Agricultural Sector Transformation and Growth Strategy

Greening Agriculture
Summary of Greening Agriculture

• Agriculture in Africa
• What is Greening Agriculture?
• Strategic aspects of greening agriculture
  ✓ Policy issues
  ✓ Institutional
  ✓ Financial
  ✓ Environmental Sustainability

• Implementation aspects in greening agriculture
  ✓ Opportunities for greening the agriculture sector
Agriculture in Africa

• Africa’s economy continues to perform above global expectations with impressive growth rates.
  • One quarter of the countries in the region grew at about 7 percent or more
  • 7 out of the ten fastest growing economies in the world are in Africa.

• Africa’s economy is largely driven by Agriculture
• However, the growth agriculture sector is still too slow and yield increase too marginal
• As a major contributor to GDP, the Agriculture sector have not yet translated into the improved livelihoods of the ordinary people.
• Unemployment remains high, particularly among rural youth.
• Food production rates are modest and continue to be undermined by acute import dependency across the region.
• As population grows, there is a need for food security and strengthening resilience
• A transition away from the business as usual scenario includes a shift from a traditional subsistence agriculture to a more commercialized, value chain based, agri-business focused and agro-industrialization driven and serve as a platform for the elimination of poverty, the eradication of hunger and the creation of jobs and wealth for many Africans.
What is Greening Agriculture?

• Greening agriculture is introducing environmental measures that results in **sustainable** socio-economic benefits, **reduces** overconsumption, losses, pollution, **saves** costs (on energy, water and agrochemicals), **avoids** inappropriate cultivation and irrigation techniques or overuse of chemical inputs.

• Greening agriculture involves internalizing environmental costs in all processes.

• Green agriculture policy involves **strengthening policies, strategies, regulations and standards** to internalize environmental measures. This means:
  ✓ Shifting away from more environmentally harmful actions to environmentally beneficial payments and requirements.
  ✓ Increasing effectiveness of environmental regulations in agriculture due to a decrease in the negative ecological impacts.
  ✓ Institutional innovations to improve sustainable food systems
Linking environmental protection and agricultural practices

- **Agricultural productivity** could be raised through basic resource management practices such as rainfall retention, irrigation water conservation, waste water reuse, dry-land cultivation, and controlling pests and weeds.

- **Environmental measures** in agriculture improves soil quality, nutrient content, moisture holding capacity and reduces soil erosion.

- **Water management** - small-scale water control and improved rural infrastructures, offers high payoffs to public and private green sector investment.

- **Climate change adaptation** – agriculture and water resources, which are the most vulnerable to the adverse impacts of climate change, need to be climate proofed.

- **Organic agriculture** - low-cost food of higher quality produced.

- **Green agro-enterprises** - cornerstone for trade-based growth
What is the current state of Agriculture

• Some major environmental issues of concern:
• Nitrate and pesticide residue pollution rising
• Loss of biodiversity due to pollution, agronomic practices such as mono-cropping, destruction of natural habitats, over-exploitation of natural stocks of fish and forests
• Soil nutrients, organic matter and natural resource degradation, including salinification associated with irrigation
• Agriculture’s carbon foot-print — fossil fuel use in production of chemical inputs, in farming practice, in food processing and related agro-industries. Transport of agricultural produce to distant markets
• Agriculture’s water use foot-print — excessive water use in intensive agricultural production and competition with others uses, particularly drinking water as well as effects on water quality through pollution
• Agriculture’s contribution to climate change, both in terms of it contribution of greenhouse gases CO2 but also methane; and its role in climate change mitigation strategies (biofuel production, but also range of bio-production systems with benign or beneficial environmental consequences, carbon sequestration)
Strategic aspects of greening agriculture

• **Agricultural infrastructure**: land tenure and use, environmental issues, agricultural finance, agricultural insurance, farming rights, etc.

• **Agricultural inputs**: seed, water, fertilizer, pesticide, agricultural labor, etc.

• **Agricultural outputs**: food production, agricultural marketing, and other aspects of the agricultural processing and industries.
Policy Tools for Greening Agriculture
Regulations as a greening tool

- one of key levers governments can use to promote green agriculture = use rules governing land and water use, chemical inputs, food safety and quality.

- **Requirements on land use**, including terracing, buffer strips and green coverage requirements, crop rotation, maintenance of water quality, including controls on groundwater, irrigation and silage and slurry operations.

- Regulations are the most common public policy instrument for getting markets and **producers to pay for public costs of harmful** “externalities” such as pollution and natural resource degradation in agriculture and other sectors.

- **Stricter health and safety standards** for food commodities can reduce the use of polluting agrochemicals, e.g. nitrogen and phosphorous loading.

- **Organic farming**, which is regulated and legally enforced through certification and labeling in many countries, relies on techniques such as biological pest control, green manure, composting and crop rotation to maintain soil productivity and control pests.

- **Supplementary requirements** including that at least a % of farmland be used for forest = “ecological compensation areas”, soil protection.

- **Compliance and enforcement measure**: restoration measures, compliance assistance measures, fines, penalties.
Economic instruments as a greening tool

• Primarily **taxes and charges and tradable permit systems** – are used to discourage practices that are damaging to the environment by raising the cost of these activities to producers.

• However due to property rights taxes have not been efficient in regulating environmental concerns

• **Subsidies are a good alternative**- Government subsidies to farmers and agribusinesses to manage the supply of agricultural commodities, influence their cost, supplement the income of producers can achieve aims

• **Subsidies should be targeted to farming systems and practices that preserve environmentally** sensitive land and biodiversity; maintain flood, drought or soil erosion control; and provide sinks for greenhouse gases and carbon storage.

• **Taxes and charges on farm inputs have been levied in a few countries to address environmental issues in agriculture.** These have mostly been applied to environmentally-damaging chemicals; Denmark, France, Italy, Norway, Sweden have taxed fertilizer and pesticide use.
Green Financing

Green finance is a broad term that can refer to financial investments flowing into sustainable development projects and initiatives, environmental products, and policies that encourage the development of a more sustainable economy.
Green Finance

• **Financing of public and private green** investments/interventions such as water management or protection of biodiversity and landscapes prevention, energy efficiency

• **Financing public policies** that encourage the implementation of environmental and environmental-damage mitigation or adaptation projects and initiatives (for example feed-in-tariffs for renewable energies)

• **Green financial systems** that deal specifically with green investments, such as the Green Climate Fund or financial instruments for green investments (e.g. green bonds and structured green funds), including their specific legal, economic and institutional framework conditions
Empowerment as a greening tool

• Capacity building programmes
  • Training of extension workers
  • Curriculum development- green initiatives should be part of training curriculum for county officials etc
  • Grants to support green technologies and innovation in agriculture
  • Educational Grants geared toward engagement in green agriculture initiatives as an award scheme
  • Establish research and development programmes for green agriculture in Universities

• Green agriculture associations and institutions
  • Business development and strategic partnerships
Implementation aspects: Opportunities for greening the agriculture sector

• Promoting sustainable and good husbandry in agriculture = linking socio-economic and environmental interests

• *Objective:* to enhance sustainable green agricultural productivity
<table>
<thead>
<tr>
<th>Area</th>
<th>Purpose</th>
<th>Form</th>
</tr>
</thead>
</table>
| Water efficiency            | • Irrigation  
• Water harvesting for production and consumption  
• Sustainable water resources management                                                                                                       | • maintenance of better functions of irrigation and drainage facilities  
• Rules on maintenance of a body of water  
• community owned water supply organizations  
• Maintain chemical, physical and biological integrity of water by addressing point and non-point sources of pollution |
| Sustainable Land Management | • Enhance property rights in agriculture  
• Access and use rights to land and natural resources  
• Regulate production intensity and overuse of chemicals  
• Soil management practices  
• Environmental measures: restoration of natural habitats and populations of species, afforestation or re-afforestation   | • conservation of soil on ridges, valleys and prevention of formation of gullies; rules, protection of slopes, catchment areas or areas rules  
• firing, clearing or destruction of vegetation  
• protection of slopes, banks of streams and rivers and of dams  
• land/soil conservation/fertility rules  
• preserving land, reclaiming wetlands and protecting water resources,  
• rules of good land husbandry  
• environmental impact assessment to control use of land and its natural resources  
• rotational agriculture |
| Energy efficiency           | • promote development, utilization and commercialization of reviewable energy resources  
• to create an enabling environment to attract investment in renewable energy sources;  
• SME investments in renewable energy  
• install and use solar water heating systems for example commercial buildings, educational institutions, health institutions,   | • Off-grid and on-grid (tariff) policy and rules  
• minimal annual solar contribution to the premises hot water demand |
| Climate smart agriculture | ▪ adopt different varieties or species, modify farming methods | ▪ Ecosystem and landscape management  
▪ Management of agriculture with priorities for adaptation and mitigation |
| Chemicals and Pesticides | To encourage use of bio-pesticides | ▪ Control use of chemicals which may pose a risk to human health and the environment |
| Green agro-enterprises (SME and ) | ▪ Safeguard health and well-being of consumers  
▪ Reducing post-harvest loses  
▪ Green jobs creation | ▪ organic and green products and eco-services  
product traceability, crops, volumes, markets, and exports.  
▪ measures for sustainable management and production of fish farmed from aquaculture and sport fishing  
▪ Storage and handling rules  
▪ Food labeling requirements  
▪ Food safety & quality |
| Eco-innovation | ▪ Value addition in the value chain | ▪ Sustainable trade – greening the supply chain |
| ▪ Green comparative productivity  
▪ Use of green technology agriculture – ICT, precision agriculture, less polluting innovations, R &D  
▪ Green jobs creation | ▪ = dairy and food processing, green trade- fruits, green processing – leather, packaging etc  
▪ ICT in green agriculture – use of precision agriculture/ farming to increase productivity, raise farm income through more efficient and low input use  
▪ Agriculture diversification  
▪ Minimizing the cost of inputs versus outputs  
– using less to get more (Cost benefit of inputs vs outputs)  
▪ Certification- ecolabelling, eco standards (EAC) |
| Fiscal measures | ▪ Ensuring long term sustainable agricultural productivity | ▪ Removal of harmful subsidies vis a vis organic or SLM for long term productivity  
▪ Taxation – on inputs |
| Compliance assistance | ▪ Promoting sustainable agricultural productivity | ▪ Capacity building and awareness creation |
Costa Rica – ORGANIC FARMING

- with the objectives of development, promotion, training and management of organic farming activities, strengthen the mechanisms for control and promotion of products derived from organic farming and ensure the competitiveness and profitability of these products.
- Recognition of organic farming as a provider of organic services.
- Promotion, training and tax exemption for organic agricultural production.
- Special protection of traditional knowledge and the Creole genetic heritage.
- Prohibition of the use of Genetically Modified Organisms
- Law No. 8591 on development, promotion of organic farming in Costa Rica promotes organic farming with the aim of achieving effective benefits to human, animal and plant health as a whole, and, as a complement, develops public policies referring to land use, water resources and biodiversity.
Case study: Subsidies in Moldova

- Subsidies for development of organic sector support farmers during the conversion period of three years.

Organic agricultural producers who invest in plantation of intensive orchards will receive EUR 300 more per ha than conventional farmers.

Organic producers investing in plantation of vineyards will receive EUR 300 more per ha than conventional producers.

Organic producers will receive 10 percent more than conventional producers for insuring their crops.

The ceiling of credit being offered on subsidized rate for organic farmers will be EUR 3’000 more than the conventional producers.
Organic Farming in Kenya

Safi Organics, Kenya - Switch Africa Green SEED winner

**Environmental impacts:**
- Sequestering 1.5 tons of carbon emissions per acre of land.
- Counteracting soil acidity and increasing soil fertility in the long term.
- Reducing the burning of biomass waste in rural areas.

**Economic impacts:**
- Improving long-term farm yields by 30%.
- Increasing farmer income by 50% for 600 farmers so far.
- Reducing production costs of organic fertiliser down to USD 0.3 per kg.
Eco-labeling in East Africa

**Eco-labelling**-Environmental labeling constitutes an economic instrument promoting pro-environmental purchasing on the side of the public and a precautionary approach on the side of the industry

  - “All ingredients of a multi-ingredient product shall be listed on the product label in order of their weight percentage. It shall be apparent which ingredients are of organic origin and which are not.”

- **Co-mmon East African organic products standard (EAOPS)**-expected to boost organic trade and market development in the region, raise awareness about organic agriculture among farmers and consumers, and create a unified negotiating position and influence international organic standard setting processes
“Sustainable Agriculture not only gives riches to a nation, but the only riches she can call her own”

Jane Wangechi