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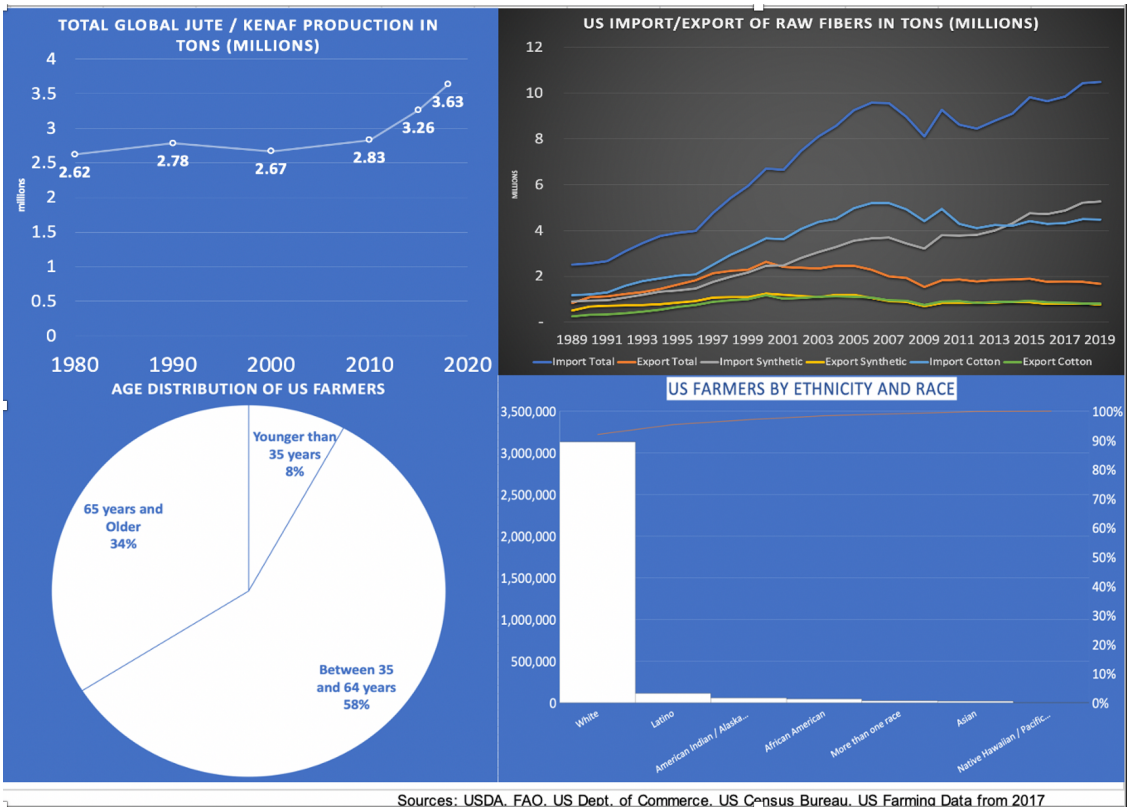
Bioeconomic Implications of Kenaf Farming

Kenaf is a plant that has been frequently used for centuries across the world. Kenaf has traditionally been used for its fibers because of its superior efficiency and its ability to thrive in different climates, especially compared to other non-food crops. The increase emphasis on sustainable products has brought kenaf to the forefront once again. In the 1960s, the USDA researched kenaf; they determined, out of 500 species, kenaf shows the most promise as a wood alternative for paper production. Research has shown paper production is only one feature of the versatile plant. Kenaf is currently being used for multiple industrial purposes, including automotive manufacturing. Transitioning from a traditional economy to a bioeconomy requires farming to incorporate sustainable fiber crops to fuel the emerging and transitioning industries. The impact of Kenaf farming has far reaching benefits.

Keywords: Kenaf, Agricultural Fibers, Bioeconomy, Clean Energy, Land-Use Alternatives



Kenaf's Impact On The Environment

Kenaf's environmental impact has yet to be realized. The production of kenaf has proven to benefit the natural environment in different ways. Kenaf is a fiber crop that can have high yields using sustainable farming techniques. The crop's growing process benefits its ecosystem. Kenaf is known to be resistant to most plant diseases – including the obtrusive (sometimes lethal) fungi – anthracnose. Kenaf's lignocellulosic and rapid-growing features makes the plant resistant to most weeds. The fiber crop also has a natural tendency to be resistant to pests and insects, this reduces the amount of environmentally harmful pesticides and insecticides a farmer needs. Additionally, kenaf benefits its surrounding ecology because it can act like a sponge for toxins in the air and soil. The crop's noticeable phytoremediation potential means the plant can absorb certain toxins from the soil, and its potential for high assimilation rates of CO_2 allows the plant to absorb higher levels of CO_2 than other fiber crops. Processed kenaf can be turned into a variety of green products, including products that can inhibit soil erosion by water and wind. Also, kenaf composites can be used to remove oil spills from water. Plus, finished goods made of kenaf are biodegradable and recyclable

Kenaf's Impact On The Economy

There are high hopes for a kenaf market to boost agricultural industries, both internationally and domestically. Kenaf fibers are used for a very wide range of products, it can be an impact in a number of industries. Kenaf is currently being used in the automotive industry for various car parts, it is being used in the construction industry for various infrastructure and insulation purposes, and it is being used to reinforce plastics – making plastics more durable and sustainable. In 2014, the European Union officially established a bioeconomy – an economy that emphasizes and promotes sustainability in all aspects of all supply chains. It can be reasonably assumed that other regions and countries will follow their steps. Naturally sourced materials coming from a sustainable source will be the forefront of any bioeconomy. Kenaf is not only a substitute to current kenaf-less products, but kenaf is a complement to existing

products (and composites). The fiber crop can be added to existing products to make them more durable and increase their recyclability potential. Kenaf is currently being used as reinforcement for thermoplastics and other thermoset polymers – which can be found in door panels. Researchers continue to find new uses for the already versatile fiber.

Kenaf's Impact On Public Policy

Public policy gave way to the first commercial wave of kenaf in the United States. During World War II, the United States needed Kenaf fiber because the army faced a shortage of international fibers. Similarly, the second wave of commercially produced kenaf will have to be started by public policy. There are certain requirements for a kenaf industry to be viable in the United States. First, there must be easy entry for farmers interested in growing kenaf. Kenaf's resistance to normally irritating conditions makes the crop easier and less expensive to grow, compared to other crops. This is a great crop for first-time farmers to grow because of its resiliency to tough climates (and lack of farming experience). Secondly, it is a crop that can be inserted in a crop rotation, and it has shown to assist the yields of other crops. This is a great sign for existing farmers too. The USDA can promote kenaf production by assisting entry farmers with startup costs, especially entry farmers who are a part of demographics that are underrepresented in the farming industry – mostly minorities and young adults. Lastly, there must be a steady demand of kenaf products. Clearly, producers must have buyers to continue production. Promoting the use of sustainable raw materials will help increase the demand for agricultural fibers. The main costs associated with kenaf farming are harvesting and processing the harvested fibers for finished goods. A steady demand for naturally produced fibers will decrease the cost of production because new technologies will focus on cultivating, harvesting, and processing fiber crops at a highly efficient level. Initial kenaf farming will set a precedent of growing natural fibers to be used in all industries.