



# Vaccine.

Building the case for

**vaccine manufacturing in Africa.**

First published by Seed in 2021.

Seedconsultancy.com

[info@seedconsultancy.com](mailto:info@seedconsultancy.com)

Designed by Andrea Camilleri

Articles appearing in this publication do not necessarily reflect the views of Seed. All rights reserved. No part of this publication may be reproduced without the previous written permission.

Copyright Publication © Seed.

**ISBN is 978-9918-9531-0-3.**

**Seed**

# About Seed

We set up Seed wanting to do things differently. Powered by tech, our business attracts the best people, whilst creating meaningful work. Our principles and vision define us. We care about making a difference; for our employees, for our clients and the wider community. Our clients enjoy objective advice, clearly expressed. With our help, they make better decisions and get better results. No matter what sector, size of business or scope of work, we bring together rigour, knowledge and experience.

**Seed is big enough to deliver yet small enough to care.**

**[Seedconsultancy.com](https://seedconsultancy.com)**

## Other publications by Seed



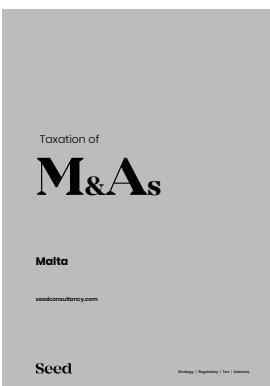
### **Agile.** *Perspectives on the future of Malta's economy post COVID-19. (April, 2020)*

This publication aims to contribute to the national debate and to stimulate business and policy leaders to embrace the future and to start working towards a much-needed recovery plan that is anchored around a long-run vision for Malta. The research report complemented by consultations with 18 social partners, 20 business leaders, 15 expert contributions and an economic survey with 385 participants.



### **(r)Evolution.** *PSD2, Open Banking and the future of payment services.*

This report sheds light on the adoption by local credit and financial institutions of Europe's Second Payment Services Directive (PSD2) which introduces the concept of Open Banking within its regulatory framework. To gauge the Directive's impact and measure the level of preparedness in the financial world, we undertook a qualitative and quantitative research study of representatives from close to 20 leading credit and financial institutions. We have used the results to inform this report.



### *This is the first publication in the series 'Taxation of..'*

This series aims to shed light on tax matters in various transactions and industries. This particular publication provides a detailed explanation of the tax matters in M&A transactions – it looks at the tax treatment from both the buy-side and the sell-side, on both asset and share deals. The last section of the report also delves into the issues of Change Management within a M&A, which are often overlooked and are so critical to the success of the M&A itself.

**Seedconsultancy.com**

**Seed**

Strategy | Regulatory | Tax | Advisory



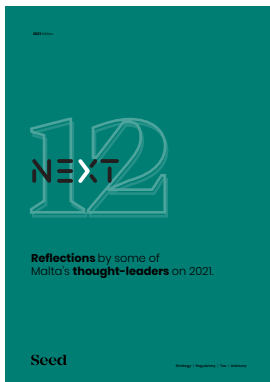
### **Propose. Budget 2021.** (September, 2020)

Seed launches its pre-budget recommendations with a two-pronged approach. The first set of recommendations focuses on a short-term stimulus package to continue supporting real economic activity with the main measure being the gradual reduction in corporate tax for local businesses. Second set of proposals are anchored around a long-term vision for the island.



### **Malta Budget 2021.** (October, 2020)

This document presents a detailed review of the Malta Budget for 2021. Apart from a high-level description of the measures announced by the Government, the report also gives a detailed economic context and analysis which should serve as a backdrop to this unique budget.



### **Next12.** Reflections by some of Malta's thought-leaders on 2021. (January, 2021)

Next12 brings together some of Malta's leading thought-leaders in their respective field to share their insights on a number of areas and topics and their developments throughout 2021. With still a prevailing sense of uncertainty, the world will surely continue to transform itself in a number of domains. There is no doubt that the world will change. Business and trade will change. Social dynamics and our way of life will change too. We need to start thinking of a new normal and Malta is no exception.



### **Analyse.** Taxation Trends within the European Union.. (February, 2021)

This publication provides high level tax information on each of the 27 EU Member States. As the world becomes smaller it is becoming more important to be able to obtain an understanding of how transactions are impacted in different countries and not just in Malta. This publication provides essential information on the various tax systems within the EU at the click of a button.

**Seedconsultancy.com**

**Seed**

Strategy | Regulatory | Tax | Advisory

# Table of contents

<b>Foreword</b> by Dr Tonio Borg, Former European Commissioner for Health	<b>07</b>
<b>Foreword</b>	<b>08</b>
<b>Executive Summary</b>	<b>09</b>
<b>The vaccine market</b>	<b>10</b>
Vaccines	11
Vaccine Manufacturing	12
<b>The African Vaccine market</b>	<b>14</b>
Setting the scene	15
Vaccine procurement in Africa	16
Manufacturing capacity	17
Specific factors and drivers of manufacturing in Africa	18
<b>Recommendations for Building a vaccine ecosystem</b>	<b>19</b>
<b>Conclusion</b>	<b>24</b>

# Foreword

by Dr Tonio Borg

The Covid-19 pandemic has created legal, economic, and social earthquakes. However, it has provided fertile ground for innovation in the vaccines market. Indeed, necessity is the mother of invention. The development of different vaccines for Covid-19 was accomplished in record time with due medical scrutiny and diligence by regulators.

The concern, however, remains that the distribution of the vaccines is not just, with countries within the African continent experiencing lack of manufacturing of the vaccines within the continent itself. The fact that 99% of all vaccines in Africa are imported from outside the continent, proves that Africa remains vulnerable to exploitation particularly as regards supply, the prices for such vaccines as well as production.

The Report by Seed analyses the pros and cons of shifting manufacturing to the African continent guaranteeing security of supply and dealing efficiently with pandemics, while at the same time guarding against what the authors describe as “big pharmaceutical crowding out small players”.

Europe has a moral and historical obligation to assist African countries, in a sincere and genuine fashion, without any condescension or patronising. Such assistance should arise out of a sincere political will to forge friendships, build bridges and accomplish a moral obligation. In this respect the European Union, which is the world’s largest contributor of humanitarian and development aid, should be in the forefront of creating partnerships with African countries to explore the possibility of home-grown manufacturing for the benefit of all Africans.

I agree with the conclusions of the Report namely, that while the case for homegrown vaccine manufacturing is by no means obvious, if there is the right level of commitment and support, it is not out of reach for some countries. This would make Africa less vulnerable and the social divide between affluent countries and other countries whose economy is still developing, would be reduced. Security of supply for vaccines against any infectious disease, present or future, is such a predominant consideration, that the case for homegrown vaccine production is a strong one and is ably made by the authors of the Report.

I hope that the Report by Seed will be an effective springboard for further debate and discussion which can lead to concrete and tangible results for the benefit of the African continent, home to 17 per cent of the world population.

**by Tonio Borg LL.D. Ph.D. K.O.M.**

**Former European Commissioner for Health**



# Foreword

There is no doubt that COVID-19 has spurred a lot of thought and reflection across several areas and elements. Today, people are questioning the future of work and the workplace with a move towards hybrid working models. Other areas such as retail and tourism are also going through this reflective phase. However, we believe that one of the most important discussions and reflections the world needs to stop and make is the future of vaccinations in Africa.

Africa is home to more than 17 per cent of the world's population, with sub-Saharan Africa alone projected to account for most of the global population growth over the next few decades. In addition, Africa's existing vaccine market, estimated at \$1.3 billion, is expected to reach a value of up to \$2.35 billion by 2030, supported by population growth, expanded vaccination and new products being required. Nonetheless, the African Vaccine Manufacturing Initiative (AVMI) estimates that the continent can currently produce less than 1 per cent of its vaccine needs. This demand and supply imbalance is likely to become even more acute in the future if it is not addressed now. The goal should be transitioning the continent from dependency to agency and security of supply.

At Seed, we are focused on making an impact and a difference. We harness the power of economics and tax policy to design ecosystems that work and that lead to tangible benefits to populations. We believe that now is the time for Africa and especially for some African countries to rethink the position on vaccine manufacturing.

We believe that vaccine manufacturing is not just a case of opening a stand-alone factory in several countries across the continent. On the other hand, it needs to be seen as a broader ecosystem which has the power of developing into an economic sector providing quality employment, career opportunities, economic value-add and societal benefits. This report is our contribution to the debate.

Expanding vaccine manufacturing in Africa is a complex undertaking, requiring several factors to align. Critically, the nascent industry needs wide-scale collaboration among a broad range of stakeholders, including pan-African leadership organisations, regional economic governments, national governments, private-sector players, and global-health actors.

The global COVID-19 pandemic presents a unique moment for leaders across the public, private, and social sectors to align on the importance and potential for developing this sector. The case for homegrown vaccine manufacturing is by no means obvious, but with the right level of commitment and support it is not out of reach for some countries.

**JP Fabri & Nicky Gouder**

**Seed**



# Executive Summary

The burden of infectious diseases continues to be disproportionately high in some African countries, particularly in sub-Saharan Africa, leading to significant impacts on health and socio-economic development.

African vaccine demand is booming even without considering COVID-19.

However, the vaccine market is particular in nature. They are biological products made from living organisms meaning that their development cycle is much more complex from that of a chemical product. This means that the risk of failure in product development is very high requiring significant investment and risk taking. This makes vaccine manufacturing dependent on very high-quality research and development teams. In addition, vaccine procurement is complex and involves multiple actors especially for the African continent.

The COVID-19 pandemic has revived a long-standing question in African and global circles: What would it take for Africa to manufacture its own vaccines?

Several factors are coming into play, and which might have a direct impact on the viability and feasibility of vaccine manufacturing. These include technology, the possibility of scaling and the innovations happening both in processes and manufacturing-models. There is also a growing support and lobby for Africa to reduce its dependency on vaccine importation. The past year has in fact seen a deepening of the political and regulatory support required to manufacture vaccines in Africa.

This report presents reasons why vaccine manufacturing should be seen as a priority in Africa with the case of having regional hubs in select countries. The below are the main recommendations we put forward:

- **There is need to develop a continent, regional and sectoral vision and strategy for vaccine manufacturing.**
- **Robust national regulatory frameworks need to be designed and developed to attract such an industry.**
- **Governments need to create enabling environments including attractive tax systems and incentives together with supporting infrastructure.**
- **Access to international finance and donor programmes together with the development of impact investment frameworks are key to developing this ecosystem.**
- **Attracting talent through taxation and residency schemes and developing a pool of qualified local talent through educational programmes is critical.**
- **Focus on supporting and reforming vaccine procurement procedures and on standardising requirements to develop complete markets for vaccines.**

Vaccine.

# The vaccine market

The vaccine market continues to undergo deep transformation due to innovations happening on several fronts including advances in life sciences and medicine as well as technological developments.

To have an informed discussion on vaccine manufacturing and its potential in Africa, it is fundamental to gain an understanding of the market dynamics and forces that shape this sector.

## Vaccine.

# Vaccines

Although they are part of the pharmaceutical ecosystem, vaccines are different from medicines. They are biological products made from living organisms meaning that their development cycle is much more complex from that of a chemical product. This means that the risk of failure in product development is very high requiring significant investment and risk taking. This makes vaccine manufacturing dependent on very high-quality research and development teams making human resources a key factor in their success. Unlike the pharmaceutical industry, there are no generic vaccines. Any change in the product must go through the entire quality, safety and efficacy evaluation process resulting in timing and cost issues. In fact, vaccines are highly regulated products requiring lengthy internal and external quality assurance processes, with strong regulatory bodies and strict procedures.

Although the vaccine market is still relatively small compared to the broader pharmaceutical market, it is exhibiting fast growth and achieving high profit-

ability as a segment. This has led to a consolidation in the industry with several mergers and acquisitions happening and today there are a handful so-defined mega-producers of vaccines.

While the vaccine industry has a high barrier to entry for second-generation manufacturers, it also has a high potential to generate blockbuster sales. The market has now developed into a highly attractive and profitable market due to the advancements in genomics, manufacturing technologies and on the back of increasing demand due to new viruses and pandemics. COVID-19 is a case in point, as well as due to population growth in developing and emerging economies.

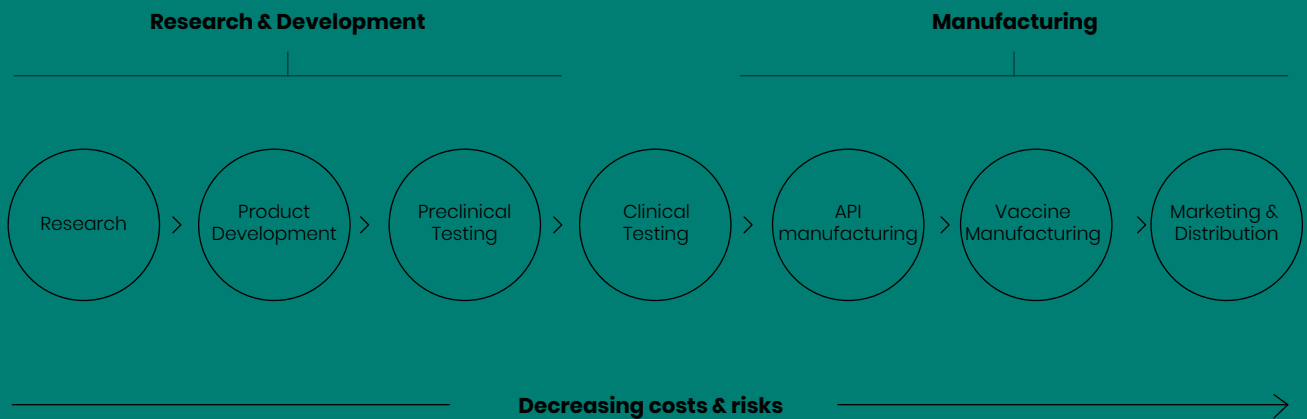
This notwithstanding, the market remains particular. Demand for vaccines is not free. It is induced and prompted by events, health professionals, donors, and government institutions. Collective and public funding is dominant in almost all countries especially for national immunisation programmes. As a result, on the demand side, there are only a limited number of purchasers; these being, governments and international bodies including UNICEF. Combined with the concentrated producers pricing is also not based on economic fundamentals but it can be set either artificially high or low.

Vaccine.

# Vaccine Manufacturing

Vaccine manufacturing is complex and multi-step as a process. Figure X provides an overview of the vaccine lifecycle, including R&D and manufacturing.

Figure X Vaccine life-cycle

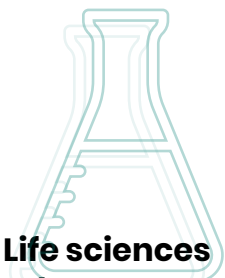


If we had to take a two-phased approach to vaccines; the R&D phase is the riskiest and the highest cost outlay whereas manufacturing is where profitability increases. For the scope of this report,

vaccine manufacturing is assumed to focus only on the manufacturing component of the above shown lifecycle

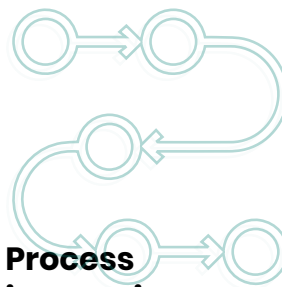
# Vaccine.

However, there are two drivers that can shape vaccine manufacturing going forward.



## Life sciences advancements

Manufacturing platforms continue to evolve especially in response to COVID-19 with the novel mRNA-based vaccines taking off. mRNA vaccines encode a disease-specific antigen into “instructions” for the patient’s immune system. Such standardisation avoids the biological variation of viral-vector vaccines. Such vaccines can benefit from less complex manufacturing processes and can become even more accessible technologies through mobile “microfactories.”



## Process innovations

Innovations are reshaping the entire manufacturing process. These advances along with the new vaccine technologies, are creating an opening for “multimodality” facilities that can achieve higher utilisation and whose fixed costs can be divided across more products.

After having seen the transformations happening in the vaccine market, it is time to focus on Africa, its vaccine market, production capacity and future possibilities in this regard.

# Seed

Vaccine.

# The African vaccine market

The **burden of infectious diseases** continues to be disproportionately high in some African countries, particularly in sub-Saharan Africa, leading to significant **impacts on health and socio-economic development.**

## Vaccine.

### Setting the scene

The burden of infectious diseases continues to be disproportionately high in some African countries, particularly in sub-Saharan Africa, leading to significant impacts on health and socio-economic development.

African vaccine demand is booming even without considering COVID-19. The African continent is home to more than 1 billion people, more than 17% of the world's population. Going forward, sub-Saharan Africa is projected to account for most of the global population growth over the next few decades. This is expected to be a main driver of vaccination demand solely based on child immunisation programmes administered by international organisations.

Africa's existing vaccine market is estimated at \$1.3 billion and is expected to exceed the \$2 billion mark by 2030 on the back of population growth, expanded vaccination and new products being developed in response to new viruses. However, vaccine research, development and manufacturing remain in their infancy. In fact, the African Vaccine Manufacturing Initiative (AVMI) estimates that the continent can currently produce less than 1% of its vaccine needs.

## Seed

99%

of **Africa's** vaccines  
are **imported**

\$2.3bn

size of African vaccine  
**market by 2030**

This external dependency is a source of vulnerability and risk which continues to increase with the outbreak of new disease outbreaks. The 2009 H1N1 Influenza pandemic highlighted the African continent's lack of capacity to develop, manufacture or access flu pandemic vaccines. The 2014 Ebola outbreak led to a realisation that Africa requires an accelerated drive of local vaccine development and manufacturing. The outbreak of COVID-19 and the demand for vaccines has once again highlighted the fragility of the African health system, not only from a manufacturing perspective but also in relation to procurement.

# Vaccine.

## Vaccine procurement in Africa

Assessing the feasibility and viability of vaccine manufacturing in Africa depends very much on vaccine manufacturing within the continent. In fact, procurement of vaccines is a complex system of linked activities defined by legislation, rules as well as local and international practices. Procurement optimisation and understanding is a necessary consideration for local production and a credible and viable approach to improve the vaccine supply.

The vaccine market is also characterised by a complex value chain process. Several considerations on the elements of the procurement processes with respect to manufacturing is given below:

- **Forecasting:** improving country capacity for forecasting will improve the optimisation of both procurement processes and the opportunity for market entry by any African manufactured vaccine. Longer term forecasting provides potential suppliers a useful indication of the future market for individual products.
- **Product selection:** optimal product presentation and regional harmonisation will assist in creating economies of scale for African vaccine manufacturing.
- **Regulation:** harmonisation of regulatory requirements would be an enabling factor to enhance the opportunity of successful African vaccine manufacturing.
- **Procurement rules & regulations:** the degree

to which individual procurement rules and regulations affect the opportunity for procurement of locally manufactured vaccines would need to be assessed on a case-by-case basis to establish possible market entry.

- **Financing:** donor policies on eligible supplier and procurement mechanism use, needs to be considered for market access.
- **Transport:** any African vaccine manufacturer would need to identify a secure and direct method of cold chain air transport to any country it supplies with vaccines.
- **Trade & importation:** supplying vaccines within established trade groups may be a simpler starting point for any export of African manufactured vaccine.
- **Customs clearance:** acknowledging the specific of the current procedures and actors in each country where vaccines are exported to will be needed for developing the necessary procedures to maintain effective cold chain delivery.
- **Taxes, tariffs & duties:** TTD application assessment would be required in each importing country as it may specifically affect the price. The Africa Continental Free Trade Agreement will play a key role in this.
- **Payments:** understanding the specifics of payment terms and the impact on the supplier will be required when considering supply agreements within the region.



# Vaccine.

## Manufacturing capacity

There currently is very limited manufacturing capacity with respect to vaccines in Africa. With only seven countries having small vaccine production, notably focused on filling and finishing lines, only one facility is the only WHO pre-qualified vaccine manufacturer in Africa and is geared towards small quantities of a vaccine for yellow fever. This confirms the fact that vaccine manufacturing in Africa is still nascent, especially in the upstream segments of the value chain. While there is potential to expand the capacities of today's African manufacturers, much of the sector's expansion will likely also come from greenfield investments that carefully consider technological and process innovations and structural realities.

Due to this limited capacity and heightened vulnerability and risk for the African continent, in September 2010, during the International Vaccine Technology Workshop in India, a group of interested Africans launched the African Vaccine Manufacturing Initiative (AVMI). Looking beyond the provision of vaccines in emergency situations, AVMI intends to coordinate efforts of African vaccine manufacturers and other interested parties, who have a vision to see Africa produce its own vaccines and biologicals for both routine and emergency situations.

Contradictory points of view exist regarding the feasibility of developing a successful and sustainable vaccine manufacturing sector in Africa. A summary of these arguments is presented in **Table X.**

**Table X: Arguments regarding vaccine manufacturing in Africa**

### Arguments in favour

- Security of supply
- Addressing the Africa specific disease burden
- Dealing efficiently with pandemics
- Responding to unmet health needs
- Increasing demand for vaccines
- Creation of new industry and employment opportunities
- Economic benefits
- Knowledge transfer
- Broader socioeconomic development

### Arguments against

- Past failures do not bode well
- Complexity and high costs involved
- Big pharmaceuticals have crowded out smaller players
- Fragmented vaccine market in Africa
- Lack of human and technical capacity

# Vaccine.

## **Specific factors and drivers of manufacturing in Africa**

Several Africa-specific conditions have an impact on the ability and capacity of vaccine manufacturing to happen on the continent. These include:

- **Human resources & education:** with few Africa educational institutions in the field of vaccinology, vaccine, or biotech manufacturing; homegrown talent is scarce. Talent attraction and new educational programmes need to be set-up to develop the required pool of highly skilled human resources.
- **Operations & maintenance:** vaccine manufacturing and all pharmaceutical manufacturing requires significant and specialised maintenance of the equipment. With a lack of an established ecosystem, the cost to bring in foreign teams will be significant until a nascent local sub-sector is established.
- **Utilities:** having the right infrastructure in relation to electricity and water will be critical for manufacturing concerns to set-up.
- **Demand dynamics:** given that vaccines in Africa are procured through donor agencies and who can leverage significant bargaining power, this can have a significant bearing on the financial viability of vaccine manufacturing.
- **Local regulators:** having well-functioning regulatory bodies with well-defined regulatory processes and procedures will also support manufacturers not only in the authorisation process but also to export the manufactured vaccines.
- **Competition:** heightened competition from global manufacturers might have pricing and competitiveness issues.

Vaccine.

# Building a vaccine ecosystem

The development of a **vaccine manufacturing sector** in Africa needs to be seen as part of a broader strategy. For the idea to materialise, we cannot only envisage a standalone factory, but vaccine manufacturing **must be seen as an ecosystem.**

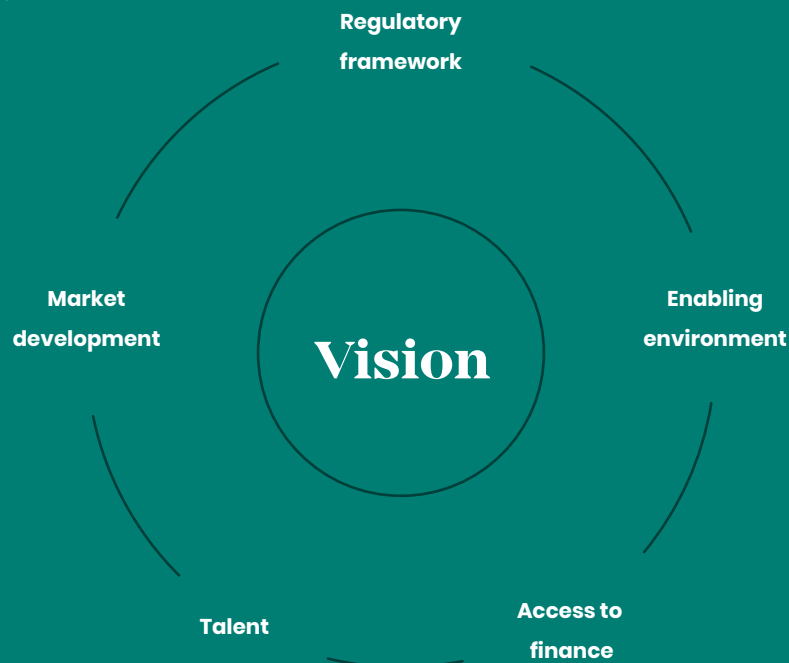
**Vaccine.**

## Recommendations

An ecosystem is defined as a dynamically stable network of interconnected firms and institutions within bounded geographical space. By taking such a systems approach means that focus is given on both the individual components of the system as well as on the sum of the parts and this is in fact believed to yield maximum results when building economic sectors and visions.

The following are to us, and based on our experience in ecosystem design, the main elements required for a successful ecosystem and which we believe are to guide the process in relation to vaccine manufacturing too.

**Figure X Key elements for a successful ecosystem**



## Vaccine.

# Vision

**There is need to develop a continent, regional and sectoral vision and strategy for vaccine manufacturing.**

Following COVID-19, there is now a growing movement and realisation that Africa requires its own vaccine manufacturing. Africa Union has taken the lead on this and called a vaccine-manufacturing meeting in April 2021. During the Global Health Summit, various global leaders expressed their support towards developing vaccine manufacturing in Africa and country-leaders in Africa are already showing leadership in this area. The success of any

ecosystem depends a lot on its vision and given the complexity of the industry and the prospect of creating regional hubs, we believe that a holistic vision should be developed that will look at the best interests of the continent. Various prospective regional hubs need to work together to ensure that synergies and complementarities are exploited and leveraged.

# Regulatory framework

**Robust national regulatory frameworks need to be designed and developed to attract such an industry.**

A good regulatory and legislative framework are central to any ecosystem together with the associated governance and institutional mechanisms. In our experience, we have found that building proactive and innovative regulators is critical to the long-term success of the ecosystem. Regular regulatory reviews and legislative changes to cater for new developments and trends are fundamental for a sector to remain competitive and attractive.

Also, regulatory capacity building needs to be regular. Vaccines and their manufacturing are extremely regulated and complex as industries. It is therefore imperative to ensure that national regulatory bodies are designed to support the industry.

## Seed

**Vaccine.**

## Enabling environment

**Governments need to create enabling environments including attractive tax systems and incentives together with supporting infrastructure.**

The general business and market environment needs to be supportive of the ecosystem. Tax systems that are simple and attractive together with investment support schemes are fundamental building blocks. Here, the countries that are consid-

ering becoming regional manufacturing hubs should devise sector-specific incentives including tax credits to attract the global players. General infrastructure which is sector-supportive, such as energy, purified water, cold storage, warehousing, and telecommunications, will also be important.

## Access to finance

**Access to international finance and donor programmes together with the development of impact investment frameworks are key to developing this ecosystem.**

Clusters also thrive on access to finance as it serves as the blood for the system to grow and develop. Vaccine manufacturing requires significant investment, and the availability of financing will be critical for the successful development of such an ecosystem. European Commission President Ursula von der Leyen announced at the G20 Global Health Summit in Rome a Team Europe initiative on manufacturing and access to vaccines, medicines and health technologies in Africa. The initiative will help create an enabling environment for local vaccines manufacturing in Africa and tackle barriers on both supply and demand sides, backed by €1 billion from the EU budget and the European development finance institutions such as the European Investment Bank (EIB). This amount will be further enhanced by

contributions from EU Member States. The Team Europe initiative is an integrated and comprehensive support package that will tackle barriers to manufacturing and access to health products and technologies in Africa from all angles and will place the continent's own actors and institutions at its heart. On the supply side, together with the EIB and development banks, the initiative will incentivise and de-risk investment into local pharmaceutical and biotech companies. In addition, impact investment can be an important source of financing. It is also recommended that countries develop attractive impact investment frameworks to support the flow of funds and financing instruments that can support these projects.

**Seed**

**Vaccine.**

## Talent

**Attracting talent through taxation and residency schemes and developing a pool of qualified local talent through educational programmes is critical.**

Human talent is also a key pillar of any ecosystem. This is especially the case for vaccine manufacturing which requires highly skilled and specialised human resources. The power of the ecosystem to attract investment to it depends very much on the availability of skilled and required talent. This means that educational partners need to be fully onboard in the design of the ecosystem to ensure that the right qualifications are being offered and other training programmes. Establishing academic partnerships with foreign universities or research institutions can support the development of such programmes. However, at the onset, attracting talent and expats will play a key role in kickstarting any ecosystem,

especially a complex one like vaccine manufacturing. Tax incentives and special programmes such as residency schemes can be launched to attract foreign talent. Talent is nurtured by educational institutions which also need to collaborate with the private sector to develop research, development, and innovation. Here, collaboration agreements between industry and academia are central to sustain future-proof growth. The creation of business parks close to universities can translate in important innovation cross-fertilisation and spill-over adding to the vibrancy and dynamism of the ecosystem itself as it morphs to into developing the research and innovation arm to it.

## Market development

**Focus on supporting and reforming vaccine procurement procedures and on standardising requirements to develop complete markets for vaccines.**

Given the peculiarities of the vaccine market, for the ecosystem and vaccine manufacturing to take-off, it is important to ensure that the market exists from a procurement side. Therefore, countries should identify the most important vaccine preventable diseases and possible vaccines to be developed and produced to respond to Africa's needs. In

addition, to optimise the potential from African vaccine manufacturing, the challenges posed through limited capacity in procurement should be addressed in parallel with any manufacturing capacity development. Markets need to be standardised to ensure exports to other countries to sustain the demand.

## Seed

## Vaccine.

# Conclusion

Africa remains inherently dependent on foreign suppliers for vaccination requirements. As the COVID-19 pandemic has shown, as well as other epidemic outbreaks in the recent past, vaccines are a necessary requirement to bounce back for such negative shocks.

The dependency highlighted by the fact that Africa imports 99% of its vaccination needs is a serious challenge for the Africa's health resilience. As COVID-19 has shown, health resilience is directly linked to economic resilience and any setbacks to public health systems and vaccination rollouts in a global pandemic can have dire economic consequences.

Through this report we presented some of the arguments that should add to the discussion of developing a homegrown vaccine manufacturing ecosystem in Africa.

Several innovations happening in the vaccine manufacturing space should allow countries to view this effort more positively. The ability for some countries to develop into regional hubs is also becoming a closer reality as biotech and process innovations are making it easier to develop such facilities especially given the wave of new vaccines that are being developed.

As a company that has been engaged to design and develop ecosystems, we believe that such a holistic approach should be taken when contem-

plating vaccine manufacturing. This undertaking cannot be seen as a standalone initiative but needs to be the result of several components coming together. This includes the attraction talent, the access to capital and financing, a supporting national and regional regulatory framework together with market development and robust infrastructure.

The international community is aligning itself to this vision and several bodies including the European Union have pledged their support to the African continent with the hope of supporting the growth of this industry and reducing its dependency.

As the world continues to battle COVID-19 and the end seems closer, so does the next global pandemic. With national immunisation programmes being a cornerstone of African health policies and the need to have access to emergency vaccines, it is time that vaccine manufacturing remains high on the global agenda.

Vaccine manufacturing not only constitutes an important health and social policy target, but it can also result in a significant economic contribution.

The case for homegrown vaccine manufacturing is by no means obvious, but with the right level of commitment and support it is not out of reach for some countries.



## Vaccine.



### **JP Fabri**

*Co-founding Partner*

An economist by profession, he has extensive experience in applying economics in the private and public

sector. He has advised nine international governments on building economic resilience. He is a visiting assistant lecturer at the University of Malta.



### **Nicky Gouder**

*Co-founding Partner*

Nicky is a Founding Partner at Seed focusing on Tax, Corporate and Private Clients.

Advising both corporate

clients and High Net Worth Individuals & families, Nicky is a leading tax specialist in Malta. He has advised and structured a number of international structures and transactions. He continues to advise a number of clients with family planning issues and also businesses restructuring programmes

## Seed



978-9918-9531-0-3

# Seed

Strategy | Regulatory | Tax | Advisory

**[Seedconsultancy.com](https://seedconsultancy.com)**