

# Human capital and institutional quality: catalysts for structural transformation acceleration in Sub-Saharan Africa

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**His publications and leadership in coordinating impactful studies underscore his role as a pivotal figure in addressing economic challenges and fostering development within and beyond Côte d'Ivoire.**





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Excmo. Sr. Dr. Alban Houré



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## ⊗ INTRODUCTORY REMARKS

Mr. President of the Royal European Academy of Doctors (RAED)

Mr. Vice-President,

Members of the Board of Governors,

Fellow Academicians,

Dear Sponsors,

Distinguished Authorities,

Dear Parents, colleagues, and friends, present in this room or online,

Ladies and Gentlemen, with all due protocol observed,

It is a great honor for me to speak today on this memorable day, to deliver my inaugural address on the theme: “Human capital and the quality of institutions: catalysts for the acceleration of structural transformation in Sub-Saharan Africa”. This, as a new honorary member of the Royal European Academy of Doctors (RAED), this prestigious institution that brings together Doctors in various disciplines, in various sciences.

I would like to express my gratitude to the academicians for the positive attention given to my candidacy during the election that took place on January 17, 2024.

Dear Academicians, Ladies and Gentlemen,

“Nobel Laureate Simon Kuznets, in his seminal work, emphasized the indispensable role of substantial changes across various sectors of economic activity for a country to achieve

sustained real per capita GDP growth. This transformation is not merely a desirable outcome but a fundamental necessity for the economic and social advancement of nations. The quest for sustainable economic growth and development has long been a central theme in the discourse on global economic strategies, particularly for Sub-Saharan African (SSA) nations.

Structural transformation refers to the dynamic process of re-allocating economic activity across the primary (agriculture), secondary (manufacturing), and tertiary (services) sectors. This process is synonymous with economic development, characterized by the movement of factors of production—labor, capital, and land—from activities of lower productivity to those of higher productivity, often necessitating shifts in location, organization, and technology. Historically, this evolution has propelled nations toward higher levels of industrialization and improved living standards.

In Sub-Saharan Africa, the urgency for structural transformation is underscored by the aspirations of its countries toward socio-economic emergence. These aspirations are articulated through visionary long-term and medium-term development plans that focus on structural economic transformation, enhancement of human capital, and the strengthening of governance frameworks. Countries such as Senegal, Côte d'Ivoire, Nigeria, Kenya, and Zambia have set forth ambitious agendas aimed at reconfiguring their economies from reliance on primary sector activities to more diversified, industrial, and service-oriented bases.

For instance, Senegal's vision for 2035 outlines a comprehensive strategy centered on economic transformation and growth, human capital development, and sustainable governance. Côte d'Ivoire, through its long-term Vision Prospective CI-2040,

aims to become an industrial powerhouse, showing a strong commitment to structural transformation as a lever for socio-economic development. Similar commitments are evident in Nigeria's Development Plan 2021-2025, Kenya's Vision 2030, and Zambia's Eighth National Development Plan 2022-2026, all emphasizing economic growth, structural transformation, and human capital development.

Despite these ambitious plans and the clear recognition of structural transformation's pivotal role, many SSA countries have faced challenges in realizing robust industrial sectors and achieving the desired pace of transformation. The region has witnessed a persistently high concentration of exports, indicative of limited economic diversification. Several factors have been identified as contributing to this scenario, including inadequate research and development, limited innovation, dependency on primary sectors, weak connectivity infrastructures, and vulnerability to external shocks such as fluctuating commodity prices and climatic variations.

According to the African Development Bank (2016)<sup>1</sup>, the African experience of structural change deviates significantly from the classical model observed in Asia and earlier in Europe. Instead of a straightforward transition from agriculture to manufacturing, labor in African countries often moves into informal services sectors, which are typically characterized by lower productivity. This pattern reflects a structural transformation process that diverges from the path that historically led to high growth and industrialization in other parts of the world.

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1 African Development Bank (2016): "African Development Report 2015 Growth, Poverty and Inequality Nexus: Overcoming Barriers to Sustainable Development", AfDB, ISBN 978-9938-882-38-4

Understanding the reasons behind the slow and non-classical nature of structural transformation in SSA is critical. The challenges are multifaceted, encompassing inadequate human capital development, governance shortfalls, and limited engagement in productive global value chains. These issues not only impede the pace of structural transformation but also highlight the necessity for targeted interventions to address the underlying causes of economic stagnation.

The objectives of this address are to unravel the complexities of structural transformation in SSA, examine the contributing factors to its slow pace, and explore viable strategies for accelerating the process.

I would like to emphasize the development of human capital in connection with the quality of institutions. The deficiencies in human capital, in light of our needs for transforming our economies and the challenges of governance, not only hinder the pace of structural transformation but also highlight the necessity for targeted interventions to address the underlying causes of economic stagnation.

In synthesizing these perspectives, the lecture aims to provide a comprehensive understanding of the trends, constraints, and prospects for structural transformation in Sub-Saharan Africa. By dissecting the challenges and highlighting successful strategies, the discussion will offer valuable insights for policymakers, development practitioners, and the academic community. The goal is to foster a dialogue that contributes to the formulation of effective policies and strategies, thereby paving the way for the realization of the economic and social aspirations of the region.

My address will revolve around four major points: (1) the theoretical and empirical framework of structural transformation as a development path, (2) the drivers of structural transformation in emerging economies, (3) Diagnosis of structural transformation in SSA, and (4) solutions to accelerate structural transformation in SSA.





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# ⊗ 1. THEORETICAL AND EMPIRICAL FOUNDATIONS OF THE INCIDENCE OF STRUCTURAL TRANSFORMATION ON ECONOMIC DEVELOPMENT

The literature review on the structural transformation of economies, considering theoretical foundations, empirical studies, indicators, and key drivers, offers a comprehensive view of how economies evolve from agrarian-based activities towards industrial and service-oriented sectors.

## 1.1. Theoretical foundations

Lewis' (1954) dualist model, refined by Fei and Ranis (1964), marks the specific inception of structural change theories. It underscores the distinction between the traditional, rural sector with negligible labor productivity and the modern industrial sector, advocating for the shift of labor to the latter for enhanced productivity and overall economic progress. The model posits that growth persists as labor transitions from subsistence to industry, maximizing the employment of low-productivity workers in more productive activities until the subsistence sector's labor is fully absorbed.

Rosenstein-Rodan (1943) and Murphy, Shleifer, and Vishny (1989) further contributed by discussing the role of scale economies and coordination challenges in industrialization.

Neoclassical economists built on classical theories (Smith, 1776) by incorporating the concepts of marginalism and market equilibrium, focused on how factors of production

(land, labor, and capital) are allocated in an economy and the role of prices in signaling and facilitating this allocation. In the context of structural transformation, neoclassical theories emphasize the importance of capital accumulation, labor mobility, and technological progress as drivers of the shift from agriculture to manufacturing and services. The neoclassical growth model, particularly the Solow-Swan model (1956), further elaborated on how investment in physical and human capital and technological innovation could lead to sustained economic growth.

Moving beyond the classical and neoclassical frameworks, modern economic theories have introduced more nuanced understandings of structural transformation. Theories of endogenous growth, such as those proposed by Romer (1986) and Lucas (1988), focus on the role of technological innovation and knowledge spillovers in driving economic growth. These theories argue that economic policies and institutions can significantly influence the rate of technological innovation and, consequently, the pace and nature of structural transformation.

New structural economics, as outlined by Yifu Lin in 2011, further develops this concept by integrating insights from neoclassical economics with a focus on the role of institutions and policies in shaping the economic structure. This approach emphasizes that different stages of development require different sectors to lead government growth, and that effective policies can help in identifying and supporting these sectors, facilitating the transition from agriculture to industry and services. For Herrendorf et al. (2013), considering an economy's sectoral composition is critical to understanding a number of economic and labor market outcomes, including income convergence, productivity and wage inequality.

According to Gries and Naudé (2008), entrepreneurship is pivotal in introducing new products and processes, entering new markets, and driving the reallocation of resources towards more productive uses. Entrepreneurs not only exploit existing opportunities but also create new ones, fostering innovation and technological progress. This dynamic process contributes to structural transformation by diversifying the economic base, enhancing productivity, and enabling the shift towards higher-value-added activities in manufacturing and services (modern sectors).

Another significant contribution comes from the Asian Development Review, which revisits the debate on structural transformation within the neoclassical economic framework. Since the 2000s, the emergence of multi-sector growth models has aligned more closely with the empirical realities of structural transformation. These models, developed by scholars like Ngai and Pissarides, Duarte and Restuccia, and Herrendorf, Rogerson, and Valentinyi, propose two main explanations for structural transformation: technological advancements leading to differential sectoral productivity growth and utility-based shifts driven by varying income elasticities across different goods. The Duarte and Restuccia (2010) model, in particular, highlights the role of sector-specific technology and the allocation of labor across agriculture, manufacturing, and services, providing a framework for analyzing the economic forces behind labor reallocation and the subsequent paths of structural transformation.

## 1.2. Empirical foundations

The empirical foundations of structural transformation highlight its significant implications for economic and social well-being. While structural transformation can drive econom-

ic growth and improve employment opportunities, its effects on income distribution and inequality present challenges that require careful policy consideration.

Kuznets (1971) established a connection between productivity growth and shifts in economic production structures. Building on this, McMillan and Rodrik (2011) pinpointed the pace of this change as crucial for development success, noting that it can spur growth even without intra-sector productivity improvements.

Herrendorf, Rogerson, and Valentinyi (2014) analyze the sectoral shifts in labor and output across different countries, highlighting the universal pattern of movement towards service sectors as economies develop. Diao, McMillan, and Rodrik (2017) provide evidence on the heterogeneity of structural transformation processes across countries, emphasizing the role of export-led manufacturing in driving productivity growth in East Asia, a pathway less pronounced in Sub-Saharan Africa.

Rodrik (2013)<sup>2</sup> observes that modern, organized manufacturing industries uniquely achieve unconditional convergence, reaching the global productivity frontier irrespective of geographical, institutional, or policy-related challenges. Although optimal conditions can accelerate convergence, the remarkable aspect is its occurrence within certain economic sectors despite adverse fundamentals.

The relationship between structural transformation and income distribution is complex and has been the subject of extensive empirical investigation. Dastidar (2012) conducted an empir-

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<sup>2</sup> Rodrik, D. (2013). Unconditional Convergence in Manufacturing. *Quarterly Journal of Economics*, 128 (1).

ical analysis based on seventy-eight developing and transition economies and developed countries. He highlights how structural transformation can lead to varying impacts on income inequality, depending on the stage of development and the nature of the sectoral shift. For instance, the initial shift from agriculture to manufacturing may reduce income inequality by creating better-paying jobs for unskilled workers. However, as economies mature and the service sector becomes dominant, there's a risk of increasing inequality if high-paying jobs in services are accessible only to those with higher education and skills. This bifurcation can exacerbate income disparities, underscoring the need for inclusive policies that broaden access to education and training.

Exploring the recent literature on structural transformation reveals a dynamic field integrating macro-level analyses of economic growth with detailed micro-level data. A key work by Douglas Gollin and Joseph P. Kaboski, published in November 2023, broadens the traditional focus on industrialization to include a wider range of transformations. These include shifts from rural to urban settings, from home to market economies, from informal to formal sectors, and from self-employment to wage work. By leveraging new data sources, this literature aims to uncover the intricate dynamics behind market failures, policy distortions, and barriers to growth, offering a deeper understanding of structural transformation beyond mere industrialization.

Structural transformation also leads to increased economic complexity, which is closely linked to innovation and higher growth rates. Economic complexity reflects the diversity and sophistication of an economy's productive capabilities and its ability to produce a wide array of complex products. This evolution is associated with greater knowledge diffu-

sion, innovation, and technological advancement, fostering sustained economic growth. Empirical evidence suggests that economies that manage to diversify and upgrade their industrial base tend to experience faster growth, as they are better positioned to adapt to changes in global demand and technological progress.

### 1.3. Measuring structural transformation of an economy

Structural transformation involves tracking changes in the economy's composition and performance over time. Several indicators are commonly used to assess the extent and nature of structural transformation, reflecting shifts in sectoral composition, productivity, employment, and economic diversification. Here are key indicators that researchers and policymakers use to measure structural transformation:

#### *Sectoral Composition of GDP*

*Share of GDP by Sector:* This indicator measures the contribution of different sectors (agriculture, industry, services) to the Gross Domestic Product (GDP). A shift in GDP composition towards industry and services from agriculture is often considered a sign of structural transformation.

*Value Added per Sector:* Analyzing the value added by different sectors provides insights into their productivity and efficiency, offering a nuanced view of economic evolution.

#### *Labor Market Dynamics*

*Employment Shares by Sector:* This measures the distribution of employment across sectors. Structural transformation is typically accompanied by a migration of labor from agriculture to industry and services.

*Labor Productivity Growth:* The increase in output per worker over time, especially significant shifts in productivity across sectors, means structural transformation through technological advancement and better resource allocation.

*Industrial Diversification and Sophistication*

*Economic Complexity Index (ECI):* The ECI measures the diversity and sophistication of a country's export basket, reflecting its ability to produce and export complex goods, which is indicative of advanced productive capabilities and structural transformation.

*Herfindahl-Hirschman Index (HHI) for Industry:* This index measures the concentration of industry output or employment, with lower values indicating greater diversification across industries.

*Technology and Innovation Indicators*

*Research and Development (R&D) Expenditure:* Higher R&D spending as a percentage of GDP suggests a focus on innovation, which is crucial for developing new, productive activities.

*Patent Applications:* The number of patent applications is a direct indicator of innovative activity within an economy, highlighting sectors that are evolving and contributing to structural changes.

*Capital Formation and Investment*

*Gross Capital Formation:* The share of investments in physical assets as a percentage of GDP indicates how much an economy is investing in its future productive capacity, a critical component of structural transformation.

*Foreign Direct Investment (FDI) Inflows:* FDI can play a significant role in transferring technology, enhancing skills, and restructuring industries towards higher value-added activities.

*Income and Consumption Patterns*

*Income Elasticity of Demand:* Changes in consumption patterns, with higher demand for services and manufactured goods as income rises, can reflect shifts in economic structure.

*Share of Middle-Class Consumption:* The expansion of the middle class and its consumption patterns often accompany structural transformation, indicating a shift towards more diverse and sophisticated economic activities.

*Institutional and Regulatory Indicators*

*Ease of Doing Business Index:* Improvements in this index can indicate a conducive environment for entrepreneurship and innovation, facilitating structural transformation.

*Global Competitiveness Index:* This index measures national competitiveness, defined as the set of institutions, policies, and factors that determine the level of productivity of a country, reflecting the capacity for structural transformation.

These indicators provide a comprehensive framework to assess structural transformation, capturing shifts in economic activity, productivity, and technological advancement. By monitoring these indicators, policymakers and researchers can identify patterns of economic change, evaluate the effectiveness of policies aimed at fostering structural transformation, and address the challenges associated with transitioning to more advanced stages of economic development.



#### 1.4. Drivers of structural transformation

Structural transformation in economies, particularly in the context of developing countries, is driven by several key factors, as identified through extensive literature review (academists and development institutions). These drivers encompass a broad range of economic, social, and political elements that work together to shift economies from agrarian bases to industrial and service-oriented structures. Ten (10) key drivers are identified.

*Human Capital Development:* investment in education and health is paramount. Skilled labor forces are essential for technological adoption, innovation, and productivity increases, which are critical for industrial and service sector growth.

*Technological Advancement:* adoption and development of new technologies enhance productivity, especially in manufacturing and high-value service sectors, facilitating the move away from traditional agriculture.

*Quality of Institutions:* effective governance, strong legal systems, and transparent institutions are crucial for creating conducive environments for business, investments, and innovation, encouraging economic diversification.

*Market Access and Trade Liberalization:* expanding access to international markets through trade agreements can spur competition and efficiency, enabling countries to specialize in sectors with comparative advantages.

*Infrastructure Development:* investments in physical infrastructure (like transportation and energy) and digital connectivity

are fundamental to reducing transaction costs, accessing markets, and supporting industrial activities.

*Financial Sector Development*: a robust financial sector supports structural transformation by providing capital for investment in new industries, technologies, and entrepreneurship.

*Macro-economic Stability*: ensuring stability in prices, exchange rates, and fiscal policies is vital for creating a predictable economic environment that encourages investment and long-term planning.

*Labor Market Flexibility*: the ability of labor markets to adapt to changing economic conditions and to the demands of emerging sectors is crucial for facilitating structural shifts.

*Environmental Sustainability*: incorporating sustainable practices and green technologies ensures that structural transformation is resilient and adaptable to global environmental challenges.

*Social Policies*: Policies aimed at reducing inequality and ensuring equitable access to opportunities can support a more inclusive structural transformation process.

These drivers highlight the multifaceted approach required to stimulate and sustain structural transformation. The relative importance of each driver may vary by country, depending on specific socioeconomic contexts and development stages. In line with these key drivers, what are the lessons derived from emerging countries.



## ❖ 2. LESSONS FROM CASE STUDIES

This section is based on the results of two (2) studies conducted in 2015 by CAPEC for UNDP in Côte d’Ivoire, which focused on: “Structural Transformations and Sectoral Development in Côte d’Ivoire” and “Analysis of the conditions for the emergence of African countries: case study of Côte d’Ivoire: emergence and sustainable human development”. What are the major lessons that can be drawn from the development trajectory of emerging countries?

### **2.1. Policies in favor of offering quality education and health care**

In an analysis of the “catch up” or convergence processes of developed countries by developing ones, Nelson and Phelps (1966) assert that the rate at which the gap between the technological frontier (represented by Northern countries) and the current level of technology narrows depends on the level of human capital. An extension of this model by Benhabib and Spiegel (2013) shows that human capital, particularly the level of education in a country, plays a positive role in determining the growth rates of total factor productivity, through its influence on the catch-up rate.

According to Yao (2014): “countries endowed with significant human resources also enjoy a relatively high level of well-being and growth”. In contrast, countries rich in natural resources but without a level of human resources do not experience development. Thus, development is linked to human resources.” Therefore, public sector intervention is necessary to ensure

an offer capable of stimulating and meeting the demand for components of human capital, as their low consumption is detrimental to any society. Barro (1990) supports this by arguing that public spending, especially on education, research and development, and infrastructure, are significant sources of growth.

Emerging countries, aware of the importance of human development, specifically education and health, in the development process, will prioritize these two factors.

Deng Xiaoping (leader of the People's Republic of China from 1978 to 1992)'s vision for China's education, emphasizing compulsory schooling, work initiation, and equity, has fundamentally transformed the educational landscape. By prioritizing both popularization to ensure equal access and enhancement for excellence, Deng set the foundation for a more inclusive and high-quality education system. This approach led to significant reforms, reshaping China's educational system to better serve its economic and social objectives. The reforms have not only expanded access to education across diverse social strata but also elevated the standard of education, contributing to the country's rapid development and modernization. The profound changes resulting from these reforms underscore the importance of a balanced focus on accessibility and quality in education.

Malaysia's focus on expanding education quality, vocational training, and Research and Development epitomizes a successful shift towards a knowledge-based economy (K-economy) starting in the mid-1990s. This strategic emphasis has been pivotal in sustaining rapid economic growth and boosting international competitiveness. By investing in the education sector and fostering a culture of innovation and skill devel-

opment, Malaysia has laid a robust foundation for a resilient economy. This approach has not only improved the workforce's capabilities but also attracted foreign investment and stimulated domestic innovation.

In support of universal education, Malaysia has implemented programs aimed at addressing challenges in teaching quality and efficiency, program relevance, and the promotion of pre-school education. There is also a focus on teacher recruitment to enhance supervision. In 2000, 83% of primary school students benefited from a textbook loan scheme. The student-teacher ratio decreased from an average of 30 students per teacher in 1985 to 19 students per teacher in 2000.

For decades, the primary school enrollment rate has been nearly universal, and secondary enrollments have increased rapidly. The share of the workforce with secondary education rose from 37% in 1982 to 58% in 2012. Gender and ethnic disparities in primary and lower secondary enrollment rates were eliminated in the mid-1980s. Rapid expansion and early investments in education have played a significant role in Malaysia's impressive growth. Human capital contributed to one-third of GDP growth between 1971 and 1997 (Ghani and Suri, 1999).

Malaysia's journey highlights the transformative power of education and R&D in achieving sustainable development and a competitive edge in the global market. Vocational training in Brazil is almost exclusively provided at universities. There are no *grandes écoles* or engineering schools. Therefore, the government considers it fundamental to develop quality vocational education to address economic and social problems (integration of children from vulnerable households, increasing the portion of the population able to meet modernity, ensuring a more humane and equitable development). The National

Workforce Qualification Program (PQN) was thus launched in 2003. It is funded by the unemployment insurance fund and includes both a training component and a certification component. It is particularly focused on vulnerable groups: unemployed, low-skilled workers, and young people reaching the end of their schooling. This program allowed for the training of about 140,000 people in 2004 in centers created for this purpose.

The majority of skilled workers and employees are trained through the National Service for Industrial Learning and National Service for Commercial Learning. The Federal Centers for Technological Education (CEFET) and Federal Institutes of Education (IFET) train technicians, while engineers are trained at universities. Also, through the employment assistance program aimed at young people aged 16-24 who are low-skilled and from disadvantaged backgrounds, the government also provides a subsidy equivalent to one year of minimum wage for each position filled through a placement agency.

By focusing on quality vocational training, Brazil aims to match the skills of its population with the demands of the modern economy, thereby reducing unemployment rates and improving living standards. The PQN initiative is a testament to Brazil's commitment to leveraging education as a catalyst for sustainable development and social progress. Since 2009, China's substantial investment in health sector reform, with an initial plan of 850 billion yuan, escalating to an additional 280 billion yuan due to higher than expected expenditures, underscores a pivotal shift towards improving healthcare quality and accessibility. This financial commitment reflects a strategic emphasis on enhancing the health infrastructure and focusing on proximity care, ensuring that healthcare services are not only of high quality but also readily accessible to the population.

This approach aims to address both immediate and long-term health needs, contributing to the overall well-being and productivity of the society. Through these reforms, China demonstrates a comprehensive understanding of the foundational role of healthcare in sustainable development and social stability.

## **2.2. Exploiting comparative advantages to develop the industrial sector**

Brazil and Malaysia started from coffee and rubber cultivation respectively to build an emerging economy focused on promoting agricultural and agri-food industry products. China has taken advantage of the gradual liberalization of its economy to increase the value added of its range of industrial exports.

## **2.3. Sanitize the institutional framework and conduct an incentive regulation of markets**

Historically, Brazil has based its economic development on coffee cultivation, which was by far its main export. Although the country remains the world's leading coffee producer today, this crop is no longer as crucial for Brazilian growth, having been largely overtaken by soy, sugar, ethanol, and meat production. The structural transformation at the root of Brazil's emergence is focused on promoting exports of agricultural products and the agri-food industry, inclusive growth, and the development of centers of excellence in various sectors of activity. This strategy leverages the strengths of the Brazilian economy at all levels, including the population and natural resources.

Brazil has undergone a profound transformation in its trade policy over the last decade, integrating into international trade through trade liberalization, its active participation in Mercosur as one of its founding members, and its membership in the

World Trade Organization (WTO) from its inception. As a result, Brazil has reduced tariff rates, deregulated markets, and eliminated export subsidies.

A set of measures known as the “Industrial, Technological, and Foreign Trade Policy,” launched in 2003 and identifying priority sectors (semiconductors, software, pharmaceuticals, and capital goods), has stimulated innovation by particularly supporting interactions between academic research and productive sectors. To support national development, the Ministry of Science and Technology in Brasilia launched the Science, Technology, and Innovations Plan 2007-2010 in 2007, which includes four major strategic priorities divided into 21 specific action lines.

Although this Plan shares many similarities with national strategies for science, technology, and innovation used by developed countries (the United States, Germany, Japan, France, etc.) or emerging ones (India, China), some differences are notable. Indeed, public enterprises acting in strategic sectors play the role of leaders in technological innovation and, consequently, benefit from state financial support; the policy orientation towards export substitution rather than import substitution enhances the competitiveness of strategic sectors through foreign competition and facilitates the diversification of the economy.

Over the years, Brazil has become the world’s leading exporter of soy, sugar, ethanol, beef, chicken, tobacco, and orange juice. According to the OECD, the overall productivity of factors of production increased by 40% between 1990 and 2004, with spectacular gains in sectors like cotton (200%), corn (80%), etc. Brazil is now the eight-largest automobile producer in the world (2023) and the first in Latin America.



India is characterized by very gradual changes in its structures and economic strategy. Over the past thirty years, it has significantly increased its growth rate and investment effort. The policy of economic and trade liberalization has led to an acceleration of its growth. This has been accompanied by slow but tangible structural changes. Traditional sectors remain dominant. In 2021, 43.96 percent of the workforce in India were employed in agriculture<sup>3</sup>, while the other half was almost evenly distributed among the two other sectors, industry and services. While the share of Indians working in agriculture is declining, it is still the main sector of employment. Despite the growth of the modern manufacturing sector, industry does not constitute the main driving force of Indian economic growth. Instead, it is the services sector, particularly the “modern” services, that have seen strong progress in recent decades: business services, communication services, banking. In the 2000s, the country experienced sustained growth, with record rates in 2004 (8.4%), 2007 (9.6%), and 2008 (8.7%).

In the 1980s, India embarked on the path of reforms and gradually eased the controls on economic activity (distribution, industrial production, investment, foreign trade). Cautious and limited, these reforms include the relaxation of the licensing system regulating industrial activity, measures facilitating the importation of industrial equipment and intermediate goods for export industries, and a reduction in certain tax rates. They give a new impetus to growth, which accelerates and settles at below 6% per year from 1981 to 2003. While the investment rate only increases slightly, its structure changes in favor of modernization investments (in machinery and equipment) and the private sector. The efficiency of capital improves (Chauvin and Lemoine, 2005).

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3 India - Distribution of the workforce across economic sectors 2021 | Statista

Services have been the main engine of growth for the Indian economy since the 1980s. The decline in the share of agriculture in GDP since 1990 has been fully compensated by the rise in the share of services. While India's remarkable performance in exporting business services (services related to information technology and telecommunications) is often highlighted, it is important to emphasize that across the entire economy, services hold an exceptionally high share (54.5% in 2009; 54.4% in 2010, and 55.7% in 2011) and constitute the most dynamic sector.

Although services are the strategic sector, structural transformation remains dependent on innovation and the policy of amplifying external effects and complementarities between different sectors of the economy. Since their trade opening in the 1980s, an acceleration has occurred to catch up, creating competition, emulation, imports, and exchanges. Indian industrialists then adopted new innovation strategies based on two axes: reducing costs on the one hand and seeking quality on the other.

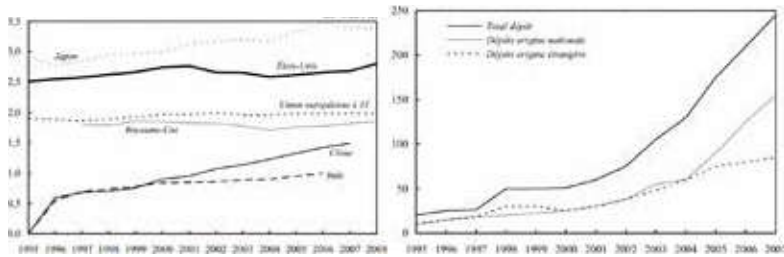
The rise of China over the last forty years, since the beginning of the reform era in 1979, is certainly extraordinary in its magnitude and scale. The pragmatic policy of opening up has led to the gradual dismantling of the strict planned economy regime and the implementation of reforms aimed at reducing trade barriers, culminating in its entry into the WTO in 2002. Accounting for 1% of the global economy in 1976, China accounted for 16.9% of global GDP in 2023, while it only represented 4% of the global GDP in 2001. However, this Chinese share is in decline: it was 18.3% in 2021.

China's strategy for structural transformation is closely linked to its highly extroverted development policy. It involves pro-

moting technological change in the productive sectors of major exports, attracting FDI, and ensuring regional rebalancing. Three major phases characterize the process of structural change in China: the first occurs under the impetus of China's entry into the WTO, the second as part of the technological policy of the Chinese Ministry of Science and Technology (MOST), and the third in response to the international financial crisis of 2008.

In 1956, under the impetus of the State Commission for Science and Technology, China established a standardization office with the mission to "develop a system of national standards to serve the country's industrial sector." Standardization systems were then implemented in specialized ministries for coal, oil, machinery, metallurgy, chemistry. The Cultural Revolution would stagnate the first process until Deng Xiaoping came to power. In the 1990s, a set of reforms (market regulation, mandatory or voluntary standards) enabled China to join the WTO with the obligation to adhere to the rules of the Agreement on Technical Barriers to Trade, and to accept the code of good practice for standardization, as of November 2003.

The Chinese authorities initially defined ten sectors of innovation: automotive, steel, textiles, equipment manufacturing, shipbuilding, electronic information, chemical and petroleum industries, light industry, non-ferrous metals, and logistics. To increase productivity in these sectors, the government supports innovation through public research and development spending and through incentive mechanisms for investing in innovative projects. Graph 1 shows the sustained growth in research and development expenditure and the dramatic increase in the number of patents filed over the period 1995-2007.

**Graph 1. Evolution of investments in R&D and patent filings**

Source : OCDE, 2010.

According to an estimate by the World Bank (1998), the contribution of the capital factor to Chinese growth since the reform is 37%, that of the quantity of the labor factor is 17%, that of structural transformation (transfer of labor from the rural economy to the industrial sector) is 16%; and 30% of the growth is due to the overall productivity of factors related to technical or organizational progress.

The drive for innovation in strategic sectors has allowed the industrial sector to play a catalytic role in the process of structural transformation through the following elements:

- The high import content of exports, with imports potentially consisting of sophisticated products;
- The significant presence of foreign enterprises in exports (60%);
- The role of the Chinese government in accelerating the capabilities of domestic companies in advanced sectors (public financing, tax-exempt high-tech parks, research efforts, etc.), which explains the lack of specialization according to usual comparative advantages in China;
- The positive role of migration from the countryside to cities on growth (Fogel, 2006 and 2010, and Chen et al., 2010);

- A rapid increase in human capital in China, due to educational efforts. The work of Li, Fraumeni, Liu, and Wang (2009) concludes to a progression of human capital by 6.2% per year between 1985 and 2007 (3.9% per year over the period 1985-1994 and 7.5% per year over the period 1995-2007).
- The diffusion of innovation from foreign firms to Chinese capital companies. It is well demonstrated that the R&D efforts of foreign firms setting up in China lead to an increase in the entry of Chinese companies into this industry and an increase in R&D expenditures of these domestic companies (Swenson, 2007, and Cai, Todo, and Zhou, 2007). The presence of foreign firms in an industry also leads to a reduction in the pollution content of this industry's production (Dean and Lovely, 2008).

#### **2.4. A strong partnership between the State, the private sector, R&D institutions, and civil society**

The Russian economy has undergone significant structural changes since the collapse of the Soviet Union, transitioning from a planned, centralized economy to a market economy, globally integrated. It experienced an average growth of 7% in the 2000s decade and nearly doubled real disposable incomes. Agriculture in Russia accounts for only 3.9% of the GDP, industry 36.1%, and services 60% in 2012. The industrial sector employs 27.8% of the workforce and continues to play a crucial role in the structural transformation process.

This success can be attributed to the implementation of major economic reforms aimed at establishing a competitive market economy integrated into the global economy, and by the dynamism of the Special Economic Zones (SEZs) created to facilitate the transition from a resource export economy to a more innovative and diversified production system.

In 2011, Russia had two industrial production SEZs, four technological innovation SEZs, one port SEZ, and seven tourist and recreational SEZs. Their advantages focus on more efficient administration, tax benefits, easy customs clearance, available quality infrastructure, and reduced labor costs. The impact of the SEZs on structural transformation is indeed notable, but their success in international trade seems far inferior to that experienced by Chinese SEZs.

Overall, Russia's strategy for structural transformation has benefited from human skills (quality and diverse human capital), essential for the use, adaptation, and maintenance of new technologies incorporated into physical capital. The significance of natural resources has been a considerable asset since the 2000s, where the revenues from their exports have been used to finance innovation for economic and social development.

The creation and development of Special Economic Zones in Russia illustrate how the State, private, and civil society agree to define priority sectors and investments. In India, the partnership agreement between the government and the Confederation of Indian Industry has built the largest global innovation network.

## **2.5. Develop Territorial Innovation Systems (innovation clusters) based on regional advantages and assets**

In Brazil, the process of structural transformation and economic development demonstrates a unique pattern, often initiating from its excellence poles or economic hubs such as São Paulo and Porto Real. These regions act as the epicenters of economic activity, innovation, and technological advancement, playing a pivotal role in setting the pace for the country's overall economic trajectory. The significance of these excellence poles

lies in their ability to foster an environment conducive to economic growth, innovation, and competitiveness on a global scale. This initial spark of structural change is not isolated; it is strategically disseminated throughout the rest of the economy and the sub-regions through proactive economic integration policies. These policies are designed to ensure that the benefits of innovation and growth are not confined to the excellence poles but are spread across the entire nation, fostering inclusive economic development.

Parallely, the structuring of Science, Technology, and Innovation (STI) systems in India provides a compelling case of how a framework for innovation can be effectively implemented in a context characterized by strong decentralization and a focus on promoting entrepreneurship. India's approach to building its STI systems emphasizes the decentralization of innovation processes, allowing for a more localized and responsive innovation ecosystem. This system encourages the proliferation of entrepreneurship and startups across various sectors, leveraging India's diverse regional strengths and capabilities. The decentralized model of innovation in India ensures that different regions can develop specialized niches and competencies, contributing to a more balanced and inclusive national economic development. This framework not only incentivizes innovation but also facilitates the integration of various stakeholders, including government, academia, and the private sector, in a cohesive ecosystem that supports sustained economic growth and competitiveness.

Together, the experiences of Brazil and India illustrate the importance of strategic economic policies and frameworks in fostering structural change and innovation. While Brazil showcases the role of excellence poles and economic integration policies in disseminating growth, India's decentralized STI

systems highlight the power of entrepreneurship and regional specialization in driving innovation. Both models provide valuable insights into the critical role of decentralized innovation policies in shaping the future of emerging economies.

## **2.6. Ensure coherence and coordination of national and sectoral development plans**

Ensuring coherence and coordination between national and sectoral development plans is a critical aspect of successful economic policy and strategic governance. This approach has been effectively adopted in various countries, each tailoring the strategy to their unique economic landscapes and developmental needs.

In India, the Planning Commission (now replaced by the NITI Aayog) played a pivotal role in providing the government with a long-term strategic vision. It was instrumental in deciding the country's priorities and allocating the necessary budget to meet these goals. This centralized planning mechanism allowed India to pursue ambitious development objectives, emphasizing sectors such as agriculture, industry, and services with tailored plans that aligned with the national agenda. The approach facilitated a structured economic transformation, guiding India on a path towards becoming one of the world's fastest-growing economies. For instance, during the Five-Year Plans, India successfully achieved various milestones in industrialization and technology adoption, demonstrating the effectiveness of coherent and coordinated planning.

Malaysia's experience with its policy of emergence, particularly through the implementation of the New Economic Policy (NEP) and the subsequent Vision 2020, highlights the impor-



tance of adaptable plans with clear, achievable objectives. Malaysia's strategic development initiatives focused on eradicating poverty and re-structuring society to eliminate the identification of economic function with ethnicity. This necessitated flexible planning to anticipate and adjust to changing circumstances in the transformation process, showcasing a dynamic approach to development planning. The NEP, for example, significantly reduced poverty levels from 52.4% in 1970 to less than 5% by 2015, while also improving income equality, illustrating the impact of well-coordinated sectoral and national development plans.

China's remarkable economic transformation under the leadership of Deng Xiaoping further underscores the importance of coherence in development planning. Deng's policies of "Reform and Opening Up" introduced in the late 1970s, led China to move away from a centrally planned economy towards a more market-oriented one. This shift required immense coordination across various sectors, ensuring that the new market mechanisms aligned with the broader goals of national development. Under his guidance, China experienced unprecedented growth rates and emerged as a major global economic power. The success of China's model was largely due to the strategic coherence in its economic policies and the effective coordination between different sectors of the economy.

These examples from India, Malaysia, and China demonstrate that the success of national and sectoral development plans hinges on their coherence and the ability to coordinate effectively. Adaptable planning, clear objectives, and the capacity to anticipate and respond to the dynamic nature of economic transformation are key elements that contribute to sustainable development and economic prosperity.

## 2.7. Ensure an overall good governance with a modernized public sector

According to Kauffman et al. (2003), it is not the political regime itself (whether democratic or authoritarian) that facilitates economic transition and promotes growth; rather, it is the quality, specificity, and interactions between the state and private actors that do so, according to Wang (2009).

For Ahrens and Mengerlinghaus (2006), a pro-market governance structure (PMGS), based on the politico-economic development constraints of a given country, displays a high degree of accountability, ensures participation, predictability, and transparency. Such a structure results from interdependent and mutually reinforcing institutional and organizational arrangements. They identify four pillars of governance that promote market efficiency:

- i. Building a strong state: the state must be strong enough to implement its policies, protect the rights of economic actors in order to prevent the state from being captured by special interests;
- ii. Limiting the role of the state: to limit the inherent risk of a too-strong state (e.g., violation of citizens' rights), the state must be limited enough to prevent predatory behavior by politicians and senior administration officials.
- iii. Strengthening public sector capacities: capacity strengthening includes all activities that support the accountability, predictability, and transparency of the public sector. Capacity strengthening is essential for the effectiveness and efficiency of government activity and includes institutional reforms, strengthening organizations, and developing human resources.

- iv. Creating credible economic institutions: economic institutions determine incentives for the implementation of economic activities. They facilitate market functioning and promote economic growth. Two approaches emerge in the construction of this type of institution: focusing on best practices in other countries or appropriating local knowledge to gradually forge its institutions. While the first approach may fail due to differences in social norms and beliefs, the second has the merit of taking into account the specific needs of the country and thus integrating the persistence of informal institutions (Roland, 2004 and Kingston and Caballero, 2006).

Kingston and Caballero (2006) identify two major phases in the transformation of governance structure in China. The first phase (1978-1993) is characterized by gradual reforms aimed at improving the efficiency of the economy. As for the second phase, it was initiated in September 2003 by the decision of the 14th Congress of the Communist Party to transform the Chinese economy into a socialist market economy. The goal was to create market institutions and establish rules that favor the regulation of the economy through market forces.

The main features of China's governance mode are summarized as follows:

- o *A strong Chinese state*: Chinese politics heavily depends on the character of the leader and the political program of the leader of the Chinese Communist Party (CCP).
- o *A limited Chinese state*: - A horizontal separation of powers and an internal limitation within the CCP: according to the Leninist model that governs the Chinese political model, the existence of de facto power is limited internal-

ly and among the different organs of the party due to the two principles of this political system (democratic centralism and collective leadership). - A vertical separation of powers (decentralization): to create a counterbalance at the central level, the power of local authorities has been increased. The gradual promotion of the rule of law: after Mao's regime, the rule of law gradually strengthened with a formal inclusion in the 1982 constitution. The rule of law was reinforced with China's accession to the WTO in 2001, which, due to the commitment to international institutions, standards, and laws, limits the powers of the CCP.

- o *An administration with enhanced capabilities*: Even though the close connection between the cadres and the CCP somewhat dilutes their credibility to follow the rules, ensure effectiveness, and reduce corruption, the Chinese public administration has made significant progress towards a modern and efficient bureaucracy (reduction of positions, recruitment based on competition, promotion by merit).
- o *Strong economic institutions*: Throughout the transition process, China has pragmatically and gradually initiated a series of reforms that have favored its economic transformation. Protection of property rights. Competition policy: this gradual policy that began in the early 1980s consisted of a reduction in the state's control of the industrial sector, a reduction in tariffs (from 50% in 1980 to 15% in 2000), price liberalization.
- o *Marked monetary stability, a strong voluntary budget constraint, and the conduct of a prudent economic policy*, all reinforce the other reforms.

- o *A state with a high development consciousness (developmentalist):* China has introduced institutions that align the personal interest of the authorities and the interests of society. These institutions did not follow a traditional pre-determined framework but rather relied on pragmatism.

Comparing the Chinese, Korean, and Japanese states, Yao (2014) shows that the Chinese State is a state that facilitates economic development. Three traits characterize such a state: ***investment in the development of human and technological capabilities, gradualism, and government interventionism.*** These traits show that the Chinese State has conscientiously taken measures to promote economic growth and structural transformation.

Through a review of theoretical and empirical literature and by analyzing stylized facts in emerging countries, I could summarize the essential factors, the drivers of structural transformation, into two major points: the development of human capital aligned with priorities, and credible, high-quality institutions that preserve stability and facilitate effective and efficient interactions among actors in various economic markets. What are the efforts and shortcomings of Sub-Saharan African countries on their paths toward structural transformation?





### ❧ 3. STRUCTURAL TRANSFORMATION OF SUB-SAHARAN AFRICAN ECONOMIES: REASONS OF THE SLOW PROGRESS

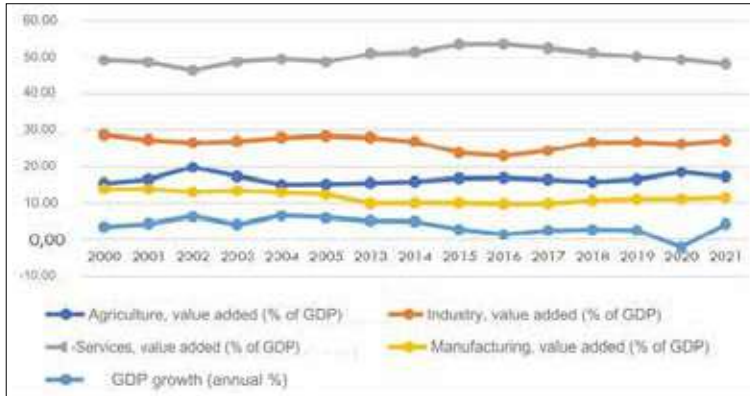
Despite the Sub-Saharan Africa's (SSA) region's vast potential and abundant resources, progress has been notably slow and uneven across different countries. This section aims to delve into the intricacies of this transformation, examining the factors that have contributed to the sluggish pace of economic evolution. Through this analysis, a clearer understanding of the mechanisms driving or hindering progress in the region's economies will emerge, offering insights into potential pathways toward accelerated development.

#### 3.1. Global situation

The evolution of the structural transformation of Sub-Saharan African economies is marked by cautious advancement, revealing persistent challenges encountered in this process. During the period from 1995 to 2018, modest progress in structural transformation was observed:

- The share of the primary sector in GDP decreased from 39.86% to 31.95%, indicating a transition towards more diversified sectors.
- The secondary and tertiary sectors progressed from 23.8% to 26.28% and from 36.34% to 41.77% respectively, signaling relative growth in manufacturing and services (Avom & Nguekeng, 2020).

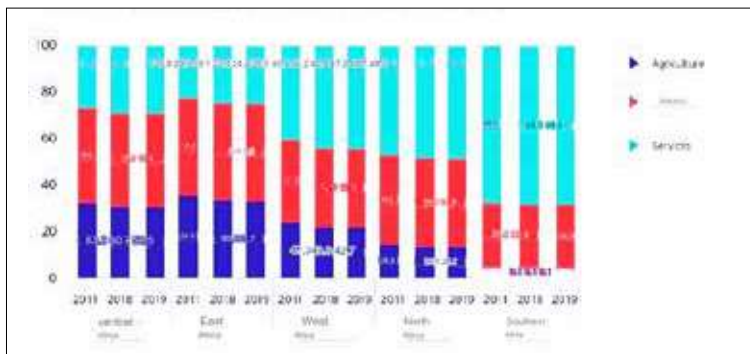
**Graph 2: Contribution of sectors of activity to growth**



Source: Author

Between 2011 and 2019, there was a notable decline in the proportion of agriculture’s contribution to total employment, decreasing from 53.5% to 50.7%. Despite this decline, the agricultural sector retains its status as the primary provider of employment opportunities across the region. This observation, highlighted by the International Labour Organization (ILO) in 2020, underscores the enduring significance of agriculture as a major source of livelihoods for many individuals in Sub-Saharan Africa.

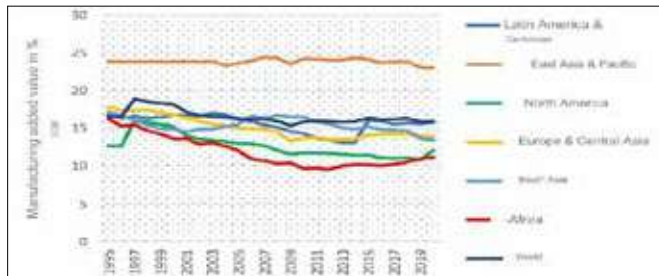
**Graph 3: Distribution of employment, by major sector of activity (%)**





In 2019, Southern Africa emerged with the highest proportion of manufacturing jobs as a percentage of total employment, standing at 22.23%, significantly surpassing other regions such as East Africa (9.3%), Central Africa (10.4%), and West Africa (12.9%). Despite this, the industrial sector's contribution to wealth creation remained very moderate, with its value added remaining below 15% from 2000 to 2021. Africa's overall contribution to global manufacturing value added (MVA) has also been notably low, accounting for only 11.87% compared to 23.88% for Asia and the Pacific in both 1995 and 2020. Alarming, over 80% of Africa's MVA is associated either with natural resources or with traditional "low-tech" activities, as highlighted by PwC in 2019.

**Graph: 4 Trend in manufacturing value added in world regions**



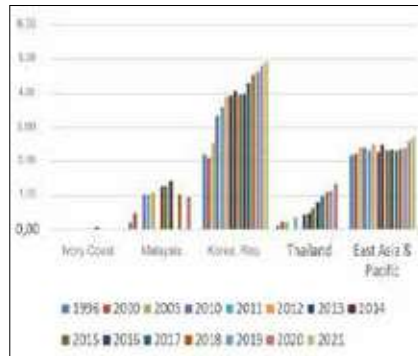
Despite efforts to enhance human capital, particularly in education and research, Sub-Saharan Africa (SSA) continues to face significant challenges:

***Limited Public Spending in Education and Research and Development*** : There has been an increase in public education expenditure across SSA since 2010. However, investment levels remain insufficient to adequately address the region's educational needs, impacting the quality and accessibility of education for many (Graphs 6 to 7).

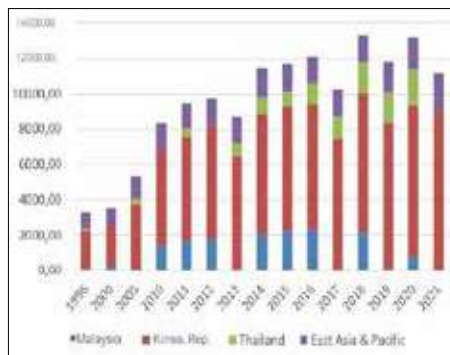
**Graph 5: Public education spending (% of GDP)**



**Graph 6: Research and development expenditure (% of GDP)**

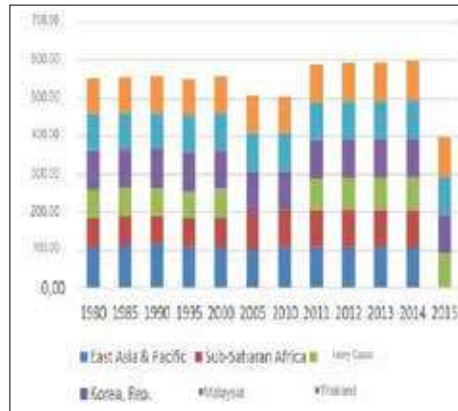


**Graph 7: R&D researchers (per million inhabitants)**

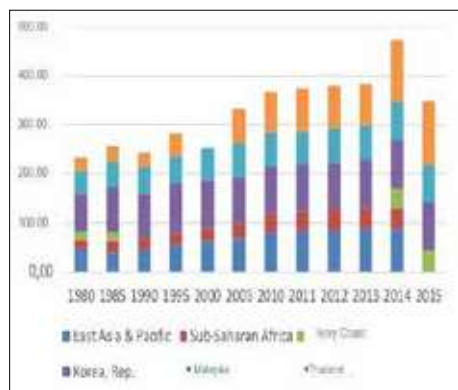


**Weak educational outputs** : Sub-Saharan Africa (SSA) exhibits lower gross enrollment rates compared to East Asia across pre-school, secondary, and tertiary education levels. The gross enrollment rate in higher education in SSA experienced a gradual increase from 3.2% in 1990 to 8.59% in 2015, contrasting with higher rates of 7.39% and 39.15% observed in East Asia during the same period. In 2015, Ivory Coast recorded a gross enrollment rate in higher education of 9.16%, while South Korea boasted a significantly higher rate of 93.18%, underscoring the disparities in access to higher education between these two countries.

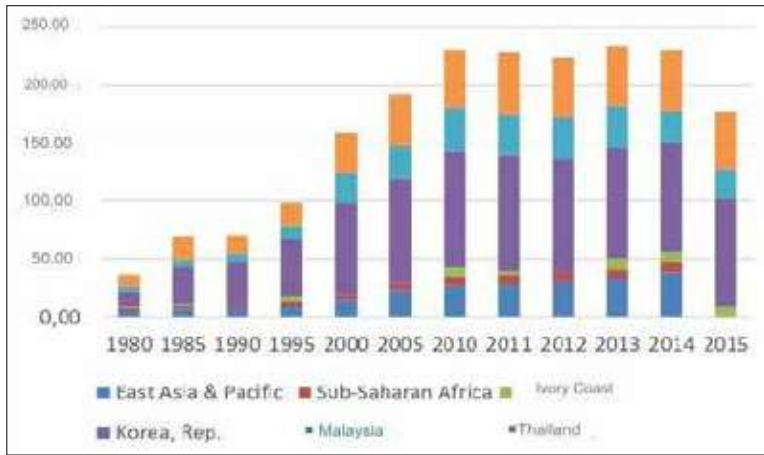
**Graph 8: Gross primary school enrollment rate (%)**



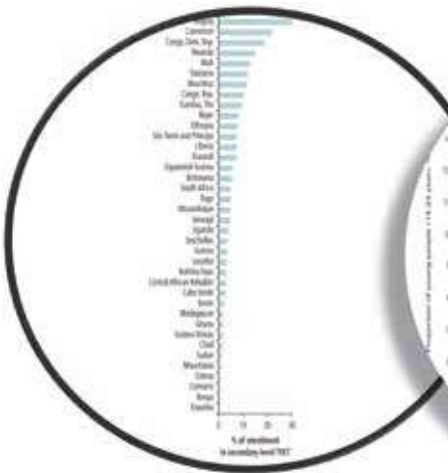
**Graph 9: Gross secondary school enrollment rate (%)**



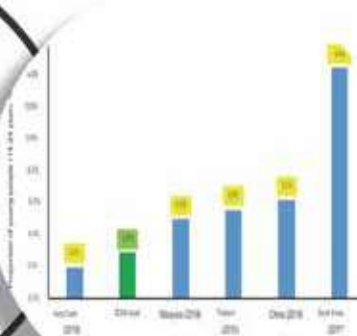
**Graph 10: Gross enrollment rate in higher education (%)**



**Graph 11: Youth integration ratio in TVET (Authors based on UNESCO 20)**



**Graph 12: Percentage enrollment of all secondary students in TVET programs**



***A TVET system disconnected from the needs of employers:*** Within Sub-Saharan Africa (SSA) as a whole, only around 12.2% of upper secondary students were enrolled in vocational training programs in 2014, with significant variations observed across different countries and regions (Santos, Soto and Sosale, 2019). In Côte d’Ivoire, about 2% of the youth are in Technical and Vocational Education and Training (TVET) compared to 5% in Malaysia, 6% in China, and 14.5% in South Korea, in 2017-2018. Despite this, formal vocational training (VT) systems in SSA are generally characterized as weak, fragmented, and disconnected from the demands of the labor market. Moreover, these systems often lack emphasis on practical training, which is considered a major deficiency by employers within the region, as highlighted in a report by Dc dVet in 2021.

### 3.2. Lessons from the ECOWAS region

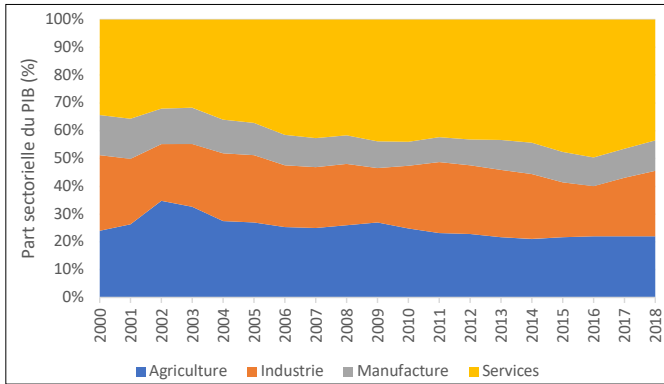
We make use of the retrospective analysis of the ECOWAS region done in the context of the ECOWAS 2050 vision, elaborated by CAPEC in 2020-2021. Key lessons are presented and can be considered at a certain level for other regions in Sub-Saharan Africa.

#### 3.2.1. Structural transformation in ECOWAS region

##### ***An economy less and less based on the agricultural sector***

In the early 2000s, a preponderant share of the GDP was strongly generated by the agricultural sector in the ECOWAS region (Graph 13). From around 25% in 2000, this share of agriculture rose to almost 35% in 2002, and in 2018 stood at around 20% of space GDP.

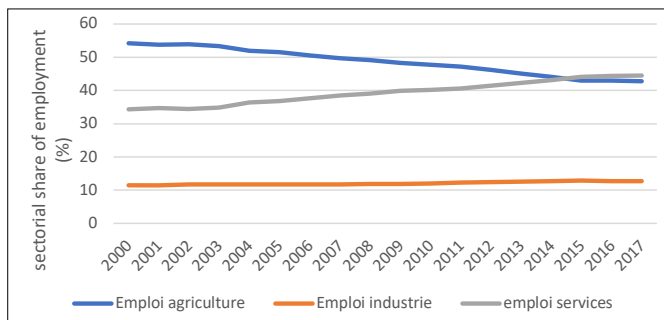
**Graph 13: Sectorial of GDP proportion evolution in the ECOWAS region**



Source: CAPEC from WDI (ECOWAS 2050 Vision)

Moreover, jobs in the agricultural sector are falling while those in services and industry are increasing. In the early 2000s, the contribution of the agricultural sector to total employment in ECOWAS was more than 54% compared to 34% and 11% respectively for services and industry. In 2017, these proportions were 42.77% for agriculture, 44.49% for services and 12.73% for industry (Graph 14).

**Graph 14: Evolution of the sectorial share of employment in the ECOWAS region**



Source: CAPEC from WDI

***The shares of the industrial and manufacturing sector in constant progression, but always weak***

The manufacturing and industry sector strongly influenced the GDP of the ECOWAS zone, especially just after the climax reached by the agricultural sector, in terms of contribution in 2002. But after this short period, there is a strong growth in the services sector, which could be explained by the new information and communication technologies (NICT) which are of capital importance for other sectors of the economy. Thus, the drop in the contribution of the agricultural sector to the GDP of the ECOWAS region has given way to the services sector, making constant the progression of the manufacturing and industry sector, which should in principle be the primary beneficiaries of the loss of speed in the agricultural sector in contributing to GDP.

We therefore need a tertiary sector fully at the service of the manufacturing and industrial sector in order to respect the industrialization process and ultimately lead to a structural transformation of the ECOWAS economies.

***Technological innovation too slow to effectively support structural transformation***

Aware that ECOWAS cannot be developed outside of science and technology, the States of the Union have recognized the importance of these. In 2004, the first Conference of Ministers responsible for Science and Technology of ECOWAS was held in Nigeria. During this conference, the problems hampering the economic development of space were highlighted. These include<sup>4</sup>: (i) The inadequacy of infrastructure; (ii) The

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<sup>4</sup> D. TRAORE, « Politics, science, technology and innovation of ECOWAS (ecopost) » [www.westafricainstitute.org](http://www.westafricainstitute.org)

low level of scientific training coupled with the gender imbalance in scientific research activities; (iii) Lack of database on activities in science and technology. Since its creation, all of the ECOWAS States have faced difficulties in terms of technological innovations.

In science and technology, there is a low level of scientific training coupled with an imbalance between men and women in the learning of science and techniques. There are still high rates of illiteracy. The low level of training can be assessed through the completion rate of lower secondary education. This rate, for the whole area increased from 27% for boys, 20% for girls in 1990 to 46% for boys and 41% for girls in 2018. According to UNESCO (2015), the gross enrolment rate for higher education was 9.2% in 2012 in West Africa.

However, it is important to note the lack of data on activities carried out in the field of technological innovations and research for all of ECOWAS as well as the lack of link between innovation and use of research results. In addition, research remains the poor relation of national budgets with a low level of funding, since the share of GDP devoted to research amounted to 0.34% in 2004<sup>5</sup> with a significant share of gross domestic expenditure on R&D coming from external funding (UNESCO 2015). In addition, due to the underdevelopment of cutting-edge research infrastructures, there is a strong brain migration from African countries to notably the OECD countries.

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5 D. TRAORE, « Politics, science, technology and innovation of ECOWAS (ecopost) » [www.westafricainstitute.org](http://www.westafricainstitute.org)



### 3.2.2. Human Capital development

*Interesting performances achieved in terms of access to education, but education systems struggling to adapt to new social requirements and the current challenges of the labour market*

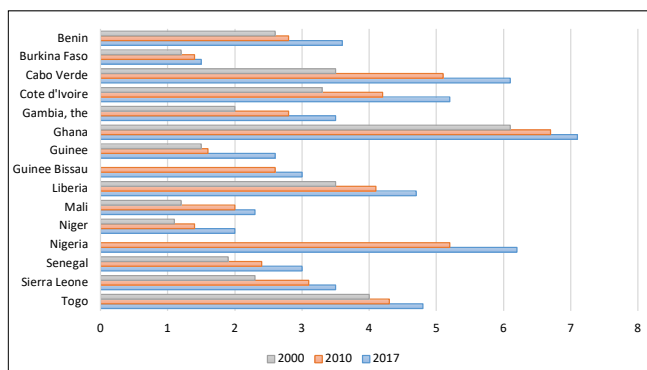
ECOWAS states face significant challenges in providing universal quality education due to limited capacities, resources, and socio-cultural barriers. Legal mandates for compulsory and free education at certain levels confront practical obstacles. Although access to primary education has improved across most countries over the past six decades, many still fall short of national and international development goals. Preschool, secondary, and higher education enrolment remains low, with secondary and higher education seeing rates as low as 4% in Niger and Mali, and only up to 24% in Cape Verde.

Education policies, focused on access since the 1990 World Conference on Education for All, often come at the expense of educational quality. Regional education systems struggle to meet labour market demands, failing to equip learners with knowledge in science and technology. Technical and vocational enrolment rates for youths are below 4% (UNESCO, 2020), despite rich natural resources. The resultant educational shortcomings contribute to high dropout rates and workforce skill gaps, with the average schooling years staying below four in nine countries as of 2017.

**Table 1: Primary school leaving rates in the ECOWAS countries**

COUNTRIES	In % of the number of school-children in the cohort (2007-2017)
Benin	52.5
Burkina Faso	34.4
Cape Verde	9.9
Côte d'Ivoire	26.7
The Gambia	24.9
Ghana	18.4
Guinea	34.1
Guinea Bissau	ND
Liberia	32.2
Mali	38.4
Niger	35.6
Nigeria	35.6
Senegal	37.9
Sierra Leone	53.0
Togo	45.9

Source: UNESCO (2020), Note: ND= data not available

**Graph 15: Evolution of the average number of years of education in ECOWAS countries**

Source: CAPEC from UNDP data (2018)

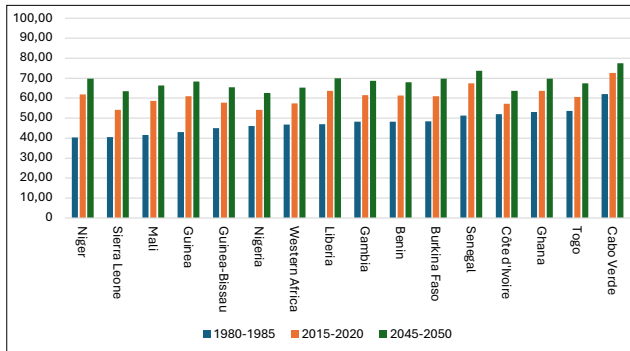
Note: Year 2000 data not available for Nigeria and Guinea Bissau

In order to correct these deficits, a number of initiatives of regional scope (such as the ‘Nnamdi Azikiwe’ program in academic mobility, initiatives on the equivalence of diplomas and the harmonization of education systems, the Technical Training program and professional (FTP) for the improvement of entrepreneurial skills) are implemented. Their objective is to strengthen the training capacities of establishments and staff (particularly those involved in TVET) and ultimately to increase the region’s knowledge and research capacities.

***Greater efforts to be made in health matters to enable the region to take advantage of its demographic potential***

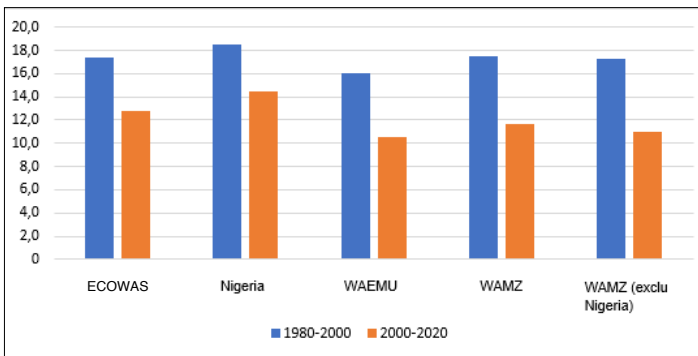
As for health, while improvements have also been recorded, as indicated by the overall increase in life expectancy at birth and the decline in the mortality rate over the past 4 decades, the performance of countries in the region remains heterogeneous. Out of the 10 countries that recorded the weakest performances in the world in terms of life expectancy at birth over the period 2010-2015, 4 belong to ECOWAS. These are Côte d’Ivoire, Guinea Bissau, Nigeria and Sierra Leone. Only two countries, Cape Verde (72) and Senegal (66), have recorded life expectancies at birth greater than 65 over the past decade. Life expectancy at birth was 54.18 years over the same period in Nigeria. This country also records the least sharp decline in the mortality rate at the level of the sub-region. It stands at 14.5 per 1000 individuals compared to a sub-regional average of 12.7 per 1000 over the last two decades (Graph 16).

**Graph 16: Life expectancy at birth in West African countries, 1980-2050**



Source: World Bank World Development Indicators

**Graph 17: Mortality rate by economic zone in West Africa, 1980-2020  
(number of deaths per 1000 people)**



Source: World Bank World Development Indicators

In the ECOWAS region, excluding Cape Verde, only modest improvements in maternal and child health have been observed. Sierra Leone, notably, has the highest maternal mortality rate globally at 1,360 deaths per 100,000 live births, far exceeding the Sustainable Development Goal 3 target of 70. The sub-regional maternal mortality rate in 2015 was 562.5 per 100,000 live births, higher than sub-Saharan Africa's 547. Child mortality under five years also remains high at 77.5 deaths per 1,000 live births, compared to sub-Saharan Africa's 74.7.

Health systems in these nations are generally fragile and ill-equipped to handle health crises, evidenced by the devastating Ebola outbreak between 2014-2016 and the current widespread impacts of the coronavirus. Despite efforts, such as the 2016-2020 Regional Strategic Health Plan by the West African Health Organization aimed at improving epidemic surveillance and prevention, capacities remain inadequate. Inefficient regional surveillance of diseases like Ebola, tuberculosis, and cholera raises the risk of their rapid cross-border spread, potentially hindering regional integration and development.

Overall, ECOWAS countries' health systems face deficits in infrastructure, medical personnel quantity and quality, and governance challenges.

***Countries with relatively weak performances in terms of human capital level***

With the exception of Ghana, which belongs to the third performance quartile for the human capital index, all the countries of the sub-region for which data are available belong to the lowest quartile of the human capital index (Graph 18).

**Graph 18: Human capital indices in the world**



Source: World Bank (2018)  
<https://www.worldbank.org/en/publication/human-capital#firstLink01627>

Greater efforts must be made at the educational and health levels to improve human capital and enable the ECOWAS but also the Sub-Saharan African countries to take advantage of their demographic potentials.

### 3.2.3. Governance

#### *Signs of weakening of good democratic governance in ECOWAS countries*

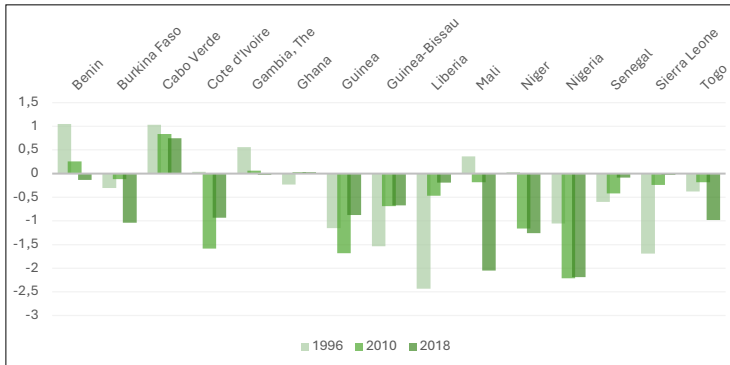
The colonial and postcolonial history of the nation state in sub-Saharan Africa is often presented in the form of a graft of an imported model, thus justifying its fragility and its difficulties of institutionalization. The lack of linearity between state and nation building on the one hand, and social dynamics on the other, lead to a crisis of state legitimacy and undermines the foundations of national unity. At the same time, the forms of organization of the State as well as the definition of its missions, methods and means of intervention appreciably affect its effectiveness and its capacity to respond to the material and immaterial needs of the populations <sup>6</sup>.

The general shape of governance in ECOWAS countries is shown in Figure 36. There is a democratic decline in some of its member countries. The role of the ECOWAS institution in the promotion and development of democracy in member countries seems to be diminishing, all the more noted since in the last two decades of its creation, it had built a reputation leader among African regional organizations in the defence of democratic principles.

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<sup>6</sup> [http://www.afrique-gouvernance.net/bdf\\_axe-3\\_fr.html](http://www.afrique-gouvernance.net/bdf_axe-3_fr.html)

**Graph 19: Worldwide Governance Indicator of Political Stability and Absence of Violence/Terrorism,**



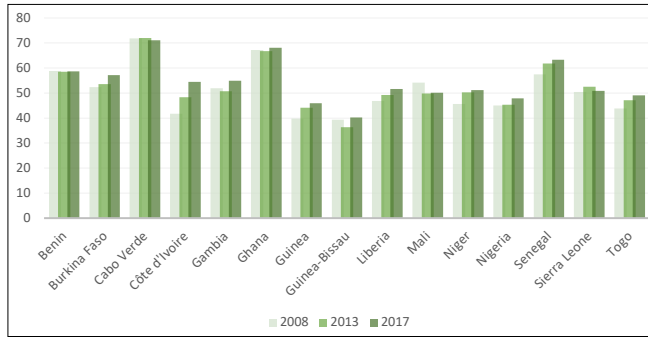
Source: ECA from the Worldwide Governance Indicators, 2020  
<https://datacatalog.worldbank.org/dataset/worldwide-governance-indicators>

***ECOWAS countries still face the challenges of socio-political instability and corruption***

Studies by D. Kaufmann, A. Kraay and Zoido-Lobaton reveal six governance indicators known as the World Bank indicators which are: Voice and responsibility, Political instability and violence, Efficiency of government, Regulatory burden, Rule of law, and Corruption.

Graph 20 presents the indicator political stability and absence of violence and terrorism in the ECOWAS countries. This indicator is assessed on a scale of -2 to +2 with the lowest values indicating a precarious situation of political stability and absence of violence. Although there has been an improvement in indicators for all ECOWAS countries between 1996 and 2019, we note that they are all values below 0, highlighting the weakness of political and social stability in all countries, and thus constituting an important stake for the future of the region.

**Graph 20: Overall performance of governance in ECOWAS countries - Trend per country**



Source: ECA from Ibrahim Index of African Governance (IIAG)  
<https://datacatalog.worldbank.org/dataset/worldwide-governance-indicators>.

### ***Security has become more complex since the independence era***

West Africa has been the scene of deadly civil wars, numerous conflicts and explosions of violence. But contrary to popular belief, these conflicts and violence were less numerous and made fewer victims in this region than in the rest of the continent during the same period. Since the 2000s, there has been a very clear decrease in large-scale civil wars. However, we are witnessing an upsurge (especially in the Sahel), extremism, jihadist terrorism, trafficking in drugs and people, piracy, cybercrime, and others which today threaten the progress made by the sub-region. In addition to these threats, there are difficulties linked to the integration of young people into society, migratory movements and subregional imbalances. The rapid development of the extractive industries, the weakness of political institutions, the too slow reform of the security sectors as well as the problems of land management are also sources of fragility<sup>7</sup>. *Thus, we are witnessing a heavy trend of more complex security situations within ECOWAS.*

<sup>7</sup> "Meeting the challenges of stability and security in West Africa", The World Bank and AFD; Marc, Alexandre, Neelam Verjee, and Stephen Mogaka. 2015

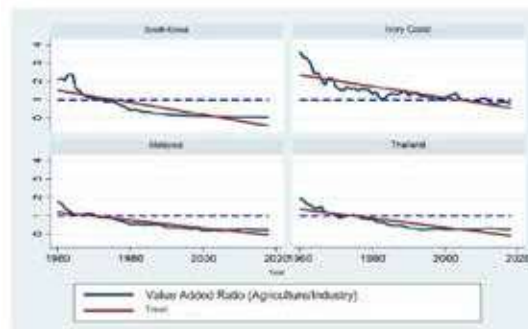


## ❧ 4. CONSTRAINTS TO THE TRANSFORMATION OF RAW MATERIALS: A CASE STUDY OF CÔTE D'IVOIRE

### 4.1. Pace of structural transformation in Côte d'Ivoire

The structural transformation index, as depicted in Graph 31, reveals a concerning downward trend in Côte d'Ivoire, indicating a shift in economic activity from the agricultural sector towards industry. While the process began in earlier decades, notably during the 1960s-1980s, when policies promoting import substitution and export-oriented industries were implemented, progress has been slow. Only in recent years, particularly since 2012, has the structural transformation process accelerated, with the index dipping below the threshold of 1, signifying a genuine transition. However, compared to benchmark countries that initiated structural transformation in the 1970s, Côte d'Ivoire's progress has lagged, underscoring the need for more concerted efforts to drive economic diversification and industrialization.

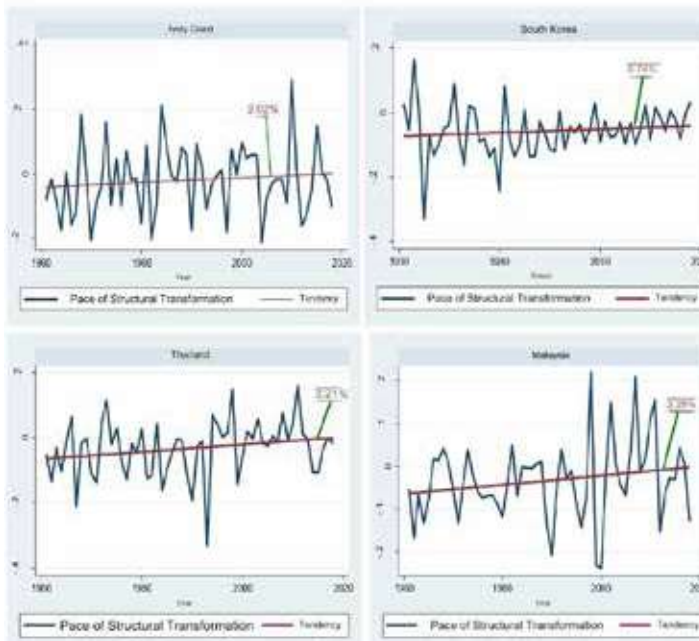
**Graph21: Trend in structural transformation, Ivory Coast, South Korea, India and Malaysia**



Source: CAPEC, using World Bank Data

Graph 22 indicates that structural transformation took place at a rate of 2.02% in Côte d'Ivoire compared to 5.74% in South Korea, 3.28% in Malaysia and 3.21% in Thailand. This index explains the pace at which the economy moves from *deagriculturation* to industrialization. In other words, it is the rate at which the ratio of the value added of the agricultural sector to that of the industrial sector declines to reach a lower value. From 1960 to 2018, the index fell from 3.64 to 0.78 in Côte d'Ivoire; from 2.12 to 0.05 in South Korea; 1.76 to 0.19 in Malaysia and 1.96 to 0.23 in Thailand. If Asian countries have experienced a faster pace of their structural transformations, it is primarily thanks to the multiple reforms they have carried out.

**Graph 22: Pace of structural transformation, Ivory Coast, South Korea, India and Malaysia**



Source: CAPEC 2021, from World Bank Data

## 4.2. Methodological approach to analyze the binding constraints

In July 2021, the Prime Minister of Côte d'Ivoire's Cabinet asked me to coordinate some works on the Dynamics of the value chains in agricultural sector focusing on 16 products. The methodology we suggested and that had been adopted is that used for the analysis of constraints to (private sector) growth, applied by the Millennium Challenge Corporation (MCC) of the United States.

The analysis of constraints to economic growth initiated by the MCC for all countries eligible for Threshold and Compact programs follows the "Growth Diagnostic" methodology developed in 2005 by Ricardo Hausmann, Dani Rodrik, and Andrés Velasco (HRV-Harvard University). This methodology states that "all poor countries face numerous economic and development challenges, but these challenges do not impact growth equally. Prioritizing investments and interventions becomes necessary in view of the country's capacities, capital and political will, and the often limited financing needed to address these challenges".

In practice, the growth diagnostic follows a discriminating procedure materialized by a decision tree (problem tree) to evaluate all potential bottlenecks that prevent the takeoff of growth. This methodology has been recognized by the participants to the discussions as very relevant to identifying the grass roots constraints and build more specific policies that can address with success each binding constraints.

### 4.3. Cross-cutting constraints to agricultural products transformation (industrialization)

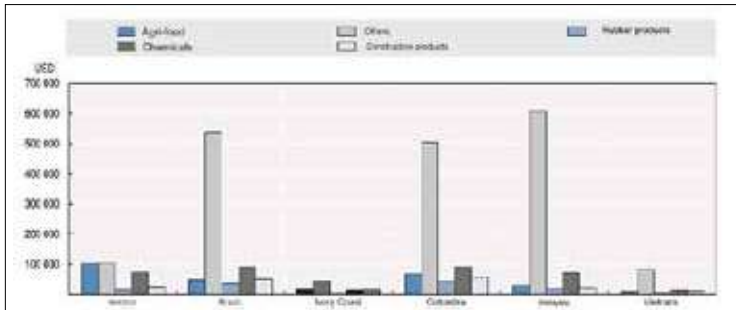
Numerous constraints are at the origin of the low level of processing of agricultural raw materials. Discussions in workshops with stakeholders of the value chain of each product, made it possible to identify **five (05) major cross-cutting constraints**, namely:

- difficulties in accessing processing equipment (low local production and difficulties in accessing long-term credit) ;
- insufficient adequate training and qualified human resources for transformation;
- difficulties in accessing packaging and packaging for finished products;
- difficulties in regular supply of quality raw materials;
- the weakness of technological innovations.

#### 4.3.1. Difficulties in accessing processing equipment

Leader in the UEMOA zone, in 2019 Ivorian industry represented 25% of GDP. This industry is dominated by agri-food activities which contribute by far the largest part of the added value and employment. Labor productivity (measured as value added per worker) was limited compared to most benchmark countries, The exception of Viet Nam (Graph 23).

**Graph 23: Labor productivity of the industrial sector in Côte d'Ivoire compared to emerging economies**



The reasons behind the difficulties in accessing processing equipment are presented.

- ***Insufficient national supply and high import of processing equipment***

In Côte d'Ivoire, the industrialization of agricultural products involves three main public entities. The Ivorian Society of Tropical Technology (I2T) focuses on research and innovation since its inception in 1979. Côte d'Ivoire Engineering, established in 1976, handles the design and production of industrial equipment. The technology demonstration and promotion center (CDT) serves as a liaison between technology creators and users, encouraging the growth of SMEs, particularly in agro-industry. However, the production of machinery and materials contributes just 2% to the nation's industrial GDP—significantly less than the 28% average seen in emerging countries like Malaysia, Thailand, and Vietnam.

The processing of the agricultural raw materials should in reality rely above all on domestic production of equipment adapt-

ed to our conditions. This low rate of national production of equipment not only does not allow easy progression of the industries processing our agricultural products but above all forces them to import more equipment. This is the case in Ivory Coast where imports of capital goods represented 18.6% of imports in 2018, including 46.2% for mechanical machines. *Specifically, imports of machines and devices for the industrial preparation or manufacturing of food increased from 59 tonnes in 2016 to 306 tonnes in 2018, an increase of 418% compared to 2016*<sup>8</sup>.

• ***High cost of machinery and equipment***

A comparative advantage for processing and competitiveness in the manufacturing sector is the low cost of equipment. This chart compares Ivory Coast's machinery and equipment price index with some neighboring countries, countries in East Africa, North Africa and Asia (Graph 24). It appears that this index for Côte d'Ivoire is 125.3 higher than the world average (100), above that of neighboring countries (Burkina Faso, Benin and Togo). The position of Ivory Coast is well above countries like Vietnam (100.34), Malaysia (97.35), Morocco (86.9) and Egypt (82.54) which are below the world average. On the other hand, the price of machines and equipment increases little in Ivory Coast relative to that of competing countries such as Ghana (134.84), Senegal (126.94) and Nigeria (139.28).

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8 ITC (2020). Trade Map. [https://www.trademap.org/Country\\_SelProduct\\_TS.aspx?n-vpm](https://www.trademap.org/Country_SelProduct_TS.aspx?n-vpm)

**Graph 24: Comparison of the index of the general price level of machinery and equipment compared to the world average set at 100**

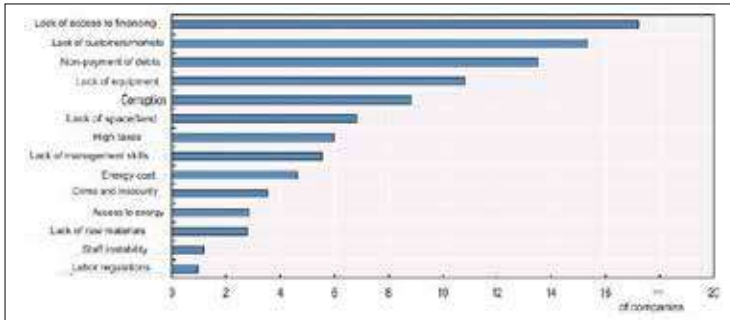


Source: World Bank International Comparison Program 2017

- ***Low access to long-term credit for agri-food SMEs for the acquisition of processing equipment***

Faced with this limited supply of equipment at the national level, SMEs involved in the processing of agricultural raw materials are trying to request bank credits to cope with imports. However, access to financing constitutes a significant obstacle for these companies (Graph 25 ). Indeed, out of ten companies, six (06) small firms (from 5 to 19 employees) consider that the lack of access to financing is problematic, compared to four (04) for large firms (more than 100 employees)<sup>9</sup> .

<sup>9</sup> ENSEA (2012), "Business climate survey", unpublished data.

**Graph 25: Typology of difficulties encountered by SMEs in Côte d'Ivoire**

Financing for industrial equipment is crucial in the context of processing agricultural products and enhancing agricultural value chains. The need to update old equipment and address competitiveness leads firms to frequently update their production tools. Given the substantial investment required, firms often prefer financing through loans to preserve their cash flow. Evidence shows a positive correlation between credit availability and manufacturing value added. In Asia, countries like Malaysia, South Korea, China, and Japan, where credit exceeds 100% of the economy, see manufacturing contributing over 20% to GDP. Conversely, in Côte d'Ivoire, where domestic credit is only 20%, the manufacturing sector's added value is just 11.7%, lower than that in Senegal, Tunisia, and Morocco. Côte d'Ivoire's SMEs in manufacturing often face difficulties in securing long-term credit, impeding their ability to maintain high productivity levels.

#### 4.3.2. Shortage of adequate training and qualified human resources for the transformation of agricultural products

The role of Vocational and Technical Education and Training (TVET) in secondary education in Côte d'Ivoire is still min-



imal (5.72% in 2018) with a capacity to host about 20,000 learners annually against over 120,000 applicants. This limited capacity reflects a shortage of public TVET structures, especially those specializing in processing agricultural raw materials. The scarcity of institutions specialized in agro-industry is attributed to the low level of valorization of value-added trades and jobs and insufficient funding for the creation and operation of these establishments.

### ***Low Valorization of Agro-Industry Trades and Value-Added Outcomes***

The agro-industrial sector includes many trades across various activity families (dairy, meat, sugar, cereal, starch products, fats and oils, beverages, and diverse foods) corresponding to different stages of basic product transformation. These stages encompass research and innovation, manufacturing, marketing, quality, and maintenance. However, this evolving sector currently suffers from an image deficit and a lack of awareness of dedicated trades, making it difficult for processors to find the needed skills. The agro-industrial sector struggles with skill needs, facing recruitment challenges across all education levels due to higher qualification requirements for positions, sector image deficit, demanding working conditions, and less attractive career prospects.

Data from UNESCO (2017) indicate that the share of technical education and vocational training in all levels of education in Côte d'Ivoire is 2%. At the secondary level this share represents 6.67%, a figure which still remains lower than those of Thailand and Indonesia.

### ***Low Funding Level for the Creation and Operation of Dedicated Establishments***

The primary source of TVET funding in Côte d'Ivoire remains the state, with a very low portion of the Education sector's budget allocated to TVET financing. Despite the state's intention to prioritize this type of education towards achieving its ambitious goal of becoming an emerging country and an increase in student numbers from 5 to 7%, TVET funding has remained constant at around 41 billion CFA francs in recent years. Operational expenses for TVET institutions represent 5 to 8% of this financing. Hence, state-managed rehabilitation or creation of TVET establishments, burdened by obsolete equipment and deterioration of significant training materials, are challenging. To address these rehabilitation or establishment creation costs, the state seeks loans from funders, like the rehabilitation of the Professional Lyceum in Odienné, specializing in agro-industry, which cost about 5.3 billion CFA francs with a 1.3 billion CFA franc contribution from the State of Côte d'Ivoire.

### ***Mismatch Between Vocational Training and Agro-Industrial Sector Skill Needs***

Vocational training often doesn't meet the needs of agro-industrial companies. Despite established links with the private sector, integrating trainees into the workforce remains challenging. This mismatch is linked to a lack of understanding of the skill map and a shortage of trainers and continuous training for trainers and transformation actors.

### ***Lack of Knowledge of Skill Map in Agro-Industrial Sector***

Matching vocational training with agro-industrial sector employment needs requires identifying sought-after skills, which are often unknown to agricultural product transformation actors. Agro-industrial companies struggle to identify their real labor needs, partly because they cannot conduct prospective studies. Furthermore, available information about company needs is outdated and inaccurate, collected and estimated through flawed communication mechanisms manipulated by the interests of intermediaries, both public and private.

### ***Shortage of Trainers and Continuous Training for Trainers and Transformation Actors***

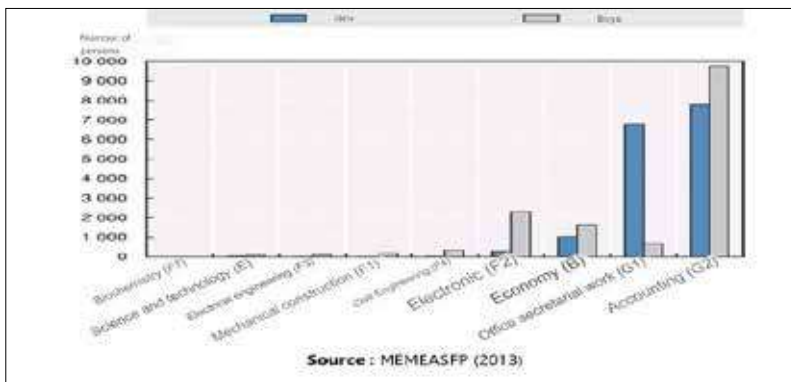
Qualified human resources in agro-industry technologies and equipment are often insufficient. This skills gap particularly affects small operators, who frequently lack even basic operational and management skills. Besides their development, agro-industrial unit actors need additional specific training and consultation services in more technical areas like good manufacturing practices, food safety, and quality management. These knowledge gaps put national operators at a disadvantage compared to international counterparts. Furthermore, continuous training for agro-industrial sector trainers is underdeveloped in Côte d'Ivoire, and training companies are often ill-equipped to provide trainer refreshment courses.

### ***Low representation of industrial sectors and particularly agro-industrial sectors in technical and vocational education***

While technical and vocational education aims to bring students closer to the job market, the training offer seems uncor-

related with employment opportunities. The vast majority of technical education students turn to economics, secretarial and accounting training, while industrial training is almost non-existent (Graph 26). The latter are more present within vocational training but remain a minority compared to tertiary training<sup>10</sup>. In 2016, the distribution of students in technical and vocational education was 27.3% for industrial sectors compared to 72.5% for tertiary sectors. Furthermore, out of the fourteen (14) professional branches covered by technical education and vocational training, training courses in the agricultural and agro-industrial fields are insufficiently represented, particularly at the technician level<sup>11</sup>.

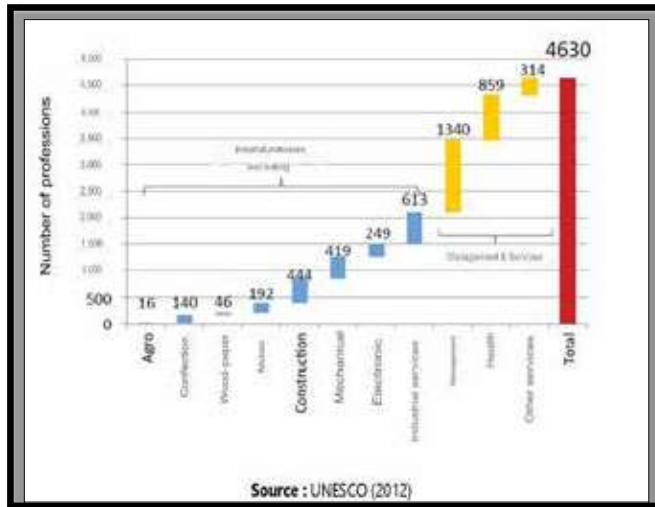
**Graph 26: Distribution of students in technical education and vocational training sectors**



- *Low level of agri-food professions compared to industrial professions*

10 MEMEASFP (2013).

11 TVET reform 2016-2020. Strategic Guidance Document

**Graph 27 :Distribution of professions by sectors of activity**

The analysis of professions by sector of activity in 2012 indicates that the agricultural products processing sub-sector only has 16 professions out of a total of 2,119 at the industrial sector level (Graph 27)<sup>12</sup>.

- ***High cost of unskilled labor in the manufacturing sector***

Faced with this lack of qualified human resources in the agri-food sectors, companies are forced to recruit unskilled labor which they specialize through on-the-job training or specialized training<sup>13</sup>. In addition, the cost of this unskilled labor is relatively higher in Côte d'Ivoire compared to other comparator countries<sup>14</sup> taking into account the minimum monthly salary (Graph 31).

<sup>12</sup> UNESCO (2012)

<sup>13</sup> IOS Partners (2014). Study on the competitiveness of SMEs in Ivory Coast

<sup>14</sup> World Bank (2015). Study on the competitiveness of the Ivorian manufacturing industry

The lack of qualified human resources in the field of processing of agricultural products results, according to those involved in processing, in the lack of mastery of good manufacturing practices and good hygiene practices. This state of affairs therefore leads to a decline in the quality of finished products and therefore the non-competitiveness of processing units.

In sum, the lack of adequate training and qualified human resources constitute a major constraint to the development of the processing of agricultural products.

#### **4.3.3. The seasonal and perishable nature of certain agricultural products, a handicap for processing**

The difficulties of regular supply of quality raw materials are dependent on the perishable and seasonal nature of many agricultural speculations. Many agricultural raw materials deteriorate quickly after harvest or slaughter unless they are immediately processed. Some are seasonal and can only be processed during part of the year. Each of these factors makes supplies unpredictable and results in significant variations in the quality and cost of raw materials. As a result, financial and production planning becomes more difficult.

In the case of certain raw materials, the availability of the product remains relatively variable depending on the season and its price experiences moderate fluctuations depending on the natural law of supply and demand. Thus, the product is relatively available in the indicated season. Conversely, in the season not indicated, the harvest requires more work and the risk of product degradation is higher during the exploitation of the raw material, which dissuades many producers from marketing their production at this time of year. 'year. Ultimately, the raw material is less available and the supply constraints are greater

at the level of the processing units which are obliged to diversify their purchasing areas and the varieties purchased to secure regular access to the raw material.

For all processing units, the main operating costs come from the cost of acquiring raw materials, which represents on average between 50 and 75% of the total expenses incurred . For example, the current average price of cassava delivered to the door of the processing plant is €50/tonne roots in Thailand and Vietnam, the world's largest exporters of cassava-derived products. To be competitive with imports, a processing unit in Ivory Coast must therefore aim for a purchase price of its raw material of the same order of magnitude.

#### **3.2.4. Difficulties in accessing packaging for finished products**

The food packaging sector in developing countries owes its strength to strong agricultural production, steady growth of food products and steady growth in food demand. In all these sectors of activity, it faces constraints such as the insufficiency of packaging solutions capable of meeting the requirements of international markets and the low domestic demand for packaging materials, which results in low level of investment. Without adequate packaging from harvest, losses can represent up to 60% of production before even reaching the first place of sale.

With its 6 billion euros in turnover, the African packaging industry is far behind Asia (mainly China) and its 120 billion euros; on a global business of some 400 billion euros in 2009<sup>15</sup>. In Ivory Coast, the supply of multilayer complexes, films and laminates remains limited. Limited or costly local availability

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15 Young Africa (2010). Africa badly packaged. <https://www.jeuneafrique.com/197636/archives-thematique/l-afrique-mal-emball-e/>

of satisfactory ‘consumer’ retail packaging is an obstacle to the development of exports of pre-packaged goods. The most obvious case is the absence of local production of glass containers. All hollow containers are notoriously expensive to transport, especially glass. The high cost of corrugated cardboard packaging for fruits and vegetables in relation to their export value does not make it possible to secure acceptable financial margins. Finally, the most recent requirements for food exporters to Europe put much more pressure on suppliers of packaging materials and on food packers themselves.

Côte d’Ivoire imported between 2016 and 2020 around 21,000 tonnes of bags and packaging bags of all types of textile materials. For comparison, this import level is close to that of Indonesia (21,450 tonnes) but lower than those of countries such as Kenya (13,968 tonnes), Burkina Faso (6,212 tonnes) and Bangladesh (3,575 tonnes).

### **3.2.5. Weakness of technological innovations in the processing of agricultural products**

During workshop discussions, processing stakeholders noted the unsuitability of SME agricultural raw materials processing equipment. Furthermore, technological innovation stands out as an essential pillar in the modernization of SMEs, which constitute the majority of private companies, particularly in the agricultural product processing sectors. Most African businesses are less productive than their international competitors. The Africa-Asia productivity ratio of the labor force declined from 67% in 2000 to 50% in 2018. In some African countries, almost 91% of the non-agricultural labor force still works in the informal sector<sup>16</sup>.

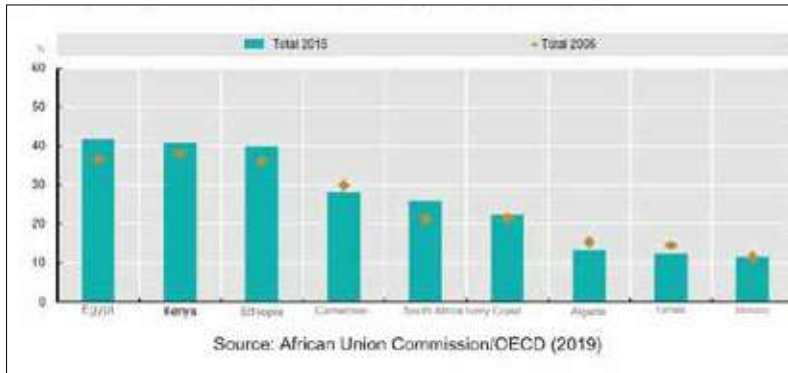
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16 African Union Commission/OECD (2019), “Africa’s Productive Transforma-



Considering technological innovation capabilities, Côte d'Ivoire is ranked sixth after Egypt (Graph 28) in terms of the share of value-added services contained in manufactured, mining and agricultural products exported<sup>21</sup>.

**Graph 28: Share of value-added services contained in manufactured, mining and agricultural products exported by nine African countries**

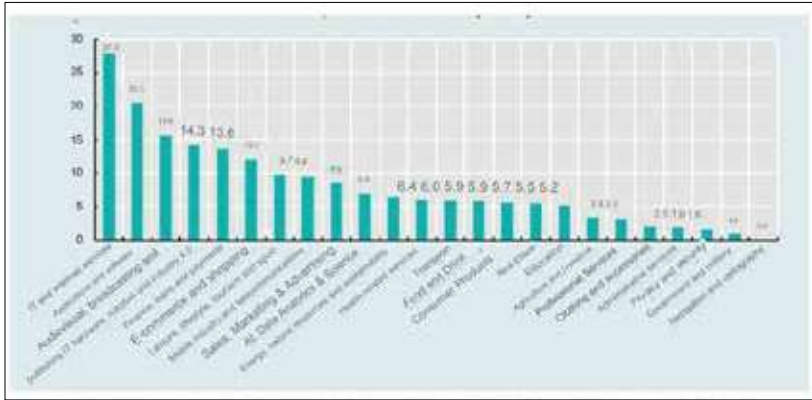


Furthermore, Côte d'Ivoire's research and development expenditure index in relation to GDP in 2016 was 0.13 - a value lower than that of comparator countries such as Malaysia (1.44), Thailand (0.78) and Indonesia (0.24)<sup>17</sup>.

The food and beverage sector only represents 5.9% of the areas of activity of the numerous start-ups in Africa which are much more involved in innovations linked to information technologies and the internet (Graph 27).

tion in a Changing World”, in *Africa's Development Dynamics 2019: Achieving Productive Transformation*, OECD Publishing, Paris/African Union Commission, Addis Ababa.

17 UNESCO (2016). UNSECO Science Report. Around 2030

**Graph 29: Areas of activity of African start-ups**

In addition, out of a total of 23 patents filed with the World Intellectual Property Organization (WIPO) by Côte d'Ivoire in 2018, there is no mention of any patent originating from the agri-food industry, unlike others. Other countries such as Thailand 904 patents, Vietnam (646), Indonesia (1407) and Malaysia (1116) are more innovative.

**Table 2: Summary of patents filed at WIPO and originating from the agri-food industry in Côte d'Ivoire and in certain comparator countries**

Country	Patented	Patents from the food industry
<b>Ivory Coast</b>	<b>23</b>	None
<b>Thailand</b>	<b>904</b>	Bangkok Inter Food Co, LTD: <b>13</b>
<b>Vietnam</b>	<b>646</b>	Nutifood Nutrition Foodjoint Stock Company: <b>13</b> Saigon Beer-Alcohol-Beverage Corporation: <b>9</b> Nafoods Groupjoint Stock Company: <b>1</b>
<b>Indonesia</b>	<b>1407</b>	PT Siantar Top, TBK: <b>7</b>
<b>Malaysia</b>	<b>1116</b>	Munchy Food Industries SDN BHD: <b>3</b> Cimei Food Ingredients SDN. HDB: <b>2</b>

Source: WIPO (2020) <sup>18</sup>.

18 WIPO (2020). [https://www.wipo.int/ipstats/en/statistics/country\\_profile/profile.jsp?code=ID](https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=ID)

According to the actors, the weakness of technological innovations in the processing of agricultural products is mainly explained by two (2) factors: (i) weakness of R&D in the Agro-Industrial Sector, (ii) Insufficient Funding of Innovations by Processors.

***The weakness of R&D in the Agro-Industrial Sector is related to;***

√ *Lack of Dedicated Technological Innovation Hubs*

Although Côte d'Ivoire hosts over ten technology and innovation support centers, their specificity in the field of research, especially related to the transformation of Ivorian agricultural sectors, is hard to establish due to their overlapping areas of research. This lack of specificity leads to a shortage of innovation hubs specifically dedicated to agricultural transformation. It is crucial for policymakers to contribute to the creation of dedicated technological innovation hubs for agricultural transformation. However, funding for existing structures seems insufficient considering the agricultural sector's challenges.

√ *Lack of Incubation Centers, Startups, and Spin-offs*

Unemployment, especially among the youth, is a major concern for Ivorian authorities. Aware of the public and private sectors' incapacity to absorb a large number of unemployed, the Ivorian state encourages entrepreneurship through various structures. These incentives generally support the youth and entrepreneurs in establishing micro-activities generating income, which have helped many beneficiaries out of poverty. From 2011 to 2020, over 90,000 youths have received support in creating income-generating activities. However, incentives for entrepreneurship in agro-industry are rare, likely due to the potentially high setup costs.

√ Risk perception in entrepreneurship

The decision to undertake can be influenced by examples of success or failure and stereotypes about entrepreneurship being an “uncertain” path. This is particularly true in agro-industrial transformation, where equipment is expensive to install and maintain.

***The Insufficient Funding of Innovations by Processors is explained by:***

√ *Unawareness of the Impacts of Technological Innovations*

For Joseph Alois Schumpeter (1883-1950), innovations are the main driver of economic evolution, offering societal benefits. Specifically, for entrepreneurs, they improve sales, reduce expenses and waste, and offer better market positioning. Yet, how many, especially in the agro-industrial sector, realize this? Agro-industrial entrepreneurs often stick to existing processing methods without planning for the future, stemming from unawareness of the impacts of innovations, a lack of awareness about their benefits, and a limited number of structures disseminating technological advancements nationally.

√ *High Cost of Technological Innovations*

Protecting an innovation is costly, borne by the innovator. According to the “Patent and Addition Certificate Applicant’s Guide” by OAPI (African Intellectual Property Organization), which covers Côte d’Ivoire, several fees are involved in protecting a discovery. These range from filing fees to maintenance fees, including publication, priority, additional claims, and length fees, requiring at least 2,208,000 CFA francs for a patent. This cost does not include documentation provided by the applicant or the risks of piracy leading to legal procedures also borne by the applicant.

Technological innovations are beneficial for all, but they originate from an innovator who has invested time and energy. Even if an innovator can protect against counterfeiters through patents, the certainty of not seeing their invention misused isn't 100%. Therefore, compensation strategies for the contribution of this innovation are necessary to avoid additional costs. However, these strategies remain insufficient and do not compensate for contributions made in the field of innovation research.





## ⊗ 5. SOLUTIONS TO ACCELERATE STRUCTURAL TRANSFORMATION OF SSA'S ECONOMIES

### 5.1. The key lessons

Accelerating the structural transformation of Sub-Saharan Africa's (SSA) economies can be approached through a multifaceted strategy, addressing both macroeconomic factors and microeconomic dynamics. Here are five solutions that can be outlined for this purpose; with strong emphasis on the first and second ones, catalysts of all others initiative :

- **Strengthening of Institutions and Governance** : Implement reforms to improve the business environment, such as simplifying regulations and ensuring property rights. Promote good governance practices to attract investment and foster economic stability.
- **Investment in Human Capital**: Enhance the quality of education and vocational training to meet the demands of the modern labor market; foster health initiatives to ensure a healthy, productive workforce.
- **Diversification of Economies**: Reduce dependence on primary commodities by developing manufacturing and service sectors. Encourage value addition in agricultural and mining products to increase their market value.
- **Improvement of Infrastructure**: Upgrade transportation, energy, and communication networks to reduce the cost of

doing business. Invest in sustainable energy sources to ensure consistent power supply for industries.

- **Regional Integration and Trade:** Enhance intra-African trade through regional cooperation and infrastructure connectivity to increase market size. Align customs, trade regulations, and standards across countries to simplify cross-border transactions.

By addressing these key areas, SSA countries can stimulate productivity, attract investments, and integrate more effectively into the global economy, paving the way for a more robust and dynamic structural transformation.

## 5.2. Solutions to the specific binding constraints in Côte d'Ivoire

### *To resolve the difficulties of access to processing equipment*

Difficulties in accessing processing equipment and insufficient training and human resources constitute a real obstacle to the development of agricultural sectors. To overcome them, it is proposed to the government to: (i) develop a local processing equipment industry, (ii) increase the level of financing of public equipment production structures, (iii) set up an attractive tax regime dedicated to the importation of processing equipment in the short term, (iv) set up a directory of prototypes of equipment dedicated to processing and strengthen the capacities of processors, (v) set up guarantee mechanisms and tax mechanisms for access to credit for processors, (vi) set up platforms for exchange and collaboration between processors.

(i) The development of a local processing equipment industry will be possible through investments in physical and human capital. More precisely, it will involve the construction of a



local equipment manufacturing industry by substituting for imports, and the creation and training of new trades for the maintenance of said equipment.

- (ii) The increase in the level of financing of public equipment production structures must be subject to reform by the government to boost research and development and facilitate the implementation of public-private partnerships.
- (iii) In the short term, a tax reform linked to the importation of processing equipment must see the light of day while awaiting the emergence of a local industry for the production of processing equipment.
- (iv) Due to constant changes in technologies and techniques, the development and dissemination of a directory of processing equipment for all agricultural sectors becomes crucial for them, as does the strengthening of transformer capacities. The government, through the Ministry of Industry and its other branches, must make this directory available to processors and include it in awareness programs.
- (v) Processors experience enormous difficulties in accessing credit. Under certain conditions such as tax relief for lenders (banks) and guarantee mechanisms supported by public authorities to reassure lenders, reforms of access to credit by SME-transformers will have to be considered. At the end of this reform, bank rating mechanisms will be developed with a view to providing public opinion with an idea of their rank in the process of granting credit to processors.
- (vi) One of the important reforms for the agricultural sectors consists of the effective establishment of exchange and col-

laboration platforms with a view to sharing good practices and learning from each other's successes and mistakes.

***To compensate for the lack of training and qualified human resources for processing, we need to:***

- (i) Create Equipped and Dedicated Training Centers for Agro-Industry and Industrial Maintenance Professions: establishing well-equipped training centers dedicated to agro-industry and industrial maintenance is essential for developing specialized skills crucial for this sector's growth and efficiency.
- (ii) Strengthen the Capacities of Trainers and Transformation Actors: enhancing the skills of trainers and transformation actors is key to ensuring that the workforce meets the dynamic needs of the agro-industrial sector, leading to improved productivity and innovation.
- (iii) Adapt Training Curricula to the Needs of Transformation Units: Training programs must be tailored to the specific needs of transformation units, ensuring that the curriculum remains relevant and graduates are well-prepared to contribute effectively to the industry.
- (iv) Establish Platforms for Exchange and Collaboration Among Processors: creating platforms for processors to exchange ideas and collaborate can foster innovation, improve practices, and enhance competitiveness within the agro-industrial sector.
- (v) Develop and Disseminate a Directory of Professions and Skills Related to Agro-Industry: compiling and sharing a

comprehensive directory of agro-industrial professions and skills can guide education, training, and recruitment, bridging the gap between industry needs and workforce capabilities.

***To enable regular supplies of quality agricultural raw materials***

Regular supplies of quality raw materials require: (i) improving the availability of quality raw materials, (ii) improving access to quality agricultural products.

- (i) Improving the availability of quality raw materials. Improving the availability of quality raw materials will have to take place throughout the year. However, this annual availability is made difficult due to the low resilience of the agricultural production sector in the face of climate change. Thus, improving this availability means firstly investing in packaging and storage infrastructure to capitalize on post-harvest losses and secondly investing in research and development on the conservation of agricultural raw materials.
- (ii) Improving access to quality agricultural products. Investment in the creation of industrial zones and free zones will facilitate access to quality agricultural products. Furthermore, reforms aimed at regulating the transport of raw materials with quality requirements which would lead transport operators to favor suitable types of vehicles will be a plus. These reforms will be linked to ease of acquisition of transport equipment by agricultural product processing companies. Finally, investments will be required in the creation of rural tracks and roads and the rehabilitation of those that exist.

***To alleviate the difficulty of access to packaging for agricultural and derived products***

The packaging of agricultural products and derivatives is a very important stage of the transformation process. However, most processors in the agricultural sectors encounter difficulties at this stage. To resolve them, two major solutions must be adopted: (i) the development of a local packaging production industry and (ii) tax reductions on imports of biodegradable packaging.

- (i) Investments in the development of a local packaging production industry are important to see the emergence of a dynamic industrial fabric in this stage of transformation. These investments must favor the recovery of agricultural waste (false banana tree trunks, coconut tree stems, tree bark, etc.) from local raw materials as well as the recycling of solid packaging (glass, metal) in a context of circular economy.
- (ii) Reforms aimed at tax reductions on imports of biodegradable packaging should be encouraged in an African demographic context which is seeing the emergence of a middle class with consumer trends favoring packaging (snacking, nomadism, individual serving, sales takeaway, home delivery, etc.).

***To correct the weakness of technological innovations in transformation***

To correct the weakness of technological innovations in transformation, it is necessary to proceed with (i) the creation and operationalization of agro-poles and incubation centers dedicated to transformation, (ii) the promotion of inclusive entre-

preneurship in the field of start-ups and spin-offs, (iii) facilitating the patenting of discoveries, (iv) facilitating partnerships between agro-industry players and research centers.

- (i) Investments are to be made for the creation of agro-poles and incubation centers dedicated to processing. These investments must be accompanied by major reforms in their management, in particular by establishing objective contracts and carrying out regular monitoring and evaluation.
- (ii) The promotion of inclusive entrepreneurship in the field of startups and spin-offs will be effective if investments are undertaken, particularly through financing and support.
- (iii) The conditions for obtaining patents in Côte d'Ivoire are recorded in the OAPI "Guide for patent applicants and certificate of addition". Therefore, considering a reform of the guide may prove fruitless, unless there is successful consultation with OAPI members. Therefore, to motivate innovations, the Ivorian public authorities will have to bear a large part of the costs linked to obtaining patents on the one hand and, on the other hand, give priority to innovators.
- (iv) It is necessary to introduce bipartite meetings into the research center agendas to inform transformation stakeholders of the research advances carried out by the dedicated centers.





## ❖ CONCLUSION

Dear Academicians, Ladies and Gentlemen;

It is evident from this inaugural speech that the main drivers of structural transformation are innovation and the reallocation of factors in favor of high-value-added sectors.

However, innovation and technological adaptation are strongly dependent on the composition of the country's human capital. Higher education levels are more crucial for R&D than lower education levels, which, on the other hand, are more useful for imitation or adoption of technologies developed elsewhere.

Human capital, through its level and quality or structure, allows the economy to adapt more or less quickly to technological change, which is the key factor in structural transformations.

These changes can only occur in an ecosystem that guarantees property rights and directs investments towards the desired sectors.

As noted by McMillan et al., (2017): “structural transformation accompanied by high investment in fundamental factors – human capital, infrastructure, and institutions – is the source of rapid and sustained growth”.

Also, lessons learned from the development trajectory of emerging countries show that structural transformation starts with innovation in the industrial sector following financing efforts in research, development, and investment (R&D&I), and

reforms to clean up the institutional framework and regulate markets (CAPEC and UNDP, 2014).

The root causes of the slow structural transformation in Sub-Saharan African countries thus lie in the low investments in basic education, higher education, research and development for innovations, and in the quality of institutions to preserve stability, reduce investment risks, and promote a good match between the training system (general education, technical and vocational education) and the economy's skill needs for structural transformation.

Therefore, it is necessary to have endogenous and effective democracies coupled with transformative leaderships capable of driving radical changes and leading to widespread improvements. Thus, the emphasis must be placed on visionary and strong governance, based on great social discipline and the constant building of social consensus. The establishment of consultation and dialogue among concerned actors (public, private, and civil) as well as the respect for fundamental rights remain essential for the dissemination of skills, for innovations, and ultimately for the structural transformation of SSA economies. I would like to conclude my remarks by once again expressing my deep gratitude to the President of the RAED, the Vice-President, Members of the Board of Governors, Fellow Academicians, Distinguished Authorities, my Sponsors, and all of you, dear colleagues, parents, and friends, who have chosen to devote part of your time to follow this presentation.

*Thank you all immensely.*





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# **Response Speech**

**Excmo. Sr. Dr. Jaume Llopis Casellas**





Mr President, Members of the Board of Governors, Fellow Academicians, Distinguished Authorities, Ladies and Gentlemen:

I would like to begin my contribution to this formal investiture of the Academy by expressing my gratitude to the Board of Governors of the Royal European Academy of Doctors and in particular to its President, Dr. Alfredo Rocafort Nicolau, for the great honour that it represents for me to respond, on behalf of this Royal Academy, to the acceptance speech as honorary academician of Dr. Alban Houré.

### *Laudation*

I first met our new member elect in October of last year in Abidjan, Côte d'Ivoire. We were introduced by Martin Frigola, Dean of the MDE Business School, the local associate school of IESE. Dr. Houré's references, with respect to all aspects of Côte d'Ivoire's economy, were outstanding. I quickly became aware, just on the strength of meeting him and of our brief conversation, of the breadth of his knowledge of economics, not just of Côte d'Ivoire, on which he is the main source of reference, but of Sub-Saharan Africa as a whole; all augmented by his work, and experience gained, in Japan and at several European universities.

I must also mention the two other merits that most caught my attention: his modesty and his great personal qualities. With all the above in mind, I had no hesitation in proposing him as a candidate for honorary membership of the Royal European Academy of Doctors. Once he accepted this, I submitted the application to the President and Board of Governors, who voted unanimously in favour.

This Academy is thus honoured to add, as a member and new honorary academician, someone whose personal and scholastic merits are combined – thanks to his triple academic training, which I will now go into – with the best of African, Japanese and European culture. I would go so far as to say that there are few other people who could present such a varied record of personal merit. It is these unique characteristics that prepare us to get to know a man who has managed to transform the curiosity of a young traveller, and a desire to dedicate himself to education through study, into expertise on microeconomics, organisational economics and the development economics of Sub-Saharan Africa.

Let me begin by explaining that the full name our distinguished member elect is Alban Alphonse Emmanuel Ahouré, to whom I will refer, with his generous permission, as Dr. Alban Ahouré.

Born in Treichville, Abidjan, Republic of Côte d’Ivoire on 23<sup>rd</sup> June 1973, his initial medical vocation was soon re-routed thanks to a good academic record that pointed towards the study of economics. As one of the first cohort of graduates in Economics from the University of Bouaké, his path was already laid out. Once he had passed the entrance examination of the postgraduate inter-university programme of studies in African Economics, he continued to study for his DEA (or *Diplôme d’études approfondies*, a programme of postgraduate studies designed to prepare students for a doctorate) at the universities of Abidjan, the economic capital of Côte d’Ivoire, and then Ouagadougou, in neighbouring Burkina Faso.

Professor Alléchi M’Bet, supervisor of his master thesis and then a beloved friend, changed his future. It was he who brought up the subject of a visiting scholarship of the Japanese Ministry of Foreign Affairs offered, via Japan’s embassy in Côte d’Ivoire,

to young African researchers. Dr. Houré was selected, and he spent ten days in the country during February 2000. This is what encouraged him to continue in Japan, with a research grant, his career as an economist. As he has since explained to me, it occurred to him that as very few Ivorians went there, this was a good opportunity to “stand out”; something that he has definitely done in the course of his long academic ascent.

He obtained his doctorate in economics from the University of Kobe, the capital of the prefecture of Hyōgo, where he continued to reside for five years. He tells me that Japan has had a definitive impact on his work, his results and his professional advancement. If you would permit me a brief aside here, Kōbe (神戸市) literally means “gateway of the gods” or “gateway of the spirits”, a portal through which our member elect has successfully entered. In March of 2006, he was awarded the Uematsu Sho Prize of Kobe University’s Graduate School of Economics, in recognition of the best thesis on contemporary economic problems in Japan.

One result of Dr. Houré’s experience in Japan is his continued links with the country. He is, for example, president of the association of Ivorian alumni of Japan, which organises a two-yearly international conference on Japanese studies at the Félix Houphouët-Boigny University in Côte d’Ivoire, with the participation of researchers from both Japan and West Africa. These efforts have been recognised by the Japanese Ministry of Foreign Affairs in 2020, which has decorated Dr. Houré for his contribution to promoting cooperation between Japan and Côte d’Ivoire.

This Royal Academy is proud to have such a new member – its first honorary academician from the Sub-Saharan Africa – who represents the Academy’s manifest willingness to broaden its

scope internationally and beyond the bounds of Europe. I am convinced that Dr. Alban Houré will be a great asset in our efforts to strengthen our links with both his country of birth, Côte d'Ivoire, and his alma mater, Japan. This might be an opportune moment to point out that His Excellency Dr. Naohito Watanabe, a former Consul General of Japan, is likewise a distinguished honorary member of our organisation.

Dr. Alban Houré is currently the director of CAPEC, the Economic Policy Analysis Unit of CIREs, the Ivorian Centre for Economic and Social Research. The social impact of this organisation is notable, as it provides employers and managers with continuous training designed to allow them to operate more efficiently. Multidisciplinary in character, the research unit of CAPEC is made up of researchers, both permanent and associate, and experts in various fields, such as economics, sociology, law, medicine, bioscience and agronomy, among others, from all the public universities and public institutions of higher education in Côte d'Ivoire.

Studies carried out under the CAPEC umbrella by Dr. Houré and his team of researchers from the centre of analysis help to strengthen the capacity of national political and economic bodies, public administration, the private sector and civil society, both in the country of its founding and in Sub-Saharan Africa as a whole.

From this rostrum, Dr. Houré contributes to consolidating the achievements of this platform, which was set up to guide and manage effectively the country's post-conflict policies, poverty-reduction strategies and development efforts. It is now an outstanding and sustainable alliance; a strategic association of professionals with the ability to support and strengthen the governing capacity of Côte d'Ivoire.

As senior economist at CAPEC, Dr. Alban Houré has contributed to analysing the constraints to economic growth as part of the implementation of a program of the United States government initiative Millennium Challenge Corporation (MCC) entails for Côte d'Ivoire. This work was decisive when it came to continuing the process that led to the signing, in November 2017, of the Grant Agreement of the Ivory Coast MCC Compact Program, totalling 524,740,000 US Dollars. This Grant aims to implement two projects:

- (i) Skills: the Employability and Productivity Project (\$155 million USD) aimed at improving the employability of Ivoirians and the productivity of the private sector by enhancing the quality, offering, and access to technical and basic skills, in response to the private sector's demand, and
- (ii) ATP: the Project for Transport in Abidjan (\$292 million USD) aimed at increasing the competitiveness of the city of Abidjan as a growth hub of the country by improving traffic flow and decongesting the city's central corridor linking its port to the north, east, and west regions of the country.

One study that I would like to highlight is the analysis entitled *Prospectif 2050*, which CAPEC carried out at the request of the Regional Office for West Africa of the United Nations Economic Commission for Africa (UNECA). Coordinated by Dr. Houré, this work was the basis for the adoption in 2021 by ECOWAS, the Economic Community of West African States, of *Vision 2050*, an ambitious strategic plan for this African region, supported by five pillars: 1) peace, security and stability, 2) governance and the rule of law, 3) economic integration and interconnectivity, 4) inclusive and sustainable transformation and development, and 5) social inclusion.

But Dr. Alban Houré does not just provide great support, given his commitment and efforts, for the making of decisions that promote the development of African countries; his academic work also makes him a point of reference for a new generation of economists.

He is a Full Professor of Economics at Félix Houphouët-Boigny University in Abidjan (represented here today by its Vice-President of Planning, Programs and External Relations), and hundreds of students have attended his classes since 2006. His teaching focuses on microeconomics, econometrics, organizational economics, labour economics and human resources, incentive mechanisms within organisations, and the evaluation of development projects.

His many publications in specialist journals include contributions on the evaluation of tax policies, strategies for economic competitiveness and the structural transformation and modernisation of economies and, more recently, on the impacts of the Covid-19 pandemic.

He is also the author of an informative book entitled *Incentives, Ageing Workforce, Performance Pay, Job Satisfaction* (Éditions universitaires européennes, 2017), in which he explores some aspects of the internal labour market; with a comparative analysis of Japan, Sweden and the United States on the effects of job satisfaction and career prospects based on the intrinsic motivation of workers.

As I mentioned at the beginning of this laudation, the new honorary member of our Academy is also a great connoisseur of European culture, especially its French-speaking part, and he frequently collaborates with European universities.

He is a research associate of the Foundation for Studies and Research on International Development (FERDI), a think tank linked to the University of Clermont-Auvergne in Clermont-Ferrand, France, where he has co-supervised doctoral theses. He has likewise participated in several thesis examination committees at the aforementioned university, and also at the University of Maastricht, in the Netherlands. He is a member of the scientific committee of the *Revue d'économie du développement* at the University of Clermont-Auvergne.

As an economist with a global perspective, many of his works and the theses he supervises focus on information economics, following in the footsteps of the 2001 Nobel Prize in Economics laureate, Joseph E. Stiglitz. According to this theory, the information used for decision-making is distributed asymmetrically, which ends up causing disruption. Alban Houré has always been interested in studying these information asymmetries, and in proposing solutions capable of minimising their impact on economic decisions that lie within his area of influence.

Dr. Houré also defines himself as an admirer of Patrick Guillaumont, professor emeritus of the University of Clermont-Auvergne and president of FERDI – the foundation already mentioned – for whom choosing the path of economic science means wanting to change the world by making things move and causing them to evolve. It is true that thanks to people like Dr. Alban Alphonse Emmanuel Houré, the science of economics is much better-connected with the real world.

To conclude this laudation, I would like you to get to know the people who are the source of inspiration of Dr. Houré as a husband and father: Monique, his loyal life-partner and mother of their six children, Grâce, Shinobu (born in Kobe), Josémarie, the twins Marie-Raphaèle and Marie-Gabrièle, and

little Megumi. They are his true driving force, helping him to grow every day as a person and move forward with a commitment to making the world a better place.

***Human capital and institutional quality: catalysts for structural transformation acceleration in Sub-Saharan Africa***

***[Capital humain et qualité des institutions: catalyseurs de l'accélération de la transformation structurelle en Afrique subsaharienne]***

Structural transformation of the economies of Sub-Saharan Africa, the obstacles that slow it down and possible solutions to be applied are the three issues that have marked the inaugural speech of Dr. Alban Houré as honorary member of the RAED, which we have just heard. I will not go into individual details of the points that our member elect has outlined in his speech, full of relevant information and rich nuances, as is to be expected from an economist as prestigious as he is, and one involved in the economic reality of the region of the world that we know of as Sub-Saharan Africa, and which raises so many hopes for development among analysts of the global economy.

After an introduction dealing with the theoretical and empirical framework applied to studying structural transformation in economic development from the points of view of several schools of economic thought, his has been a discourse based on the unquestionable weight of the data obtained, the author's own experience on the ground and a series of projections about the immediate future, marked by a prudence that nevertheless continues to invite optimism.



Dr. Houré stresses the need – bordering on urgency – for the structural transformation that is key to socio-economic growth in the Sub-Saharan countries of Africa. Social and economic aspirations articulated through long and medium-term development plans not only make the structural transformation of the economy viable; they also affect the improvement of human capital and the strengthening of the political framework.

Countries following this economic path include, as he indicates, Senegal, Côte d’Ivoire, Nigeria, Kenya and Zambia, each of them with ambitious agendas for restructuring their economies and reducing dependence on the primary sector, in order to promote a diversification in which industry and the service sector play a greater role.

When it comes to promoting robust industrial sectors and maintaining the pace of structural transformation in Sub-Saharan Africa, there are many challenges. Dr. Houré has pointed out, in his speech, the most relevant of these: the high concentration of economic efforts on exports; an unequivocal symptom of limited economic diversification. And what, in his view, are the factors that feed an economic scenario with such poor diversification? These doubtless include inefficient and badly focused R&D policies, a highly reduced level of innovation, dependence on the primary sector and high exposure to external factors such as fluctuations in the prices of raw materials or the effects of climate change.

We should now pause to consider a distinguishing characteristic of the Sub-Saharan economy: the course of structural transformation of the economy of this region of the world has been different to that followed by the Europe of the day and, later on, by the countries of East Asia, which went from the primary to the industrial sector; the latter being a prolonged precursor to the rise of the service sector.

Dr. Houré tells us that this has not been so in Sub-Saharan Africa, but rather that the workforce has often gone from being engaged in agriculture to delivering services that he describes as “informal”, and which are characterised by their low performance and limited productivity. On the basis of this reality, the new honorary member of the Royal European Academy of Doctors has revealed the reasons behind this evolution that is so far outside traditional economics and which, for this very reason, is by nature a slow process.

Dr. Houré goes on to explain the theoretical and practical fundamentals of the structural transformation of economic development, whose presuppositions have given way to beneficial lessons that can be drawn from certain case studies, such as the economic and structural transformation, in recent decades, of China, Malaysia and Brazil.

Particular attention is drawn in this respect to the benefits of implementing policies that favour education and proper healthcare. Dr. Houré maintains, for example, that China’s system of education has gone through important reforms that have brought about deep changes. Malaysia – which has likewise placed an emphasis on the expansion and quality of education, vocational training and R&D – is “one of the success stories among developing countries that began promoting a knowledge-based economy in the mid-1990s to sustain rapid economic growth and improve international competitiveness”. The government of Brazil meanwhile favours the development of high-quality vocational education to solve economic and social problems, while promoting, via government agencies, the value of scientific and technical knowledge for the purposes of social development.

These lessons, which can be considered true examples of rapid economic transformation based on exploiting the advantages of building an emerging economy focused on the promotion of agricultural products and the agri-food sector (e.g. coffee-growing in Brazil and the cultivation of rubber in Malaysia), provide a counterpoint to what Dr. Houré calls the “cautious advances” of the Sub-Saharan economy in the period 1995 to 2018, such as a drop of eight points in the primary sector as part of the GDP of the countries concerned, a situation confirmed by the increase, by three and five points respectively, in the secondary and tertiary sectors. Despite the undeniable progress that these data represent, significant challenges remain to hamper the region’s full potential, namely:

- insufficient productive infrastructure,
- limited impact on the creation of jobs, and
- markedly stagnant growth in labour productivity.

Parallel efforts to improve human capital in terms of education and research are burdened by low investment, a factor that does not bear comparison to the above examples of East Asia, where the case of South Korea stands out in particular, given its leadership in R&D investment, and the fact that it is home to the region’s biggest proportion, per million inhabitants, of people engaged in research.

According to Dr. Houré, tackling these weaknesses in the development of human capital is crucial if Sub-Saharan Africa is to improve its competitiveness and activate sustainable growth in the long-term. To give just one example, only 2% of students in Côte d’Ivoire are engaged in vocational training or technical education, as opposed to 5% in Malaysia and 6% in China.

For him, another crucial factor that explains the observed rapid structural transformation of Brazilian and South-East Asian countries is the quality of the economic and political institutions. These institutions actually create incentives for the implementation of economic activities.

Progress in governance in Sub-Saharan African countries over the period 2010-2021 has been mitigated by weaknesses, such as weak efforts to enforce business climate, and to resolve issues concerning Security, Rule of Law and Participation, Rights, and Inclusion.

Dr. Houré cannot do otherwise than focus on the situation in his country of birth when it comes to dealing with the desired structural transformation of the economy of Sub-Saharan Africa.

The case of Côte d'Ivoire is, as he explains, a special one. Despite the implementation of various initiatives from the 1960s to the 1980s, accelerated structural transformation did not actually occur before 2012. However, and regardless of comparative percentages that clearly point to the slowness of the process in Côte d'Ivoire, what is really relevant is that the countries of East Asia experienced faster structural transformation, thanks above all to the multiple reforms implemented there.

Other factors that Dr. Houré has highlighted in his speech include the need for a robust alliance between the state, the private sector, R&D institutions and civil society in order to promote and disseminate innovation, along with the development of innovation hubs, particularly those deploying assets that allow relocation and which promote local entrepreneurship, and finally, initiatives that guarantee the coherence and coordination of national and sector-based development plans.

One highly important aspect of the process of structural change in the economies of Côte d'Ivoire and the Sub-Saharan region as a whole is the limitations placed on the transformation of raw materials. These encounter a series of obstacles, such as restricted access to equipment and processing and conservation technology, along with a shortage of skilled workers and the seasonal nature of certain raw materials; not forgetting difficulties in obtaining proper packaging for perishable items.

This problem of access to equipment is key, Dr. Houré tells us, because only the domestic production of equipment adapted to the working and climatic conditions of the area can guarantee progression in the industrial sector of the transformation of agricultural raw materials. Sustained progress in this area would also remove the obligation of the countries concerned to import such equipment.

One negative factor common to the whole of Sub-Saharan Africa is that small and medium-sized operators in the agribusiness sector suffer from a shortage of long-term credit for the acquisition of processing equipment. It goes without saying that low innovative capacity in Sub-Saharan Africa, and more specifically in Côte d'Ivoire, do not help the process of economic transformation.

Dr. Houré naturally concluded his speech by addressing a range of solutions designed to overcome the obstacles faced by the structural transformation of the economy of Sub-Saharan Africa. He proposes the following for resolving difficulties in accessing processing equipment and compensating for the lack of training and qualified human resources:

- The development of a domestic processing-equipment industry

- Increased financing of public equipment-production facilities
- The establishing of a fiscal regime designed to incentivise the importing of processing equipment in the short term
- The setting-up of a directory of processing-equipment prototypes, while strengthening the capacity of processing organisations
- The implementing of credit-guarantee and tax mechanisms to improve the access to finance of small and medium-sized processors of raw materials
- The creation of information-exchange and cooperation platforms for processing organisations
- Finally, and by no means less important, a strengthening of human capital; given that technological innovation and adaptation in the areas concerned will depend on its quality and structure.

Some of the solutions proposed require investment, while others can be implemented by reforming the regulatory framework and improving the quality of political and economic institutions. Africa's business world is already gradually adapting to new models of growth, and Europe cannot afford to miss the continent's investment train. It is for this reason that economists like Dr. Alban Houré provide the key to fruitful cooperation, both now and in the future.

**FRENCH TRANSLATIONS:**

**Please note the French-language names of these organisations:**

CAPEC = *Cellule d'Analyse de Politique Economique*  
(Economic Policy Analysis Unit) *du CIRES*

CIRES = *Centre Ivoirien de Recherches Economiques et Sociales*  
(Ivorian Centre for Economic and Social Research)

Cédéao = *Communauté économique des États de l'Afrique*  
*de l'Ouest* (ECOWAS, the Economic Community of West  
African States)







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Conferenciante habitual, *coach* y autor de 8 libros, algunos *best sellers* empresariales, fue elegido Mejor Director de Marketing de España en 1975 por la revista Marketing Actualidad y Mejor Directivo del Año en 1982 por la AED (Asociación Española de Directivos). En 2023 fue investido como Académico Numerario de la Real Academia Europea de Doctores.



- *The main drivers of structural transformation are innovation and the reallocation of factors in favor of high-value-added sectors.*
- *Innovation and technological adaptation are strongly dependent on the composition of the country's human capital. Higher education levels are more crucial for R&D than lower education levels, which, on the other hand, are more useful for imitation or adoption of technologies developed elsewhere.*
- *Human capital, through its level and quality or structure, allows the economy to adapt more or less quickly to technological change, which is the key factor in structural transformations.*
- *These changes can only occur in an ecosystem that guarantees property rights and directs investments towards the desired sectors.*
- *Structural transformation accompanied by high investment in fundamental factors – human capital, infrastructure, and institutions – is the source of rapid and sustained growth.*

Alban Houré

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