

# BIODIVERSITY, TRADITIONAL KNOWLEDGE & INTELLECTUAL PROPERTY FOR SUSTAINABLE ECOSYSTEMS



**Kimani .F. Goddard, PhD**

- **Phd Fellow & IP Specialist Maastricht University Faculty of Law**
- **Research Fellow, World Trade Institute Bern University, Switzerland**
- **Senior Intellectual Property Advisor, WIPO**



# KEY DISCUSSION POINTS

- Biodiversity, TK, Genetic Resources, IP & Innovation Systems
- Global IP Regulation & the AfCFTA
- Patent Performance of Leading Economies
- African Performance in Patents
- Appropriation of Genetic Resources & TK
- Biological Knowledge Stores & IP

## TRADITIONAL KNOWLEDGE BIODIVERSITY, GENETIC RESOURCES & IP

- THE BIODIVERSITY & TRADITIONAL INNOVATION OF THE AFRICAN CONTINENT IS AT CORE OF DISCUSSIONS ON IP & ACCESS TO GENETIC RESOURCES
  - EGYPT AND MANY OTHER AFRICAN COUNTRIES HAVE RATIFIED CONVENTIONS & PASSED NATIONAL LAWS ON **TRADITIONAL KNOWLEDGE, ECOSYSTEM BIODIVERSITY, GENETIC RESOURCES & SUSTAINABLE DEVELOPMENT**
  - AFRICAN TRADITIONAL KNOWLEDGE OF ECOSYSTEMS, PLANTS, ANIMALS ETC. IS INTELLECTUAL PROPERTY
  - "THE IMPORTANCE OF INTELLECTUAL PROPERTY AND INTERNATIONAL INVESTMENT AGREEMENTS FOR OVERCOMING THE "PERIPHERAL ECONOMY TRAP"" **K GODDARD AFRONOMICS LAW JOURNAL**
  - THE LANDSCAPE OF INTERNATIONAL TREATIES ADDRESSING IP, TK & GENETIC RESOURCES
- 
- UNDER THE AFRICAN CONTINENTAL FREE TRADE AREA (AFCFTA) PHASE II NEGOTIATIONS TO ADOPT PROTOCOLS ON COMPETITION POLICY, **INVESTMENT AND INTELLECTUAL PROPERTY RIGHTS (IPRS)** ARE CURRENTLY UNDERWAY
  - AN AFCFTA CONTINENTAL PROTOCOL ON INTELLECTUAL PROPERTY THAT SUPPORTS BIODIVERSITY AND TRADITIONAL KNOWLEDGE

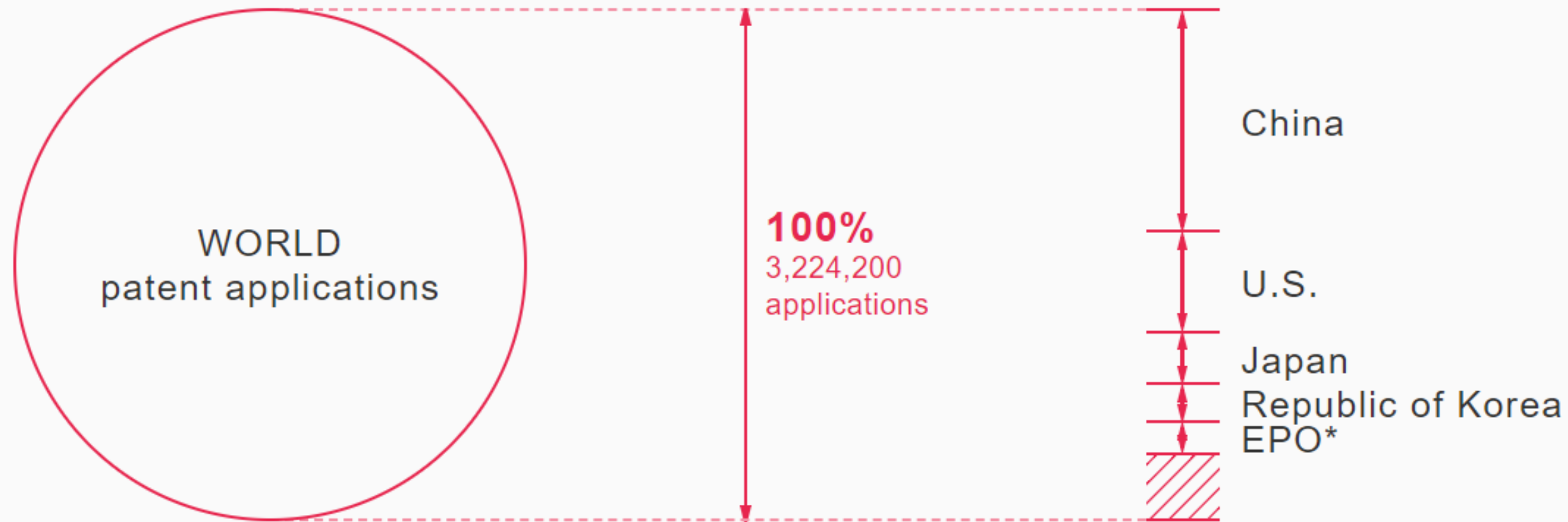
# TECH TRANSFER

- The **COVID-19 IP waiver**, **transfer of tech** regulatory responses has emphasised the need for countries on the continent harness their populations' traditional knowledge of ecosystems to drive native scientific innovation toward building continental ip ownership
- October 2020: India & South Africa applied to the WTO TRIPs Council for the temporary waiver of IP protection on pharmaceutical and medical products
- Despite a wealth of genetic resources and traditional knowledge of continental populations of these resources, research, innovation and ownership of IP Assets for these is negligible
- African economies push for transfer of technology & technical know-how under Article 66.2 of the TRIPS Agreement on transfer of technology, which requires developed member states to provide incentives for technology transfer.
- However IIAs often undermine these efforts

# BIODIVERSITY, TRADE & INTELLECTUAL PROPERTY

- A recent report from UNCTAD on the implications of the **AfCFTA for biodiversity** and trade, defines **BioTrade** as "collection, production, transformation and commercialization of goods and services derived from biodiversity (genetic resources, species and ecosystems) under environmental, social and economic sustainability criteria known as the BioTrade Principles and Criteria (P&C) (UNCTAD, 2020a).
- The economic benefits of BioTrade may be negligible for African economies if the underlying intellectual property and traditional knowledge upon which the development of these goods and services is based, is appropriated by entities outside the continent.
- The AfCFTA can be a vehicle for building an African IP, TK and Genetic Resources Asset portfolio as the foundation for environmentally sustainable trade and economic development
- Intellectual Property in the AfCFTA

# PATENT STATS 2019



More than 84% of all patent filings in 2019 occurred in the IP offices of China, the U.S., Japan, the Republic of Korea and the EPO. China accounted for more than 40% of the world total.

Notes: \* EPO is the European Patent Office

Source: WIPO Statistics Database, September 2020

# INNOVATION PERFORMANCE

- The 2020 WIPO Global Innovation Index (GII); top three innovation economies for Sub-Saharan Africa were 1.) South Africa & Mauritius 2.) Kenya and 3.) The United Republic of Tanzania
- Within the economies classed in the low-income group worldwide, two African countries came within the top three, 1.) The United Republic of Tanzania and 2.) Rwanda; the third country being Nepal in Asia.

Statistical Country Profiles

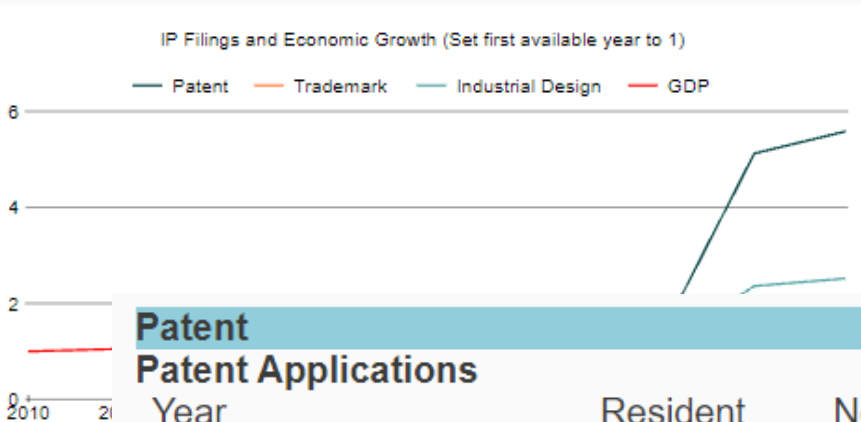


Nigeria

Population (Million): 206.14 (2020)  
Gross Domestic Product (Billion US\$)(Constant 2017 US\$ (PPP)): 1,013.53 (2020)

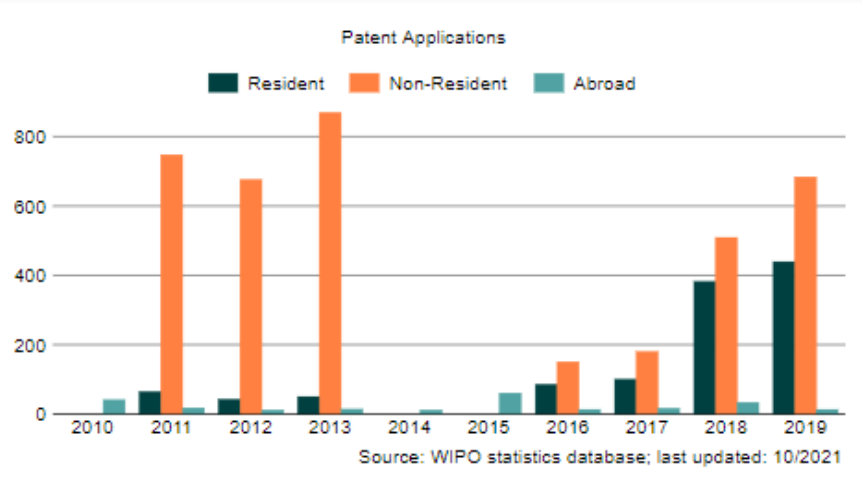
IP Filings (Resident + Abroad, Including Regional) and Economy

Year	Patent	Trademark (class count)	Industrial Design (design count)	GDP (Constant 2017 US\$)
2010				781.79
2011	81	20,953	801	823.29
2012	53	17,445	639	858.11
2013	64	20,987	1,045	915.36
2014				973.12
2015				998.93
2016	98		674	982.78
2017	116	16,440	916	990.70
2018	415	11,883	1,891	1,009.75
2019	452	14,690	2,017	1,032.05



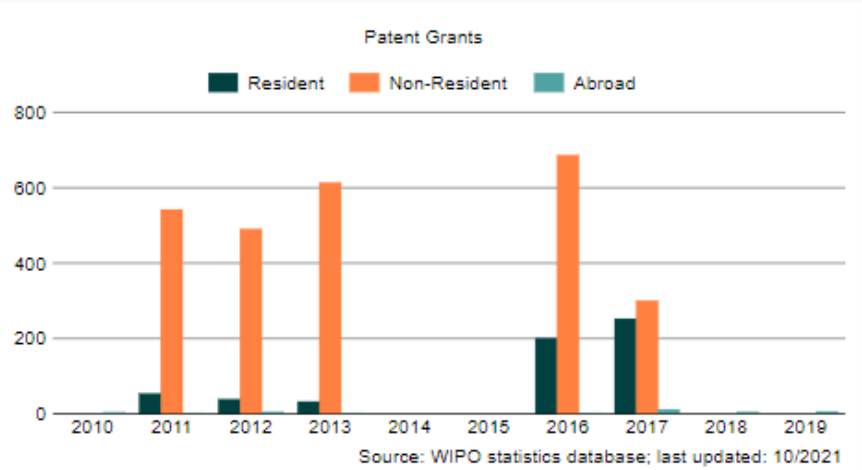
Patent  
Patent Applications

Year	Resident	Non-Resident	Abroad
2010			41
2011	64	747	17
2012	42	676	11
2013	50	869	14
2014			11
2015			60
2016	85	150	13
2017	100	180	16
2018	382	509	33
2019	439	683	13



Patent Grants

Year	Resident	Non-Resident	Abroad
2010			3
2011	53	542	2
2012	38	490	4
2013	32	613	2
2014			
2015			1
2016	200	686	2
2017	252	300	11
2018			4
2019			5





Statistical Country Profiles



Egypt

Population (Million): 102.33 (2020)  
Gross Domestic Product (Billion US\$)(Constant 2017 US\$ (PPP)): 1,223.04 (2020)

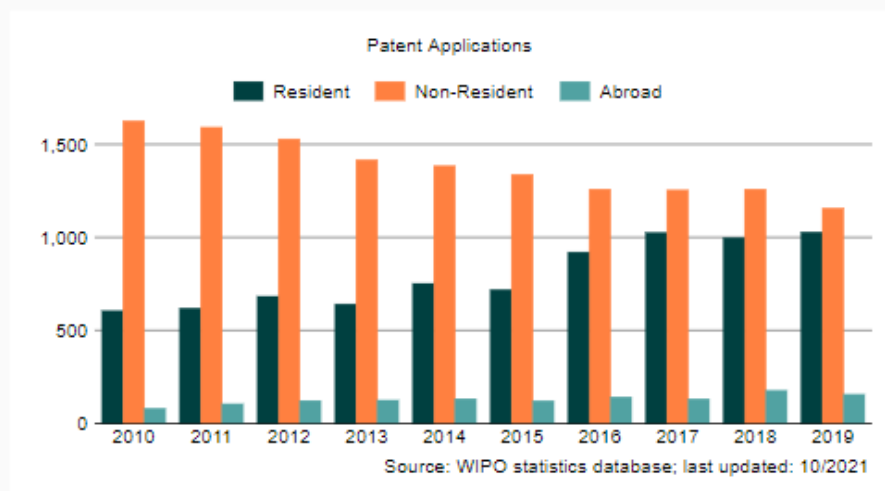
IP Filings (Resident + Abroad, Including Regional) and Economy

Year	Patent	Trademark (class count)	Industrial Design (design count)	GDP (Constant 2017 US\$)
2010	685	19,216	4,185	855.76
2011	723	11,702	2,134	870.86
2012	805	13,724	2,171	890.24
2013	766	11,993	1,687	909.70
2014	884	13,918	1,914	936.23
2015	839	15,374	1,661	977.16
2016	1,061	18,522	1,752	1,019.63
2017	1,156	20,227	2,324	1,062.27
2018	1,174	25,092	1,868	1,118.72
2019	1,183	26,258	1,720	1,180.89



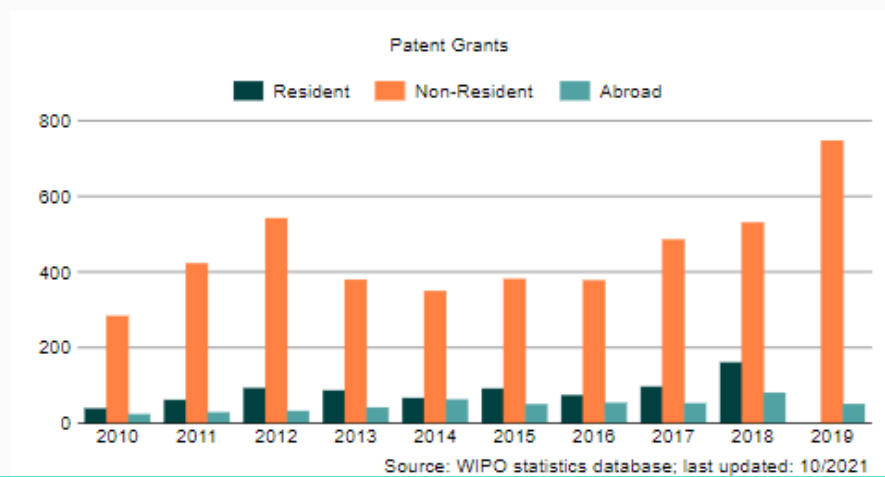
Patent  
Patent Applications

Year	Resident	Non-Resident	Abroad
2010	605	1,625	80
2011	618	1,591	105
2012	683	1,528	122
2013	641	1,416	125
2014	752	1,384	132
2015	718	1,337	121
2016	920	1,258	141
2017	1,025	1,254	131
2018	997	1,258	177
2019	1,027	1,156	156



Patent Grants

Year	Resident	Non-Resident	Abroad
2010	38	283	23
2011	61	422	28
2012	92	542	32
2013	86	379	41
2014	66	349	62
2015	91	381	49
2016	73	377	53
2017	96	485	52
2018	160	530	80
2019		747	50



## Statistical Country Profiles

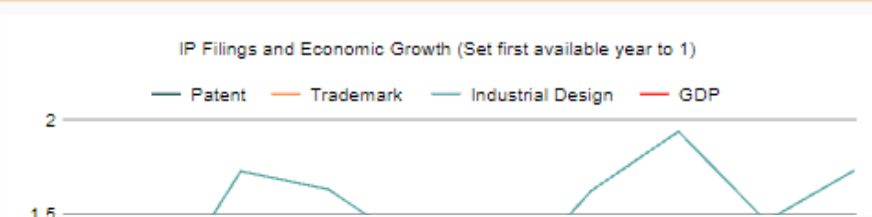


### South Africa

Population (Million): 59.31 (2020)  
Gross Domestic Product (Billion US\$)(Constant 2017 US\$ (PPP)): 680.04 (2020)

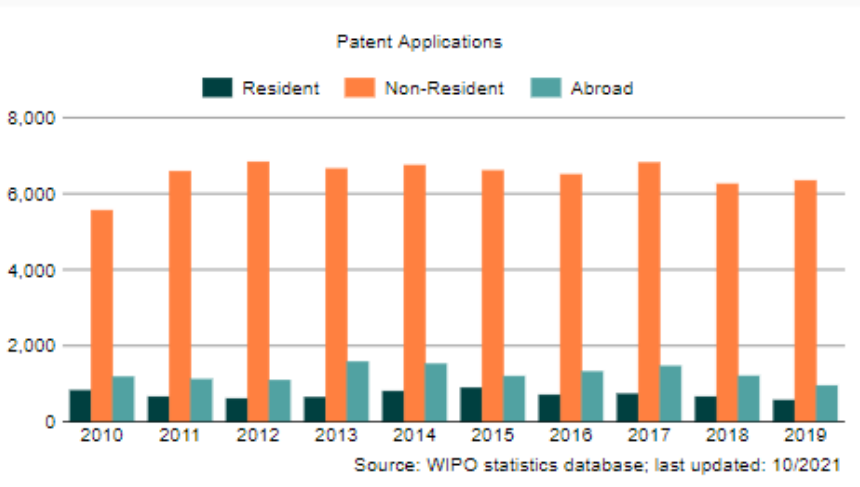
#### IP Filings (Resident + Abroad, Including Regional) and Economy

Year	Patent	Trademark (class count)	Industrial Design (design count)	GDP (Constant 2017 US\$)
2010	2,001	28,310		637.77
2011	1,770	29,939	1,921	658.72
2012	1,699	32,954	3,317	673.30
2013	2,215	35,212	3,135	690.03
2014	2,322	32,421	2,539	702.77
2015	2,086	38,025	2,126	711.16
2016	2,020	36,004	3,117	714.00
2017	2,189	36,469	3,722	724.10
2018	1,861	34,031	2,810	729.80
2019	1,517	35,042	3,322	730.91



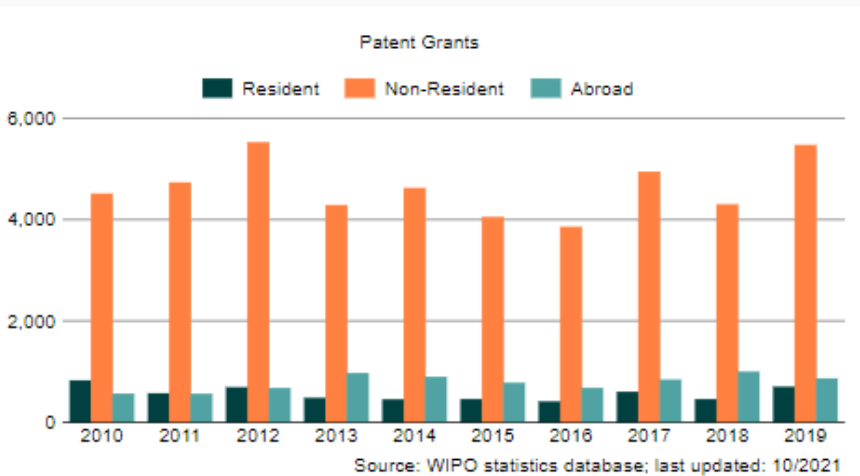
#### Patent Applications

Year	Resident	Non-Resident	Abroad
2010	821	5,562	1,180
2011	656	6,589	1,114
2012	608	6,836	1,091
2013	638	6,657	1,577
2014	802	6,750	1,520
2015	889	6,608	1,197
2016	704	6,506	1,316
2017	728	6,816	1,461
2018	657	6,258	1,204
2019	567	6,347	950



#### Patent Grants

Year	Resident	Non-Resident	Abroad
2010	822	4,509	559
2011	567	4,729	555
2012	685	5,520	672
2013	474	4,282	966
2014	445	4,620	890
2015	453	4,046	773
2016	403	3,852	674
2017	595	4,940	835
2018	451	4,295	992
2019	694	5,468	861



# TK & GENETIC RESOURCE APPROPRIATION

German pharmaceutical company Schwabe appropriation of TK & Genetic Resources in South Africa.

- Pelargonium sidoides: Geranium with antimicrobial & expectorant properties, used in indigenous communities for bronchitis, respiratory diseases, etc
- Schwabe commercial a medical product product derived from the plant without exclusive rights participation of the indigenous communities; an filed patents
- In 2010 European authorities withdrew the patents



# BIOLOGICAL KNOWLEDGE STORES

INVESTING IN CONTINENT-WIDE RESEARCH AND INNOVATION TO PRODUCE A BIOLOGICAL DATA STORE OF TK AND GENETIC RESOURCES ON THE CONTINENT

THIS CAN BE A STORE OF KNOWLEDGE TO BOOST THE CONTINENT'S PERFORMANCE IN RESEARCH AND INNOVATION; AS WELL AS INCREASING OWNERSHIP OF IP IN THE KNOWLEDGE THAT IS PRESENT IN TRADITIONAL COMMUNITIES ON THE CONTINENT

BIOTRADE MUST BE SUPPORTED BY OWNERSHIP OF THE IP THAT FORMS THE BASIS OF PRODUCTS AND SERVICES COMPRISING THIS TRADE