (cont....)

Riverbed farming

- Free range grazing, sand extraction
- Green coverage → **regeneration of riverine vegetation**
  - Local government – priority - riverbed farming - land use policy

Riverbed farming alliance – Policy influence
- policy formation process
- agriculture course curriculum.
Impact of the project

➢ Large unused barren land are used for market oriented production.
➢ Access to land, skill (leadership, negotiation, cost benefit analysis).
➢ Acceptance and replication.
➢ Regular and Increased income.
➢ Improved food security and economic status.
➢ Earnings re-invested in other productive alternatives.
➢ Directly/indirectly influence on Gross Domestic Produce (GDP)
Inclusive growth of riverbed farmers, cultivated areas and farmers groups

Years (crop cycle)

- Households
- Cultivated area [ha]
- Groups

- Number
- 2006/07: 670, 43
- 2007/08: 1115, 52.5
- 2008/09: 2050, 80
- 2009/10: 3160, 130
- 2010/11: 3380, 140
- 2011/12: 3600, 145
- 2012/13: 4460, 205
- 2013/14: 6220, 305
- 2015/16: 9123, 415
- 2016/17: 9220, 1012

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Lessons

- Riverbed farmers to strengthen capacity access to finance, improved negation skills, entrepreneurship skills,

- Riverbed marketable product (watermelon) is influenced by nearby boarder products - adjustment on the production system.

- Riverbed farming vegetable - additional income - climate change adaptive measures.

- Riverbed vegetable prone to climatic hazards (flood, hailstorm, cold wave, drought) - so crop security/insurance schemes.

- Coverage- 2% of the total available riverbed areas- limited to seasonal cultivation of riverbed.

- Crop initiated nutrition rich crops (moringa, orange fleshed sweet potato) at river bank - needs further promotion.

- Riverbed Farming Alliance- Focused on central level policy influence- needs policy influence at local level.
Opportunities

- Increasing trend of riverbed areas (78,008 hectare) + additional riverbank – conservation based farming - benefit to larger land poor communities.

- Local government - local plans / resource leverage

- Riverbed farming technology - agriculture in university/college wider knowledge dissemination.
Conclusion

➢ Riverbed farming cultivation technology - land poor farmers – need strengthening of business, entrepreneurship skills for increasing income.

➢ Lobbying for crop security/insurance and users right for riverbed land cultivation- advocacy works (local government planning – university course curriculum)

➢ Riverbed farming- additional income + food security condition - river bank - throughout the season.

➢ Ministry of Agriculture prioritized riverbed farming - link local government planning / policy process.

➢ Negligible impact on environment (less sand extraction, minimize top soil/sand loss due to wind erosion and organic manure application - soil formation process.

➢ Increasing growing population in the Tarai and increasing trend of riverbed/bank areas - riverbed farming technology - conservation perspectives covering whole river basin..
Thank you