MALABO MONTPELLIER PANEL

Water-Wise: Smart irrigation strategies for Africa
Irrigation is crucial for Africa’s Food Production

- The amount of irrigation in Africa is very small.
- Higher yields depend on irrigation.
- There is plenty of water in Africa but it has to be harnessed.
- It can be large scale or small scale.
- But it has to be smart and ingenious.
- That means being used Precisely and Sustainably with Resilience.
The Rivers of Africa – There is plenty of water
Current Irrigation Uptake and Potential

A mere 6 percent of cultivated land is currently irrigated in Africa, compared to 14 and 37 percent in Latin America and Asia respectively.
Climate change in Africa – we need more water just to stay put

- By 2050, yields of rain-fed maize will decline by as much as 25% or more.
- Sorghum and millet yields to decline by more than 30% and 40%
- Wheat production likely to disappear from Africa by the 2080s.
- Semi-arid lands will become more marginal in the Sahel.
- Crop net revenues likely to fall by as much as 90% by 2100 in South Africa.
The potential benefits of irrigation in Africa

**Increased agricultural productivity**
- Improved food & nutrition security
- Higher incomes

**Women’s empowerment**
- Enhanced decision-making
- Saving time
- Reduced drudgery

**Climate risk reduction**
- Drought resilience
- Adaptation to erratic rainfall

**Job creation**
- Youth employment
- Attractive employment

Current Irrigation Uptake and Potential

Irrigation can make business sense: yields from irrigated crops are twice or more in comparison to rain-fed yields.

The potential to increase irrigation in Africa is 47 million ha.

In SSA, irrigated land could be expanded to 38 million ha, from the current 7.7 million.

A mere 6% of arable land in Africa

Of this 6%, more than two-thirds is concentrated in just five countries

African countries produce 38% of their crops (by value) under irrigation.
# Opportunities for Innovation in Irrigation

<table>
<thead>
<tr>
<th>Traditional irrigation methods</th>
<th>Innovative irrigation technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small-scale irrigation</td>
<td>Community-led irrigation</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Rope-and-bucket</td>
<td>River diversion</td>
</tr>
<tr>
<td></td>
<td>Gravity-fed drip irrigation</td>
</tr>
<tr>
<td>Rope-and-washer</td>
<td>Tidal irrigation</td>
</tr>
<tr>
<td></td>
<td>Center-pivot</td>
</tr>
<tr>
<td>Hip pump</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floppy Sprinkler</td>
</tr>
<tr>
<td>Treadle pump</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soil sensor</td>
</tr>
<tr>
<td>Motorized pump</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hyperspectral camera</td>
</tr>
<tr>
<td>Solar pump</td>
<td></td>
</tr>
</tbody>
</table>

*Photos by: NECOFA, Kenya; David Stanley; BBC 2009; Neil Palmer, CIAT*
Overcoming Barriers to Irrigation Uptake

- Infrastructure and technologies
- Skill development
- Land tenure
- Access to finance
- Returns on investments
- Integrated approaches

Access to finance
- Hiring services
- PPPs
- Multiple-use water systems (MUS)
- The Green Climate Fund (GCF)
- The Global Agriculture and Food Security Program (GAFSP)
Small–scale irrigation success in Niger

- Accelerated Development and Poverty Reduction Strategy 2002
- Rural Development Strategy 2003
- Private Irrigation Promotion Project (2003-08) by the Agency for the Promotion of Private Irrigation
- Strategy of Small Irrigation 2015

© World Bank 2015
Institutional Innovation in Ethiopia

Ministry of Water, Irrigation and Electricity
- Water Works Design & Supervision Enterprise
- Water Works Construction Enterprise
- Water Resources Development Fund

Ministry of Agriculture and Natural Resource Development
- Community-managed small-scale irrigation schemes (<250 ha)

Ministry of Environment, Forest and Climate Change
- Environmental impact of irrigation projects

Ministry of Finance and Economic Cooperation
- Capital budget for construction of irrigation projects

Agricultural Transformation Agency
Chaired by the Prime Minister
Recommendations: Smart Irrigation Strategies for Africa

- Policy and investment priority
- Innovative technologies
- Smart regulation
- Private sector involvement
- Skill development and training
- Supportive fiscal regime
Thank you!
Download our reports and subscribe to the newsletter
www.mamopanel.org