3 CASE STUDIES

ETHIOPIA HIGHLANDS

ACHIEVING DUALITY OF WATER SAVINGS AND FOOD SECURITY BY TRANSFORMING VALUE CHAINS

Monday 23 November 2020 | 8.30 - 10.00 CET

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Executive Director, Smart Food

INDIA DRYLANDS
1) ETHIOPIA HIGHLANDS
PROBLEMS

- Severe soil erosion
- Extreme dry periods each year
- Heavy annual rains
- Little water management
- Food shortages, migration
BENEFITS

- Better soils
- Consistent water supply
- More productive farm
- More diversity on farm
- Better diets
- Reduced drudgery of walking for water
- Less destruction of lowlands
- Terraces recharged groundwater, which recharged streams downstream.
- 5 x more land irrigated in the valley
- In 5
  - 82% improved food security vs 51%
  - 53% reliance on food aid vs 92%
2) India Drylands

DFI UP Bundelkhand project: Birdha village, Lalitpur district
Income increased 40 - 140% of small and marginal farmers.
Impact of Rainwater harvesting Interventions

Change in land use from degraded to productive landscape

Feb 2019

Feb 2020

RWH Interventions implemented: April-June 2019
Reverse migration: 32 families
Investments on AWM Innervations: US$ 33500

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<tbody>
<tr>
<td>Area under cultivation (Ha)</td>
<td>4</td>
<td>35</td>
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<tr>
<td>Gross income in <em>Kharif</em> (US$)</td>
<td>850</td>
<td>8400</td>
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<tr>
<td>Gross income in <em>Rabi</em> (US$)</td>
<td>2910</td>
<td>40500</td>
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<tr>
<td>Total gross income/year (US$)</td>
<td>3760</td>
<td>48900</td>
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### Major Issues

<table>
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<tr>
<th>Major issues identified</th>
<th>Data</th>
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<td><strong>Water scarcity</strong>; mid-season <strong>droughts</strong> in <em>kharif</em> and dried up wells in <em>rabi/summer</em></td>
<td>Reduced Avg. annual rainfall from 950 mm to 750 mm</td>
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<td><em>Kharif</em> season fallow (social issues like <em>Annapratha</em>)</td>
<td>30-50% fallow in <em>Kharif/Rabi</em></td>
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<td><strong>Poor land and water use efficiency</strong></td>
<td>&lt; 40-50% WUE</td>
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<td><strong>Low organic carbon</strong> and <strong>land degradation</strong></td>
<td>O C ranges 0.2-0.4 %</td>
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<td>Use of local <strong>landraces with low productivity</strong></td>
<td>&lt; 1 ton /ha productivity</td>
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<td><strong>Poor mechanization</strong></td>
<td>broadcasting in &gt; 70% fields</td>
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<td><strong>Poor livestock productivity</strong> (high population but poor yield)</td>
<td>2-3 Liter milk/animal/day</td>
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<td>Widespread <strong>fodder scarcity</strong> (main reason for <em>Annapratha</em>)</td>
<td>&gt; 40 % unmet demand</td>
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Approach

- Building capacity of relevant stakeholders
- Strengthening community-based institutions

Interventions

- Landscape
- Farm scale
Rainwater harvesting structures designed by ICRISAT

➢ 30-40% more cost effective
➢ Life expectancy >30 years (others are 3-5 years)
➢ Withstand heavy flooding
➢ Almost no maintenance required
Reviving havelis

- Dual-purpose: reservoir in the monsoon & fertile farm in next season
- Low renovation cost
  - farm ponds cost 10 x more
  - check dams cost 50 time more
2) **BOLD ACTIONS**
for Food as a Force for Good

*Good for you - the planet - the farmer*
Thank you!

www.linkedin.com/in/jkanepotaka/
KISAN-MITrA: Knowledge-based Integrated Sustainable Agriculture Network- Mission India for Transforming Agriculture: Doubling Farmers’ Income in Bundelkhand region

Supported by

Government of Uttar Pradesh, India (2018-2021)
Scaling-up process in UP Bundelkhand

- CSR supported
- Govt. of Uttar Pradesh
- Scaling-up of AWI interventions and best practices
- Testing new practices
- Impact at scale
- 2012-2016 PS watershed
- 2017-2021 DFI pilot sites
- 35000 ha
- 1250 ha
- ICRISAT, ICAR-CAFRI
- ICRISAT, ICAR-CAFRI, ICAR-IGFRI, BUAT, Banda, BAIF, NGOs

Map showing Bundelkhand region with villages and water structures.
About 250,000 trees are planted between 2018-2020
Improved cultivars and balanced fertilizer application enhanced crop yield minimum by 30%

Data based on 1200 Crop Cutting studies across seven districts
Fodder and Livestock Improvement

- Improved fodder varieties
- Introduction of perennial fodder species;
- Balanced feeding trials;
- Sexed semen through Artificial Insemination
- Early pregnancy diagnosis kit in cow and buffalos
Employment generation thru RWH interventions

- About 20,000 people days generated from rain water harvesting works in 2019 and 2020
- Nearly 3,000 people days generated for migrant laborers in 2020 from NRM activities
- More than 100,000 people days generated with crop intensification and agroforestry interventions