A Vision for Climate Smart Agriculture in Asia

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Estimated and projected population
(World and Asia, selected years 1990-2050)

Source: UNDESA, 2015
Calculated and projected change in per capita daily calorie intake
(World and Asia, selected 3-year averages 1990-2016 and projections for 2030 and 2050)

Source: FAOSTAT, 2015; Alexandratos & Bruinsma, 2013
Comparison of rice yields of selected rice producers in Asia
(1993-2013, Hectograms per Hectare)

Source: FAOSTAT, 2015
Observed temperature trend in Asia, 1901-2012
(annual trend change in degrees Celsius over period)

Key:
Annual Temperature Change

Source: IPCC, 2014
Area over threshold average growing season temperature for rice
(Thailand example using A1B (SRES) Scenario – area indicated in red)

Average Growing Season Maximum Temperature > 34 Degrees Celsius

Source: OAE & FAO, 2013
Total emissions from agriculture in Asia
(Comparison of absolute values, 1961 & 2011)

1961
1006 Mt CO₂ eq

2011
2401 Mt CO₂ eq

Source: FAOSTAT, 2015
Sources of emissions from agriculture and land use in Asia
(Average annual values, million tonnes of CO2-eq, 2001-2011)

Million tonnes CO2, Average values over 2001-11

<table>
<thead>
<tr>
<th>Source</th>
<th>Million tonnes CO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crops &amp; Livestock</td>
<td>2,199</td>
</tr>
<tr>
<td>Net Forest Conversion</td>
<td>573</td>
</tr>
<tr>
<td>Forest</td>
<td>-186</td>
</tr>
<tr>
<td>Biomass Fires</td>
<td>45</td>
</tr>
<tr>
<td>Degraded Peatlands</td>
<td>425</td>
</tr>
</tbody>
</table>

Source: FAOSTAT, 2015
More Productive

Resilient

Low Emission

Photo credit: FAO
Shares of emissions from agriculture in Asia
(Average annual values, million tonnes of CO2-eq, 2001-2011)

- Enteric Fermentation: 35%
- Manure Management: 11%
- Synthetic Fertilizers: 19%
- Crop Residues: 20%
- Manure applied to soils: 7%
- Manure left on pasture: 4%

Source: FAOSTAT, 2015
Shares of emissions from agriculture in Vietnam
(Average annual values, million tonnes of CO2-eq, 2001-2011)

- Rice Cultivation: 47%
- Crop Residues: 16%
- Manure Management: 13%
- Synthetic Fertilizers: 9%
- Manure applied to soils: 5%
- Manure left on pasture: 3%
- Enteric Fermentation: 5%

Source: FAOSTAT, 2015
Responsive
Flexible
Evidence-based

Photo credit: Zero Hunger Challenge
Alternate Wetting and Drying in Rice Paddy
Savings and Co-Benefits

Sources:
CCAFS. 2014. Putting Alternate Wetting and Drying (AWD) on the map, globally and nationally. Copenhagen: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Photo credit: CCAFS, IRRI
Aquasilviculture
Mariculture system, Ca Mau province, Viet Nam

- Mangrove forest absorb carbon
- Aquaculture ponds produce certified organic prawns and shrimps
- Crops and fruit trees provide food security and alternative sources of income

Source:

Photo credits: FAO
Climate Smart Agriculture Practices

- Livestock waste management
- Index-based insurance schemes
- Rain-water harvesting
- Agroforestry
- Conservation Agriculture
- Climate tolerant crop and livestock varieties
More Productive
Resilient
Responsive
Low Emission
Evidence-based
Climate Smart

To find out more go to: www.fao.org/climatechange/climatesmart