

REPUBLIC OF KENYA



NATIONAL HORTICULTURE POLICY

June 2012

© 2012. Government of Kenya

Agricultural Sector Coordination Unit (ASCU)
Kilimo House, Cathedral Road
PO Box 30028–00100. Nairobi, Kenya
Tel: +254 20 2046856. Fax: +254 20 2046985
Email: info@ascu.go.ke. website: www.ascu.go.ke

Contents

Contents.....	iii
Foreword.....	v
Preface.....	vii
Acknowledgement.....	viii
Executive Summary.....	ix
Abbreviations and Acronyms.....	xi
<hr/>	
1. IntRoDUctIon.....	1
<hr/>	
1.1 Background.....	1
1.2 The Role of Horticulture in the Kenyan Economy	1
1.3 Justification.....	8
1.4 Objectives.....	9
<hr/>	
2. PRoDUctIon.....	10
<hr/>	
2.1 Production Land.....	10
2.2 Planting Material.....	11
2.3 Agricultural Inputs.....	12
2.4 Crop Management Practices	12
2.5 Urban and Peri-Urban Horticulture	13
2.6 Resource Mapping and Development of Special Economic Zones.....	14
2.7 Aesthetic Horticulture	15
<hr/>	
3. sUPPoRtseRVICes.....	17
<hr/>	
3.1 Research and Development.....	17
3.2 Extension.....	18
3.3 Information and Communication	19
3.4 Financing and Investment of the Industry	20
3.5 Insurance Schemes	22
<hr/>	
4. MARKEtInG,VALUeADDItIonAnDtRADE.....	23
<hr/>	
4.1 Domestic Market	24
4.2 Regional and International Markets.....	25
4.3 Food safety and Quality Standards.....	27
4.4 Market Information Systems.....	28
4.5 Traceability.....	29
4.6 Value Addition.....	29

5. InFRAsTRUCtURe.....	32
5.1 Roads.....	32
5.2 Electronic Communication	33
5.3 Energy.....	33
5.4 Water and Irrigation.....	34
5.5 Sea Ports	35
5.6 Railways.....	35
5.7 Air Transport.....	36
5.8 Market Infrastructure.....	36
5.9 Produce Cold Chain Facilities.....	37
6. LeGAL, ReGULAtORY AnD InstItUtIonAL FRAMeWoRK.....	40
6.1 Legal and Regulatory framework.....	40
6.2 Institutional Framework.....	41
7. InDUstRY sUstAInABILItY.....	43
7.1 Environmental Sustainability.....	43
7.2 Economic Sustainability.....	44
7.3 Social Sustainability.....	45
8. GeneRAL IssUes.....	48
8.1 Gender.....	48
8.2 HIV and AIDS, TB, Malaria and other Water-borne Diseases.....	49
8.3 Youth in Horticulture.....	49
8.4 Integrity in the industry.....	50
APPenDIX.....	53
Appendix I. Institutions in the Horticulture	53
Industry.....	53
(i) Government Institutions.....	53
(ii) Private Sector Organizations.....	54
Appendix II: Horticulture Crops.....	57

FOReWORD

Agriculture plays an important role in the Kenyan economy. This importance is reflected in the positive correlation between growth in the agricultural sector and that of the national economy in the past in which the economy grows if agriculture grows and vice versa. The horticultural industry is a significant contributor to Agricultural Gross Domestic Product (GDP).

Over the last few decades, horticulture has emerged as one of the leading sub-sectors in the agricultural sector in terms of foreign exchange earnings, food security, employment creation, and poverty alleviation. The importance of this policy in enhancing agriculture's contribution towards the projected economic growth of 10 percent per annum over the next 20 years, as stipulated in the Kenya Vision 2030, cannot be over-emphasised.

The horticultural industry faces many challenges. With liberalization and regional integration, Kenya continues to witness an increased influx of horticultural produce from neighbouring countries as far as South Africa. This has been attributed to high cost of local production and low adoption of modern technologies by our farmers. This situation can significantly affect local production and depress prices of certain commodities thus negatively affecting the livelihood of many Kenyans that directly and indirectly depend on the industry.

The Kenyan horticulture industry exports depend heavily on European markets. Any disturbances in these markets have significant disruptions on Kenyan horticultural exports. This calls for diversification from such traditional markets. A favourable environment for horticultural investment is vital in retaining and continuing to attract new investments against the background of stiff global competition with competing investment destinations. This policy provides the grounds for enhanced horticultural investment in the country. It also underscores the important role of public-private partnerships and the need to continuously engage stakeholders in policy implementation to realise equitable benefits and sustain industry growth.

This policy consolidates gains achieved over the last decade address current and emerging challenges in the industry. The policy provides the opportunity for the industry to redefine itself and to redirect efforts towards ensuring sustained growth and global competitiveness. The quest for a guiding horticultural industry policy in Kenya has been long. This has resulted from the need to consult and have stakeholders' interests collated and adequately addressed to ensure comprehensive and inclusive mechanism in policy formulation. I am happy that industry players have seen the important need to work together for their benefit and that of the industry. I wish to commend all stakeholders for the selfless dedication during the entire process of developing the policy.

I am confident that the proposed policy interventions, if effectively implemented, will lead to the realization of the sub-sector objective of accelerating and sustaining growth and development of the horticultural industry in order to enhance its contribution towards food security, poverty reduction and wealth creation as outlined in the Kenya Vision 2030.

Dr. Sally J. Kosgei, EGH, MP
Minister for Agriculture

PReFACe

The horticultural industry remains a leading success story in Kenya. It is among the leading foreign exchange earners, contributes to food security, and is a source of livelihood to the majority of rural people who practise one form of horticulture or another. These achievements were realised despite the absence of a guiding policy framework in the sub-sector. However it is no longer feasible to sustain the achievements or spur further growth of the industry without an effective and supportive policy that takes into account the dynamic nature of horticulture business. This policy outlines the Government's intended measures in the horticulture industry, and proposes constructive engagement and partnership between the Government and private sector on how the industry should be managed in order to align and move it on a path of sustainable growth and development. This partnership recognises the significant role that the private sector continues to play in the development of the industry and its potential to contribute to even greater levels of development in future.

The policy emphasises the development of the domestic market with regard to production, food safety and post-harvest handling facilities, and the development of physical market infrastructure. Interventions in these directions are intended to exploit the potential of the industry in addressing food security, unemployment and poverty alleviation. In addition, the policy reiterates the need to adequately exploit agro-ecological conditions suitable for a wide range of horticultural crops by focusing attention to under- or unexploited regions of the country.

The multisectoral nature of the industry requires close collaboration among the different sector players. Previous attempts at fostering collaboration and partnerships among players in the industry through the National Horticulture Task Force have made significant strides in improving coordination in the sub-sector. Drawing from this experience, the policy proposes institutionalizing mechanisms to address challenges that are multi-sectoral. In addition, the policy proposes reviewing the institutional framework to enhance coordination in the industry. It is expected that industry players and stakeholders will participate in the implementation of this policy in order for the sector to realise set objectives. Further, in view of the dynamic nature of the horticulture industry, it will be necessary to develop a mechanism to periodically evaluate the policy so as to assess implementation progress and provide direction for policy review where necessary.

Romano Kiome (PhD, CBS)
Permanent secretary

ACKnoWLeDGeMents

The preparation of the National Horticulture Policy has been a widely consultative process. Efforts have been made in the past culminating into drafts from which this policy borrowed. I wish to thank the National Horticultural Taskforce (NHTF) for guiding the process of policy formulation.

I thank the policy drafting committee drawn from the lead institutions in the industry: the Ministry of Agriculture (MoA), the Horticultural Crops Development Authority (HCDA), the Kenya Agricultural Research Institute (KARI), the Kenya Plant Health Inspectorate Service (KEPHIS), the Kenya Flower Council (KFC), the Fresh Produce Exporters Association of Kenya (FPEAK), the Kenya National Federation of Agricultural Producers (KENFAP), the Smallholder Horticulture Marketing Programme (SHoMaP) of MoA, and the Kenya Horticultural Competitiveness Programme (KHCP) of USAID. Members of the drafting committee drawn from these institutions worked tirelessly to ensure the policy was formulated in the shortest time and in a most consultative manner.

Further, I wish to commend the coordination role played by the Agricultural Sector Coordination Unit (ASCU) by facilitating the committee's work and offering guidance during the entire process.

This policy was financed by a grant from the International Fund for Agricultural Development (IFAD) through SHoMaP, to whom we are highly grateful.

I wish to thank the provincial directors of agriculture and the various district agricultural officers for successfully organising regional stakeholder consultations.

Since it is not possible to mention everyone and every institution individually, kindly take this acknowledgement as an expression of sincere gratitude.

Romano Kiome (PhD, CBS)
Permanent secretary

eXeCUtIVe sUMMARY

Agriculture is the mainstay of the Kenyan economy with an annual direct and indirect contribution to GDP of 24 percent and 27 percent in 2011, respectively. Horticulture is among the leading contributors to the Agricultural GDP at 36 percent and continues to grow at between 15 and 20 percent per year. The horticultural industry is among the leading foreign exchange earners and contributes enormously to food security and household incomes to a majority of Kenyan producers who carry out one form of horticultural production or another.

The industry employs over six million Kenyans directly and indirectly. Of the total horticultural production, about 95 percent is consumed or utilized locally, while the remaining 5 percent is exported; yet in terms of incomes, the export segment earns the country huge amounts of foreign exchange. For example, in 2011, the industry earned the country KES 91.2 billion from exports. Despite its importance in the economy as a leading foreign exchange earner, the industry has not had a policy to guide its growth and sustainability.

The good performance of so far has been attributed to the fact that it is largely private sector driven and has so far not had any major challenge hence has remained lucrative. However, this performance cannot be guaranteed in the future if a clear and organised roadmap to sustainability is not established. Several factors hinder the potential of the industry. These include multiple taxation regimes, low incentives in terms of local market prices, high costs of inputs as well as water, energy, and air freight, and a generally unregulated environment leading to produce poaching and lack of quality control for local produce. Agro-processing, packaging and quality standards in the domestic market are also not fully developed. There is need to invest in better production methods, post-harvest care and quality to improve consumer acceptance of produce to earn higher value.

There have been several attempts to develop a national horticulture policy in the past culminating in drafts that were not completed due to reasons that included lack of ownership by some stakeholders. It became imperative that a clear guiding policy be developed in a highly consultative process with multiple stakeholders to ensure ownership of the policy and its eventual implementation in order to propel the industry to growth and sustainability. The process has culminated into this policy.

The objective of the policy is to sustain the industry's growth and development to enable it to; contribute to food and nutrition security, provide raw materials for primary processing, compete favourably in the export market and earn more foreign exchange, generate increased incomes and employment for various players, and generally contribute to the broader economic goals as envisaged in Vision 2030. This

policy analyzes the various industry concerns and highlights the challenges faced. It offers policy interventions for production, support services (financing, research and extension), marketing (local, regional and export markets), infrastructure as well as regulatory and institutional arrangements. Industry sustainability, being such an important issue, is handled exhaustively with a view of maintaining and improving on the average annual growth rate of 15.9 percent that has been recorded over the last decade. Cross-cutting issues affecting the industry are also analyzed and policy interventions proposed.

Horticulture is among the few sub-sectors of the economy that continued to grow in the recent past in the background of declining performance of other sub-sectors like tourism and general agriculture. Continuation of this growth cannot be assumed hence the need for this policy. The policy is a further assurance that most of the issues that hitherto hindered the growth of domestic and export horticulture have adequately been addressed to harness the potential in the local market while maximizing on increased foreign exchange earnings from the export market. With this holistic approach, the policy ensures that the industry will continue in the lead and surpass current performance several times for the good of stakeholders and the economy as a whole.

ABBReVIAtions AnD ACROnYMs

AAK	Agrochemical Association of Kenya
ACP	African Caribbean Countries
ASAL	Arid and Semi-arid Lands
ASCU	Agricultural Sector Coordination Unit
CIG	Common Interest Groups
COMESA	Common Market For Eastern And Southern Africa
EAC	East African Community
EPA	Economic Partnership Agreements
EPC	Export Promotion Council
EU	European Union
FPEAK	Fresh Produce Exporters Association of Kenya
GDP	Gross Domestic Product
HACCP	Hazard Analysis Critical Control Points
HCDA	Horticultural Crops Development Authority
HIV / AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
IPPC	International Plant Protection Centre
KARI	Kenya Agricultural Research Institute
KEBS	Kenya Bureau of Standards
KENFAP	Kenya National Federation of Agricultural Producers
KEPHIS	Kenya Plant Health Inspectorate Service
KES	Kenya Shillings
KFC	Kenya Flower Council
KIRDI	Kenya Industrial Research and Development Institute
MAPs	Medicinal and Aromatic Plants
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
PCPB	Pest Control Products Board
PBG	Producer Business Groups
SACCOs	Savings and Credit Cooperative Societies
SHoMaP	Smallholder Horticulture Marketing Programme
UPA	urban and peri-urban agriculture
UPOV	Union for the Protection of New Plant Varieties Convention
USAID	United States Agency for International Development
VCT	voluntary counselling and testing



1 IntRoDUctIon

1.1 Background

The agricultural sector in Kenya is made up of five major sub-sectors namely industrial crops, food crops, horticulture, livestock and fisheries. The sector's contribution to the Gross Domestic Product (GDP) has been fluctuating between 21.5 and 26 percent in the last decade. This means it is still the leading contributor to the Kenyan economy especially when combined with its indirect contribution through linkages with other sectors estimated at 27 percent of the country's GDP.

The horticultural industry is among the leading contributors to agriculture and by extension to the national economy statements on. Horticulture contributes in achieving food security, income and employment generation, foreign exchange earnings, raw material for agro-processing, and poverty alleviation. The horticulture sub-sector contributes 36 percent of agriculture's share of GDP. The sub-sector, especially with regards to horticultural exports, grew at an average annual rate of 15.9 percent between 2001 and 2010.

1.2 the Role of Horticulture in the Kenyan economy

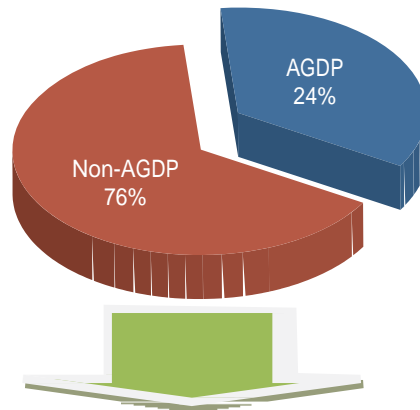
The horticulture sub-sector is made up of five commodities; vegetables, flowers, fruits, nuts and; medicinal and aromatic plants (MAPS). Of the total value of horticultural produce, vegetables account for 44.6 percent, fruits 29.6 percent, flowers 20.3 percent, and nuts, medicinal and aromatic plants account for the rest. About 95 percent of horticultural production goes to the domestic market and 5 percent to the export market.

The value of Kenya's horticultural produce was estimated at KES 205.1 billion in 2011; the sub-sector directly and indirectly employs over six million Kenyans. The industry is a leading foreign exchange earner. In 2011, Kenya earned KES 91.2 billion from horticultural exports. Figure 1 below shows the contribution of horticulture into the Kenyan economy.

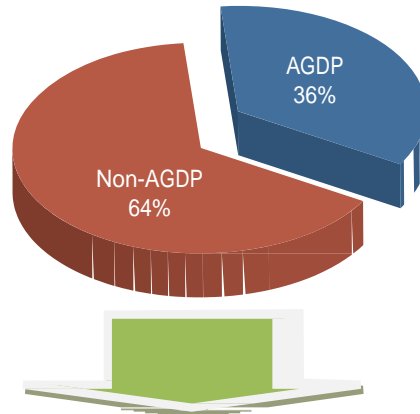


Figure 1: Contribution of horticulture to the economy (2011)

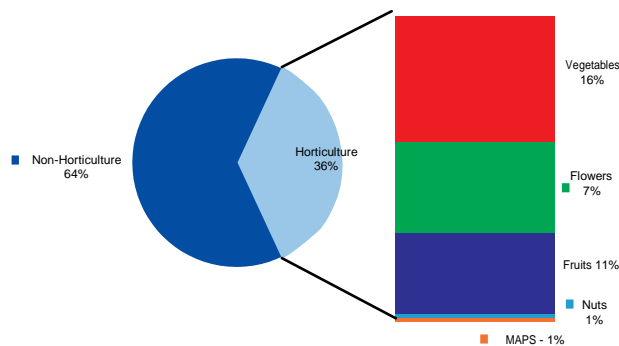
Direct Agriculture sector contribution to GDP (2011)



Horticulture sub-sector contribution to AGDP (2011)



Horticulture commodity groupings contribution to horticulture sub-sector by value (2011)

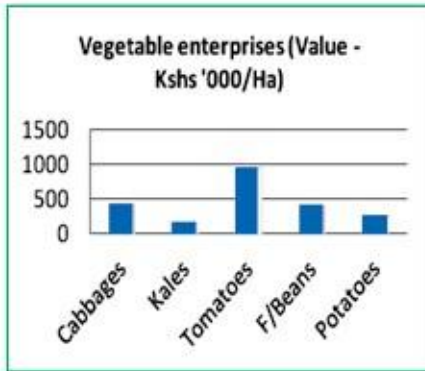


Horticultural production in 2011 was 7,785,707 tons from 566,228 hectares, mostly by small-scale farmers. Five counties Meru, Nakuru, Kiambu, Nyandarua and Kisii accounted for 52 percent of the total value. However, post-harvest losses are estimated at 40 percent. The domestic market accounts for 7,404,858 tons which was sold in the wholesale and retail market outlets; and cross-border trade.



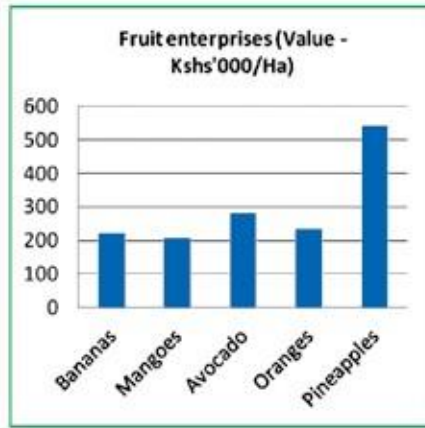
Figure 2: Value per hectare of key horticultural crops, broken into major commodity groupings (2009 and 2010)

The major commodity contributors to production are vegetables – Irish potatoes, tomatoes and cabbages,



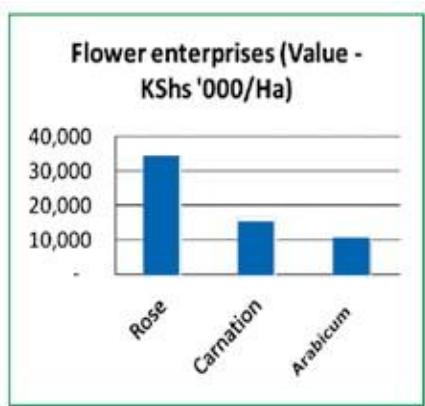
The vegetable sub-sector is important in attaining food security and improving livelihood for smallholder farmers who produce 100% of African vegetables and up to 70% of the Exotic and Asian vegetables. The major vegetables produced in Kenya are: Irish Potatoes, tomatoes, cabbages, snow peas, kales, spinach, runner beans, French beans, carrots, broccoli, indigenous vegetables, and Asian vegetables. In terms of enterprise value per acre, tomatoes are the most lucrative, followed by cabbages and French beans.

Fruits – bananas, mangoes and pineapples,



In Kenya, the major fruits produced are: bananas, mangoes, pineapples, avocados, oranges, paw paw, water melon, sweet melon, passion fruits, citrus, peaches, strawberries, guavas, pears and apples. In terms of value of enterprise per unit area, the leading crops are pineapples, avocados, oranges, bananas and mangoes.

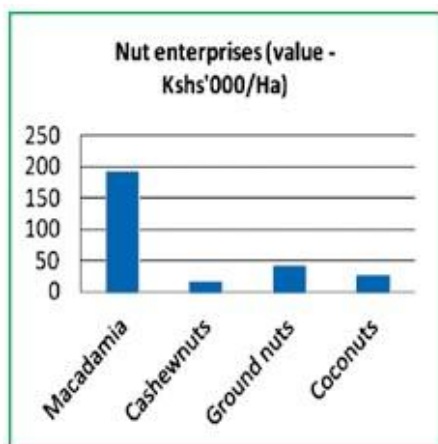
Flowers – roses, carnation and arabicum,



Flowers: The main categories of flowers cultivated in Kenya are roses, carnation, alstromeria, hypericum, arabicum, eryngium, statice, moby dick, lilies and tuberose. In terms of value of enterprise, rose, carnation and arabicum have the highest value per unit area.

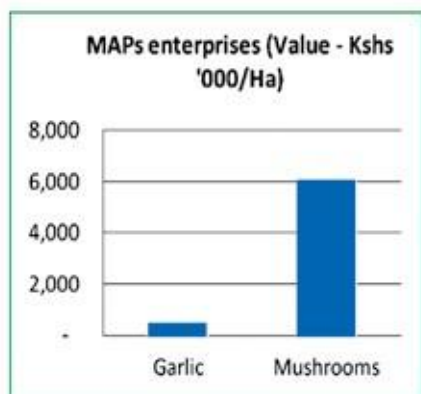


Nuts – macadamia, groundnuts and coconut,



Macadamia, groundnuts, coconuts, cashew nuts, bambara nuts, are produced in Kenya. The macadamia nuts and ground nuts have higher levels of returns per unit area compared to other nuts.

MAPs – garlic, bixa and mushrooms.



Medicinal and Aromatic Plants (MAPs) - are increasingly becoming important in Kenya and include: garlic, bixa, mushrooms, Artemisia, dill, stinging nettle, and cucur. In this category of horticultural crops, mushrooms and garlic have the highest value per unit area.

A lot of potential exists in ASAL areas for production of horticultural crops under irrigation and in other regions that are underexploited.

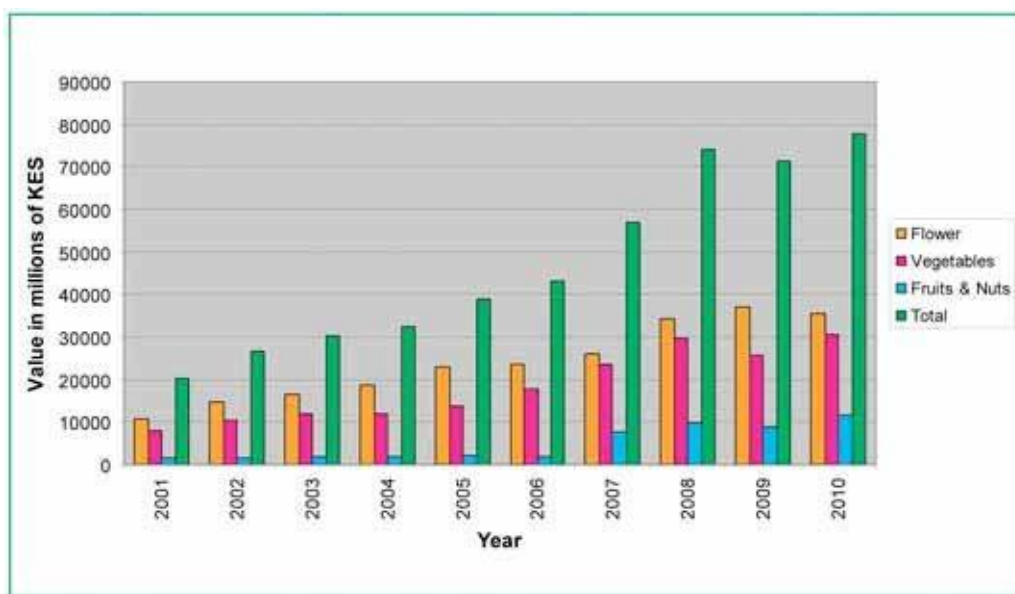
Kenya is a major exporter of horticultural produce to the European market. This success can partly be attributed to significant achievements in complying with international market requirements and the lucrative nature of the export market giving premium prices for the various commodities especially flowers. Kenyan producers have greatly complied with stringent sanitary and phytosanitary requirements of the export market. However, for the horticultural produce consumed locally, there has been little effort towards ensuring that the produce complies with standards as with the case of international markets. The establishment and conformity to standards for domestic markets, among other issues, is a major thrust of this policy.

Horticultural exports over the last decade are skewed towards flowers (Figure 3). Kenyan flowers account for 34 percent of the European Union (EU) market-one of the largest flower markets in the world, especially to The Netherlands at 67 percent. Vegetables also account for a significant part of exports and over 50 percent



going to the UK. Fruits and nuts go mainly to France and UAE. The huge export potential for fruits and nuts remains untapped and production of horticultural crops of importance to the pharmaceutical, health, nutrition and confectionery industries remains largely unexploited. In general, the export product range and destination is narrow and needs to be expanded.

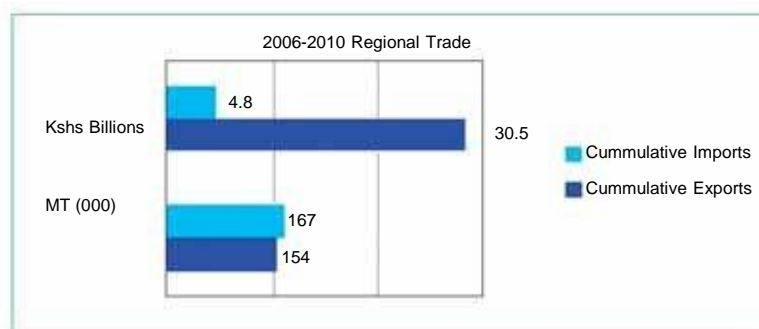
Figure 3. Value of Horticultural Exports 2001 - 2010.



Horticulture Export Value Trend for the period 2001 to 2010

Horticultural production for domestic market faces the challenge of continued influx of similar products from regional markets. In the African region (Uganda, Tanzania, Sudan, Ethiopia, Somalia, South Africa and Egypt), Kenya was between 2006 and 2010 (Figure 4) a marginal net importer in terms of volume but a significant net exporter in value of exports. The value of Kenya's horticultural exports to the region was estimated at KES 30.5 billion; six times that of imports of KES 4.8 billion. However, the volume of imports was about 8 percent more than exports. In essence Kenya exports to the region high value products and imports relatively low value commodities.

Figure 4: Regional cumulative trade in horticultural crops and products 2006-2010





The recent shift by a few multinationals in the horticultural sector from Kenya to other regional countries is a threat to the future of the industry. This shift has been attributed to multiple taxes, low incentives, rampant produce poaching and, generally, the high cost of doing business in Kenya. Despite the far-reaching ramifications, a clear strategy to mitigate the trend is lacking. Measures proposed in this policy go towards mitigating that unfavourable trend.

Agro-processing and packaging technologies are relatively undeveloped in Kenya. In particular, investment in packaging technology is critical during sea freight, whose cost is significantly lower compared to that of air freight. Deliberate efforts need to be made towards investing in this area to increase produce shelf life, reduce post-harvest losses, and improve consumer acceptance both in the domestic and international markets.

The shift from tariff to non-tariff barriers in international horticultural trade has necessitated more regulation of the industry to comply with the new market requirements. However, the activities of government agencies involved in regulating the industry are not harmonised and lead to delays and increased cost of complying with non-tariff barriers. To improve service delivery in this area, the Government will establish mechanisms for strengthening interagency coordination on regulation.

These challenges require a multi-sectoral approach in seeking and providing appropriate solutions. Presently, the National Horticulture Task Force provides a platform for addressing challenges that are multi-sectoral in nature, though it lacks the legal status to implement or enforce policy. It is therefore imperative that the industry establishes an institutional mechanism to address multi-sectoral challenges. This policy takes into account other government initiatives outlined in policies, legal frameworks and strategies within and outside the horticultural sub-sector.

To meet the rising demand for horticultural produce, productivity will be boosted through enhanced research outputs and provision of improved extension services in line with both the NARS policy and NASEP. Further, mapping of horticultural resources and development of special economic zones will be undertaken to facilitate investments and economic production.

Kenya is among the world's leading producers of Rose flowers with exports from the country accounting for 34 percent of flowers auctioned in Europe. Despite the high volume of flowers marketed in these auctions, Kenya as a country does not adequately benefit from her flowers due to various middlemen who could be avoided if there was a local flower auction. Therefore, the country will establish a regional flower auction in Nairobi to tap the economic rent of exporting flowers directly from Nairobi flower auction.



Promotion of domestic horticultural marketing is a major thrust of this policy. Currently, most municipal markets are poorly constructed and managed. They are not appropriate for fresh produce handling and in most markets, no fresh produce handling and storage facilities exist leading to mix up of commodities and deterioration of quality. To ensure well working markets and their management, measures will be taken to provide physical market facilities in all municipalities with very elaborate management systems. Further, this policy proposes creation of horticulture mega-markets in major cities and towns to handle both wholesale and retail marketing of fresh produce in hygienic conditions.

To address the problem of multiple cesses, levies, and taxes which has been a major problem of the industry, taxation will be carried out only at the point of sale for domestic market and point of exit for the export market. These measures are intended to ensure the country optimises returns from sale of produce while addressing safety, hygiene and product quality for the domestic market as well as reducing levels of taxation.

The impact of climate change on production in Kenya with regards to erratic weather patterns, availability of water resources, food miles (carbon footprint), and prevalence of pest and diseases pose a big challenge to global competitiveness of the horticultural industry. In order to address climate change and environmental concerns associated with poor agricultural practices, the government will partner with the private sector to enable the country participate in carbon trading, sustainably protect fragile ecosystems like riparian areas and the country's major water towers, promote water use efficiency and adopt green energy. Erratic weather patterns have also affected the industry indirectly through prolonged drought significantly hampering adequate generation of energy from hydroelectric power stations. Inadequate and unreliable electricity supply continues to negatively impact the horticultural industry and particularly floriculture which requires reliable electricity supply to run most of the automated greenhouse operations. The need for sustainable green energy is therefore critical for growth of the industry.

Water is a major factor of production for horticulture. Inadequate water for irrigation is one of the most pronounced effects of climate change in Kenya. This policy proposes efforts to promote water harvesting techniques and adoption of efficient irrigation systems among smallholder farmers. The government has initiated regulation of water abstracted from water resources across the country as an immediate action. The long term plan for addressing shortage of irrigation water involves conservation of all water catchment areas through Public Private Partnership (PPP). The horticultural industry has further proposed that the drawing of water from the resources be regulated on the basis of available water and not the quantity specified in the water permit as part of the industry's self regulation code of practice. Further, farming along large water bodies like lakes should be regulated on the basis of the natural water balance of the particular water body.



1.3 Justification

Sustained horticultural production is essential to realisation of the goals and targets of the Kenya *Vision 2030*. Despite the significant growth that the industry has attained, the sub-sector has been operating without a policy. This status is no longer tenable given serious emerging challenges both locally and internationally. This National Horticulture Policy has been developed to ensure the growth and competitiveness of the industry is sustained into the future. The domestic horticultural market constitutes about 95 percent of the total production but contributes almost the same value as the 5 percent of volume exported. This is largely due to poor handling of produce throughout the value chain but more so, after harvest. The policy has given a lot of consideration to promotion of physical markets, their management, the entire marketing function and maintenance of standards to promote domestic horticultural market as well as advance the export market. Measures at ensuring both socio-economic and environmental sustainability are also given prominence in the policy. The policy is therefore timely, coming when the industry is robust and set to grow to even greater heights.

1.4 Objectives

The broad objective of this policy is to accelerate and sustain growth and development of the horticultural industry in order to enhance its contribution towards food security, poverty reduction as well as employment and wealth creation. The specific policy objectives towards the broad objective are to:

- i) Facilitate increased production of high-quality horticultural produce.
- ii) Enhance provision of the sub-sector's support services like finances, insurance and technical advisory services.
- iii) Promote value addition and increase domestic and external trade.
- iv) Develop and improve infrastructure to support the horticultural industry particularly in major production areas.
- v) Establish, strengthen and entrench institutional, legal and regulatory framework in the horticultural industry.
- vi) Promote mechanisms for socio-economic and environmental sustainability while addressing cross-cutting issues.
- vii) Promote horticultural investment in the ASALS.



Adoption of appropriate farming practices such as green house can enhance productivity and returns to farmers



2 PRODUCTION

In line with Vision 2030, the policy focus will be to increase horticultural production through opening up new areas especially in ASALs, intensifying productivity, enterprise diversification, and encouraging small-scale farmers to realise economies of scale. Other issues of emphasis in production include providing adequate and affordable quality planting material; adopting appropriate crop production management practices; access to affordable financial services and insurance schemes; providing agricultural inputs; and promoting urban and peri-urban horticulture.

2.1 Production Land

2.1.1 Current status

It is estimated that in 2011, there were 566,228 ha of land under horticulture. The main horticultural enterprises in Kenya include flowers, vegetables, fruits, nuts and medicinal and aromatic plants (MAPs). Flower production is undertaken predominantly by large-scale multinational farms while vegetables, fruits, nuts and MAPs are produced mainly by smallholder farmers.

However, production land in high and medium-potential areas is declining due to increasing human settlement and urbanisation, with production under horticulture increasingly becoming smallholder. The potential for expansion is in Arid and Semi-Arid Lands (ASALs), which are currently underutilised. The Government has continued to implement programs and projects geared towards increasing area under horticultural production in the ASALs and intensifying production in medium- and high-potential areas. Due to changing weather patterns as a result of climate change, there is a continuous move towards greenhouse farming.

2.1.2 Challenge

- i) Uneconomic land parcels for horticultural production due to continued land fragmentation as a result of human settlement and urbanisation.
- ii) Declining soil fertility and degradation due to poor management.
- iii) Low adoption of appropriate technologies to exploit land potential in the high- and medium-potential areas and in ASALs.

2.1.3 Proposed Policy Interventions

- i) Government will fast track implementation of the land policy and the completion of the land-use policy.
- ii) Stakeholders in the industry will partner to enhance soil fertility management.
- iii) The Government will facilitate public-private partnerships in adopting



appropriate technologies such as greenhouses to exploit untapped potential in the high- and medium-potential areas and in the ASALs.

2.2 Planting Material

2.2.1 Current situation

Adequate supply and access to high-quality planting material for organic and conventional production systems are essential if the horticultural industry is to develop and commercialise. The horticultural sub-sector largely depends on imported planting material that is mostly unaffordable and there is inadequate locally produced certified material due to low investments. Imported material constitutes a larger percentage of the total planting material for flowers and vegetables. Promotion of indigenous varieties is limited by lack of high-quality planting material. Breeding programmes undertaken by local research institutions are constrained by financial, human and physical resources. There are many smallholder commercial fruit tree nurseries spread all over the country but the majority do not meet standards that would ensure supply of quality-planting materials.

2.2.2 Challenges

- i) Inadequate financial, human and physical resources to research on and develop varieties.
- ii) Inadequate coordination among research institutions and insufficient breeding programs targeting crop varieties with superior characteristics such as high yields and early maturity.
- iii) Low priority given to germplasm conservation has hampered concerted efforts in the production of quality planting material and has resulted in the loss of beneficial species.
- iv) Inadequate systems for producing and bulking high-quality organic and conventional planting material.
- v) Unaffordable and inaccessible high-quality planting material by smallholder farmers.
- vi) Inadequate enforcement of certification of planting material has led to poor-quality seedlings.

2.2.3 Proposed Policy Interventions

- i) The Government will enhance the capacity of public research institutions through increased funding, and encourage local breeders to undertake breeding through partnerships and collaboration with regional and international research institutions.
- ii) Collaboration in research programs among institutions will be enhanced.
- iii) Partnerships with relevant public and private institutions will be promoted to increase funding for germplasm conservation and to protect plant varieties with potential for commercial value.
- iv) The Government will explore innovative systems that include best practices



of producing and bulking planting material, and promote the up-scaling of successful systems.

- v) The private sector will be provided with incentives to enhance accessibility of planting material.
- vi) Certification processes will be streamlined through improving the capacity of the Kenya Plant Health Inspectorate Service (KEPHIS), and promoting use of clean material while embracing international standards and best practices.

2.3 Agricultural Inputs

2.3.1 Current situation

The major inputs in the horticulture industry are seed, fertilizer and pesticides. Other requirements include farm structures and equipment. The poor quality of inputs attributed to counterfeiting and adulteration and their high cost are a hindrance to faster development of the sub-sector. Inputs are distributed through a wide range of stockists, merchants and cooperatives throughout the country. However, most of the input dealers are not trained to offer quality advisory services to farmers. Despite the positive impact on the environment and health, little has been done to promote technologies such as organic farming that foster use of farm-based inputs. The industry largely depends on imported fertiliser, pesticides and herbicides.

2.3.2 Challenges

- i) Unevenly distributed outlets for farm inputs.
- ii) High cost of agricultural inputs.
- iii) Incidences of counterfeiting and adulteration.

2.3.3 Proposed Policy Interventions

- i) The Government will continue to offer incentives to the private sector to enhance distribution of farm inputs.
- ii) Mechanisms will be put in place to reduce the cost of inputs through appropriate programmes such as bulk purchasing and local manufacturing and subsidy to schedule horticulture commodities.
- iii) The Government and private sector will continue to undertake measures that will make inputs more accessible to farmers.
- iv) The Government will enforce compliance with quality standards for farm inputs.
- v) Strengthen surveillance institutions such as pests and products Board, KEPHIS to ensure regularatory.

2.4 Crop Management Practices

2.4.1 Current situation

The crop production systems are largely smallholder and land intensive. Seasonal variations in production are common as the systems are largely rain fed. Improved



production systems that employ advanced green-house technologies and irrigation are practiced in large-scale farms and smallholder commercial farms. Use of agricultural inputs, mechanization and adoption of production technologies vary among subsistence and commercial farms, and also among flower, vegetable and fruit farms. Due to stringent export requirements, Kenya has progressively implemented traceability measures that have included the development of internationally recognised local standards, such as KenyaGAP, KFC Silver Standard, HEBI Base Code and others, with effective certification procedures. Further, segmented markets that require value-added products have led to some farms specializing in organic farming.

2.4.2 Challenges

- i) Low productivity of horticultural enterprises due to use of inappropriate technologies.
- ii) Perceived high cost and difficulty in implementing quality standards and product safety for on-farm production.
- iii) Ineffective pests and diseases management practices.
- iv) Lack of long-term horticulture development strategy hampers coordinated development of the sub-sector and guidance to prospective investors.
- v) Poor adoption of appropriate production technologies for organic farming.

2.4.3 Proposed Policy Interventions

The Government will:

- i) promote the adoption of modern technologies through improved provision of advisory services by the public and private sector extension service providers.
- ii) Enhance compliance with standards and product safety through sensitization.
- iii) Promote use of integrated pest and disease management.
- iv) Facilitate the development of long-term plans and suitability maps/profiles for various eco-zones for horticulture investment.
- v) Encourage the development and use of appropriate production packages for organic farming.

2.5 Urban and Peri-Urban Horticulture

2.5.1 Current status

Kenya continues to experience rural–urban migration as people seek better opportunities in urban areas. Urbanization continues to encroach on productive agricultural land converting it to settlements and commercial centres, threatening horticultural production. In addition, the capacity to meet the food needs of an increasing population continues to be constrained. The urban farming community has increased and urban and peri-urban agriculture is becoming a mainstay of a substantial proportion of many urban and peri-urban (UPA) dwellers.



2.5.2 Challenges

- i) The current legislation hinders the exploitation of the existing farming potential in urban areas. The Local Government Act CAP 265, the Land Control Act, (Cap 302) and, the Public Health Act, (Cap 242) are not supportive of agricultural activities in designated urban areas.
- ii) There is no policy to address the challenges associated with urban and peri-urban farming.

2.5.3 Proposed Policy Interventions

- i) The Government will facilitate the review of sections of the law that prohibit UPA and fast track the development and implementation of the UPA policy.

2.6 Resource Mapping and Development of special economic Zones

2.6.1 Current situation

Kenya has vast resources for horticultural development which remain unexploited. The development of horticultural enterprises has not been informed by enterprise suitability and potential; in addition the production units are fragmented and uneconomical. Whereas the country has great potential for new horticultural development, there have been no deliberate efforts to map out resources and establish special economic zones.

2.6.2 Challenges

- i) Limited exploitation of horticultural potential in regions with suitable conditions.
- ii) Unplanned development of horticulture which does not take into consideration enterprise suitability and economies of scale.
- iii) Lack of spatial plan and land use policy.
- iv) High cost of investment in horticultural physical facilities and equipment.

2.6.3 Proposed Policy Interventions

- i) The Government will fast track the development of the national spatial plan and land use policy.
- ii) The Government will undertake comprehensive resource mapping to delineate and exploit resources for horticultural development.
- iii) The Government will establish special horticultural economic zones and provide incentives for investment.



2.7 Aesthetic Horticulture

2.7.1 Current situation

Aesthetic horticulture (landscaping, flower arrangement, interior design, nursery management, pot plants) is widespread in Kenya especially in urban and peri-urban areas. It offers employment opportunities and is a source of income. However, its potential remains unexploited and it needs support.

2.7.2 Challenges

- i) Low awareness, adoption and appreciation of the value of aesthetic horticulture in non-UPA areas.
- ii) Lack of regulatory guidelines.
- iii) Inadequate capacity in aesthetic horticulture.
- iv) Lack of designated outlets and infrastructure for aesthetic horticulture.

2.7.3 Proposed Policy Interventions

- i) The Government and other relevant bodies will promote aesthetic horticulture.
- ii) The Government in collaboration with stakeholders will provide necessary regulatory guidelines.
- iii) The Government in collaboration with stakeholders will facilitate capacity building in aesthetic horticulture.
- iv) Local authorities will designate outlets and provide necessary infrastructure for aesthetic horticulture.



Effective quality checks are crucial to meeting the dynamic consumer demands



Staff should be trained on inspection services



3 sUPPoRt seRVICes

The policy objective is to enhance provision of adequate and efficient support services critical for improved horticultural production. The main support services addressed are appropriate research and development, adequate and efficient extension services, availability and access to information and communications, affordable financial products and comprehensive insurance cover.

3.1 Research and Development

3.1.1 Current situation

Horticulture research is undertaken by universities, the private sector and the Kenya Agricultural Research Institute (KARI). Research focus has been on on-farm production with very little attention to the whole value chain, contributing to poor performance of many enterprises especially in the market. The level of research in horticultural crops has remained low over the years. As a result, farmers continue to rely on imported planting material and other technologies to keep pace with constantly changing trends of production techniques and consumer demands. The agricultural sector has developed the proposed National Agricultural Research Systems (NARS) policy and the Kenya Agricultural Research Organisation (KARO) Bill 2011 which seeks to harmonise the administration in terms of prioritisation, funding and coordination of research under the proposed Horticulture Research Institute.

3.1.2 Challenges

- i) Horticultural research programmes have not been accorded high priority in terms of funding and development of capacity and there is high reliance on donor funding.
- ii) Inadequate research that has not embraced the value chain approach has led to low quality and narrow product range, limited product development and marketing.
- iii) Limited collaboration and coordination among research institutions and other stakeholders has resulted in lack of consultations when setting the research agenda, leading to uncoordinated research activities and programmes.
- iv) Ineffective dissemination of research findings and poor adoption of technology.
- v) Inadequate programmes for building capacity of research personnel, hence inability to keep up with changes in technological advances.
- vi) Inadequate research on pest and disease management and surveillance has led to increase in outbreaks.
- vii) Due to reliance on imported planting material and minimal implementation of intellectual property rights, there are risks of losing germplasm of indigenous horticultural crop varieties.



3.1.3 Proposed Policy Interventions

To address the constraints above, the following interventions will be undertaken.

- i) Horticulture Research will be financed through the Government of Kenya, private sector, development partners, trust funds, royalties and competitive grants.
- ii) To ensure relevance of research programmes and make them demand driven, collaborative research projects and stakeholder forums will be encouraged to set the research agenda.
- iii) The Government will design innovative ways to disseminate research findings to beneficiaries that will include establishing research databases, use of ICT and promoting technology adoption.
- iv) To address the dynamism of the horticulture sector, the capacity of researchers and other stakeholders will be enhanced to match the changing industry needs.
- v) Research institutions will be encouraged to carry out more focused research on disease and pest management.
- vi) To promote sustainability of the sub-sector, conservation of germplasm of indigenous crops will be enhanced.
- vii) Plant Breeders Rights Regulations and the provisions of the International Union for the Protection of New Plant Varieties (UPOV) will be implemented to facilitate recognition and payment of royalties to breeders.

3.2 extension

3.2.1 Current situation

Horticulture requires specialised extension approaches and skills due to its dynamism and industry needs. There are private and public extension service providers in the horticultural industry. Most of the small- and medium-scale horticultural farmers rely on public extension service providers while large-scale farmers depend on private extension services. However, there are inadequate extension service providers to cater for the needs of horticultural farmers. HCDA offers limited specialised extension services for export crops and only in specific high-concentration areas. Consequently, high-potential regions and farmers who produce for the local market have not benefited from this service. In addition, most farmers are not yet commercially oriented. Lack of operational synergy of programmes by extension providers has hindered harmonization of extension messages. Appropriate extension packages require constant reviewing and updating. There is low awareness among extension providers of quality requirements for horticultural produce and few guidelines for good agricultural practices. The agricultural sector has developed the National Agriculture Sector Extension Policy (NASEP). The policy seeks to promote pluralism in extension service delivery and institute mechanisms to coordinate extension services from both public and private sectors for improved quality. The extension service proposed in this policy is anchored on the NASEP and in line with the devolved governance system under the Constitution.



3.2.2 Challenges

- i) Inadequate institutions offering specialized horticultural extension services and training.
- ii) Provision of extension services has been hampered by producers who are not organized into groups to enhance delivery of technologies and marketing of produce.
- iii) Poor service delivery due to use of inefficient extension methodologies, and lack of coordination in the provision of extension services.
- iv) Inadequate numbers of extension personnel to reach most industry stakeholders leading to lack of adequate knowledge and skills transfer.
- v) Extension agents lack adequate knowledge of existing standards for producing quality produce.
- vi) Inadequate funding of existing extension services.
- vii) Limited capacity in agribusiness leading to unviable business plans.

3.2.3 Proposed Policy Interventions

- i) To enhance horticultural production, the Government will strengthen and harmonize public extension services to offer specialized extension services.
- ii) The Government will facilitate the formation and strengthening of producer business groups and commodity associations to enhance technology transfer and marketing of produce.
- iii) The Government will build capacity of staff, farmers and farm input suppliers to improve and update their skills and knowledge. Due to the dynamic nature of the horticultural sub-sector, staff will be constantly updated on new technologies, market regulations and consumer demands.
- iv) To improve partnerships and collaboration, the value chain approach in extension will be encouraged.
- v) The Government will encourage farmers, extension agents and suppliers to build quality into the products throughout the value chain.
- vi) The Government will improve funding to extension services to cover all commodities and areas, and catalyze demand-driven extension.
- vii) Capacity will be built among extension service providers on agribusiness and preparation of business plans. Refresher programs for extension staffing ok.
- viii) Support development and regulation of private extension.

3.3 Information and Communication

3.3.1 Current situation

Quality information is required for planning and development in the horticultural industry. Currently, HCDA and the Ministry of Agriculture are the key players engaged in horticultural data collection. The production data once collected is validated by a committee of industry stakeholders. However, there is lack of cooperation and withholding among custodians of information which has negatively affected the development and progress of the sub-sector. Thus available information



on prices, production, yields, consumption trends, markets, farm sizes, area under crops and crop suitability maps is insufficient and unreliable.

Currently the data available is neither adequate nor timely and has limited accessibility. The ICT potential has not been exploited to enhance data management in order to deliver value to the industry.

3.3.2 Challenges

- i) Accessing existing data and information in horticulture for the purpose of planning and development is cumbersome.
- ii) There is limited capacity for data collection and management among value chain players resulting in unavailability of accurate data. Organized systems of data and information management are lacking, and the information available is held by various stakeholders.
- iii) Collection and dissemination of market information is not well organized leading to exploitation of farmers arising from information asymmetry.
- iv) Communication technologies like radio, mobile phones, websites and e-mails have not been used optimally due to high cost and accessibility constraints in some areas.
- v) Information and knowledge on developing farm plans is limited leading to unviable farm business plans.

3.3.3 Proposed Policy Interventions

The Government, in collaboration with stakeholders will;

- i) Encourage commodity surveys, censuses and value chain studies to generate data to enhance the availability of information for the industry.
- ii) Encourage data validation forums for stakeholders to share information. Stakeholders will be facilitated and empowered to collect and validate data.
- iii) Establish a reliable ICT-based horticultural database at HCDA.
- iv) Institute innovative communication strategies for collecting and disseminating market information.
- v) Strengthen agricultural information desks in the districts to empower stakeholders. This information shall include trends and opportunities.
- vi) Bi-annual horticulture fairs in all counties.

3.4 Financing and Investment of the Industry

3.4.1 Current situation

Provision of affordable and accessible financial services is essential for the development of the horticultural industry. Investment in horticultural enterprises is capital intensive. In addition to own capital, several financial institutions offer support to the industry. These include Government parastatals, commercial banks, microfinance institutions, bilateral and multilateral lending institutions, NGOs, SACCOs and donor programs. However, such financial services are inaccessible to



a large number of medium and small-scale operators due to high interest rates, low level of awareness and low credit portfolio for agriculture by financial institutions.

Programs financing the industry are uncoordinated resulting in duplication of activities. This can partly be attributed to lack of prioritising on areas that need financing. The Government has established partnerships with some banks and other lending institutions to expand the agricultural loan portfolio and avail credit at affordable interest rates.

Though most large-scale farmers and medium-scale commercial horticulture farms have a wider range of credit packages and options available to them, smallholders lack access to credit, and where such credit exists, it is not tailored to meet their production needs.

Investor incentives that have positively impacted the horticulture industry include improved access to ICT; rapid development in road, port; upgraded airports; revival of irrigation; and market infrastructure. Despite all this more needs to be done to attract more investors.

3.4.2 Challenges

- i) Government financial support to the industry is inadequate.
- ii) Lack of a special fund to support development of the horticulture industry.
- iii) Inaccessibility of funds to smallholder farmers due to high interest rates.
- iv) Limited access to long-term loans for capital investment in the horticultural industry.
- v) Inadequate management capacity of some horticulture loan applicants.
- vi) Scanty information on availability of financial resources.
- vii) Lack of a framework for coordinating development and investment programs.
- viii) Financial services not tailored to meet the needs of the small- and medium-scale producers.
- ix) Inadequate investment in the horticultural sub-sector.

3.4.3 Proposed Policy Interventions

The Government will:

- i) Improve budgetary allocation to horticulture.
- ii) Provide an enabling environment for the private sector and other stakeholders to establish affordable credit facilities to support horticultural investments.
- iii) In partnership with financial institutions, continue promoting the development of long-term appropriate financial products that are accessible and affordable.
- iv) Encourage the financing of the industry through programmes and projects by local and international funding institutions and development partners.
- v) In partnership with the private sector, build management capacity for loanees.
- vi) Establish a suitable mechanism for disseminating information on available sources of funding the industry.



- vii) Engage the private sector in identifying the industry's investment priorities.
- viii) Put in place mechanisms to coordinate funding by development agencies to avoid duplication and enhance enterprise diversification.
- ix) Provide incentives to attract local and foreign direct investment in the horticultural sub-sector.

3.5 Insurance schemes

3.5.1 Current situation

There are risks and uncertainties in the horticultural industry that call for appropriate insurance schemes. Currently there is the government sponsored African Trade Insurance (ATI) Agency and the Adaptation to Climate Change and Insurance (ACCI) schemes that provide crop insurance. There are inadequate insurance schemes for horticultural enterprises and any that exist in the country are being pioneered with a view to ascertaining viability. In addition, there are knowledge gaps on crop insurance. There is low adoption of appropriate measures that would mitigate against risks and uncertainties, making industry unattractive for insurance cover.

3.5.2 Challenges

- i) Inadequate technical skills in agricultural insurance.
- ii) There is a knowledge gap in insurance among stakeholders.
- iii) Inadequate appropriate insurance schemes for the horticultural industry.
- iv) High insurance premiums for horticultural enterprises.
- v) Lack of insurance regulations (on the Sector)

3.5.3 Proposed Policy Interventions

The Government will:


- i) Partner with the private sector to build capacity for agricultural insurance.
- ii) Provide an enabling environment to private insurance companies to develop appropriate and affordable enterprise insurance products to support Horticultural investments.
- iii) Facilitate provision of insurance services through the proposed Agricultural Insurance Policy.



Carnations and roses are the major export crops



Packaging continue to be improved to add value to Kenyan products



4 MARKETING, VALUE ADDITION AND TRADE

The policy objective is to provide an enabling environment that facilitates marketing, value addition and trade with a view to enhancing competitiveness of Kenyan horticultural products in domestic, regional and international markets. To ensure the industry's competitiveness, focus will be on development, management and regulation of domestic fresh produce markets. Trade will be improved through harmonizing and adopting standards, improving product quality, and enhancing use of market information systems. Value addition will be encouraged at all stages of product value chains.

4.1 Domestic Market

4.1.1 Current status

Domestic trade is an important source of livelihood for players in the horticultural value chain. The bulk of produce for domestic market comprises vegetables, fruits and medicinal and aromatic plants (MAPs). Flower trade is still limited and largely targets the export market. The major actors involved in trade are producers, traders, middlemen, transporters and local authorities. The margins between farm gate prices and consumer prices are wide and indicative of suppressed profitability for the producer. Many markets have inadequate physical facilities and do not therefore provide facilities like storage and cold rooms, weighing equipment, loading/unloading and social amenities. Ship chandlers who dock at the Mombasa port presently purchase most of their produce from neighbouring ports.

4.1.2 Challenges

- i) Information asymmetry among market players distorts market prices, reduces producer margins, skews trade benefits toward middlemen and traders, and blocks entry of new market players while increasing the wide gap between the farm gate and market price.
- ii) Lack of access to physical markets for new entrants due to presence of cartels and brokers.
- iii) Failure to honour contractual obligations between buyers and producers.
- iv) Conflicting markets' management and regulatory roles by Government agencies.
- v) Prevalence of produce of substandard hygiene and quality arising from lack of enforcement of standards, and poor consumer awareness.
- vi) Inappropriate pre- and post-harvest handling practices and packaging of horticultural produce.
- vii) Lack of organized and hygienic fresh produce markets for supplies to ship chandlers.
- viii) Inadequate appropriate fresh produce transporting Vans (refrigerated lorries etc)



4.1.3 Proposed Interventions

- i) Gathering and exchanging market information through appropriate avenues by public and private sector players will be promoted.
- ii) The Government will regularize operations of market agents.
- iii) Contract farming and promoting formation of farmer organizations or groups will be encouraged to increase farmer bargaining power and benefits from economies of scale as well as cushioning them from price fluctuations.
- iv) The management and regulation of markets will be harmonized and streamlined.
- v) The Government through relevant ministries, local authorities and other public institutions will enforce laws and regulations that ensure adherence to safety, hygiene and other standards.
- vi) The Government will facilitate training in recommended best practices in pre- and post-harvest handling, packaging and transportation.
- vii) The Government will improve wholesale and retail outlets for fresh produce.
- viii) Involve private sector in provision of appropriate transport for fresh produce and installation.

4.2 Regional and International Markets

4.2.1 Current status

Statistics of regional trade in the horticulture sub-sector are scanty but there are indications that Kenya could be a net importer of some horticultural produce from the region. The major imports include pineapples, apples, onions, oranges, bananas and tomatoes. The flow of produce to Kenya is encouraged by the strong Kenyan shilling and relatively high cost of domestic production.

Kenya is a major exporter of horticultural produce mainly to the EU. Other destinations include USA, Middle East, Japan, Russia, and South Africa. Competition in these markets is stiff due to a large number of suppliers such as Colombia, Ecuador, Ethiopia, Spain, Morocco, Israel, Egypt, India, and China. In 2011, the country earned KES 91.2 billion from horticultural exports, up from KES 77.7 billion in 2010. Horticulture exports declined by 6 percent in volume while the value increased by 17 percent compared to the year 2010. The overall increase in value of exports was attributed in part to the weak Kenya shilling against the major foreign currencies. Of the total exports in 2011, flowers comprised an estimated 122,000 MT worth KES 44.5 billion, Vegetables 92,000 MT valued at KES 21.5 Billion and fruits 37,000 MT valued at KES 3.6 billion. Nuts exports stood at 13,000 MT valued at KES 2.7 billion, processed fruits 78,000 MT valued at KES 7.3 billion while processed vegetables was 38,000 MT worth KES 11.6 billion. Over the 2010 and 2011 period, the exports in nuts realized the highest increase both in volume (14 percent) and value (33 percent). Vegetables realized negative growth in export volumes (-26 percent) and no change in value. The increase in the value of nuts was attributed to the increased demand for nuts in-shell among local processors and



improved markets in USA, China and Japan. The increase in flowers tonnage and value were due to the entry of Kenya into new direct markets in Eastern Europe, Japan, USA and Australia.

Imports include citrus, apples, pears and grapes from South Africa, Egypt and other countries. These imports have a major impact on the local market and adversely affect local production. With the local market opening up to horticultural imports, more so from COMESA and EAC member countries, there is risk of spread of diseases and pests that can be detrimental to local horticultural production. Kenya is a signatory to and has been implementing a number of international protocols.

In the recent past, there has been increasing shift of horticultural investment to other competing countries and an increase in the number of non-tariff barriers to trade. Between 2007 and 2009, horticultural exports declined and imports of horticultural produce from the region increased.

4.2.2 Challenges

- i) Inadequate use of information to facilitate trade and investment decisions in domestic and regional markets.
- ii) Comparatively high cost of domestic production.
- iii) Risk of introduction and spread of diseases and pests.
- iv) Over-reliance on a narrow product range exported to a few destinations.
- v) Lack of direct flights to potential non-traditional markets.
- vi) Slow pace of implementing trade protocols.
- vii) Lack of co-ordination of marketing bodies.

4.2.3 Proposed Interventions

- i) A national marketing strategy of Kenyan horticultural products will be developed in an effort to consolidate existing markets and growth in emerging markets. Monitoring and analysis of trade flows will be encouraged so as to establish Kenya's comparative advantage.
- ii) The Government will have the Kenyan embassies aggressively promote the trade of horticultural produce in their countries of representation.
- iii) The government will give incentives to marketing bodies like FPEAK and KFC to play a more proactive role in marketing Kenyan horticulture regionally and internationally.
- iv) The government will strengthen capacity of institutions such as HCDA and EPC to effectively promote horticultural products in both domestic and export markets.
- v) Incentives will be provided to facilitate competitiveness of local produce.
- vi) The Kenya Plant Health Inspectorate Service (KEPHIS) and other regulatory agencies will be strengthened to effectively implement sanitary and phytosanitary regulations and curb sub-standard imports.
- vii) Enterprise diversification and value addition will be encouraged to broaden



the product range to make Kenyan produce more competitive.

- viii) The Government will explore direct flights to non-traditional export destinations.
- ix) The Government will negotiate for and implement favourable trade protocols.

4.3 Food safety and Quality standards

4.3.1 Current status

The international framework governing food safety, to which Kenya is a signatory, has developed significantly through enhanced role of three international bodies namely; Codex Alimentarius Commission (CAC), Office International des Epizootics (OIE) and the International Plant Protection Convention (IPPC) under the WTO/SPS agreement. In addition, Kenya is a member of the Organisation of Economic Cooperation and Development (OECD).

There has been an increase in incidences of food contamination and scares in the recent past locally and globally. This has raised food safety concerns and awareness. Hence the value of customized Hazard Analysis Critical Control Points (HACCP) plans.

Horticultural produce is prone to pesticide residue, heavy metal and microbial contamination. Whereas Kenya has put stringent measures in complying with international standards and market requirements, a lot remains to be done for the domestic market.

In Kenya, the food safety control system is multi-sectoral in approach. The legal and regulatory framework governing produce food safety and quality standards for both domestic and export markets is contained in local statutes, subsidiary legislation, Global Good Agricultural Practices and to a lesser degree, international protocols. Market demands on particular quality specifications, arising out of increased consumer awareness, also play a role in determining quality for producers targeting those markets. The overriding problem is that of an ineffective risk management system on food safety- and lack of a legally empowered competent authority.

The guiding regulatory framework for the domestic market is contained in various statutes and subsidiary legislations. These include the Public Health Act, the Local Government Act and the Horticultural Crop Authority Orders. There is no coordinated self-regulation mechanism among small producers on produce safety. The growers of produce destined for domestic markets are therefore not effectively regulated. This can partly be attributed to ineffective enforcement of legal and regulatory provisions.

Local growers implement a number of international standards. However, complying with these standards is both tedious and costly. Presently, associations like the Kenya Flower Council (KFC) and the Fresh Produce Export Association of Kenya



Over the last few years, the number of certified growers has increased leading to a reduction of over 80 percent in number of interceptions registered for Kenyan horticultural exports.

4.3.2 Challenges

- i) Lack of a harmonised strategy for management of food safety.
- ii) Inadequate regulatory and institutional framework for food safety.
- iii) Low level of awareness on food safety issues.
- iv) Inappropriate handling of produce for domestic market that does not normally conform to food safety and quality requirements.
- v) There is inadequate enforcement of legal and regulatory provisions for produce in the domestic markets.
- vi) Inadequate enforcement of packaging and labeling standards.

4.3.3 Proposed Interventions

- i) The Government will review and harmonise the regulatory and institutional framework to improve coordination and enforcement of food safety requirements.
- ii) The Government will create awareness and enhance enforcement of standards for horticultural produce destined for both the local and international markets.
- iii) Private sector players will be facilitated to undertake self-regulation and conform to market requirements.
- iv) The Government will accredit laboratories that test for quality of commodities in order to provide confidence among consumers.
- v) All government agencies will be encouraged to collaborate at municipal level to enhance enforcement of standards in the local markets.
- vi) The Government will, in liaison with various stakeholders, develop comprehensive packaging and labeling standards for the local and export markets.
- vii) Bilateral cooperation between Kenya and other countries will be enhanced in areas of sanitary and phytosanitary inspection as well as pre-shipment inspection to boost exports of horticultural produce.
- viii) Food safety risk management systems will be developed and implemented to guarantee product quality at the market place.

4.4 Market Information systems

4.4.1 Current status

The horticultural industry requires accurate and timely information for planning purposes. National statistics on domestic horticulture and regional trade are not reliable. Conversely, the statistics on exports are fairly accurate but may not be capturing certain data. There is limited data on local flower consumption. The unreliability of the domestic and regional trade statistics is attributed to lack of an effective data-capturing mechanism to monitor cross-border trade, trade in municipal markets and other market outlets. There lacks a harmonised system for data capturing among Government agencies and other stakeholders. However, a



national data validation committee is in place involving many stakeholders.

4.4.2 Challenges

- i) Lack of an integrated and comprehensive data and information management system for the industry hinders coordinated planning and management.

4.4.3 Proposed Interventions

- i) The Government will collaborate with the private sector and development partners to develop an efficient market information system, and to build the necessary physical and human capacity to manage the system.

4.5 traceability

4.5.1 Current status

The traceability of produce is an important component of trade. Kenya has improved considerably in implementing measures for effective traceability. However, unfair trade practices like poaching are still common.

4.5.2 Challenge

- i) Inadequate implementation of regulatory and administrative measures to ensure traceability has led to poor production conditions and unfair trade practices.

4.5.3 Proposed Intervention

- i) Partnerships among key actors along the value chains will be enhanced to ensure effective traceability mechanisms are in place and operational.

4.6 Value Addition

4.6.1 Current status

Kenya exports largely semi-processed and low value-produce which account for 91 percent of total agricultural related exports. The limited ability to add value is attributed to low capacity and high cost of value addition infrastructure. Seasonality of production means many processing firms operate below capacity, and coupled with high costs of production make Kenya's processed products less competitive. As a result, the country imports some products which could be processed locally. Generally the cottage industry is under-developed and lacks a comprehensive database of processors.

4.6.2 Challenges

- i) Inadequate incentives for investment in value addition.
- ii) Inadequate marketing strategies to promote consumption of locally processed products.
- iii) High cost of compliance with processing requirements.



- iv) High cost of local processing.
- v) Lack of comprehensive inventory of players involved in value addition.
- vi) Unfavourable technologies for small scale value addition.

4.6.3 Proposed Interventions

- i) The Government will continue to offer attractive incentives to encourage investments in value addition.
- ii) Product and produce branding will be undertaken to promote local consumption and exports of horticultural produce with unique attributes e.g. organic products.
- iii) The Government will undertake measures to moderate the cost of complying with processing requirements.
- iv) The Government will put in place measures to reduce the cost of processing.
- v) Stakeholders in the industry will develop a comprehensive inventory of value addition enterprises and players.
- vi) KIRDI to develop appropriate processing machines for low income small holder entrepreneurs.
- vii) Greater involvement of the youth/women in value addition.
- viii) Government to offer incentives and remove barriers for small scale holders.
- ix) Create a fund for commercialization and value addition in the sub-sector.



Roads improvement is a major factor in horticultures sub-sector as is exemplified by Thika superhighway (under construction)



5

InFRAsTRUCtURe

The policy objective is to facilitate development of infrastructure that will promote and sustain competitiveness of the horticultural industry. Development of infrastructure will focus on: improving roads, rehabilitating old and establishing new irrigation facilities, improving sea ports and the railway system, developing produce cold-chain facilities and constructing modern markets. Other infrastructural developments will include upgrading of airports, improving electronic communication, and improving on existing and establishing new and renewable energy sources.

5.1 Roads

5.1.1 Current status

Horticultural produce is highly perishable and requires fast transportation to market outlets. Most roads in the horticultural production areas are impassable, especially during the rainy season. This results in heavy losses due to inability to deliver or untimely delivery of produce to the market. In addition, the poor state of roads significantly affects the quality of the produce due to damage. Poor roads are a major hindrance to commercialization and competitiveness of Kenya's horticultural produce and products thus hindering full exploitation of the industry's potential.

5.1.2 Challenges

- i) High losses of produce due to deterioration in quality as a result of delayed delivery occasioned by poor roads.
- ii) Most of the roads in the horticultural producing regions are in dilapidated condition due to poor maintenance.
- iii) Inadequate allocation of funds for road development and maintenance in production areas.

5.1.3 Proposed Interventions

- i) The Government will develop and maintain rural access roads and other roads leading to market outlets to all-weather status to facilitate timely delivery of produce to markets.
- ii) The Government will promote community and private initiatives in the construction and maintenance of rural access roads.
- iii) Levies charged on horticulture will be used to improve and maintain roads in the production areas.



5.2 electronic Communication

5.2.1 Current status

Electronic communication is vital in keeping pace with development of a vibrant and dynamic industry such as horticulture. In Kenya, there are various forms of electronic communication: mobile telephone, TV, radio, and the internet. The use of these media has increased resulting in faster information flow. The Government has provided a supportive environment by reviewing relevant legislations in the communication sector. The most recent development in this area has been the installation of the fibre optic cable, liberalization of communication, freeing of airwaves, and promotion of e-commerce.

5.2.2 Challenges

- i) The support infrastructure for electronic communication is not adequately distributed in most horticulture production areas.
- ii) Cost of adopting digital-based technology is high.
- iii) Electronic communication bottlenecks have led to a limitation of market information available to producers, traders and consumers.

5.2.3 Proposed Interventions

- i) The government will continue to reduce the cost of electronic communication by reducing taxes and levies.
- ii) The Government in partnership with the private sector will ensure the distribution of the electronic communication infrastructure such as fibre optic cable cover all horticulture production areas.
- iii) The Government will provide an enabling environment for the provision of electronic communication services to attract more players in the sub-sector.
- iv) Education and communication to producers on use of E-communication (IEC) strategy.

5.3 energy

5.3.1 Current status

The major source of energy used in horticulture is electricity generated mainly through hydro-electric means and diesel fuel. The horticultural industry consumes a high amount of energy in production, irrigation, storage, lighting, plant and machinery operation, processing, transportation and packaging. The current national electricity demand outstrips the supply due to over-reliance on hydro-electric power which accounts for 75 percent of supply. The dependence on hydro-electric power generation is not sustainable especially during times of drought leading to expensive diesel powered electricity generation. In response to declining water resources for hydro electricity generation, the government has initiated a number of renewable energy projects such as the Olkaria geothermal project and the Lake Turkana wind project. Other sources of green energy are being exploited.



5.3.2 Challenges

- i) The high cost of electricity and fuel makes horticultural products and produce uncompetitive in the local, regional and international markets.
- ii) Frequent power outages lead to losses and reduced efficiency in industry operations.
- iii) There is inadequate energy infrastructure installed in the production areas.

5.3.3 Proposed Interventions

- i) The Government will continue to promote, encourage, invest and explore alternative and cheaper sources of energy.
- ii) The Government will continue to review tariffs with a view to reducing cost of energy to encourage competitiveness of Kenya's horticulture.
- iii) With liberalization of the energy sector, more companies will be encouraged to participate in generation of power thereby improving supply and lowering price.
- iv) Rural electrification in horticultural production areas will be up-scaled.
- v) The Government will introduce incentives for investment on green energy and other alternative sources of energy.

5.4 Water and Irrigation

5.4.1 Current status

Water is the most valuable agricultural input. With less than 20 percent of Kenya being arable and the rest either arid or semi-arid lands (ASAL), the provision of adequate water for irrigation is critical to increased production in horticulture. Horticultural production in Kenya is mainly under rain fed conditions. Due to seasonality of rainfall and vagaries of weather, production has been below optimum and fluctuating. There is a high potential for horticultural production under irrigation in the ASAL areas. The quantity of water available for use in horticultural activities is insufficient while the quality is continually declining. This is partly attributed to agricultural activities on riparian land and water catchment areas.

5.4.2 Challenges

- i) Low level of water harvesting for irrigation.
- ii) Low investment in irrigation infrastructure as a result of high costs.
- iii) Low development of irrigated production.
- iv) Use of unsuitable and poor quality water for irrigation.
- v) Lack of good quality water for irrigation in areas with potential for horticulture.
- vi) Over-exploitation of water resources
- vii) Continuous degradation of water catchment areas.

5.4.3 Proposed Interventions

- i) The Government will continue to give incentives for water harvesting and irrigation.
- ii) The Government will encourage development of more irrigation schemes and mapping out of alternative areas for future investments.



- iii) Relevant laws will be enforced to discourage the use of unsuitable water for production.
- iv) Provision of quality water and supplementary irrigation will be encouraged and enhanced to ensure a stable supply of horticultural produce throughout the year.
- v) The Government in collaboration with stakeholders will promote the adoption of water-efficient technologies.
- vi) Preservation and conservation of water catchment areas and prevention of water pollution will be exercised.

5.5 sea Ports

5.5.1 Current status

The Kenyan sea port of Mombasa is used to ship bulky fresh fruit exports. There are ongoing trials on shipping flowers by sea to improve competitiveness since it is cheaper than airfreight. The volume of horticultural produce transiting via the seaport in Mombasa is increasing. As a result, the perennial congestion at the port should be addressed to improve efficiency. Slow turnover of goods at the port increases the cost burden that is ultimately borne by investors and consumers making Kenyan horticultural produce less competitive in the international market.

5.5.2 Challenges

- i) Delays at the port have reduced usage of the port for export of horticultural produce thereby limiting the volumes of exports.
- ii) Inadequate facilities at the sea port for handling fresh produce.

5.5.3 Proposed Interventions

- i) Port services will be improved to enhance efficiency and competitiveness.
- ii) The Government in partnership with the private sector will invest in more fresh produce handling facilities.

5.6 Railways

5.6.1 Current status

Rail has the potential to transport bulk horticultural commodities for both local and regional markets. Presently, this mode of transport is underutilised, unreliable and has limited network.

5.6.2 Challenge

- i) Railway services have not been adequately utilised due to inefficiency and unreliability.

5.6.3 Proposed Intervention

- i) The Government will continue with restructuring, commercializing and privatizing the Kenya Railways to improve efficiency and competitiveness of its operations.



5.7 Air transport

5.7.1 Current status

Air transport remains the key mode of transport for high-value perishable export produce. Kenya is strategically placed to serve as the hub of air traffic for Eastern and Central Africa. The country has a relatively well developed air transport industry with three international airports, four domestic airports and over 400 aerodromes and airstrips. The horticultural industry can greatly benefit from the available and increasingly advancing air transport facilities in the country and the region by transporting high value horticultural produce to local and regional markets.

5.7.2 Challenges

- i) High freight charges compared to other competitors in fresh produce trade.
- ii) Lack of landing rights for many airlines.

5.7.3 Proposed Interventions

- i) Efficiency in the provision of air transport services will be enhanced and efforts will be made to reduce the cost of jet fuel and handling costs.
- ii) The Government will endeavour to increase cargo space and allow more airlines landing rights.

5.8 Market Infrastructure

5.8.1 Current status

Farmers, traders and consumers are faced with the problem of inadequate physical market infrastructure. Where they exist, such markets are inappropriately constructed, underutilised, in disuse, congested, disorganised and have poor sanitary conditions. In addition, the market facilities do not separate retail and wholesale sections, are overstretched and do not have adequate security.

The current trend of increase in urban population, with more people entering middle income level and demand for quality fresh produce has exerted pressure on existing markets facilities in cities and demand for appropriate market structures. There are initiatives to construct fresh produce markets in all constituencies. Furthermore, there is need to invest in mega fresh produce markets with cooling and storage facilities to supplement municipal markets.

Kenya is a major producer of flowers and accounts for 34 percent of the market share of European auctions. The domestic market outlets are limited to a few vendors and kiosks in cities and major towns and there are no auctions.

5.8.2 Challenges

- i) Inadequate and poor market infrastructure which compromises produce quality and hygiene leading to high levels of post-harvest losses.
- ii) Inadequate cold storage facilities, water, electricity, telephones, and other



amenities leading to deterioration of produce quality and high losses in the markets.

- iii) Sale of produce in undesignated locations and sections of markets leading to congestion.
- iv) Levies and cesses collected are not used for market development and maintenance.
- v) Lack of an appropriate framework for the private sector to invest in development of markets.
- vi) Inadequate social amenities and poor hygienic conditions in most fresh-produce markets.
- vii) Most markets do not have distinct wholesale and retail sections.
- viii) Lack of space for development of major fresh produce markets.
- ix) The trade in fresh produce has outstripped current physical facilities in municipal markets.
- x) Kenya does not have a flower auction hence does not realise maximum benefit from flower trade.

5.8.3 Proposed Interventions

- i) The Government will undertake coordinated development of markets by relevant ministries, local authorities and stakeholders to ensure construction of appropriate fresh produce markets; and effective management by the private sector.
- ii) The Government will encourage public–private partnership approach in development and management of markets.
- iii) The Government will encourage development of designated wholesale and retail markets and fabricated hygienic kiosks for retailing fresh horticultural produce.
- iv) Efforts will be put to ensure that cess collected from the markets is used for market development and maintenance.
- v) The Government will ensure that the social amenities and other market facilities are constructed and are kept in hygienic conditions.
- vi) Stakeholders will be encouraged to build clearly designated markets for wholesale and retail.
- vii) Counties will allocate space for fresh produce market development.
- viii) In addition to the existing markets, the Government will construct mega fresh produce markets in Nairobi, Mombasa, Nakuru, Eldoret, Kisumu and Meru with cooling and storage facilities.
- ix) The Government will construct and operationalise a flower auction market.

5.9 Produce Cold Chain Facilities

5.9.1 Current status

The Government has constructed 8 cold storage facilities in some selected major production areas. Currently, inadequate cold storage facilities force the farmers to sell their produce immediately after harvest at low prices. The private sector has installed cold storage facilities at the airport and others have been put at the farm level particularly by the flower producers.



5.9.2 Challenges

- i) Inadequate cold chain facilities and refrigerated trucks for domestic and export markets.
- ii) High cost of construction and maintenance of cold chain facilities.
- iii) High post-harvest losses and reduction in quality of horticultural produce due to inadequate cold chain facilities.
- iv) Inadequate and inappropriate collection centres.

5.9.2 Proposed Interventions

- i) Stakeholders in the horticultural sub-sector will be encouraged to invest in cold chain facilities.
- ii) Public–private partnerships will be encouraged to develop cold chain facilities.
- iii) The Government will encourage use of low-cost technologies like charcoal coolers and wet walls.
- iv) The Government will develop guidelines for promoting and managing collection centres.

Law enforcement is necessary if the industry is to flourish





6 LeGAL, ReGULAtORy AnD InstItUtIOnAL FRAMeWoRK

The policy objective is to improve service delivery through effective and efficient legal, regulatory and institutional framework. The focus will be on harmonising the roles of the various institutions and stakeholders, reviewing statutes governing the sub-sector to ensure they are in tandem with the needs of the industry, strengthening commodity associations and enforcing the legal requirements.

6.1 Legal and Regulatory Framework

6.1.1 Current status

The current legal and regulatory frameworks that govern the industry consist of Acts of parliament and subsidiary legislations. Where such laws exist, there is inadequate enforcement.

KEPHIS and HCDA are regulatory institutions established through subsidiary legislation. The mandates of these institutions are critical to the development of the horticultural industry and therefore need to be strongly anchored in law. At the moment the Bill to establish KEPHIS is at an advanced stage while HCDA is proposed to be entrenched through the consolidated legal and regulatory reforms in the agricultural sector.

There are other legal and regulatory frameworks that influence the operations and governance of the industry. These include international standards, protocols, conventions, treaties and agreements at the multilateral and bilateral level and codes of practice for industry associations at the local level.

6.1.2 Challenges

- i) There is poor enforcement of sanitary and phytosanitary measures, environmental standards, pesticide use, labour laws, ethical trade practices and public health, among others, in the local market.
- ii) The review of the Acts of parliament and subsidiary legislations have not kept pace with changing needs of the industry.
- iii) The establishment of key government regulatory institution under subsidiary legislation that does not confer adequate legal mandate as is the international norm.
- iv) Inadequate funding



6.1.3 Proposed Interventions

- i) Establish mechanisms to enhance enforcement of laws and regulations.
- ii) Undertake regular reviews of relevant statutes and subsidiary legislations to match the changing needs of the industry.
- iii) Fastrack the establishment of KEPHIS under an Act of parliament.
- iv) Entrench HCDA through the consolidated legal and regulatory reforms in the agricultural sector.
- v) Establish the Horticulture Fund.

6.2 Institutional Framework

6.2.1 Current status

Public institutions established under various statutes have a national mandate on various regulatory aspects with a view to improving service delivery. However, some institutions such as KEPHIS, PCPB, KARI and HCDA have, over time and due to dynamic market requirements, undertaken roles which are not provided for in their legal and regulatory frameworks. The Government has designated a competent horticultural authority structure that delineates the specific roles that KEPHIS, KARI, HCDA and PCPB shall play. Private institutions are based on voluntary membership and focus on self-regulation and advocacy. There is an increase in registration of commodity based associations that serve interest of industry players.

6.2.2 Challenges


- i) Inadequate legal provisions that entrench the competent authority structure for the horticultural industry.
- ii) Inadequate resources for institutional operations.
- iii) Weak and ineffective linkages among public and private institutions that undertake regulatory, developmental and support functions resulting in inefficiencies in the industry.

6.2.3 Policy Interventions

- i) A clear framework to enhance inter-institutional coordination will be established.
- ii) The Government will review the legal and regulatory framework in order to entrench the current competent authority structure for the horticultural industry.
- iii) The Government shall implement online registration, certification, licensing and any other documentation to increase efficiency and reduce transaction time like a one-stop-shop.
- iv) The capacity of relevant institutions will be streamlined and enhanced through public-private partnerships to improve service delivery.
- v) Stakeholder organizations and institutions will be strengthened through enhanced linkages and partnerships among players along the value chain.

Environmental conservation must be taken into account to ensure sustainability





7

INDUSTRY SUSTAINABILITY

The policy objective is to secure the industry's sustainability that may be compromised by social, environmental and economic factors. The focus on economic aspects include enterprise suitability mapping, taxes, fees, levies, infrastructure, product competitiveness, high cost of energy and transportation; while focus on social issues are corporate social responsibility, capacity development and compliance with labour laws; and environmental management.

7.1 environmental sustainability

7.1.1 Current situation

Kenya is a water scarce country and the situation is worsening due to climate change, degradation within the five water towers, unsustainable land use practices and inefficient use of available water resources. Horticulture production is water-intensive. There is increasing pressure on water, land and other resources essential for horticultural production. The pressure on land has resulted in encroachment on riparian land and degradation of water catchment areas as well as human-wildlife conflict. Kenya's horticulture sub-sector has tried to implement various environmental standards. However, the rising demand for environmental requirements such carbon and water footprints in the international market pose a threat to the country's competitiveness if measures are not taken to sustain and enforce compliance. Due to its geographical location, Kenya mostly practices green farming. Efforts to upscale these practices are underway through increased use of renewable energy and organic farming.

To tap into emerging trends in the horticultural industry addressing environmental sustainability, the African Carbon Exchange, the first of its kind in Africa, was officially launched in Nairobi in 2011. The initiative encourages countries to reduce their carbon footprint by either using more energy efficient technologies or by engaging in reforestation. Further, the horticultural industry is in the process of finalizing trials on purfresh cold storage and transportation technology. Kenya is estimated to have 1.2 percent of the land mass under forest cover. Efforts to attain the recommended forest cover of 10 percent offers an opportunity to benefit significantly from the carbon credit trading while at the same time mitigating negative effects of climate change. Kenya has to plant 384 million trees to achieve the desired 10 percent forest cover. In view of the international community's support for carbon credit, smallholder farmers will be facilitated to tap into this opportunity for effective intervention against climate change while earning a livelihood through carbon credit trading.



7.1 Challenges

- i) The continued sub-division of land into uneconomic parcels.
- ii) Degradation of water catchment areas and declining water resources.
- iii) Encroachment on riparian land.
- iv) Degradation of the farmland.
- v) Unpredictable weather due to climate change and global warming.
- vi) Receding water bodies and declining water quality to support irrigation.
- vii) Lack of enforcement of wildlife crop damage compensation.
- viii) Pollution by industrial effluent.
- ix) Poor garbage disposal in fresh produce markets.

7.1.3 Proposed Policy Interventions

- i) The Government will finalize the development and implementation of a land-use policy which shall guide agricultural land use including land subdivision.
- ii) The Government shall provide incentives for investments in water conservation, efficient water use and recycling.
- iii) Enforcement of cultivation around water bodies based on natural water balance while observing the riparian law.
- iv) The Government will enforce laws against encroaching on water catchment areas and riparian land.
- v) The Government shall encourage and offer incentives for green and conservation farming.
- vi) The Government will enhance environmental conservation and measures to mitigate the effects of climate change and global warming.
- vii) The Government will support initiatives on carbon and water trading, and green water credit.
- viii) The Government will institute appropriate measures to promote water harvesting, irrigation, recycling of water, and damming.
- ix) The Government will enforce laws requiring that farmers be compensated for damage to their crops by wildlife.
- x) The Government will enforce anti-pollution regulations.
- xi) An appropriate waste management system in fresh produce markets will be developed.

7.2 economic sustainability

7.2.1 Current situation

There are multiple taxes in the horticultural industry. Most of the taxes are levied on transit and at the point of entry to the market. Financial services are limited and not readily available to the majority of smallholder farmers. In addition, there is limited awareness of insurance products for horticultural enterprises.

7.2.2 Challenges

- i) Multiple licenses, levies, fees, cesses and other charges increase the cost of doing business.



- ii) There is a growing influx of horticultural produce from neighbouring countries due to uncompetitive nature of some local horticultural produce.
- iii) Inadequate market diversification and presence of non-tariff barriers hinder access to non-traditional markets.
- iv) The domestic commercial horticultural market is characterized by poor infrastructure (roads, physical markets), low quality standards, and negative attitudes by local consumers for certain export-based products.
- v) High cost of energy and transportation, poor quality seed and planting material, disease and pests, and inaccessibility to markets.
- vi) Local consumption of some of the products is low, hence making the producers dependent on external markets and vulnerable to international fluctuations in demand.
- vii) Low adoption of appropriate and affordable technology among small operators.
- viii) Inability of existing technical capacity to cope with the changing technological needs of the industry.

7.2.3 Proposed Policy Interventions

The Government will:

- i) harmonize taxation regimes in the industry and provide incentives for investors.
- ii) ensure produce is only taxed at the point of entry to local market or point of exit for export.
- ii) continue to be proactive in both bilateral and multilateral trade negotiations to ensure favourable trading regimes.
- i) step up initiatives to develop fresh produce markets in strategic locations.
- iv) institute measures to reduce the cost of energy as well as exploit alternative sources, especially of renewable energy.
- ix) promote local consumption of horticultural produce and products in collaboration with other stakeholders.

7.3 social sustainability

7.3.1 Current situation

The horticultural industry employs directly and indirectly about 6 million people and it has the potential to engage more. The industry is dynamic and requires specialised services to cope with changing needs. Smallholder farmers who provide the bulk of the produce are comparatively less endowed with the necessary skills. There is low enrolment in agriculture-related courses in local universities and colleges. Comparatively, the agricultural sector has lower wages. The horticulture sub-sector has experienced some negative publicity that has the potential to compromise access to international markets. Increasingly, there are efforts to ensure corporate social responsibility in the industry.



7.46 Challenges

- i) Inadequate technical skills in horticulture among public technical staff and smallholder farmers.
- ii) Agriculture curricula in institutions of higher learning do not meet the needs of the horticulture industry.
- iii) Inadequate staffing levels to provide effective extension services.
- iv) Low enrolment of students for agricultural courses in institutions of higher learning.
- v) Uncompetitive wages for workers in the industry.
- vi) Occasional negative publicity.
- vii) There is low adoption of the principles of corporate social responsibility (CSR).

7.3.3 Proposed Policy Interventions

The Government will:

- i) Encourage development of partnerships among research, universities, extension service providers, private sector and other industry players that effectively address the emerging technological and quality requirements of the industry.
- ii) Continue encouraging universities to update curricula and training program to match market needs.
- iii) Partner with private sector operators to enhance the provision of extension services and promote the adoption of appropriate technology.
- iv) Encourage universities to develop agriculture training programs that are attractive to young people.
- v) Facilitate harmonization of wages across sectors.
- vi) Together with stakeholders, develop mechanisms for availing accurate information on the industry.
- vii) Encourage the private sector to undertake CSR.

Youth has stated playing a leading role in horticulture





8

GeneRAL IssUes

The policy objective is to empower marginalised and vulnerable groups and be responsive to the changing environment in the industry. The focus will be on gender equity, mainstreaming HIV/AIDS awareness and prevention, encouraging youth in agriculture and curbing corrupt practices.

8.1 Gender

8.1.1 Current situation

Employment in the horticultural industry and work conditions discriminate gender, marginalised groups and persons with disability. Horticultural production is dominated by female farmers and yet proceeds are not equitably shared. Cases of sexual harassment, reluctance to accord women maternity leave, poor pay and work conditions have been reported.

8.1.2 Challenges

- i) Low level of awareness on issues related to gender, marginalized groups and persons with disabilities.
- ii) Cultural perception that persons with disabilities cannot excel in their duties.
- iii) Laxity in enforcing gender-related labour laws in the industry.
- iv) Lack of facilities to meet the special needs of women, marginalized groups and persons with disabilities.
- v) Lack of appropriate training packages for persons with disabilities.

8.1.3 Proposed Policy Interventions

- i) The Government will enforce the appropriate laws and promote the mainstreaming of gender and marginalized persons in management of the horticulture industry in line with the constitution, Vision 2030 and the gender and development policy.
- ii) The Government in collaboration with other stakeholders will establish structures to ensure access to resources and full participation in the entire horticultural value chain by marginalized groups.
- iii) The Government will implement the Persons with Disability Act, and where they meet the basic qualifications, 5 percent of all recruited personnel will be persons with disabilities.
- iv) Employers will be encouraged to develop communication systems to ensure that persons with disabilities access information.
- v) Employers and Government agencies will collaborate to develop appropriate training packages and facilities that are accessible to marginalized groups.



8.2 HIV and AIDs, tB, Malaria and other Water-Borne Diseases

8.2.1 Current situation

Horticulture is labour intensive and therefore, continuous loss of workforce through HIV/AIDS is a threat to the development of the industry. Women are at a greater risk of contracting HIV/AIDS due to their disadvantaged social status. Reports indicate that HIV positive workers in Kenya still face stigma and discrimination despite enactment of work place policies that outlaw such discrimination. There are efforts to implement the HIV/AIDS workplace policy in the industry but more needs to be done. Tuberculosis, malaria and water borne diseases are important diseases in the horticultural industry but that are also expensive to manage and cause economic losses due to absenteeism from work.

8.2.2 Challenges

- i) There is continued stigmatization and discrimination of persons living with HIV and AIDS in the industry.
- ii) Low awareness of HIV/AIDS workplace policy among workers.
- iii) Reluctance of employers to accord victims special consideration as regards their status.
- iv) TB, malaria and water-borne diseases cause poverty and result in loss of productivity and life. They are also an economic burden to employing companies and to the Government as they are major obstacles to social and economic development.
- v) Most people living with HIV and AIDS are unable to access services and drugs due to uneven distribution of health facilities.

8.2.3 Proposed Policy Interventions

The Government will:

- i) ensure the HIV and AIDS workplace policy is implemented.
- ii) institute measures to create awareness on prevention mechanisms for these diseases.
- iii) in collaboration with stakeholders, facilitate accessibility of health services.

8.3 Youth in Horticulture

8.3.1 Current situation

Horticulture provides many employment opportunities along the various value chains, yet there is high rate of unemployment among the youth. This can be attributed to inadequate funding, lack of access to land, and negative perception of agriculture by the youth. In addition, the education system and social perceptions that agriculture is not well paying drive away youth from agriculture. This has led to high rural-urban migration among youths in search of white-collar jobs and westernised lifestyles.



8.3.2 Challenges

- i) Most youth do not consider farming as gainful employment and only get into it as a last resort.
- ii) Youth have limited access to and ownership of land for farming.
- iii) Some youth lack funds to invest in commercial horticulture.

8.3.3 Proposed Policy Interventions

The Government will:

- i) provide incentives to the youth and involve them in different horticultural value chains by expanding innovative youth development initiatives and resources to cover the industry.
- ii) continuously address factors that limit profitability of the sector to make it an attractive economic venture for the youth. Such activities will include integrating horticultural value chain activities with other economic sectors like agro-processing, manufacturing and trade.
- iii) in collaboration with stakeholders, facilitate the review of horticulture teaching curricula in learning institutions to make it more relevant to the rapidly evolving horticulture industry.

8.4 Integrity in the industry

8.4.1 Current situation

Operational malpractices are a threat to many sectors of the Kenyan economy including the horticulture industry. These malpractices result to high transaction costs, loss of market, lack of access to markets, uncompetitive produce, loss of produce and erosion of profits. The annual environmental audits have become routine and have not achieved the desired impact in assessing the level of compliance and effectiveness of mitigation measures.

8.4.2 Challenge

- i) High incidences of input adulteration such as seeds, agrochemicals and fertilizers.
- ii) Untruthful labeling of input packages and falsification of some trade documentation.
- iii) Unregulated market agents who impede smooth operations in the industry.
- iv) Likelihood of compromised environmental audit reports due to conflict of interest between paying clients and audit firms.

8.4.3 Intervention

- i) The Government and the industry will enhance measures to promote integrity and curb malpractices at all levels of the horticultural value chains.
- ii) The industry will establish and operationalise appropriate code of practices to deal with operational malpractices.
- iii) The government will enhance inspection service and institute deterrent



measures to curb adulteration and document falsification.

- iv) The National Environment Management Authority will ensure all environmental audits are carried out professionally without compromise arising from conflict of interest.





APPenDIX I.

InstItUtIons In tHe HoRtICULtURe InDUstRY

(i) Government Institutions

Ministry of Agriculture

The Ministry is the lead agent in agricultural transformation in the country. The ministry provides overall policy, regulation and operational direction.

other Government Ministries

Other ministries whose mandates directly impact on horticulture include Water and Irrigation, Public Health and Sanitation, Environment and Mineral Resources, Local Government, Cooperatives development and Marketing, Trade and Regional Development Authorities.

Horticultural Crops Development Authority

The Horticultural Crops Development Authority (HCDA) is established under the Agriculture Act, (Cap. 318) through the Horticultural Crops Development Authority Order, 1967 (Legal Notice No. 229/1967). HCDA has the mandate to facilitate the development, promotion, coordination and regulation of the horticultural industry in Kenya.

Kenya Plant Health Inspectorate service

The Kenya Plant Health Inspectorate Service (KEPHIS) was established by the Kenya Plant Health Inspectorate Service Order, 1996 under the State Corporations Act (Cap 446). KEPHIS is the designated competent authority with the responsibility of regulating plant health issues relating to phytosanitary and seed matters.

Kenya Agricultural Research Institute

The Kenya Agricultural Research Institute (KARI) is established under the Science and Technology Act (Cap 250) with the national mandate of carrying out research in the fields of agriculture.

the Pest Control Products Board

The Pest Control Products Board (PCPB) is established under the Pest Control Products Act (Cap 346). Its functions are to regulate the importation, exportation, manufacturing, distribution and usage of pesticides.

Kenya Bureau of standards

The Kenya Bureau of Standards (KEBS) is established under the Standards Act (Cap 496). Its primary function is to promote standardization in commerce and industry. Kenya Industrial Research and Development Institute.



The Kenya Industrial Research and Development Institute (KIRDI) was established under the Science and Technology Act (Cap 250). It is mandated to undertake research and development in industrial and allied technologies.

export Promotion Council

The Export Promotion Council (EPC) is established through Legal Notice No. 4342 with the mandate of developing and promoting Kenya's exports. EPC's primary duty is to identify and address constraints facing exporters and producers of export goods and services.

national environment Management Authority

The National Environment Management Authority (NEMA) is established under the Environmental Management and Coordination Act (EMCA) No. 8 of 1999, as the principal instrument of government in the implementation of all policies relating to the environment.

Universities and Colleges of Agriculture

There are a number of public universities and colleges of agriculture in Kenya; these institutions are established under Cap 210 of the laws of Kenya. The institutions' primary roles are research and development of human capacity.

(ii) Private sector organizations

There are many private sector organizations involved in supporting the horticulture industry in Kenya. The mention of the four below should not by any means be misconstrued to exclude or to ignore the roles of the other organizations involved in supporting the industry. Indeed, this policy recognises all legally registered organizations supporting horticultural activities in the country and the provisions for private sector organizations pronounced in this policy will apply equally to all organizations at all times.

Fresh Produce exporters Association of Kenya

The Fresh Produce Exporters Association of Kenya (FPEAK) was established in 1975. It is a members association dedicated to the welfare and enhancement of members' business activities through lobbying, information and marketing support, and promoting members' compliance with international standards. The FPEAK membership comprises large and small-scale farmers and exporters.

Kenya Flower Council

The Kenya Flower Council (KFC) was established in 1996. The Kenya Flower Council (KFC) is a voluntary association of independent growers and exporters of cut-flowers and ornamentals, whose aim is to foster responsible and safe production of cut flowers in Kenya. Administered through a dynamic internationally accredited quality management system, the KFC addresses compliance to good agricultural practice; social accountability; hygiene health and safety; capacity building; environmental



protection and conservation. This forms the backbone of industry representation deemed necessary to sustain investments, secure and expand markets.

Kenya national Federation of Agricultural Producers

The Kenya National Federation of Agricultural Producers (KNFAP) is the umbrella organization of agricultural producers. KNFAP lobbies for and advocates through representation of producer groups and commodity associations at local, regional, national and international levels.

Agrochemical Association of Kenya

The membership of Agrochemical Association of Kenya (AAK) comprises manufacturers, formulators, re-packers, importers, distributors, farmers, and users of pest control products (pesticides). The primary objective of AAK is to promote safe and effective use of pesticide chemicals.

seed traders Association

This Seed Traders Association (STAK) is an association for seed traders that represent member seed trading companies operating in the country.



Fresh flowers packed and ready for export. Europe is the major export destination



APPenDIX II: HoRtICULtURe CRoPs

A. Fruit trees

Common name	Botanical name
Apple	<i>Pyrus malus L.</i>
Apricot	
Avocado pear	<i>Persea Americana; Persea gratissima</i>
Citrus	
Guava	<i>Psidium guajava</i>
Litchi	<i>Litchi chinensis</i>
Litchi	<i>Nephelium litchi</i>
Loquat	<i>Eriobotrya caponica</i>
Mango	<i>Mangifera indica</i>
Nectarine	<i>Prunus sp. L.</i>
Pawpaw	<i>Carica papaya</i>
Pawpaw (Mountain)	<i>Carica candanacensis</i>
Peach	<i>Prunus persica L.</i>
Pear	<i>Pyrus communis L.</i>
Plum	<i>Prunus salicina L.</i>
Plum	<i>Prunus domestica L.</i>
Quince	<i>Cydonia oblonga</i>
White sapote	<i>Casimiroa edulis</i>

other Fruits

Common name	Botanical Name
Bananas and plantains	<i>Musa sp.</i>
Berries	<i>Rubus sp.</i>
Bread fruit	<i>Artocarpus altilis</i>
Cape Gooseberry	<i>Physalis peruviana</i>
Carambola	<i>Averrhoa carambola</i>
Cherimoya	<i>Annona sp.</i>



Custard apple	<i>Annona sp.</i>
Date palm	<i>Phoenix dactylifera</i>
Grapes	<i>Vitis sp.</i>
Jackfruit	<i>Artocarpus heterophyllus</i>
Melons	<i>Cucumis mello; Citrullus vulgaris</i>
Mulberries	<i>Morus sp.</i>
Passion fruit (banana)	<i>Passiflora mollisima</i>
Passion fruit (giant)	<i>Passiflora quadrangularis</i>
Passion fruits(purple)	<i>Passiflora edulis</i>
Passion fruit (yellow)	<i>Passiflora edulis var flavicarpa</i>
Pineapple	<i>Ananas comosus</i>
Strawberries	<i>Fragaria vesca; F. chiloensis</i>
Sweetsop (Sugar apple)	<i>Annona</i>

Any other fruits of economic value

C. nut Crops

Common name	Botanical name
Cashew nut	
Macadamia nut	<i>Macadamia sp.</i>
Pistachio nut	<i>Pistachio vera</i>
Oyster nut	<i>Tefairia pedata</i>

All others except scheduled oil crops

D. Medicinal and Aromatic Plants

Common name	Botanical name
Artemesia	<i>Artemesia annua</i>
Aloe	<i>Aloe vera</i>
Geranium	<i>Pelagonium sp.</i>
Salvia	<i>Salvia solarea</i>

All other medicinal and aromatic plants of commercial value

e. Vegetables

Common name	Botanical name
Artichokes	<i>Helianthus tuberosus</i>
Asparagus	<i>Asparagus officinalis</i>
Beet	<i>Beta vulgaris</i>



Brinjals (egg plant)	<i>Solanum melongena</i>
Brussel sprouts, cabbages, Cauliflower, Kale.	<i>Brassica oleracea</i>
Carrots	<i>Daucus carota</i>
Celery	<i>Apium graveolens</i>
Chillies (dried)	<i>Capsicum sp.</i>
Chillies (green)	<i>Capsicum sp.</i>
Cluster bean (green)	<i>Cyamopsis psaraloides</i>
Courgettes and marrow	<i>Cucurbita sp.</i>
Cowpeas (green) chora	<i>Vigna unguiculata</i>
Cucumber	<i>Cucumis sativus</i>
Dioscorea	<i>Dioscorea sp.</i>
Dudhi (kaddu)	<i>Lagenaria siceraria</i>
Globe artichoke	<i>Cybnara scolymus</i>
Green beans, French beans	<i>Phaseolus sp.</i>
Green maize	<i>Zea mays</i>
Horseradish	<i>Redicula armoracia</i>
Karella	<i>Momordica charantia</i>
Kohl rabi	<i>Brassica sp.</i>
Leek	<i>Allium porrum</i>
Lettuce	<i>Lactuca sativa</i>
Loofah	<i>Luffa cylindrica</i>
Mushroom	<i>Agaricus campestris</i>
New Zealand spinach	<i>Tetragonia expansa</i>
Okra	<i>Hibiscus esculentum</i>
Onions and garlic	<i>Allium sp.</i>
Peas (green)	<i>Pisum sativum</i>
Potatoes	<i>Solanum tuberosum</i>
Pumpkins	<i>Cucurbita sp.</i>
Radish	<i>Rhaphanus sativas</i>
Spinach	<i>Spinacea cleraces</i>
Sweet peppers	<i>Capsicum sp.</i>
Sweet potato	<i>Ipomoea batatas</i>
Tomatoes	<i>Lycopersicon esculentum</i>

Any other vegetables of economic value



F. Flowers and ornamental Plants

Flowers

Common name	Botanical name
Agapanthus	<i>Liliaceae spp.</i>
Allium	<i>Liliaceae spp.</i>
Alstroemeria	<i>Alstroemeria aurantiaca</i>
Ammi	<i>Umbelliferae spp.</i>
Anthurium	<i>Anthurium spp.</i>
Arabicum	<i>Ornithogalum saundersiae</i>
Asters	<i>Aster sunhelence</i>
Bupleurum	<i>Bupleurum rotundifolium</i>
Carnations	<i>Dianthus caryophyllus</i>
Carthamus	<i>Carthamus tinctoris</i>
Crysanthemums	<i>Dendratherma grandfora</i>
Delphinium	<i>Delphinium spp.</i>
Eryngium	<i>Eryngium spp.</i>
Eustoma	<i>Eustoma grandiflorum</i>
Gerbera	<i>Gerbera hybrids</i>
Gladiolus	<i>Gladiolus hubrids</i>
Gypsophilla	<i>Gypsophilla paniculata</i>
Hypericum	<i>Guttiferae spp.</i>
Lily	<i>Lilium longiflorum</i>
Heliconia	<i>Musaceae spp.</i>
Mollucella	<i>Molucella leavis</i>
Ornithogalum	<i>Ornithogalum thyrsoides</i>
Roses	<i>Rosa hydrida</i>
Solidago	<i>Solidago gardensis</i>
Statice	<i>Limonium spp.</i>
Tuberose	<i>Polianthes tuberose</i>
Zantedeschia	<i>Araceae spp.</i>



ornamental Plants

Common name	Botanical name
Aphelandra	<i>Acanthaceae spp.</i>
Ardisia	<i>Myrsinaceae spp.</i>
Begonias	<i>Hillebrandia spp.</i>
Cacti	<i>Cactaceae spp.</i>
Chlorophytum	<i>Agavaceae spp.</i>
Dieffenbachia	<i>Araceae spp.</i>
Epipremnum	<i>Epipremnum aureum</i>
Ferns	<i>Rumohra spp.</i>
Ivy	<i>Hedera helix</i>
Palms	<i>Areaceae spp.</i>
Philodendron	<i>Araceae spp.</i>
Spathiphyllum	<i>Araceae spp.</i>
Cyperus	<i>Cyperaceae spp.</i>
Wandering jew	<i>Tradescantia zebrina</i>

Any other flower or ornamental plant of economic value.

