



# CASHEW: A CHOICE VALUE CHAIN FOR CLIMATE SMART AGRICULTURE



## Introduction

Climate Smart Agriculture (CSA) entails adoption of technologies, innovations and practices that transforms or reorient agricultural systems to effectively ensure food security in a changing climate environment. Cashew is an exceptionally suitable crop for upscaling climate smart technologies and building resilience to climate change among the smallholder growers in the cashew growing areas. The attributes that make Cashew a choice value chain for increasing farmers adaptive capacity and reducing exposure to climate related risks include:

### 1. Climate resilience

Cashew is a perennial tree crop that has good tolerance to water stress. While ideal rainfall range for cashew is 800 to 1200 mm per annum, the crop can produce economic yield even under low rainfalls of 600 mm per annum. Cashew does well in tropical climate with high and temperatures ranges of between 24°C and 28°C but can thrive even in temperatures of 40°C. Cashew can also tolerate temporary flooding owing to its deep rooting system and sturdy stem.



*Cashew tree crops still thriving in Lamu County while other crops had succumbed to drought in 2021. Photo credit: Menza M., KALRO.*

## 2. Wide areas with potential for cashew production

Cashew is an ideal cash crop and a suitable crop for environmental protection and conservation in many of the Arid and Semi-arid areas of Kenya. Major Cashew producing areas in Kenya are in the coastal low lands in Kwale, Kilifi, Tana River and Lamu counties. Some production also takes place in Taita-Taveta and Tharaka-Nithi counties. Other emerging Cashew growing areas in Kenya include Embu, Meru and Makueni counties in Eastern region and Busia County in Western region. Therefore, there is huge potential to widen economic gains from the cashew value chain in Kenya.



*Land suitability map for cashew production in Kenya. Source Kenya Soil Survey. KALRO, 2019*

### 3. Diversification potential

Cashew is amenable to intercropping with short duration crops. This enables farmers to diversify enterprises for enhancing food security and for increasing incomes from their farms. There are also diverse value-added products that can be obtained from cashew. Cashew kernels are the major economic products which when roasted have a pleasant taste and flavour. The kernels are popular ingredient in various kinds of dishes, are used for confectionary purposes and in the preparation of many candies. Apart from kernels, cashew nut shell liquid is used in industry to make paints, plastics and brake linings. There is also a wide array of different by-products which can be obtained from the cashew apple including fresh apple, juice, canned apple, processed pulp, jam and jelly, dried apple prunes or raisins, sweet mass, syrup, candied fruit, chutney, alcoholic and non-alcoholic beverages and cashew apple meal for livestock.



*Cow pea intercropped with cashew at KALRO Mtwapa*

#### 4. Sustainable economic opportunities

There is high and increasing demand of cashew nuts and other cashew products locally and internationally which assures farmers a sustainable market. Diverse value-added products that can be obtained from cashew. Therefore, there are many opportunities for economic participation of women, youth, marginalized and vulnerable groups along various nodes in the Cashew value chain.



*Youth and women working at a cashew nursery in Mtwapa*



*Women working in a cashew nut factory in Kenya*

## Climate Smart Agriculture in Cashew

Adverse impacts of climate change on cashew production can be minimized through adoption of climate smart technologies, innovation and management practices (TIMPs) for Cashew value chain. Cashew Climate Smart Agriculture (CSA) TIMPs have been developed and validated by Kenya Agricultural and Livestock Research Organization and her National Agricultural Research System (NARS). The Cashew TIMPs can be accessed at the KALRO website, [www.kalro.org](http://www.kalro.org).

Adoption of TIMPs helps in implementing specific Good Agricultural Practices (GAP) in the value chain. Good agricultural practices are a collection of principles to apply for on-farm production and post-production processes, resulting in safe and healthy food and non-food agriculture products while taking into account social, economic and environmental sustainability.

Examples of TIMPs for Cashew value chain:



*Nursery for Cashew grafting technology at KALRO Mtwapa for clean planting materials*



*Demonstration of Integrated Soil and Water Management practice at KALRO Matuga*



*Cashew apple flour Innovation for value addition and commercialization*



*Cashew Variety Kkorosho 75 for validated high yielding clean planting materials*





*Quality cashew from planting materials to quality product for commercialization*



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