BEST PRACTICES AND BEST PRACTICE SITES ON WATER HARVESTING IN BURUNDI

Background
This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Burundi prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

Identified Practices & Sites
- Roof water collection
- Runoff storage in artificial ponds
- Water conservation and erosion control (terraces)

Practices
- Roof water collection
- Run off storage in artificial ponds

Strengths
- Good hillside conservation

Weaknesses
- Lack of experience on water harvesting
Democratic Republic of Congo

Background
This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Democratic Republic of Congo prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

Identified practices
- Roof water harvesting with water stored in small cisterns, storage basins or reservoirs
- In situ water harvesting techniques to reduce erosion through use of contour bunds and to increase water retention using infiltration basins.
- Small rectangular ponds for crop production;
- Small storage earth dams

Practice Sites
- Minova (Rusturu)
- Bouroha/Sake (Mountain Zones of North-Kivu)
- Rumangabo & Kibuma (All with an average rainfall from 1,200 to 1,900 mm)
- Zoo / Sama (Kisangani)
- Katalé (Masisi)

Technologies

Weaknesses
- Lack of information, poor institutional framework & inadequate technical capacity.

Strengths & Opportunities
- Abundant water resource base
Egypt

Background
This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Egypt prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

Identified Practices
- Dikes to prevent the wadi runoff flow reaching the sea.
- Dikes to divert wadi runoff onto fields using guide bunds to spread the flow or small channels to convey water to prepared and bunded fields.
- Stone or earth diversions in small wadi beds to facilitate sedimentation and create terraces for cultivating & drought resistant perennial tree crops and seasonal food crops.
- Contour dikes (earth, stone and/or cemented) to reduce surface runoff and increase water infiltration into the soils.
- Cisterns (capacity 300 m³) installed near houses in the primary farm unit for storage of sheet runoff.
- Concrete reservoirs (capacity 300 – 20,000 m³) excavated below ground and encased with concrete or masonry walls for harvesting and storage of sheet runoff.

Technologies

Strengths
- Strong government support & technical back-up
- Many practices

Weakness
- Inadequate or lack of rainfall in most part of the country
Ethiopia

Background

This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Ethiopia prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

Identified Practices & Sites

- Terracing
- Bunding
- Gully Rehabilitation
- Improved grazing land management
- Micro catchment and ponds
- Runoff/floodwater farming

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Location: Region/District</th>
<th>Description of Best Practice Site</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Abreha Atsbeha</td>
<td>Tigray; Kille Awiwela</td>
<td>Integrated Watershed Development</td>
<td>Crop/Wood Production; Conservation;</td>
</tr>
<tr>
<td>2. Mekah Integrated</td>
<td>Tigray; Kille Awiwela</td>
<td>Integrated Watershed Development</td>
<td>Conservation;</td>
</tr>
<tr>
<td>3. Mekash Mekudo</td>
<td>Tigray; Ganta Afeshem</td>
<td>Integrated Watershed Development</td>
<td>Conservation;</td>
</tr>
<tr>
<td>4. Gergera</td>
<td>Tigray; Ashhi Wembera</td>
<td>Integrated Watershed Development</td>
<td></td>
</tr>
<tr>
<td>5. Aysh</td>
<td>Amhara; Kobo</td>
<td>Watershed Development</td>
<td>Crop/Wood Production; Conservation;</td>
</tr>
<tr>
<td>6. Chekotti</td>
<td>Amhara; Kalu</td>
<td>Watershed Development</td>
<td>Conservation;</td>
</tr>
<tr>
<td>7. Lenche Dima</td>
<td>Amhara; Gubaisfelo</td>
<td>Watershed Development</td>
<td></td>
</tr>
<tr>
<td>8. Tott Wajato</td>
<td>Amhara; Ambasel</td>
<td>Watershed Development</td>
<td></td>
</tr>
<tr>
<td>9. Goibho</td>
<td>Amhara; Ambasel</td>
<td>Watershed Development</td>
<td>Crop Production</td>
</tr>
<tr>
<td>10. Hito</td>
<td>Amhara; Bari</td>
<td>Watershed Development</td>
<td></td>
</tr>
<tr>
<td>11. Minjar</td>
<td>Amhara; Menter</td>
<td>WH Storage Sites; Plastic Lined Ponds</td>
<td>WH tanks and moisture conservation</td>
</tr>
<tr>
<td>12. Boset</td>
<td>Oromia; Boset</td>
<td>WH Storage Sites; Plastic Lined Ponds</td>
<td>Crop Production</td>
</tr>
</tbody>
</table>

Technologies

- Terracing
- Bunding
- Gully Rehabilitation
- Improved grazing land management
- Micro catchment and ponds
- Runoff/floodwater farming

Strengths

- Good water shed management & water conservation measures

Weaknesses

- Devolution of government structure leads to discontinuity in adoption
Kenya

Background
This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Kenya prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

Identified Practices & Sites

- Agronomic
- Vegetative
- Terracing
- Micro-catchments
- Runoff water harvesting & storage

<table>
<thead>
<tr>
<th>Best Practice site</th>
<th>District</th>
<th>Type</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lare division</td>
<td>Nakuru</td>
<td>Terracing and grass strips, runoff water harvesting from roadside drainage, roof catchment, and farm ponds</td>
<td>Domestic; Livestock; Conservation; agricultural production;</td>
</tr>
<tr>
<td>Utooni sub-location</td>
<td>Machakos</td>
<td>Sand Dams</td>
<td>-</td>
</tr>
<tr>
<td>Ndeiya Karai sub-location</td>
<td>Kiambu</td>
<td>Roof water Harvesting</td>
<td>-</td>
</tr>
<tr>
<td>Mutomo division</td>
<td>Kita</td>
<td>Earth dam</td>
<td>-</td>
</tr>
<tr>
<td>Nakomoru division</td>
<td>Laikipia</td>
<td>Farm Ponds</td>
<td>-</td>
</tr>
</tbody>
</table>

Factors Justifying Rain Water Harvesting

- Reduced Sediment transport & of run-off
- Reduced for Water supply
- Negative Effects of Climate Change
- Reduced Agricultural Productivity

Practice Sites

Strengths
- Good water management practice
- Good example of water harvesting

Weaknesses
- Minimal up-scaling
**Rwanda**

**Background**
This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Rwanda prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

**Identified Practices & Sites**
- Valley dam for livestock, domestic
- Water pond for domestic & crop production
- Terracing for crop production

**Technologies**

**Strengths**
- Good conservation initiative
- Good valley bottom small scale irrigation system
- Strong political will & support

**Weaknesses**
- Lack of institutional support
- Poor water management
Sudan

Background
This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Sudan prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

Identified Practices & Sites

- Flood systems
- Terraces
- Runoff
- Spate irrigation
- Strong water user association

<table>
<thead>
<tr>
<th>No.</th>
<th>Best practice</th>
<th>Site location</th>
<th>Technology level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bunds</td>
<td>Butana, Gezira state</td>
<td>Traditional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Managil, Gezira State</td>
<td>Traditional</td>
</tr>
<tr>
<td>2</td>
<td>Ridges</td>
<td>Semmar, White Nile</td>
<td>Modern</td>
</tr>
<tr>
<td>3</td>
<td>Tied ridges</td>
<td>Semmar, White Nile</td>
<td>Modern</td>
</tr>
<tr>
<td>4</td>
<td>Sayreen</td>
<td>Semmar, White Nile</td>
<td>Modern</td>
</tr>
<tr>
<td>5</td>
<td>Micro-catchments</td>
<td>Butana, Gezira state</td>
<td>Modern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>North Kordofan</td>
<td>Modern</td>
</tr>
<tr>
<td>6</td>
<td>Small dams</td>
<td>North Darfur, Nile State</td>
<td>Traditional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Khartoum State</td>
<td>Traditional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red sea State</td>
<td>Traditional</td>
</tr>
<tr>
<td>7</td>
<td>Boabab trees</td>
<td>North Kordofan State</td>
<td>Traditional</td>
</tr>
<tr>
<td>8</td>
<td>Harlars</td>
<td>Kordofan State</td>
<td>Traditional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Darfur State</td>
<td>Modern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kassala State</td>
<td>Modern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red sea State</td>
<td>Modern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Semmar State</td>
<td>Modern</td>
</tr>
</tbody>
</table>

Technologies

Strengths

- Good water harvesting especially spate irrigation
EFFICIENT WATER USE FOR AGRICULTURAL PRODUCTION PROJECT.

Best practices for water harvesting

Tanzania

Background
This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Sudan prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

Identified Practices & Sites

- Good example to be applicable to other areas
- Replicable to other areas with similar AEZ
- Well adopted / owner by local community
- Efficient use of water
- Profitability
- Good profiling practice

<table>
<thead>
<tr>
<th>Site</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makanya catchment, Makanya village</td>
<td>Same District, Kilimanjaro Region</td>
</tr>
<tr>
<td>Makanya catchment</td>
<td>Makanya Village- Kwasasu Subvillage</td>
</tr>
<tr>
<td>Makanya catchment</td>
<td>NDIVa -Champishi -Chome village</td>
</tr>
<tr>
<td>Makanya catchment</td>
<td>NDIVa Mgungani/ Manolo</td>
</tr>
<tr>
<td>Bukangilija / Njiapanda villages</td>
<td>Maswa district, Shinyanga region</td>
</tr>
<tr>
<td>Ilonga</td>
<td>Kilosa</td>
</tr>
</tbody>
</table>

Technologies;

- Run off
  - Pitting
  - Run off
  - Terracing

- Flood water Harvesting
  - Spate irrigation

Strengths
Good indigenous practices : Good training and professional experience : Many water harvesting systems
Efficient Water Use for Agricultural Production Project.

Best practices for water harvesting

Uganda

Background
This poster illustrates the Best Practices and Best Practice Sites on Water Harvesting in Sudan prepared under the auspices of Nile Basin Initiative's Efficient Water Use for Agricultural Production (EWUAP) Project.

Five domains were used to profile best practices and best practice sites: Technical, Institutional, Social, Economic and Environmental. These were taken into consideration in the planning and implementation of water harvesting projects in the country.

Identified Practices & Sites

- Valley dam for watering animals and domestic use
- Valley tanks for watering animals and domestic use
- Pots and Jars for domestic
- In-situ, internal & external storage for agriculture
- Rock catchment
- Subsurface masonry tanks
- Brick masonry tanks
- Strong policy framework

<table>
<thead>
<tr>
<th>Site</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kyalulangira, Kiziba and Kyalulangira village (community)</td>
<td>Domestic</td>
</tr>
<tr>
<td>Kamubisi village (community)</td>
<td>Domestic</td>
</tr>
<tr>
<td>Kyanyanda village Rugaga sub county (community)</td>
<td>Domestic, Crop Production</td>
</tr>
<tr>
<td>Edward Kanyarutokye, (individual)</td>
<td>Domestic</td>
</tr>
<tr>
<td>Ekiryotozi (community)</td>
<td>Domestic; Animal Watering.</td>
</tr>
<tr>
<td>Kyamuyimba (community)</td>
<td>Water</td>
</tr>
</tbody>
</table>

Technologies

Strengths
- Good policies
- New up-coming approaches

Weaknesses
- Insufficient professional staff