Holistic Value Chain Approaches in Agriculture

Agriculture is Solution for Climate Change Symposium

2019年5月13日
May 13, 2019
Current model of economic development has left a legacy of global burdens posing a mounting business cost and a barrier to growth.

Source: Business & Sustainable Development Commission (2017)
But also significant progress

Dramatic reduction in the number of poor in East Asia and Pacific

Business as usual is not viable

How to put a fragmented world on a sustainable path?
Sustainable Development Goals

A compelling new strategy for business to contribute to sustainable growth
Translating global needs and ambitions into business solutions – with a sizeable economic prize

Source: Business & Sustainable Development Commission (2017)
<table>
<thead>
<tr>
<th>Food and Agriculture</th>
<th>Cities and Urban Mobility</th>
<th>Energy and Materials</th>
<th>Health and Well-being</th>
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<tr>
<td>1 Reducing food waste in value chain</td>
<td>Affordable housing</td>
<td>Circular models - Automotive</td>
<td>Risk pooling</td>
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<td>2 Forest ecosystem services</td>
<td>Energy efficiency-buildings</td>
<td>Expansion of renewables</td>
<td>Remote patient monitoring</td>
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<td>3 Low-income food markets</td>
<td>Electric and hybrid vehicles</td>
<td>Circular models - Appliances</td>
<td>Telehealth</td>
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<td>4 Reducing consumer food waste</td>
<td>Public transport in urban areas</td>
<td>Circular models - Electronics</td>
<td>Advanced genomics</td>
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<td>5 Product reformulation</td>
<td>Car sharing</td>
<td>Energy efficiency. Non-energy intensive industries</td>
<td>Activity services</td>
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<td>6 Technology in large scale farms</td>
<td>Road safety equipment</td>
<td>Energy storage systems</td>
<td>Detection of counterfeit drugs</td>
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<td>7 Dietary switch</td>
<td>Autonomous vehicles</td>
<td>Resource recovery</td>
<td>Tobacco control</td>
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<td>8 Sustainable aquaculture</td>
<td>ICE vehicle fuel efficiency</td>
<td>End-use steel efficiency</td>
<td>Weight management programs</td>
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<td>9 Technology in smallholder farms</td>
<td>Building resilient cities</td>
<td>Energy efficiency-Energy intensive industries</td>
<td>Better disease management</td>
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<td>10 Micro-irrigation</td>
<td>Municipal water leakage</td>
<td>Carbon capture and storage</td>
<td>Electronic medical records</td>
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<td>11 Restoring degraded land</td>
<td>Cultural tourism</td>
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<td>12 Reducing packaging waste</td>
<td>Smart metering</td>
<td>Green chemicals</td>
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<td>13 Cattle intensification</td>
<td>Water &amp; sanitation infrastructure</td>
<td>Additive manufacturing</td>
<td>Low-cost surgery</td>
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<td>14 Urban agriculture</td>
<td>Office sharing</td>
<td>Local content in extractives</td>
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<td>15</td>
<td>Timber buildings</td>
<td>Shared infrastructure</td>
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<td>Durable and modular buildings</td>
<td>Mine rehabilitation</td>
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<td>17</td>
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<td>Grid interconnection</td>
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</tbody>
</table>

Source: Business & Sustainable Development Commission (2017)
Unleashing innovation for sustainable growth

Delivering new products, services, processes and solutions

<table>
<thead>
<tr>
<th>Largest opportunities</th>
<th>Size of incremental opportunity in 2030(^1) $ billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility Systems</td>
<td>2,020</td>
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<tr>
<td>New Healthcare Solutions</td>
<td>1,650</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>1,345</td>
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<tr>
<td>Clean Energy</td>
<td>1,200</td>
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<tr>
<td>Affordable Housing</td>
<td>1,080</td>
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<tr>
<td>Circular Economy Manufacturing</td>
<td>1,015</td>
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<tr>
<td>Healthy Lifestyles</td>
<td>835</td>
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<tr>
<td>Food Loss &amp; Waste</td>
<td>685</td>
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<tr>
<td>Agricultural Solutions</td>
<td>665</td>
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<tr>
<td>Forest Ecosystem Services</td>
<td>365</td>
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<td>Urban Infrastructure</td>
<td>355</td>
</tr>
<tr>
<td>Buildings Solutions</td>
<td>345</td>
</tr>
<tr>
<td>Other</td>
<td>735</td>
</tr>
</tbody>
</table>

Source: Business & Sustainable Development Commission (2017)
Distribution of business opportunities

Source: Business & Sustainable Development Commission (2017)

1 Rest of developing Asia includes Central Asia (e.g., Uzbekistan), South Asia (e.g., Bangladesh), Southeast Asia (e.g., Laos), and North Korea.
Guidance on the SDGs

www.sdghub.com
Main reason organization is contributing or planning on contributing to the SDGs

(% of responses, over 500 sustainability experts across 74 countries)

Opportunities starting to be understood

Source: Evaluating progress towards the Sustainable Development Goals, Globescan / SustainAbility (2017)
Tackling the Gulf of Mexico Dead Zone - MRCC
Experience in collaboration

- Asset Management & Private Equity funds
- Financing Organisations
- Foundations
- Governmental Agencies
- Direct Competitors
- Development & Cooperation agencies
- Suppliers/Clients in the value chain
- NGOs & Technical Implementing Agencies
- Research Institutes

Experience levels:
- Low experience
- Medium experience
- High experience

Experience percentages for different categories.
We are open to collaboration!
Preferred forms of collaboration

- With competitors on pre-competitive sustainability topics: 100%
- With non-competitive companies: 90%
- With value chain actors directly: 80%
- International industrial roundtable: 70%
- Through donation and/or aid/cooperation agencies: 50%
- International, multi-stakeholders roundtable: 30%
- Through company foundation outside value chain: 10%
GHG emissions from rice fields

Mostly methane - 21 CO$_2$eq

- Forestry, 17.4%
- Agriculture (w/o rice), 12.0%
- Rice, 1.5%
- All others 69.1%

(IPCC 4th AR, 2007)
GHG emissions from rice in South East Asia

Mitigation and adaptation reflected in NDCs

Discussing INDCs improvement with country representatives at SBSTA44 in Bonn
Mitigation potential of AWD: Results from farmers’ fields

Sander et al., manuscript in preparation

CF vs AWD CO2 eq/ha*season in Bulacan, Tarlac, and Nueva Ecija.

Bulacan 1: 5.3 t CO2 eq/ha*season in CF, 1.8 in AWD, -66% reduction.

Bulacan 2: 7.8 t CO2 eq/ha*season in CF, 1.8 in AWD, -77% reduction.

Tarlac: 3.7 t CO2 eq/ha*season in CF, 1.1 in AWD, -70% reduction.

Nueva Ecija: 8.6 t CO2 eq/ha*season in CF, 3.0 in AWD, -65% reduction.
Value Chain Partners

- **Members from ASEAN BCSDS**: Vietnam, Indonesia, Thailand, Singapore, Philippines
- **Private Sector Members**: Kellogg Company, Olam, Rabo Bank, Yara, Monsanto, BASF, Syngenta, Bunge, Cargill, Louis Dreyfus, Bayer, DSM, PwC, Mars, Corteva
- **Research organisations**: CCAFS, IRRI and the Global Research Alliance
- **Aid and donor agencies**
- **Implementing Agencies**: UN Environment, GIZ, FAO
- **NGOs**
Olam – SECO Cotton

Good for Business
increased smallholder supply network from 3,000 to 19,569 farmers.
applying best practice processing efficiencies, the company saved $460,000 compared with the previous season.

Good for Society
net annual revenues rise from $200 in 2009 to $1,200 in 2015
improved 610km of roads and built 12 storage facilities.
Which types of collaboration hold the greatest latent potential for impact & scale?

A. Correcting Supply chain Inefficiencies
B. Strengthening landscape level approaches
C. Improving the Business enabling Environment

- Structurally complex multitude of contributors, geographies and value chains
- Collaboration within a geographic and demographic reach
- Actors within the same value chain
Reduce deforestation/degradation, restore degraded land & improve agricultural value added
Thank you

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