



Science Technology and Innovation for the Transformation of African Economies

Establishing Robust Institutional IP Policies and Strategies for Sustainable Public Private Partnership

Case of Kenya

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1. CHARACTERISTICS OF CURRENT AFRICAN ECONOMY

JUSTIFICATION FOR INDUSTRIALIZATION

1. Current African Economy based on Agriculture and Natural Resources
2. Industrialization begins with **Value addition** of agro produce and natural resources
3. **Value addition** means moving from economy based on export of raw agricultural produce and unprocessed natural resources to that of export of processed or semi processed products
4. Lack of value addition results to export of employment opportunity, revenue generation and enhanced poverty to farmers.

Example 1

2. AFRICA LOSSING OUT ON VALUE ADDITION TO COCOA



- West Africa (**Ivory coast, Ghana, Nigeria, and Cameroon**) accounts for 64 % (3.16 million MT) of the world cocoa production
- Netherland, Germany, USA, France, Spain, and Singapore processes 53 % of the cocoa
- From the retail price of a Chocolate
 - ❑ **African farmer get 6 %**
 - ❑ **Processors get 70 %**

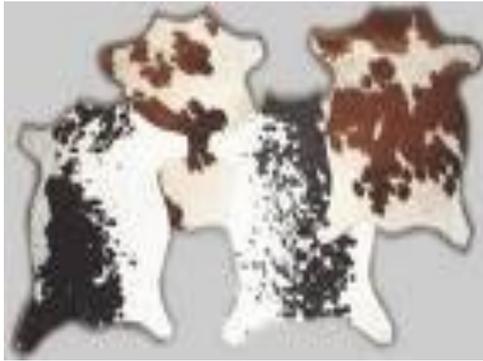
Example 2

3. AFRICA LOSSING OUT ON VALUE ADDITION TO CASHEW NUTS



- Africa produces 980 million bags of cashew nut.
- 80-90 % of the African cashew nuts is exported unprocessed
- Farmers receive US\$ 0.65 per kilo of raw nuts
- After further processing (roasting and adding flavor) the processed nuts are retailed at US\$ 18 per kilo
- In 2005
 - ❑ Exporting Africa country received US\$ 28 million
 - ❑ Foreign industries earned US\$ 576 million

Example 3



4. AFRICA LOSING OUT ON VALUE ADDITION TO HIDES AND SKINS

- Most African Countries still export raw hides and skins
- The value added prices (US\$ per square metre)
 - ❑ Raw hides and skins = US\$ 2.5
 - ❑ Finished Leather = US\$ 100
 - ❑ Leather Folder = 2500

RESEARCH FOR DEVELOPMENT (R4D)

5. PRODUCTS OF R&D AND THEIR UTILIZATION

- The direct product of R&D is knowledge, in the form of new technology, product, process or improvements.
- Publications is the traditional R&D outputs
- R&D is only useful if its products can lead to
 - Economic development
 - Job Creation
 - Poverty Reduction
- This is only possible through technology transfer

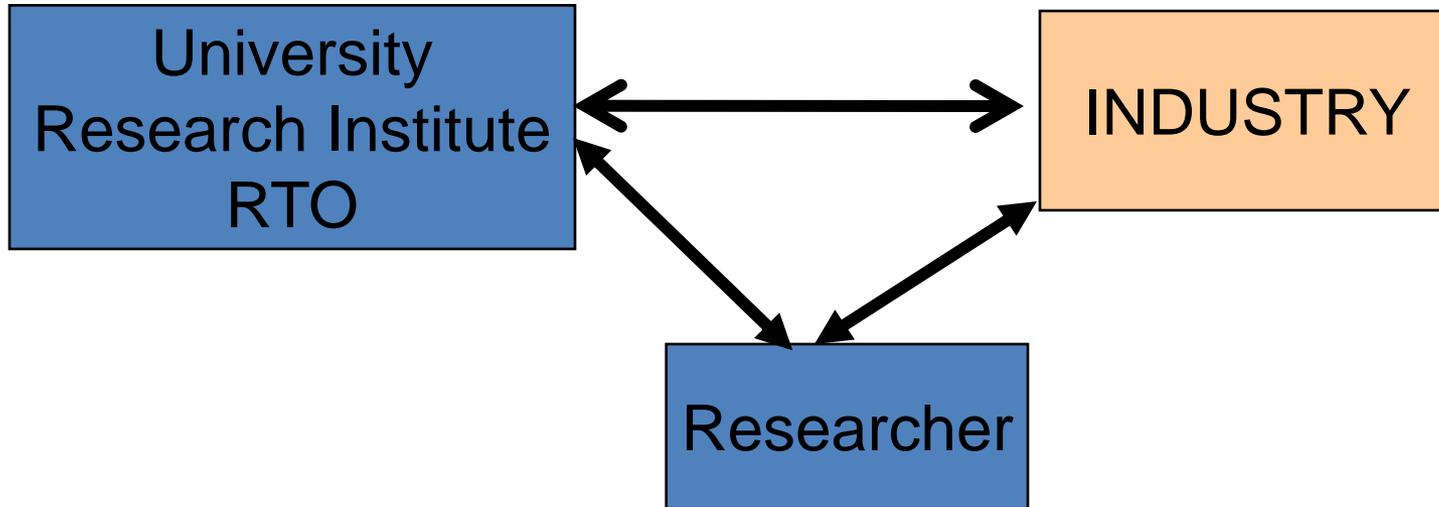
6. MAKING RESEARCH WORK FOR DEVELOPMENT

RESEARCH FOR DEVELOPMENT (R4D)



7. CHANGING THE PARADIGM

REQUIRED SUPPORT STRUCTURE



- RTO plays the role of an Enterprise
- INDUSTRY seen as the customer
- Knowledge as the product
- Researcher as a marketer



R&D is
NOT complete
until results
are utilised

REQUIRED SUPPORT STRUCTURE



- Technology Transfer Office
- Business Incubation Services
- University Companies
- Industrial/Science Park

Understands RTO culture, speaks the language of industry and behaves like a private enterprise

8. Key Guiding Policies and Strategies

- Vision 2030
- New Constitution 2010
- Draft National IP Strategy
- Science, Technology and Innovation Act, 2013

8.

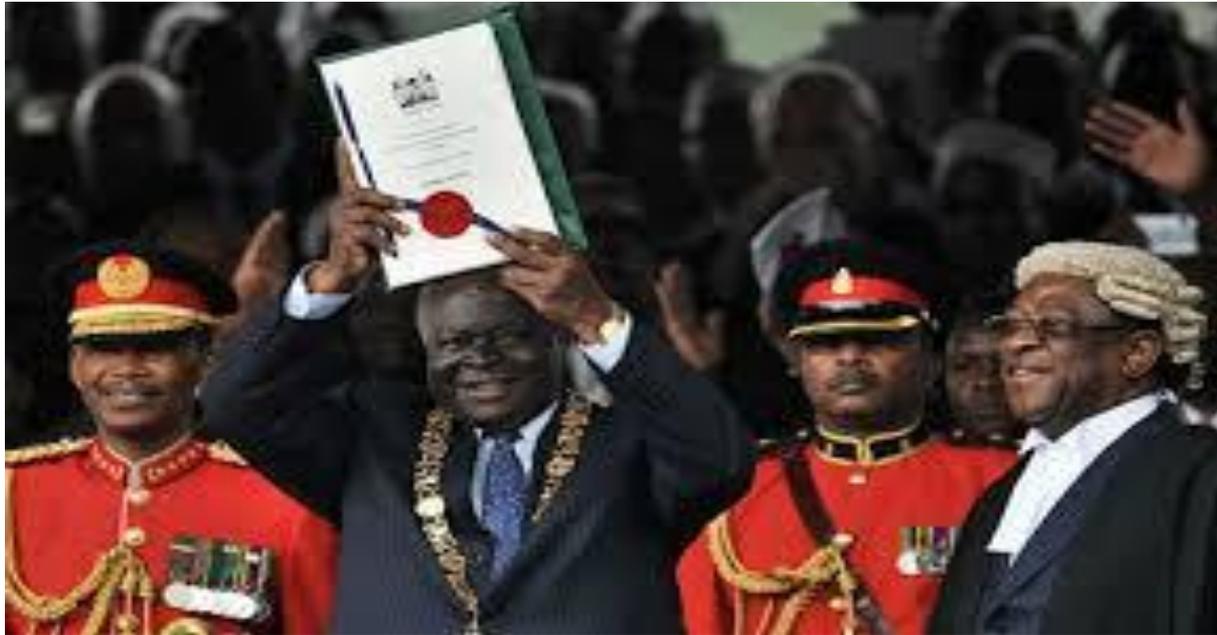


Vision 2030 has

- Identified Science, Technology and Innovation as one of the foundations for the realization of the Vision
- Puts emphasis on Industrialization → Increase the contribution of the Manufacturing sector to the GDP from 10 to 20 % by 2030
- Promoting value addition to agricultural produce as the first step towards industrialization

9. New Constitution 2010

KENYAN CASE



- The Constitution mentions IP three times
- Article 40 section 5 "The state shall support, promote and protect Intellectual Property Rights of the people of Kenya "

10. Draft IP Policy and Strategy, 2012-2017

- Four semi Autonomous Institutions for management and administration of Intellectual Property Rights
 - Kenya Industrial Property Institute
 - Kenya Copyright Board
 - Plant Breeders Rights Office
 - Anti Counterfeit Agency
- Informed the Science Technology and Innovation Act 2013.

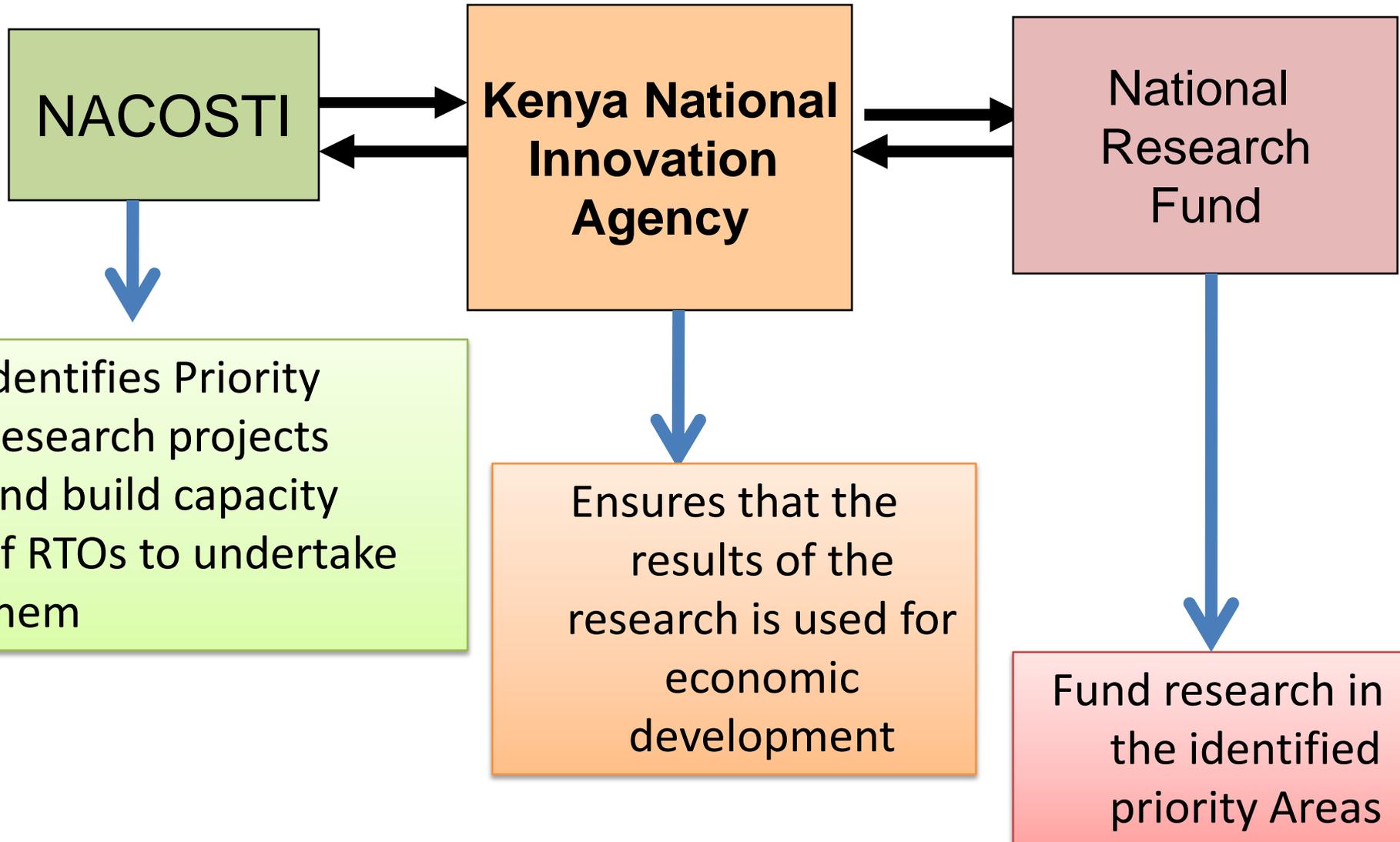
11. The Kenyan Innovation System and R&D Capacity

- 🌐 **Universities:** 48 universities (22 public universities, 9 public university constituent colleges and 17 chartered private universities)
- 🌐 **Research Institutions:** 6 research institutions and 8 commodity research foundations
- 🌐 **Government Support Institutions:** NCSTI, KENIA, National Research Fund, KIPI, KEBS, ACA
- 🌐 **Industry (Private Sector):** Large, Medium, Small, Micro and Jua Kali Enterprises

12. Science, Technology and Innovation Act, 2013

- Made it mandatory for universities and Research Institutions to have IP Policy and Technology Transfer Offices
- Provides for 2 % of the GDP to support R%D Activities
- Created three institutions to manage STI
 - ❑ National Commission for Science and Technology
 - ❑ National Research Fund
 - ❑ Kenya National Innovation Agency

13. Links of KENIA, NACOSTI and STI FUND



14. PROGRESS IN KENYA SINCE 2004

Institutionalizing IP Policies

- 5 public universities have IP policies
- 3 Research organizations have IP Policies

Institutionalizing Technology Transfer Offices

- 3 Universities have TTOs or companies
- 3 Research Organizations have TTOs

15. Key Objectives of Kenyan IP Policies

- Promote creation, protection and commercialization of IP Assets
- Ensure equitable distribution of the commercial results of R&D
- Encourage and reward RTO staff for innovation and creativity
- Provide environment for dissemination of R&D products for the benefit of the society

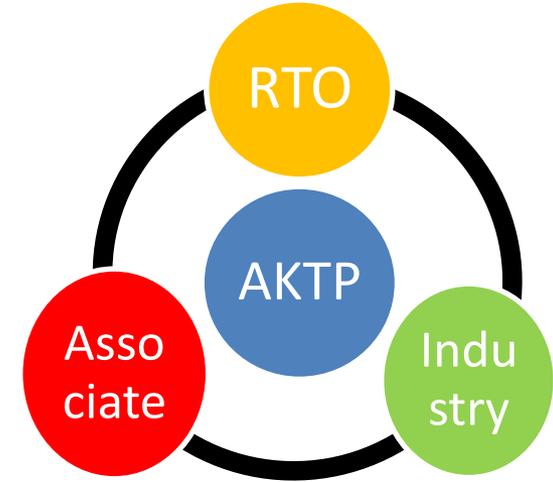
16. Some of the Issues covered by IP Policy

- Ownership of IP Rights
- Revenue or benefit sharing
- Privately funded research and intellectual property rights
- IP Assets management
- How to commercialize

Success Story 1

Licensing Agreement
between MEA
Company and
University of Nairobi

University of Nairobi



The Product

- BIOFIX was developed by University of Nairobi, 1970s
- For 20 years, the University was not keen to license it out.
- The income has gone up 10 times

The Company

- Established in 1997
- A leading provider of fertilizer manufacturer, with sales outlets in Kenya, Tanzania, Uganda and Rwanda
- Decided to diversify to organic fertilizer in line with increased global demand for organic product
- Has pushed the biofix product through its distribution network



**Kenya Industrial Research and
Development Institute**



17. Success Story 2:

- Has in place a Technology Transfer Office since 2007
- Has in place a business incubation services since 2007.
- Has incubated more than 30 enterprises since 2007

18. Success Story 3:

KENYAN CASE



- Largest Textile Industry in Kenya
- Initially Government Owned,
- Bought by the university
- TTO was a joint owner with the university
- Currently supporting the cotton textile sector in Kenya

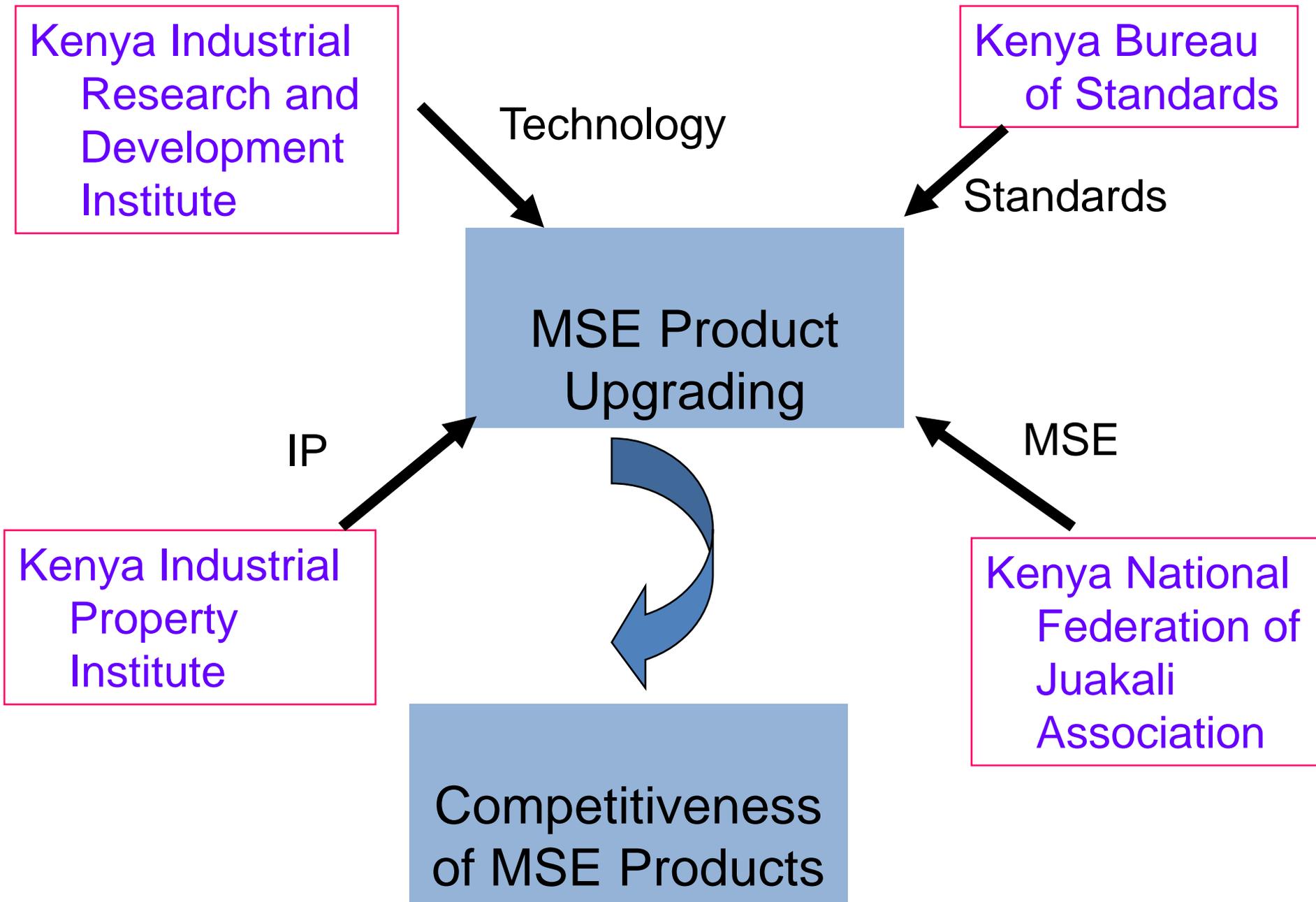
18. Success Story 4:

Upgrading Arc Welding Machine of Kenya (AWEMAK)

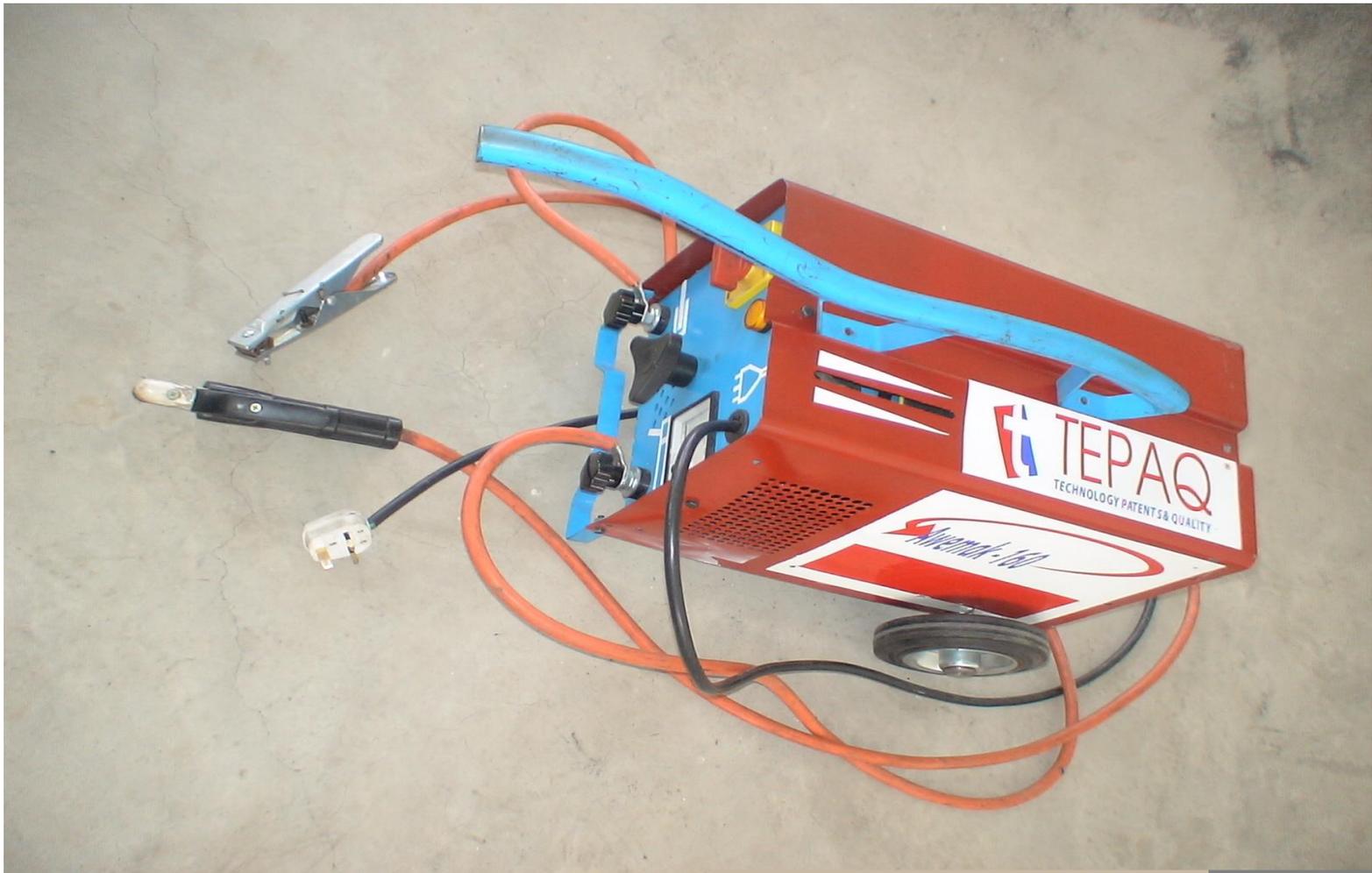


1. UGLY
2. INEFFICIENT
3. UNSAFE
4. NO NAME

BUT WORKING !!!!



Upgrading Arc Welding Machine of Kenya (AWEMAK)



CONCLUSIONS

- Innovation, Creativity and Intellectual Property are key to the realization of Industrialization Strategies in Africa
- To enhance the capacity of countries to generate innovation, creative intellectual Property assets, required for development, there is need to have in place national policies and strategies on innovation, creativity and IP
- Policy makers are requested to support and provide financial resources for the development and implementation of national policies and strategies on innovation, creativity and intellectual property