Implication of Nexus Approach for Food Security in Myanmar

THIRD GREEN ECONOMY GREEN GROWTH, GEGG FORUM

THE NEXUS OF ENERGY – WATER – FOOD

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Water, Energy and Food Security Nexus

Water security: access to safe drinking water and sanitation

Energy security: access to clean, reliable and affordable energy services for cooking and heating, lighting, communications and productive uses

Food security: availability and access to sufficient, safe and nutritious food to meet the dietary needs and food preferences for an active and healthy life
Food Security in Region

Source: foodsecurityindex.eiu.com
Malnutrition

Deaths per 100,000 people

Area of cultivated Land

Source: http://data.worldbank.org/indicator/AG.LND.AGRI.ZS
How big is Myanmar?

Source: http://www.infoplease.com/ipa/A0934666.html
Land used for Agriculture

% land used for agriculture

Myanmar, Cambodia, Vietnam, Thailand, China, India, Bangladesh

Available Freshwater

Availability of Freshwater in 2000
Average River Flows and Groundwater Recharge

Countries with the least freshwater resources
- Egypt: 26
- United Arab Emirates: 61

Countries with the most freshwater resources
- Suriname: 479,000
- Iceland: 605,000

Myanmar Major Rivers Under Threats from Mega Dam Projects
# Rice & Bean Production

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Rice Production</th>
<th>Rice per Capita</th>
<th>Bean Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>21 million</td>
<td>6.8 million tons</td>
<td>1/3 ton per person</td>
<td>137,000 tons</td>
</tr>
<tr>
<td>2010</td>
<td>48 million</td>
<td>17 million tons</td>
<td>1/3 ton per person</td>
<td>3 million tons</td>
</tr>
</tbody>
</table>

**Sources**
- Photo: [Mizzima.com](http://Mizzima.com)
- Population: [World Bank](http://World Bank)
- Production: [FAOSTAT](http://FAOSTAT)
Trends of Water-Food-Energy Interactions

- Population growth and changes in diets as a result of increasing incomes and improved living standards will lead to higher agricultural water demand.
- Accounting for 70% of all water extracted for human purposes, agriculture is by far the biggest water user worldwide.
- Agriculture is a major contributor to GHG emissions, directly and indirectly through land use change.
- Agriculture is both an energy user and supplier.
The Water-Energy-Food Security Nexus in Myanmar

Priority given to Long-term national food security policy?

• Leading to changes in food cropping regime: upland rice - sugarcane and rubber
• Farmland in dry zone requires more water for cropping than other regions
• Proper irrigation and drainage system with conservation approach
• Renewable energy as alternative source
Myanmar Future

“Need for a systems-based preventive approach”

✓ National coordination mechanism
✓ Multi stakeholder dialogue
✓ Strategies to create issue based networks
✓ Free markets and locally adaptive technology
✓ Sustainable use of water and energy
✓ Centralize regional governance
Thank You

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