

REPUBLIC OF KENYA



STATE DEPARTMENT OF AGRICULTURE

Directorate of Agriculture Engineering Services

- Status and Policy of Agriculture Mechanization in Kenya

A comprehensive overview of Kenya's agricultural mechanization status and policies.

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Agriculture sector status

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Agriculture sector status

- Agriculture contributes 21.8% to Kenya's GDP (2023) and employs 80% of the rural population. However, mechanization remains limited.
- Agriculture is key to Kenya's economy, contributing 33 per cent of the Gross Domestic Product(GDP) and another 27 per cent of GDP indirectly through linkages with other sectors. The sector employs more than 40per cent of the total population and more than 70 per cent of Kenya's rural people.
- The sector accounts for 65 per cent of the export earnings, and provides the livelihood (employment, income and food security needs) for more than 80 per cent of the Kenyan population and contributes to improving nutrition through production of safe, diverse and nutrient dense foods. The sector is also the main driver of the non-agricultural economy including manufacturing, providing inputs and markets for non-agricultural operations such as building/construction, transportation, tourism, education and other social services.

Some of the main food crops in Kenya

Table 3.1: Summary Food Crops Production 2019-2023

| Year | 2019 | | 2020 | | 2021 | | 2022 | | 2023* | |
|------------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|-----------|----------------------|
| Area/ Production | Area (Ha) | Production (Tons) | Area (Ha) | Production (Tons) | Area (Ha) | Production (Tons) | Area (Ha) | Production (Tons) | Area (Ha) | Production (Tons) |
| Maize | 2,207,325 | 3,960,385 | 2,171,697 | 3,795,175 | 2,168,603 | 3,304,430 | 2,113,520 | 3,087,220 | 2,430,013 | 4,285,206 |
| Wheat | 136,525 | 366,191 | 125,737 | 404,696 | 124,880 | 349,102 | 119,554 | 368,697 | 104,440 | 309,492 |
| Rice (Irrigated) | 32,324 | 160,585 | 31,591 | 180,890 | 32,028 | 194,908 | 44,255 | 206,527 | 38,939 | 229,064 |
| Sorghum | 238,814 | 290,206 | 219,945 | 310,628 | 207,811 | 138,893 | 206,884 | 120,422 | 207,740 | 198,923 |
| Finger Millet | 55,062 | 46,729 | 46,573 | 42,533 | 47,534 | 37,538 | 42,651 | 29,969 | 48,182 | 39,405 |
| Pearl Millet | 68,538 | 91,872 | 70,285 | 109,430 | 82,634 | 26,163 | 65,785 | 29,490 | 81,742 | 47,357 |
| Beans | 1,188,678 | 743,218 | 1,147,705 | 774,363 | 1,131,565 | 668,916 | 1,268,568 | 750,152 | 1,219,960 | 860,973 |
| Cowpea (Grains) | 242,110 | 166,604 | 244,494 | 182,359 | 235,984 | 125,442 | 199,920 | 115,608 | 249,384 | 171,803 |
| Green grams | 305,324 | 185,752 | 280,718 | 207,941 | 269,447 | 121,031 | 253,464 | 110,963 | 308,388 | 182,260 |
| Pigeon Peas (Grain) | 136,550 | 107,645 | 133,329 | 123,074 | 126,646 | 103,879 | 266,104 | 159,927 | 300,807 | 183,651 |
| Irish Potatoes | 212,669 | 2,026,446 | 204,555 | 1,939,677 | 215,729 | 2,109,646 | 231,525 | 1,831,809 | 239,336 | 2,309,915 |
| Sweet Potatoes | 57,538 | 739,140 | 54,006 | 671,097 | 59,918 | 666,486 | 48,850 | 597,900 | 54,423 | 669,100 |

Source: Ministry of Agriculture and Livestock Development

* Provisional

Current Status of Mechanization

- - Motorized power usage: 30%
- - Hand & animal draught: 70%

- **Challenges:**

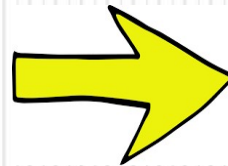
- ☐ Training gaps,
- ☐ High costs,
- ☐ Weak infrastructure,
- ☐ Limited investment.

AIM OF MECHANIZATION

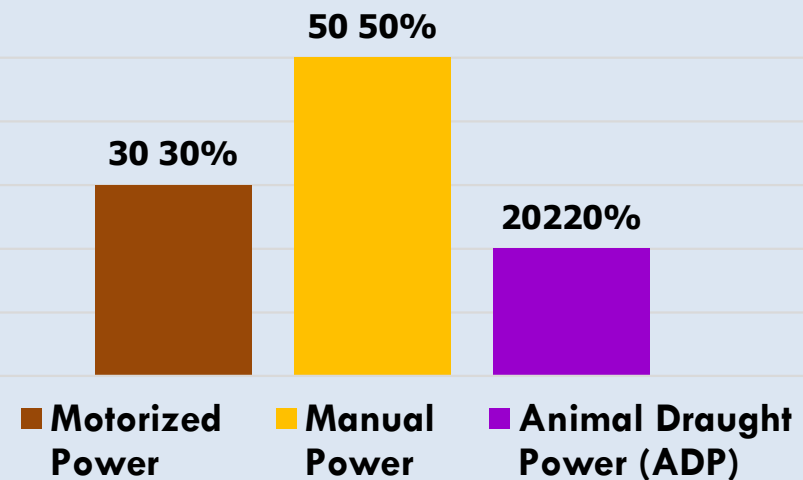
- ❑ It enhances productivity along crops, livestock, fisheries and agroforestry value chains.

KENYAN PERSPECTIVE:

The major sources of power for agricultural production available include **manual, animal** and **motorized** (mechanical, electrical, and renewable energy).



LEVEL OF AGRICULTURAL MECHANIZATION IN KENYA



The target is to increase motorized power in agricultural production from **30%** to **50%** as per the **Kenya Vision 2030 & Agricultural Sector Transformation and Growth Strategy (ASTGS)**



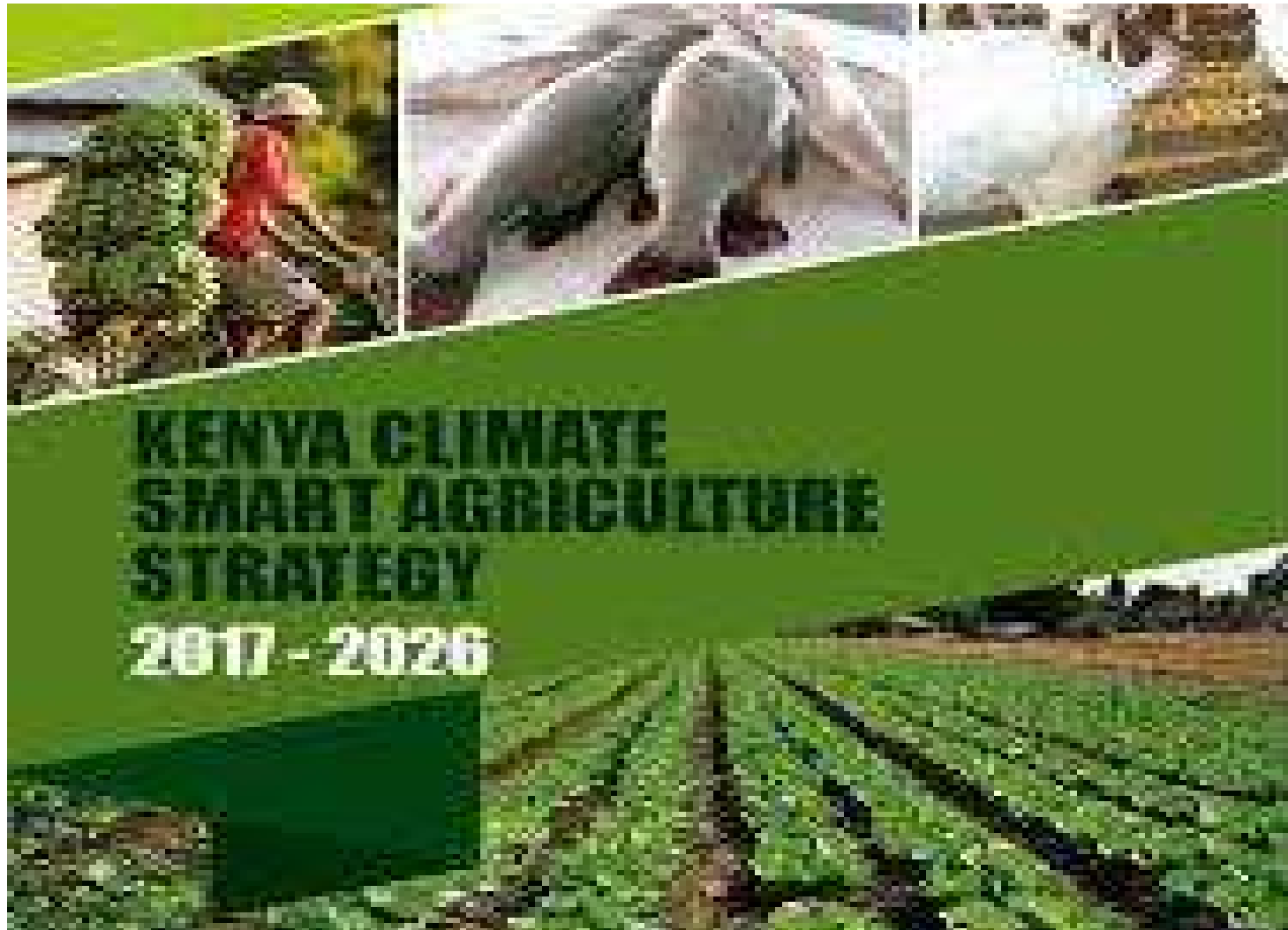
IMPORTANCE OF MECHANIZATION

- ☐ This is an important sub-sector that can drive the agricultural sector:
 - ✓ Realization of food security and nutrition
 - ✓ Creation of employment
 - ✓ Generation of income and livelihoods
 - ✓ Fostering economic development and environmental sustainability
- ☐ Government policies will focus on investment in the sub-sector AND
- ☐ Private sector involvement in agricultural mechanization investment

Embracing mechanization is essential for addressing the challenges facing global agriculture and ensuring food security and prosperity for future generations.



POLICIES IN AGRICULTURE





Mechanization Policy

4.1 OVERALL OBJECTIVE; To raise and sustain the level of agricultural mechanization for increased productivity, incomes, and food and nutrition security

4.2 WHY THE POLICY?

- ☐ Absence of a policy has led to proliferation of unchecked importation and manufacturing of agricultural machinery and equipment whose performance and effectiveness has not been tested and validated leading to dumping, loss of money, and decline of production,
- ☐ A policy will provide action to be taken by each stakeholder for access of machinery and equipment for more opportunities in crop, livestock, agroforestry and the blue economy production systems,
- ☐ The policy will address the problem of diminishing land sizes by planning for appropriate mechanization technologies for medium and small scale farmers,
- ☐ The use of machinery and equipment in agricultural production systems will make it attractive to the youth and address the issue of youth unemployment, rural agro industry development and rural urban migration.



4.3 POLICY FOCUS

- Enhance **agricultural mechanization research, technology development and adoption of innovations** along agricultural value chains
- Develop **agricultural mechanization technologies** that address the interest farmers and support local initiatives
- Establish a **legal and institutional framework** for collaboration and coordination for agricultural mechanization



National Agricultural Mechanization Policy (NAMP) 2021

Goals:

- - Improve machinery access
- - Set quality & safety standards
- - Encourage investment & R&D
- - Promote climate-smart agriculture



Agricultural Mechanization Bill 2021

- Provides a legal framework:
 - - Defines stakeholder roles
 - - Guidelines for machinery use & maintenance
 - - Financing & investment provisions

Agricultural Sector Transformation and Growth Strategy (ASTGS) 2019–2029

Objectives:

- - Increase mechanization to 50% by 2029
- - Infrastructure development
- - Credit facilities for farmers



Contd. POLICIES AND STRATEGIES

4.2 Agricultural Sector Transformation and Growth Strategy (ASTGS: 2019-2029)

- Three (3) anchors to drive Kenya's 10-year agricultural transformation:

Anchor 1: Increase small-scale farmer, pastoralist and fisherfolk incomes

- Raise average annual small-scale farmer incomes from KES 465/day to 625/day (~35% increase)
- Directly benefit ~3.3 million Kenyan farming households.

Anchor 2: Increase agricultural output and value add

- Expand agricultural GDP from KES 2.9 trillion to KES 3.9 trillion (6% CAGR).
- Increase the contribution of agro-processing to GDP by KES 130 billion over five years (50% increase over KES 261 billion in 2018).

Anchor 3: Boost household food resilience

- Reduce the number of food-insecure Kenyans in the arid and semi-arid lands (ASAL) regions from an average 2.7 million to zero, while reducing the cost of food and improving nutrition.
- Protect households against environmental and fiscal shocks



Contd. POLICIES AND STRATEGIES

4.3 National Agricultural Soil Management Policy 2023

Objective: Focuses mainly on effective soil management.

POLICY FOCUS:

Sustainable Agricultural Soil and Water Management

- ✓ Soil and water conservation;
- ✓ Soil Health;
- ✓ Agroforestry;
- ✓ Land reclamation;
- ✓ Soil restoration and rehabilitation;
and
- ✓ Soil remediation

Soil Management and Environment

- ✓ Effects of poor soil management on the environment;
- ✓ Climate change and variability impacts on agricultural soils;
- ✓ Soil extractive Industries; and
- ✓ Infrastructure development and soil management

Technology Development, Dissemination and Utilization

- ✓ Research and development;
- ✓ Dissemination and adoption of technologies

Fertilizer Development and Investments

- ✓ Fertilizer Access
- ✓ Quality assurance
- ✓ Soil management investments- soil
testing
- ✓ Resource mobilization



Contd. POLICIES AND STRATEGIES

4.4 Agricultural Mechanization Policy

Objective: Raise and sustain the level of agricultural mechanization for increased productivity, incomes, and food and nutrition security

POLICY INTERVENTIONS:

- ☐ Enhance **access and distribution** of agricultural machinery, equipment, agro-structures, agro-processing facilities and mechanization services;
- ☐ Enhance **quality assurance** for agricultural machinery, equipment, agro-structures, agro-processing facilities and mechanization services;
- ☐ Promote **investment** in agricultural mechanization;
- ☐ Enhance the **human resource capacity** for delivery of agricultural mechanization services;
- ☐ Enhance mechanization **research, technology development and adoption** along agricultural value chains;
- ☐ Enhance adoption of **agricultural mechanization technologies** for sustainable agricultural land development and climate smart agriculture;
- ☐ Establish a **legal and institutional framework** for collaboration and coordination for agricultural mechanization
- ☐ Develop **agricultural mechanization technologies** that address the interest of **people with special needs** and support local initiatives



Contd. POLICIES AND STRATEGIES

4.5 Kenya Climate Smart Agriculture Strategy 2017 – 2026

Objective: Building resilience and minimizing emissions from agricultural farming systems for enhanced food and nutritional security and improved livelihoods.

STRATEGY FOCUS:

Impacts of Climate Change on the Agriculture Sector

- ✓ Vulnerabilities due to changes in temperature regimes, precipitation patterns, extreme weather events and unsustainable use of natural resources

Greenhouse Gas Emissions in the Agriculture Sector

- ✓ Emissions from sources in agricultural production systems
- ✓ Accountable quantification of GHGs emissions

Legal and Institutional Framework

- ✓ legislations, enforcement and mandates of institutions
- ✓ Coordination and collaboration among institutions and stakeholders in climate smart agriculture

Cross-Cutting Issues

- ✓ Inadequate financing of CSA activities
- ✓ Limited capacity of Women, Youth and Vulnerable Groups (WY&VG) to participate in CSA activities
- ✓ Limited human resource capacity to undertake CSA
- ✓ Inadequate data and information on CSA



Contd. POLICIES AND STRATEGIES

4.7 Agricultural Marketing Strategy (2023-2032)

Aim: Contributing in the transformation of the agricultural sector into a vibrant, productive and efficient sector that is competitive both locally and globally.

| | |
|----------------------------|---|
| Strategic Pillars: | <ol style="list-style-type: none">1. Market Infrastructure;2. Market Requirements for Agricultural Produce and Products;3. Supply of Agricultural Produce and Products;4. Value-addition of Agricultural Produce; and5. Marketing Channels. |
| Strategic Enablers: | <ol style="list-style-type: none">1. Transport Infrastructure and Logistics;2. Agricultural Market Research, Intelligence and Innovation;3. Marketing Capacity; and4. Access to Domestic and Export Market. |

Implementation and Future Outlook

Government initiatives:

- - Extension services & training enhancement
- - Formation of cooperative societies
- - Increased mechanization over the next decade

Private sector opportunities;

- large scale farming/intensive precision agriculture
- Farming services(data ,inputs, consultancy, research)
- Value addition
- Export /trade

Innovative Technologies

- - AI-powered tools (Virtual Agronomist, Plant Village, machine services online)
- - Improved access to mechanization, information and other agricultural data and investments
- - Bridging extension service gaps
- - Precision Agriculture
- Climate financing

Conclusion

- Kenya aims to enhance mechanization through strategic policies, investment, and technology adoption for a more **productive and food-secure** future.

THANK YOU EVERY ONE

- 皆さん、聞いてくださってありがとうございます。

*(Minasan, kiite kudassatte
arigatou gozaimasu.)*