



The European Commission's science and knowledge service

Joint Research Centre

Mapping Territorial Potentials for Evidence-informed Innovation Policies in Africa: insights from Côte d'Ivoire and Nigeria

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EU SPRI Conference 2018, Paris, France

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Aim(s)/Research question(s)

- **Which evidence to inform place-based Innovation Policy (IP) in Africa?**
- **How can evidence-informed & place-based IP be oriented towards socio-economic & industrial transformation?**
- **Côte d'Ivoire, Nigeria (Western Africa)**

Policy context: innovation, a means towards the transformation of African societies and industries

Research question(s) & Policy context

Challenges & opportunities of Innovation Policy in SSA

Conceptual & analytical approach

Evidence to inform IP (preliminary mapping): case studies

Concluding Remarks

- **Continental frameworks:** Consolidated Plan of Action (CPA), STI Strategy for Africa (STISA 2024)
- **Regional strategies :** ECOPOST (Western African States), SADC
- **National (announced) initiatives:** Côte d'Ivoire & Rwanda's Innovation funds (AfDB), Sierra Leone, etc.
- **International organisations and NGOs:** World Bank, UNICEF's Innovation venture funds, etc.

Policy context: challenges and opportunities of Innovation Policies in Sub-Saharan Africa context

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Evidence to inform IP (preliminary mapping); case studies
Concluding Remarks

Challenges

- STI policies often focuses on ST component
- Weak evidence for policy making and impact assessment
- Lack of/Weak implementation mechanisms
- Alignment with development/local challenges (access to energy, water, food security, etc.)
- Low promotion of local innovations
- Research funding and infrastructure
- Support to commercialization of technology/research

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Opportunities

- Youth
- Peak of entrepreneurial activities
- Diversity of human/land/natural resources
- Increased innovation and entrepreneurial funding from IOs, private foundations, VC, etc.
- Uptake of digital technologies/spaces
- Agricultural potential for food security
- Indigenous knowledge (farming & industrial techniques, etc.)

Conceptual and analytical approach: transformative innovation policies (1/4)

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Transformative Innovation Policies

(...focuses on mobilising innovation to address societal challenges as inequality, unemployment & climate change. It emphasises policies for directing socio-tech. systems into socially desirable directions & embeds processes of change in society)
(Schot and Steinmueller, 2016; Chataway et al., 2017)

- Focus on societal goals
- Directionality
- Impact at system level
- Learning and reflexivity
- Inclusiveness
- Conflict and consensus

<http://tipconsortium.net>

Innovation Strategies for Smart Specialisation

Place-based economic transformation strategies which aim at exploiting more effectively R&I resources to generate long term economic returns and society welfare

(Foray et al 2012, Foray 2015, European Commission 2016)

- Evidence for place-based strategies
- Identification of priority domains
- Critical mass in R&I activities
- Inclusive & participatory decision-making
- Monitoring & evaluation frameworks/tools
- > 100 regions/experiments under European Cohesion policy

<http://s3platform.jrc.ec.europa.eu>

Conceptual and analytical approach: mapping potentials for local IP in the S3 framework (2/4)

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S3 as a type of TIP

- Focus on transformative impacts of innovation policies
- Broad definition of innovation
- Emphasis on societal and local challenges
- Relevance to map IP and a related range of outcomes

➔ S3 as a TIP provide approaches/examples to map territorial potentials to inform innovation policies

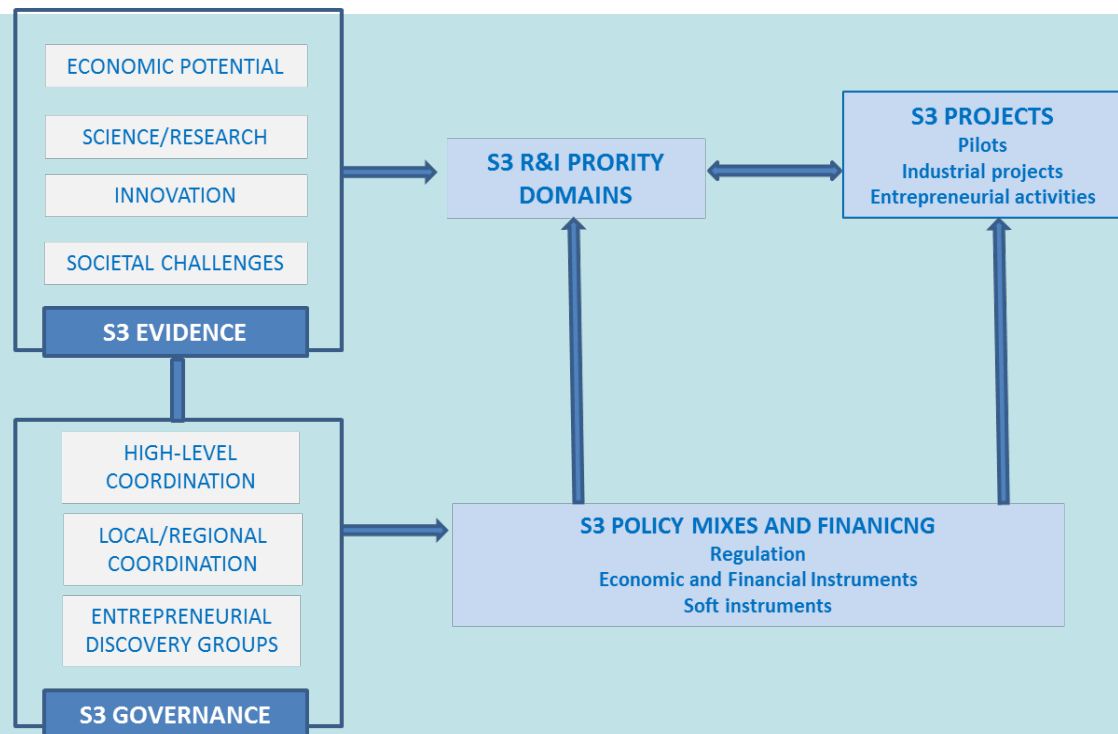
Conceptual and analytical approach: mapping potentials for local IP in the S3 framework (3/4)

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Source: Dosso, Kleibrink and Matusiak (2018)

S3 Monitoring and Evaluation

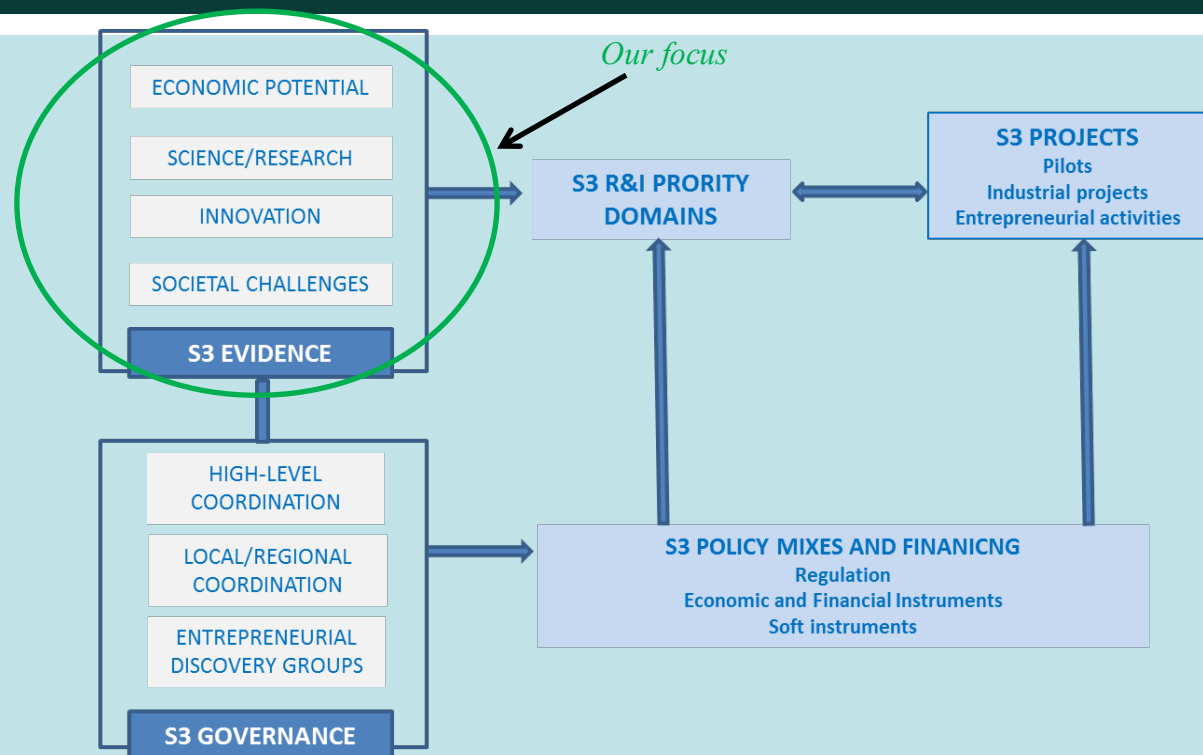
Conceptual and analytical approach: mapping potential for local IP in the S3 framework (4/4)

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Mapping Territorial Potentials for Evidence-informed Innovation Policies in Africa: insights from Côte d'Ivoire and Nigeria

Countries profiles: Côte d'Ivoire & Nigeria

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COTE D'IVOIRE



(3rd ECOWAS)

Pop million 23

GDP: 36bn USD-per cap 1,526 USD

Growth rate : > (+) 8% since 2012

Poverty % pop: 46.5 (2015)

Population 0-14 years: 42%

Youth not in employment/education/training: 36.2%

Urban population: 54%

Agricultural land (% of arable): 64%

NIGERIA



(1st ECOWAS)

Pop million 185

GDP: 405bn USD-per cap 2,177 USD

Growth rate : (-) 1.4 in 2016

Poverty % pop: 46 (2009)

Population 0-14 years: 44%

Youth not in empl/edu/training: 20.4%

Urban population: 48%

Agricultural land: 77%

Main Source for stat:
World Bank

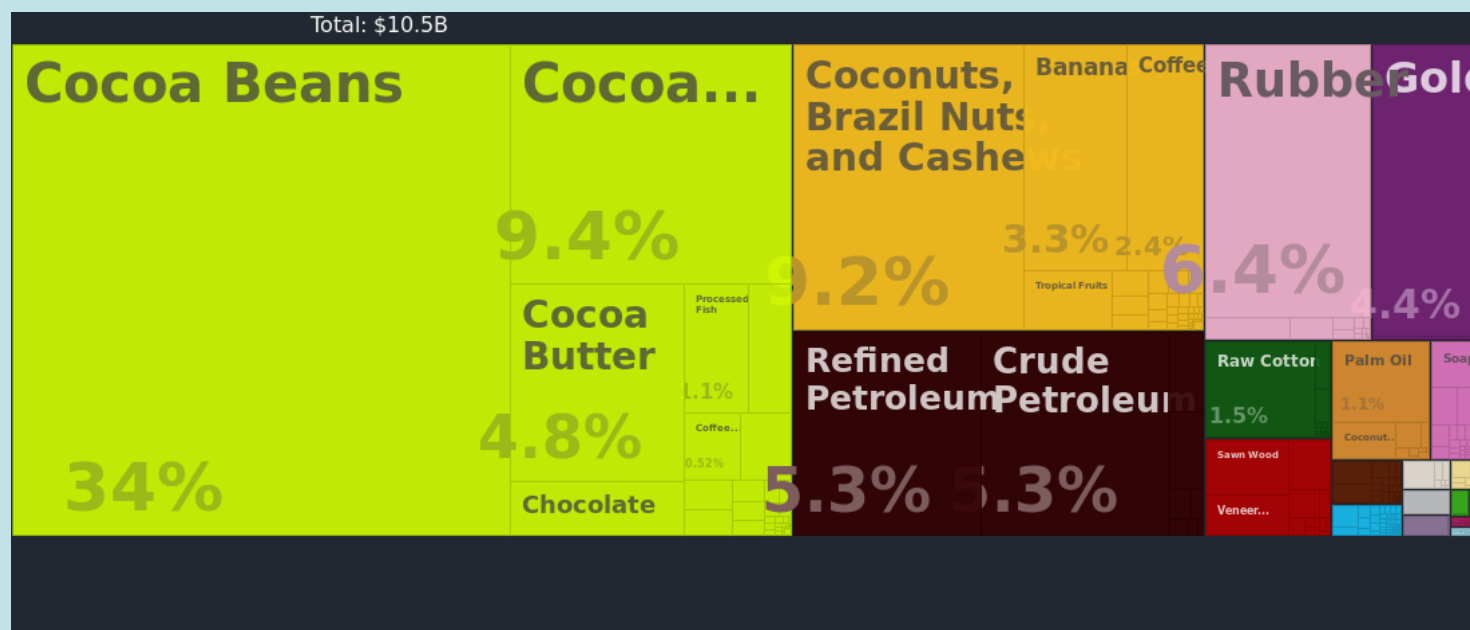
Economic potential: Côte d'Ivoire

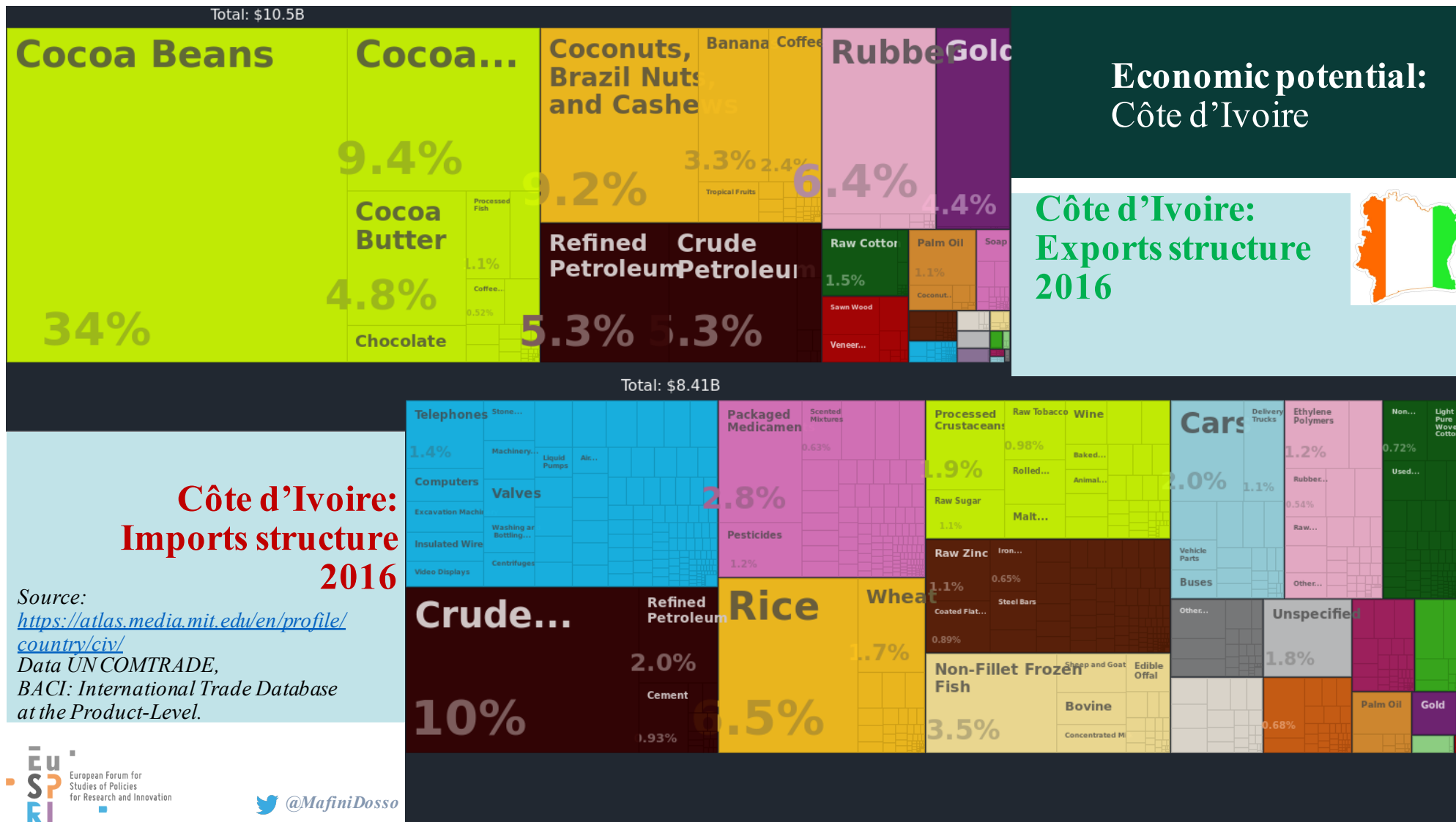
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Côte d'Ivoire: Exports structure 2016

Source:
<https://atlas.media.mit.edu/en/profile/country/civ/>
Data UN COMTRADE,
BACI: International Trade Database
at the Product-Level.





Economic potential: Nigeria

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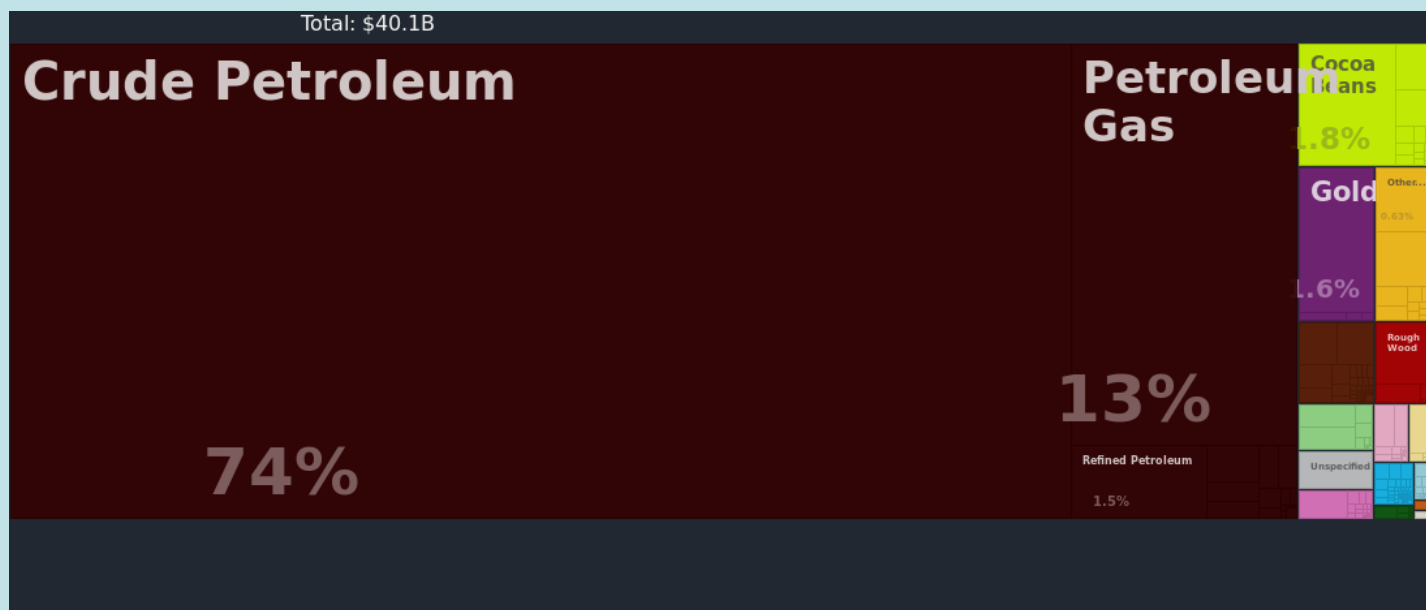


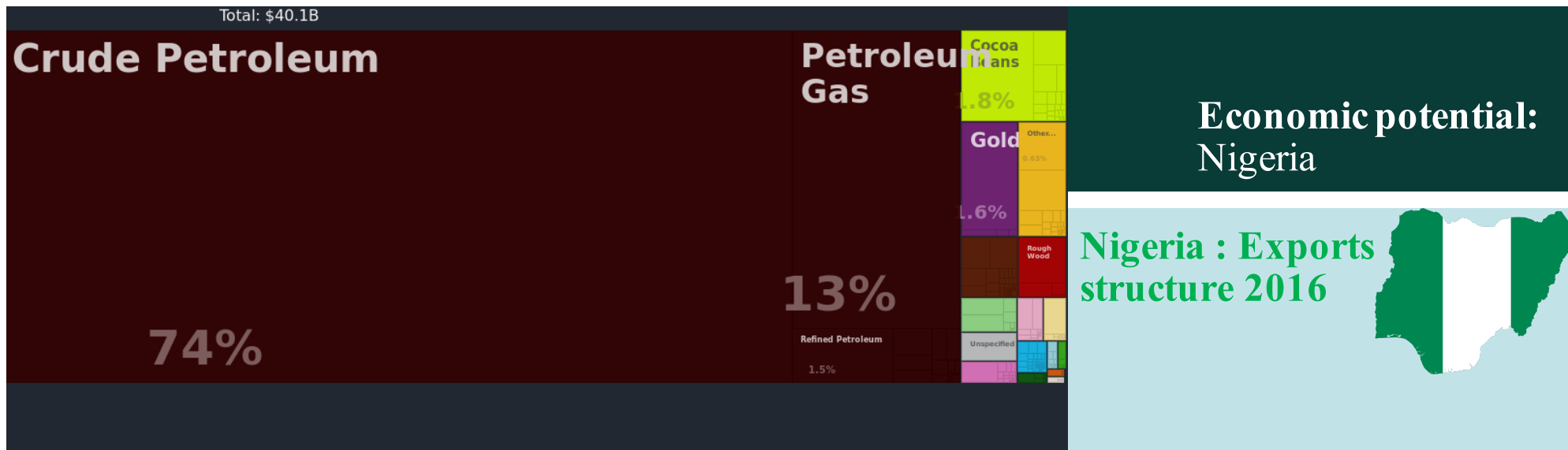
Nigeria : Exports structure 2016

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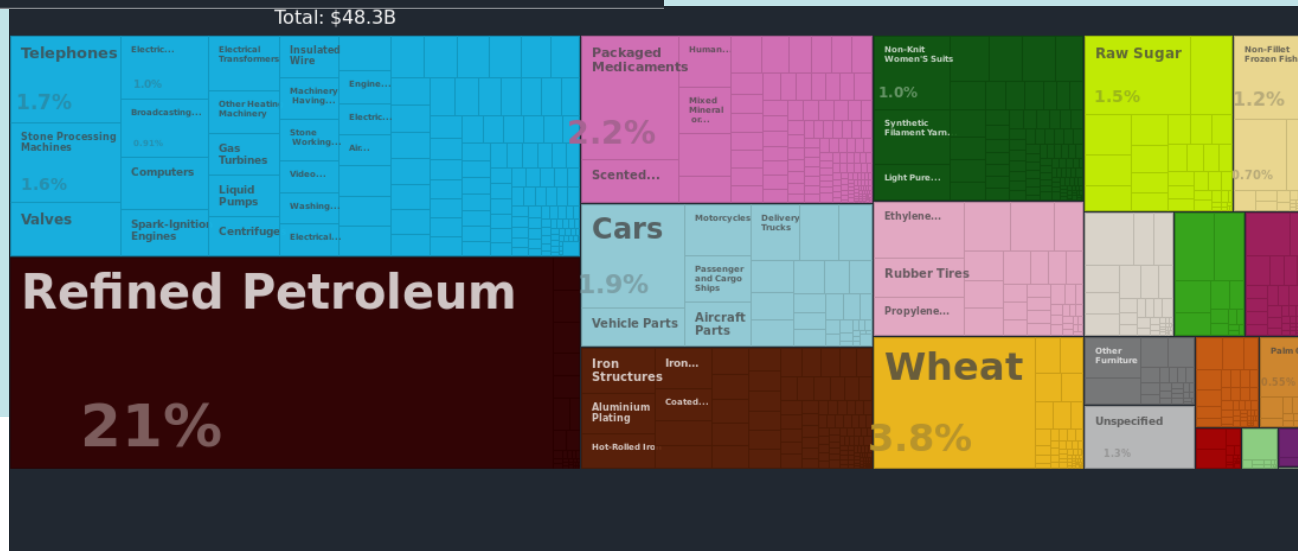




Nigeria : Imports structure 2016

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Economic potential: Côte d'Ivoire & Nigeria

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	COTE D'IVOIRE		NIGERIA	
	% of VA	% of employment	% of VA	% of employment
Agriculture	21.2	<u>48</u>	21.2	30
Industry	33.4	6	18.5	15
Manufacturing	15.2	-	8.8	-
Services	<u>45.3</u>	46	<u>60.4</u>	<u>55</u>

Source: Ichiko et al 2018, Innovation for development in West Africa, UNU-MERIT Policy brief

Science and Innovation potential: Côte d'Ivoire & Nigeria

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	COTE D'IVOIRE	NIGERIA
Tertiary education – gross enrolment ratio	9%	<i>na.</i>
Enrolment in technical & vocational education and training as % of the total enrolment in 2nd education	11%	<i>na.</i>
GERD/GDP	0.36%	0.22%
Number of scientific & technical journal articles (2016)	177	3821
Individuals using internet	26%	25%
Number of Digital Tech Hubs (2016 to 2018, Africa 442 hubs)	5 to 13	23 to 55
STI policy	None but adopted ECOPOST	STI policy 2012 & adopted ECOPOST

Source for stat: UIS stat, World Bank, UNU MERIT/National sources, GSMA

Science and Innovation potential: Côte d'Ivoire & Nigeria

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<i>Indicator</i> <i>World Bank Enterprise Survey</i>	Côte d'Ivoire (361 firms)	Nigeria (2676 firms)	Sub-Saharan Africa	<i>All Countries</i>
% of firms using technology licensed from foreign companies*	3.4	6.5	15.2	14.6
% of firms having their own Web site	18.1	22.3	30.5	44.1
% of firms using e-mail to interact with clients/suppliers	53.7	23.5	58.6	71.3
% of firms that introduced a new product/service	40.1	52.7	43.9	36.7
% of firms whose new product/service is also new to the main market	70.3	68.6	71.9	65.7
% of firms that introduced a process innovation	15.9	62.9	41.7	33.7
% of firms that spend on R&D	6.8	13.8	17.6	16.0

Concluding remarks: which evidence is needed to inform transformative innovation policies in Côte d'Ivoire and Nigeria?

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- **Industrial structure:**
 - Number of firms (and size) / start-ups companies by sector
 - VA and employment disaggregated data
- **Innovation surveys** (see ASTII initiative of African Union's NEPAD)
 - Country & states levels (Nigeria)
 - Country & sub-national levels (Côte d'Ivoire)
 - Innovation in modes/origin in small and micro-firms
 - Digital tech hubs monitoring (*GSMA data*)
 - Innovation modes/origin esp. in Informal sector (*South Africa, Rwanda*)/ Agriculture
- Distribution of existing **public innovation funds** by research field (and outcomes)
- Centres/Structures for **exploitation of research results** / technology commercialization

Concluding remarks: which evidence is needed to inform transformative innovation policies in Cote d'Ivoire and Nigeria?

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- **Human R&D capital**
 - Researchers
 - Technicians (and supporting staff)
- **Students/Graduates in** (by field)
 - State's universities and technical/vocational schools
 - Private sector/Companies' higher education & vocational schools
 - STEM graduates (engineering potential)
- **Scientific production** (total & by field)
 - International Journals (WoS, Scopus)
 - African and local Journals

THANK YOU FOR YOUR ATTENTION



Contact me at Mafini.dosso@ec.europa.eu

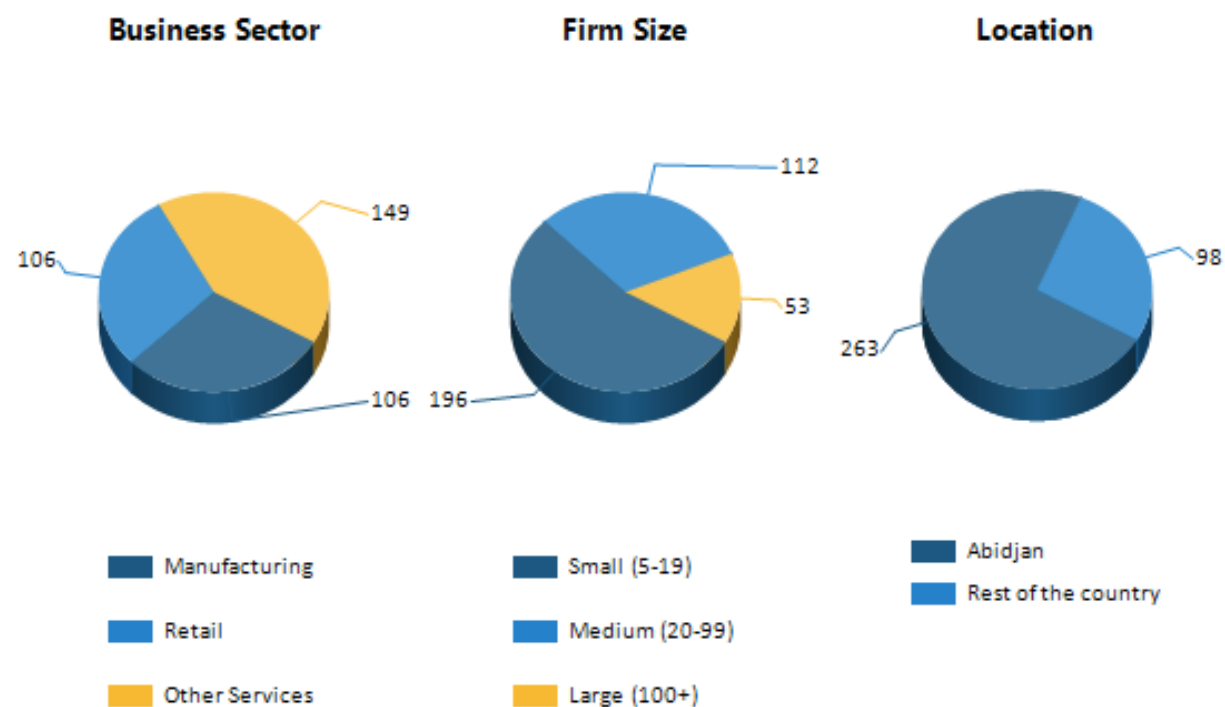
 **@MafiniDosso** (*twitter*)

 **Mafini Dosso** (*LinkedIn*)

Business owners and top managers in 361 firms were interviewed from July 2016 through February 2017.

NUMBER OF FIRMS
SURVEYED
361

Characteristics of Firms Surveyed



Business owners and top managers in 2,676 firms were interviewed from April 2014 through February 2015.

NUMBER OF FIRMS
SURVEYED
2,676

Characteristics of Firms Surveyed

