

Group 4: innovation and bio-inputs: the example of biopesticides

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***Boosting agrifood research and innovation
cooperation for impact at scale***

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biopesticides

- **definition:** based on living micro-organism as active ingredient
- **benefits:** high specificity, eco-friendly and non-toxic, low resistance
- **markets:** global (10 billion USD) and Africa (178 million USD)



icipe's biopesticides

entomopathogen group	number of isolates	genera/species
entomopathogenic fungi	295	<i>Beauveria</i> , <i>Metarhizium</i> , <i>Verticillium</i> , <i>Isaria</i>
entomopathogenic bacteria	157	<i>Bacillus thuringiensis</i> , <i>Serratia marcescens</i>
microsporidia	3	<i>Nosema</i> , <i>Malamoeba</i> , <i>Johenrea locustae</i>
endophytes	10	<i>Hypocrea</i> , <i>Trichoderma</i> , <i>Clonostachys</i> , <i>Bionecteria</i>
baculoviruses	2	<i>Spodoptera littoralis</i> NPV, <i>Spodoptera exigua</i> NPV



Busseola fusca

Metarhizium anisopliae
30

for use on amaranth

Maruca vitrata

Metarhizium anisopliae
18

for use on legumes

Tuta absoluta

Metarhizium anisopliae
20

for use on tomato

thrips

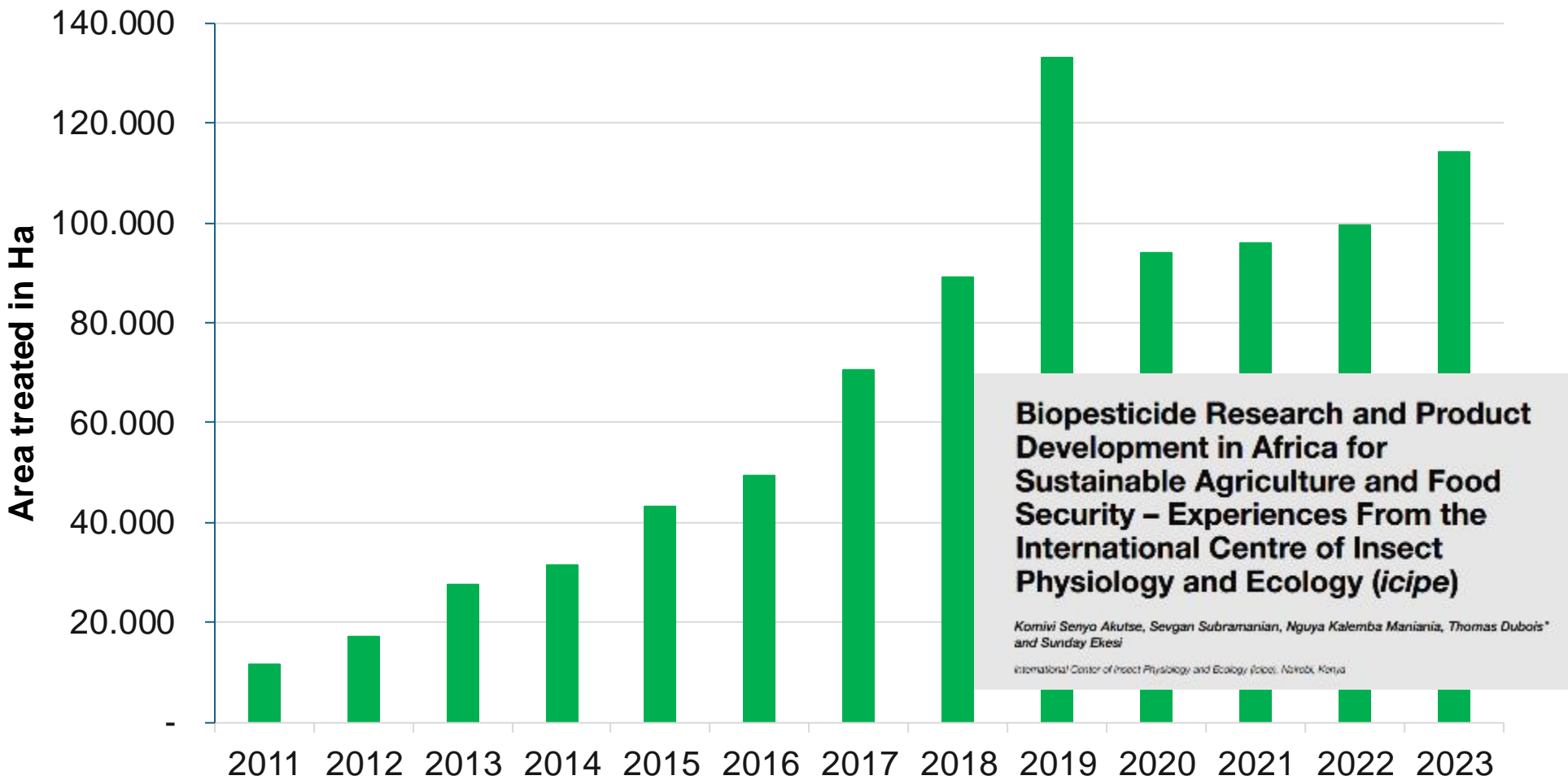
Hypocrea lixii
F3ST1

for use on onion and beans

fall armyworm

Metarhizium anisopliae
41

for use on maize



role of research

benefits from *icipe* ...

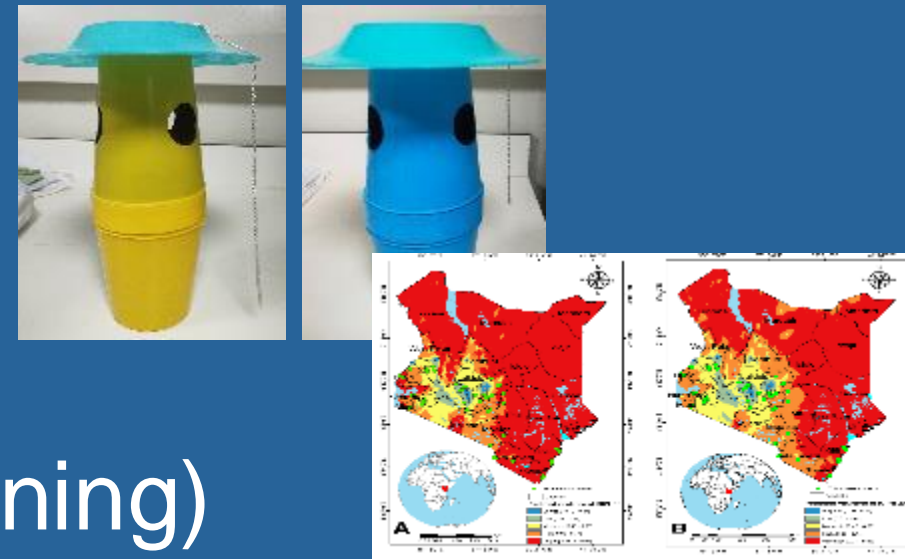
source material

scientific know-how (protocols, scientific literature)

'blue sky' innovations

upstream research

scientific capacity (training)



... to private sector

more agroecological products

improved commercialization efficiency

enhanced capacity

benefits to *icipe* ...

research expansion

research prioritized

... from private sector

funding

market information (emerging problems, key traits, data)

barriers and drivers for adoption

- **economic:** competition
- **capacity:** production, distribution, marketing
- **policy:** registration



- **economic:** resistance
- **capacity:** local empowerment
- **policy:** MRLs, phasing out of ai's




best-fit approaches to support AE transitions

Hottiserve: social enterprise



social media: entrepreneurship



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Fall armyworm biopesticides

7 videos • 68 views • Last updated on Jan 26, 2021

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fishsoup: farmer solutions



recommendations

development of bio-input innovation based on strong public-private partnership, with mutually defined roles

Economic drivers are crucial, enabled by strong policy framework

Thank you!

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