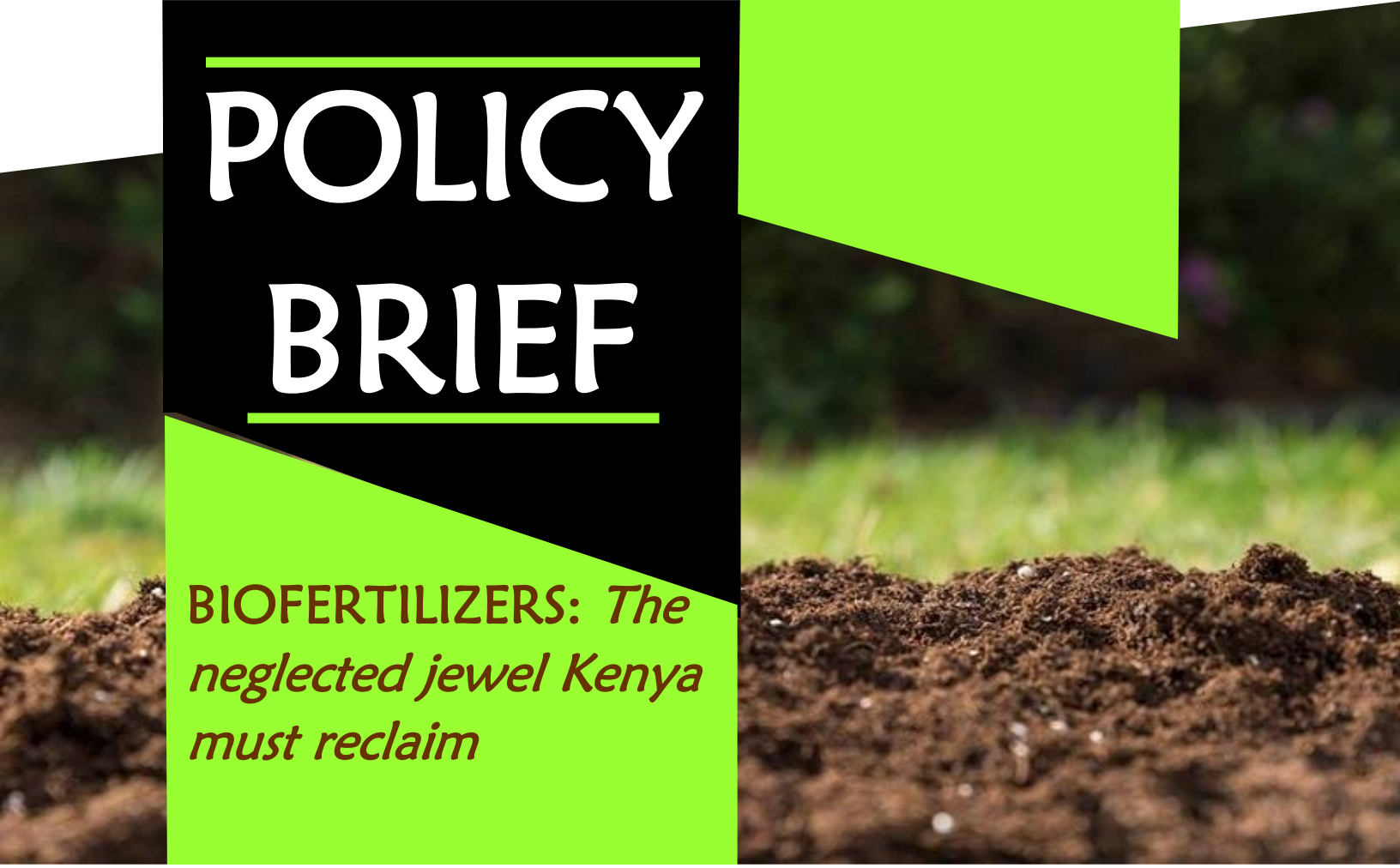
POLICY BRIEF



BIOFERTILIZERS: *The neglected jewel Kenya must reclaim*

Key Messages

- Cost of routinely used chemical fertilizers has been increasing tremendously and draws KES 30 Billion from Kenya Exchequer annually
- It impacts poor consumers through reduced food availability, increased prices, and decreased nutritional content
- Bio-fertilizers provide a more cost effective, sustainable and environmental friendly alternative
- Up to KES 7Billion and 250M can be saved if Kenya adopted use of bio-fertilizers in cereals and legumes respectively
- Current law and policy regulatory framework for biofertilizers is weak

Fertilizers are the bedrock of enhanced crop productivity; bio-fertilizers have the greatest promise

The agricultural sector is key to stimulating Kenya's economic growth and contribute directly to two of the Government's "Big Four Agenda"- manufacturing and food security. The sector contributes to 26% of the Gross Domestic Product (GDP) and another 27% of GDP indirectly through linkages with other sectors. Small scale farmers comprising of over 75% of all farmers heavily rely on the sector as their main source of livelihood. However, agricultural productivity has gradually declined over time, due to increased population pressure and demand for change of land use and low soil fertility. Chemical fertilizer worth over KES 32 Billion[1] is imported, to support crop production annually.

Increasing costs of chemical fertilizers, negative environmental effects and presence of inefficient fertilizers has led to low and unsustainable application rates, despite the government's efforts on fertilizer subsidies. Moreover, the demand for organically produced foods implies the need for cheap and environmentally friendly technologies that increase crop yields and ensures competitiveness of crop production for the local and export markets.

The use of beneficial microorganisms as a bio-fertilizer is quite important in crop production due to their potential role in food safety and sustainable soil management and crop production. Bio-fertilizers consists of a wide range of eco-friendly plant growth promoting rhizobacteria (PGPRs), mycorrhizae, and many other useful organisms that play a key role in improved nutrient uptake, plant growth and tolerance to environmental stress. Globally, the bio fertilizer market is quite vibrant, estimated at USD 6.75b in 2017, with a potential growth of 13.77% by 2023[1]. In Kenya, bio fertilizers are mainly used in the flower industry. Due to the current demand in organically grown crops for export and high prices of chemical fertilizers, the use of bio fertilizer is extending to other horticultural crops, legumes and cereals.

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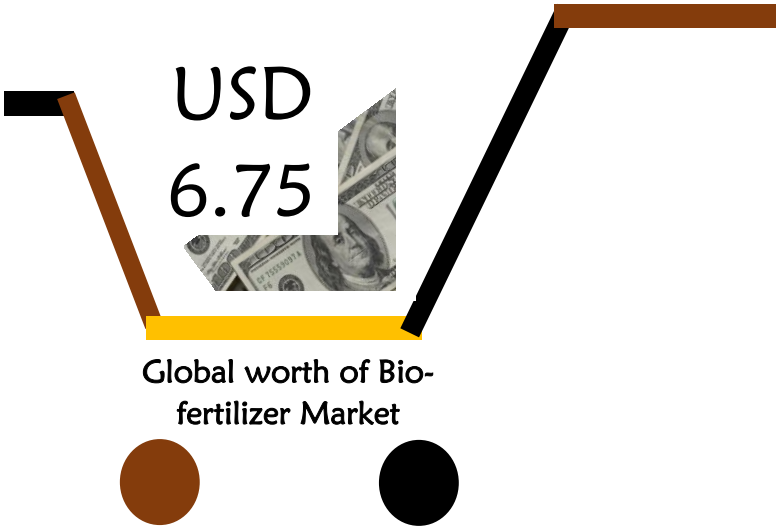

Why bio-fertilizers for Kenya?

- As opposed to heavily used chemical fertilizers, bio-fertilizers are not hazardous to humans
- Bio-fertilizers have the least ecological footprint especially in the context of climate change

- These fertilizers enhance soil nutrient sustainability because they keep the soil rich in macro and micro nutrients, promoting soil health.
- Combined application of bio-fertilizers and chemical fertilizers may significantly reduce the use of chemical fertilizers and the cost of crop production.
- Yield increases of 10 – 20% have also been associated with application of bio-fertilizers.

Potential benefits yes, but Kenya's Bio fertilizer sector is troubled

Low demand due to lack of awareness and understanding of bio-fertilizers has resulted in poor development of the bio-fertilizer sector. Moreover, local production remains a challenge, not only because of the cost of production, but also the limited demand, as well as poor delivery mechanisms that could be associated with the particular requirements for handling and storage conditions.

The potential benefits of bio-fertilizers remain largely untapped due to inadequate national policy and regulatory framework. Lack of a quality control framework for bio fertilizers has been consistent with poor quality of these inputs in the market, resulting in low demand and poor field performance. In some instances it has been found that 90% of bio fertilizer formulations did not match the product labels due to the absence of the active microorganisms or the presence of contaminants. In a different study, 40% of bio fertilizer products tested contained none of the strains claimed by the manufacturer while 25% of the inoculants contained opportunistic human pathogens at high levels.

Key Recommendations

1. The Kenya government should device and adopt an effective regulatory quality control program to ensure that only quality and effective bio-fertilizers are produced and promoted.
2. A robust awareness campaign on the benefits, handling, storage, and use of bio-fertilizer products among farmers, agro-dealers and extension agents should urgently and consistently be executed.
3. Research institutions should be facilitated for research and development to enhance innovative approaches to bio-fertilizer production, product testing and capacity building.

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