

## **Bio-innovation in Africa: looking ahead and learning from the past**

### **Fit for purpose governance frameworks for sustainable bio-innovation**

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Bio-innovation is essential in the African sustainable development and there are prospects for emerging products to offer solutions towards this end. Advanced applications of genomics, proteomics, genome editing, and general synthetic biology have added to the previous generation of genetically engineered applications. For instance, the new advances involving genome editing include new tools for genome editing like CRISPR/Cas9 and oligonucleotide mutagenesis (ODM). Africa has witnessed a pro-bio innovation pathway that is evidenced by the growing number of products and traits under experimentation. This may be attributed to a shifting policy context that has contributed to pro-biotechnology innovation deployment as well as approaches used in biosafety decision-making (Komen et al. 2020).

Can an upward trend in uptake of the emerging and promising products especially in the public health and agricultural sector be realized in the African context and what can we learn from the past? Arguably, a sustainable deployment pathway for bio-innovation must consider the generation of evidence that reconciles economic growth with social and environmental sustainability. Further, we have learnt over the years that the context within which biotechnologies can be advanced sustainably and the potential for their uptake depends largely on the social and institutional ecosystem that supports the deployment process including accumulation of capabilities (Kingiri 2021). A rethinking of governance frameworks is proposed that takes cognisance of the bio-innovation process that is much broader than product's R &D and entails institutional and social practices and capabilities that are needed to enhance a sustainable outcome.