Qatar: Mobilizing Investments in Agriculture - Partnering for Food Security
Responsible National Investments in Agriculture
Responsible International Investments in Agriculture

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Director of Programme
Qatar National Food Security Programme

36th CFS Roundtable Session, 13th October 2010, FAO, Rome
Round Table: Land Tenure and International Investment in Agriculture

Office of the Heir Apparent
QATAR NATIONAL FOOD SECURITY PROGRAMME
Qatar National Food Security Programme

National Investments in Agriculture: Technology for Dry Land Development
Global Dry Land Alliance – Partnering for Food Security

International Investments in Agriculture: Development Partnerships
Securing Host and Investor National Food Security
DOMESTIC ISSUES

- Water:
  - Aquifers are under threat of depletion: 220m/m3 p/a
  - Our water reserves are only 2 days
  - Total farms down 30% – mostly due to water issues

- Only one-tenth of the arable land in Qatar is cultivated

- 90% of our food is imported
DOMESTIC ISSUES

Risks: Non-secure imports
Over 75% of total imports are supplied by only seven countries.

Percentage of Total Food Imports by Country of Origin (2007)
AGRICULTURE

National agricultural production

- Development of new farming technologies
- Capacity building in agricultural production and arid land methodologies e.g. Hydroponics, greenhouse farming, etc...
- Cultivation and reclamation of arable lands to prevent land degradation and maximise yields
- Suitable practices encouraged, e.g. alternative fertilizers

Benefits:

- Diversification within agricultural sector → economic diversification
- Increased national production
- Begin to engage potential investors
ENERGY

Solar Energy Application

- Industrial scale solar energy
- Capacity building in sustainable energy sources
- Investment in future energy and water production technologies

Benefits:
- Sustainable energy source
- Commitment to reduce our Carbon foot print
- Economic diversification
WATER

Desalination and improved water management

Requirements:
- Dedicated desalination plant
- Capacity building in sustainable water production
- National Integrated water management; agricultural; industrial; domestic; landscaping
- Investment in water production technologies
- Environmental impact management

Benefits:
- Excess desalinated water used to recharge groundwater aquifers
- Excess can be used to supplement domestic consumption in times of crisis
- Resource conservation
IMPORTS

Secured Imports & Storage

- Diversify investments in overseas agriculture
- Reciprocal food security agreements with international gas and oil purchasers, leveraging hydrocarbon resources
- Improved long-term food storage facilities

Benefits:
- Secure produce which cannot be grown locally
- Having sufficient stock supplies to make up for any shortages and emergencies

Responsible International Agriculture Investments
Developed Countries; Emerging Countries; Developing Countries

Office of the Heir Apparent
QATAR NATIONAL FOOD SECURITY PROGRAMME
Qatar Dry Land Agricultural Development Investments

Innovation and Economic Diversification
Agriculture, Food, Water, Renewable Energy

Global Dry Land Challenges

>2 billion population and >70% in rural areas
<US $ 3000 per capita GNP per year
>60 per 1000 infant mortality rates

>40% of world land surface
<8% world renewable water resources
High reliance on rainfed crop agriculture, frequent drought
Pastoralism important culturally and economically
10 - 20% of Land area degraded; at high-risk of desertification

Emerging Impacts of Climate Change
Qatar Special High Level Side Event
UNGA 24th September 2010
Global Dry Land Alliance: Partnering for Food Security

- Challenges of Food Security and Millennium Development Goals in World Drylands
- Agro-ecological and Socio-economic Challenges of Food Security in the Arab World – Establishment of Regional Centres of Excellence
- Country-led Food Security Programmes – Science, Technology and Policy Actions
- Responsible International Agricultural Development and Investments Partnerships
Responsible International Investment in Agriculture
Transparency and Accountability
Social, Environmental and Economic Sustainability

Information and Knowledge
The Foundation of Responsible Land Investments
Land Tenure Guidelines and Principles of RAI

Agro-ecological zones and National/International Economy
IIASA – FAO Methodology, Modeling, Policy Analysis

An Integrated Agro-ecological and Socio-economic Spatial Global Assessment
Agricultural Development and Food Security

Land Availability, Land Potential, Yield Gaps, Agricultural Infrastructure Investments
World Bank Report 2010: Rising Global Interest in Farmland -
(How) Can it Generate Sustainable and equitable Benefits?
Agro-ecological suitability and land productivity

1. Development scenario

2. Climate model

3. IIASA Modeling Framework
   - Climate impact response relations
   - Production
   - Demand
   - Global Food-Feed-Biofuel System
   - Trade
   - World Market

4. Spatial distribution of land use

QATAR NATIONAL FOOD SECURITY PROGRAMME

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FAO-IIASA Agro-ecological Zones Methodology

- Land-utilization type descriptions:
  - Farm inputs
  - Technology Management
  - Socioeconomic context
  - Crop catalog:
    - Crop adaptability
    - Ecological requirements
    - Biomass parameters, etc.

- Climate database 1901–1996
- Climate change scenarios

- Climate analysis

- Matching of crop requirements with land resources
  - Biomass and yield estimation

- Crop suitability and productivity

- Land productivity of cropping systems

- Multiple-criteria analysis
- Policies, socioeconomics, demography

- Agriculture production options for development planning

- Soils
- Terrain slopes
- Forest/protected areas
- Land use/cover
- Population

Office of the Heir Apparent
Agro-ecological Zones Methodology
Geographical Data Layers

1. Monthly climatology 1960 – 1996; CRU at University of East Anglia; at 0.5 deg. latitude/longitude
2. Terrain slope database; USGS Eros Data Center; digital elevation at 30 arc-seconds latitude/longitude
3. FAO/Unesco digital Soil Map of the World; UN Food and Agriculture Organization; at 5 arc-min. latitude/longitude.
4. Global land cover characteristics database; USGS Eros Data Center; at 1 km resolution.
5. Global gridded population distribution data of 1995; CIESIN; at 2.5 arc-min. latitude/longitude resolution.
Global Agro-ecological Zones

Environmental resources database
including climate, soil, terrain, and land cover
comprising 2.2 million grid cells,
asessing the agricultural potential
of all crops, pastures, trees, shrubs
at three levels of farming technology.
AEZ Assessment: How much land is available?

1. Total land (excl. Antarctica and Greenland)
2. excluding built-up land
3. excluding arable and perennial cropland
4. excluding forests
5. excluding barren land & water

Source: IIASA-LUC, 2007
Responsible Agriculture Investments
Partnering for Food Security

Current Cultivated Land: Development Partnership – Closing the Yield Gaps


Principles of Responsible Investment, Code of Conduct, Legal protection
Property Rights, Voluntary Transfers, Transparency, Accountability
Social Responsibility, Economic Viability, Environmental Sustainability

Access to Scientific, Comprehensive, Timely information on Land Value
A New Deal in Agricultural Development Partnerships between Wealthy food importing countries and Land and water resource rich developing countries
Country level land ‘availability’

- Concentrated
  - 32 countries with > 90%
  - 16 in Africa

- Often large rel. to what is cultivated
  - 11 ctrs > double
  - 6 > triple
  - Other constraints

<table>
<thead>
<tr>
<th>Countries with at least 3Mha suitable, non-cultivated, non-forested, non-protected land (1000 ha) and relative availability</th>
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<tr>
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<td>World Total</td>
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Suitability for Rain-fed Maize

Source: Fischer and Shah (2010)
Suitability for Rain-fed Wheat

Source: Fischer and Shah (2010)
Potential Output Density of Food Crops (GK$/ha)

Source: Fischer and Shah (2010)
Transport Cost to Port ($/ton)

Source: Fischer and Shah (2010)
Population Density

Source: Fischer and Shah (2010)
## Current Cultivated Land: Food Production Potential, High Technology

**Suitable Area**: $VS + S + MS$, 1000 Ha

<table>
<thead>
<tr>
<th>Region</th>
<th>TC&lt; $30</th>
<th>TC $30 to $60</th>
<th>TC &gt; $60</th>
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## Grassland and Woodland: Food Production Potential, High Technology

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*Source: Fischer and Shah (2010)*
Yield gap, share of land used, area/rural person

### Africa

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<th>Country</th>
<th>Area (ha/rural inhabitant)</th>
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### Latin America & Caribbean

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</table>

Source: Fischer and Shah (2010)
Suitability for Food Crops in Mozambique

Source: Fischer and Shah (2010)
Overlaps:
1.4 m ha; 418 cases
Roles by different stakeholders

1. **Government:** Integrate investment into agric. strategy
   - Identify areas with potential & provide complementary public goods
   - Recognize, register, and help enforce property rights (incl. valuation)
   - Improve & streamline institutional framework

2. **Private sector:** Promote industry standards that integrate land rights
   - Leading industry practice can provide basis for regulation
   - Extend coverage/disclosure of existing approaches (e.g. Equator Principles)
   - Explore multi-stakeholder initiatives (e.g. EITI) building on existing work

3. **Civil society & academics:** Contribute to greater transparency
   - Advise, monitor, implement to build civil society & community capacity
   - Give communities voice; empower them to negotiate & push enforcement
   - Publicize promising examples; link back to policy

4. **Global community:** Capacity building support to interested governments
   - Technical support & complementary infrastructure, institutional capacity
   - Create fora to monitor impact & share examples of good practice
   - In the context of a multi-stakeholder approach
Concluding Remarks

Current Cultivated Land
Closing the Yield Gap; Investors and Host Development Partnerships

“New” Land Grasslands and Woodlands
Create Opportunities for Nationals, reducing pressures on current cultivated land
Joint Venture partnerships with Investors, small and large farms
Land Lease Rental Valuation, Investors - Large Farms, Land Rights, Biodiversity

Access to scientific, comprehensive and timely information: Hosts and Investors
Principles for responsible Domestic and International Agricultural Investments
Capacity building Recipients, assessment, policy analysis, negotiation skills

Due diligence and expert advise, multilateral institutions (FAO/IFAD/WFP/WB/UNCTAD)

Responsible International Agricultural Investments
Risk of Exporting Food Insecurity from Investing Countries to Recipient Countries

Universal Right to Food: Responsible International Investments