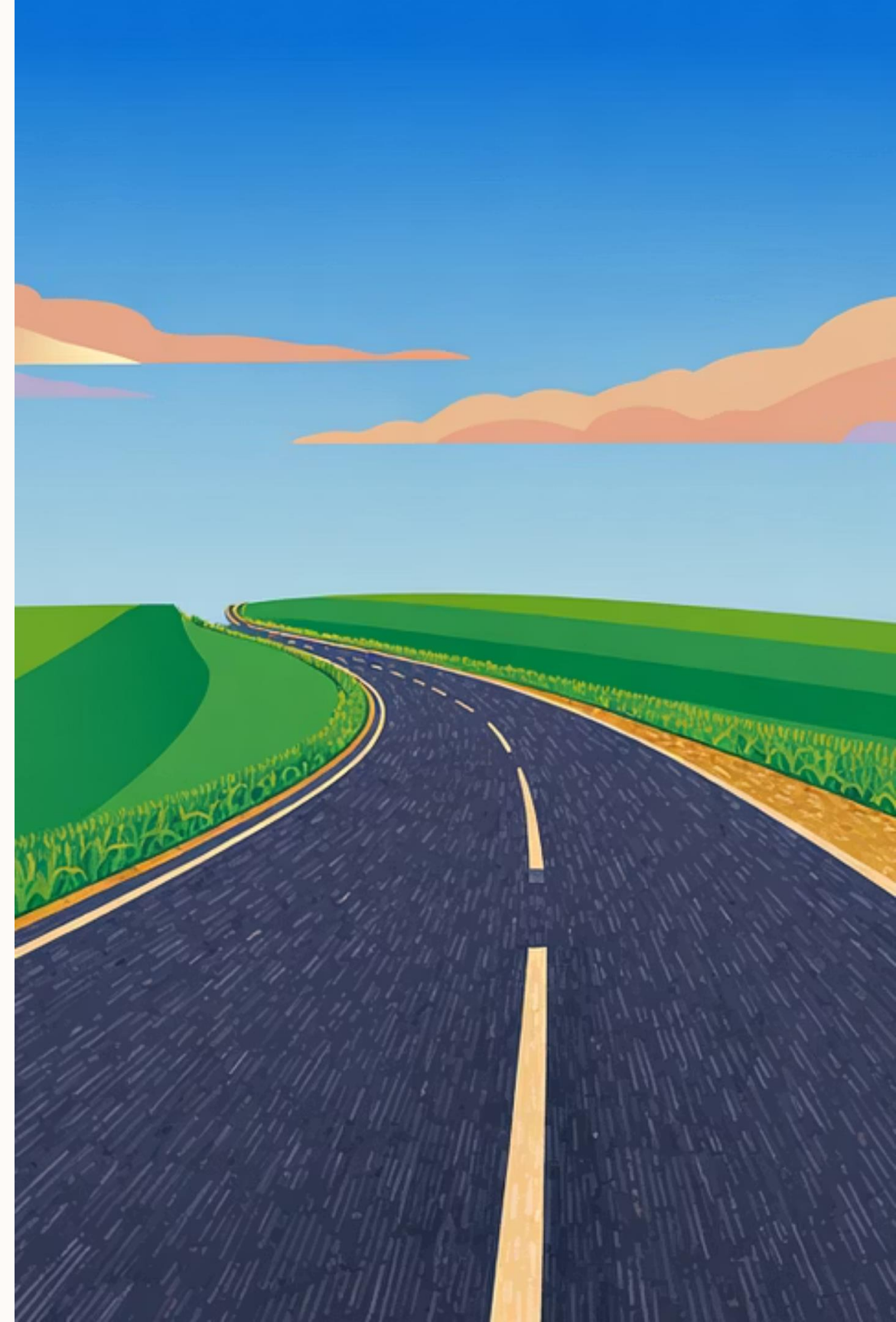


Brazil is Using Sugarcane Waste to Develop Roads

Discover how Brazil, the world's largest sugarcane producer with 548 million tons harvested in 2022/23, is innovating road construction by utilizing sugarcane bagasse ash. This approach merges sustainability with enhanced road performance, setting a new standard for eco-friendly infrastructure development.



Sugarcane Waste: Bagasse and Its Ash

Bagasse, the fibrous residue left after extracting juice from sugarcane, is traditionally burned for energy, generating about 3 million tons of ash annually in Brazil. Historically, this ash was treated as waste or used simply as a low-value soil additive, missing its potential for industrial reuse.





Build the future

Incorporating Bagasse Ash into Asphalt

Researchers at the State University of Maringá have developed a process that substitutes 5-30% of the conventional stone dust filler in asphalt with fine-grained, silica-rich bagasse ash. This mineral filler enhances the asphalt mix, with successful field tests conducted on highways such as BR-158 between Campo Mourão and Maringá.

Technical Benefits of Sugarcane Ash Asphalt



Strength & Stability

40% increase in Marshall stability, indicating higher asphalt strength



Durability

Better tensile strength and enhanced resistance to rutting under stress



Traffic Endurance

Improves longevity when subjected to heavy truck traffic loads



Resource Efficiency

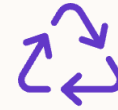
Decreases reliance on mined mineral aggregates, preserving natural resources

Environmental and Economic Impacts



Carbon Footprint Reduction

Less mining and transportation lowers emissions linked to road building



Circular Economy

Valorizes agricultural waste, integrating it into infrastructure cycles



Cost Savings

Material substitution cuts road construction costs without quality loss

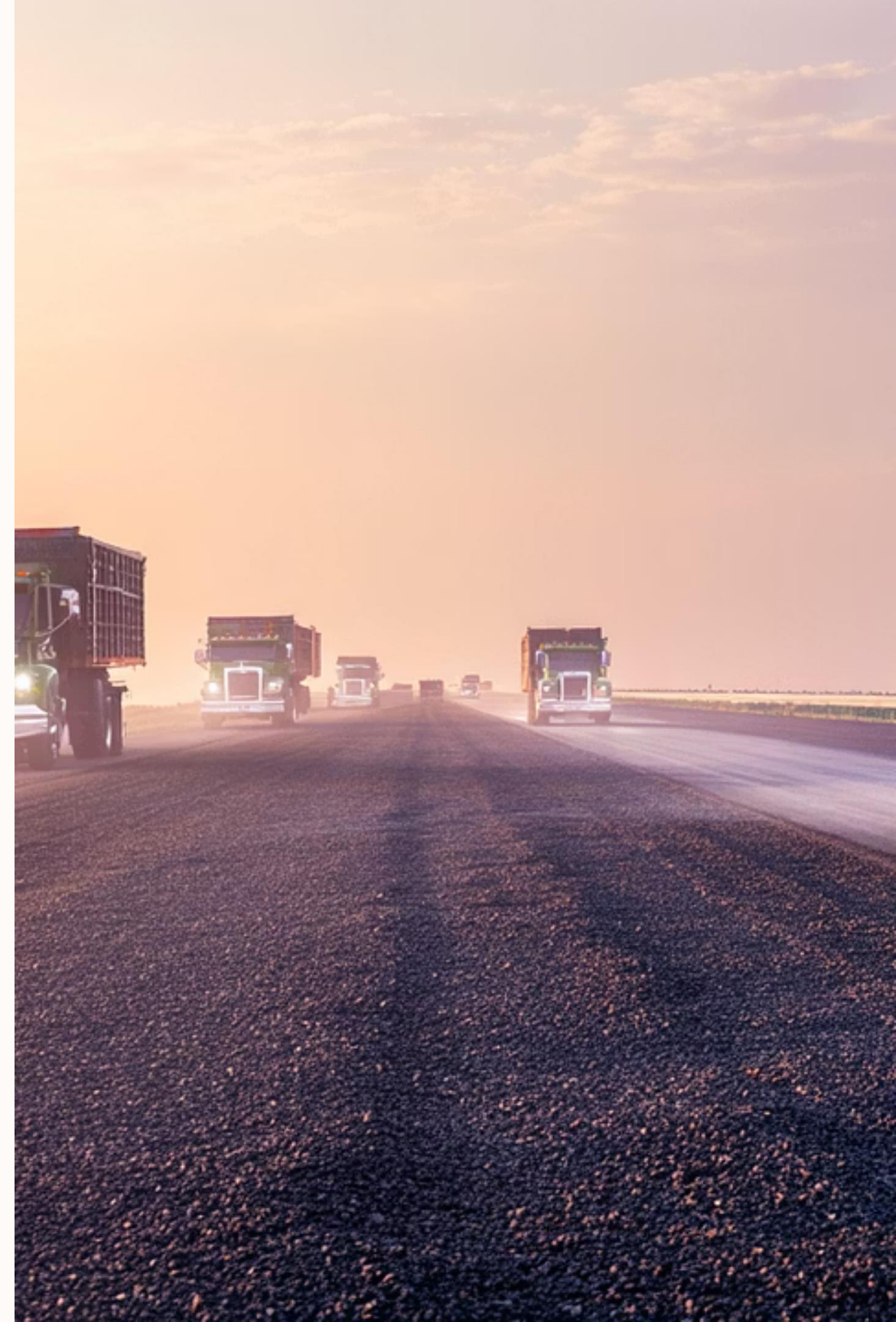


Sustainable Infrastructure

Supports environmentally responsible development of transport networks

Field Trials and Real-World Performance

Pilot sections on key Brazilian highways confirm that roads using bagasse ash asphalt demonstrate greater resilience and last longer under real traffic conditions. Infrastructure companies and drivers report favorable performance, with findings published in respected international journals validating these advancements.





Conclusion: Brazil Leading Sustainable Road Innovation

Brazil's pioneering use of sugarcane bagasse ash in highways showcases the powerful synergy between agriculture, innovation, and environmental stewardship. This initiative sets a global precedent for greener, stronger roads and advances the circular economy in road construction, inspiring sustainable infrastructure worldwide.