

A Tale of Two States:

How to support and scale the impact of Sudanese and Ghanaian young innovators in fragility

A study initiated by

The Orange Corners program,
Rijksdienst Voor Ondernemend Nederland (RVO)

In collaboration with

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IMPORTANT NOTE: The insights from this report are based on the lived experiences of young innovators that participated in this study and does not claim to be generalizable nor exhaustive. Due to the conflict that erupted in Sudan earlier in 2023, we could not proceed with data collection nor co-develop and validate our findings in the field (as was planned). The data has been collected and validated online before the start of the conflict in Sudan. Therefore, it is important to note that it does not represent the current realities of the Sudanese entrepreneurs nor the current state of the entrepreneurial ecosystem. Although, we provide country-specific recommendations, these apply to the situation where entrepreneurs experienced fragility not conflict. We aim to distill general insights that can be useful for supporting young innovators in fragile settings.

Table of Content

1	PART 1 INTRODUCTION AND OVERVIEW	4
1.1	Background and aim	4
1.2	Defining youth innovation in fragile settings	5
1.3	Method	5
2	PART 2 INNOVATION BY YOUTH ENTREPRENEURS IN SUDAN AND GHANA	7
2.1	Ecosystem and lived realities	7
2.2	Innovation process	16
2.3	Innovation types	19
2.4	Leverage points and country specific recommendations for Orange Corners	22
3	PART 3 SUPPORTING INNOVATION IN FRAGILE SETTINGS	25
3.1	General recommendations for Orange Corners	25
3.2	General recommendations for policy makers	26
4	Conclusion	27

1 PART 1 INTRODUCTION AND OVERVIEW

1.1 Background and aim

Entrepreneurship generates employment opportunities and is a driving force for economically sustainable and thriving societies. Entrepreneurs can also create social and environmental impact if their products/services and processes address unmet needs in populations. Youth-led enterprises, especially, are recognized for their positive contribution to solving local and global challenges¹. However, the ability of entrepreneurs to innovate and scale their ideas depends on the ecosystems capacity to sustain and allow their enterprises to flourish.

In African countries, where youth make up the largest part of the population, ecosystems can be fragile on one or multiple dimensions². However, we do find that they often turn to entrepreneurship to develop opportunities for themselves and their communities. Moreover, the capacity of young people to deal with the uncertainty, partly caused by fragile ecosystems, can be a great source for new ideas and approaches. Especially, digital and social innovations have become prevalent in the workforce to allow them to adapt to changing circumstances. Orange Corners operates in a wide range of fragile settings to meet the needs of these young entrepreneurs and insights from this study can help tailor their ecosystem approach and scale their impact.

As the world is changing rapidly and requiring us to deal with complex societal challenges (e.g., pandemics, migration, climate change), we need to better understand how young entrepreneurs innovate and what they need to further develop their businesses. In addition, by turning to these young entrepreneurs in fragile settings we can learn more about innovation in uncertainty and its impact. To analyze different entrepreneurial journeys, we selected Sudan as a fragile state and the focal point of our study and Ghana as a relatively stable African country and our counterfactual. During our research, the uncertainty and complexity unfolded. Surges of conflict erupted in Sudan impeding entrepreneurs' operations and in Ghana inflation caused increased financial insecurities. We needed to adapt our approach to support the participants of our study and included these insights in our findings.

This is an explorative study on the role of youth entrepreneurship in dealing with uncertainty and fragility through social and digital innovation. The research does not intend to provide an exhaustive account of cause and effect. We aim to provide insight for policy and practice on how to support young entrepreneurs in fragile settings. We develop recommendations for policy makers and entrepreneurial support organizations (e.g., incubators) on how to best cater to the needs of these entrepreneurs, focusing specifically on the Orange Corners program.

¹ <https://www.oecd.org/cfe/leed/social-economy/oecd-global-action/youth-led-social-enterprises.htm>

² <https://www.oecd-ilibrary.org/sites/ba7c22e7-en/index.html?itemId=/content/publication/ba7c22e7-en>

1.2 Defining youth innovation in fragile settings

The Ministry of Foreign Affairs in The Netherlands and the Orange Corners program have adopted the definition for youth proposed by the African Union in its charter as any individual between 15-35 years of age³. Innovation by youth entrepreneurs can be categorized as the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method⁴. For the purpose of this study and the advancement of the Orange Corners' mission to support young entrepreneurs' contribution to a more sustainable, inclusive, and prosperous society, we specifically focus on social innovations (e.g., addressing a social/problem or need) and digital innovations (e.g., using technology to create novel practices) within these four categories. Important themes for youth entrepreneurs, based on the current activities of the Orange Corners program and our review of the existing literature⁵, are skill development (e.g., digital and soft), resilience, employment opportunities (e.g., decent, digital, and green jobs), gender, and inclusion (e.g., economic, social, political). We explored these themes in this study, but also kept an open attitude for new themes to arise during our data gathering.

To better understand the innovation process in fragile settings, we adopted the following OECD definition: "the combination of exposure to risk and insufficient coping capacity of the state, systems and/or communities to manage, absorb or mitigate those risks"⁶. Its intensity can be expressed in different ways across economic, environmental, human, political, security, and societal dimensions. In this study, we explore innovation practices in fragile settings looking at Sudan, categorized as extremely fragile⁷, and Ghana with relative lower levels of fragility. We aim to uncover different leverage points in the system, "where a small shift in one thing can produce big changes in everything"⁸. Ultimately, we aim to answer the following research question: How do young entrepreneurs deal with uncertainty and fragility, focusing specifically on social and digital innovative practices and how can the ecosystem support or inhibit their impact?

1.3 Method

To understand the innovation process of youth entrepreneurs in fragile settings, we performed qualitative research in Sudan as our focal point and Ghana as our counterfactual. This method allowed us to explore key themes for young entrepreneurs based in the same continent, but operating within different ecosystems. This study does not aim to be exhaustive, but to provide insight into the processes and needs of young entrepreneurs to best be able to support their work in uncertain and risky circumstances. We used a purposeful sampling technique to collect data. Youth entrepreneurs were selected based on their fit with the scope of our study and the rich information they could provide. Orange Corners connected us with youth entrepreneurs at different stages of business development that participated in their incubation program. From December 2022 to February 2023, we interviewed 8 youth entrepreneurs from various sectors (e.g., food, waste) and a total of 14 individuals in Sudan, including key

³ <http://www.africa-union.org/root/ua/conferences/mai/hrst/charter%20english.pdf>

⁴ <https://www.oecd.org/berlin/44120491.pdf>

⁵ A Tale of Two States: Observing the process and impact of (social/digital) innovation by youth entrepreneurs in Ghana and Sudan: Literature Review. By Victoria Manyà, Prof. Marleen Dekker and Dr. Anika Altaf

⁶ <https://www.oecd-ilibrary.org/sites/ba7c22e7-en/index.html?itemId=/content/publication/ba7c22e7-en>

⁷ <https://www3.compareyourcountry.org/states-of-fragility/countries/SDN/>

⁸ <https://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/>

ecosystem actors (e.g., banks, development programs) and other experts in the field. And we interviewed 7 youth entrepreneurs from various sectors (e.g., agriculture, tech) and a total of 15 individuals in Ghana, including key ecosystem actors (e.g., entrepreneurial support programs, investors) and other experts in the field. Our sample consists of slightly more males than females and our interviewees are almost equally based in Sudan and Ghana (mostly operating in the capitals). We created a semi-structured interview guide that focused on how the youth entrepreneurs (1) develop ideas, (2) take action, and (3) make their voices heard within the institutional setting where they implement their innovations. To validate the information provided by the youth entrepreneurs, we also interviewed experts on the topic of youth entrepreneurship and innovation who are familiar with their work and/or knowledgeable about the different institutional settings. From February to April 2023, we analyzed our data in a systematic way to be able to recognize emerging patterns and themes.

We presented our preliminary findings and recommendations to key actors, such as incubators, program advisors, and embassy agents, operating in Sudan and Ghana in April and May 2023. We planned participatory workshops with youth entrepreneurs around the main themes to gather feedback and connect with various ecosystem actors from the non-profit, business, and government sectors. However, due to the conflict that erupted in Sudan mid-April 2023, we had to cancel the participatory workshops. Instead, we focused our research efforts on ways to support the Orange Corners team, the local incubator, and the youth entrepreneurs in their work during these difficult circumstances. In May and June 2023, we included these insights into our study and reviewed the academic and grey literature to corroborate our findings with the existing knowledge on our research theme. In June 2023, we finalized the report on youth entrepreneurship and innovation in fragile settings.

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2 PART 2 INNOVATION BY YOUTH ENTREPRENEURS IN SUDAN AND GHANA

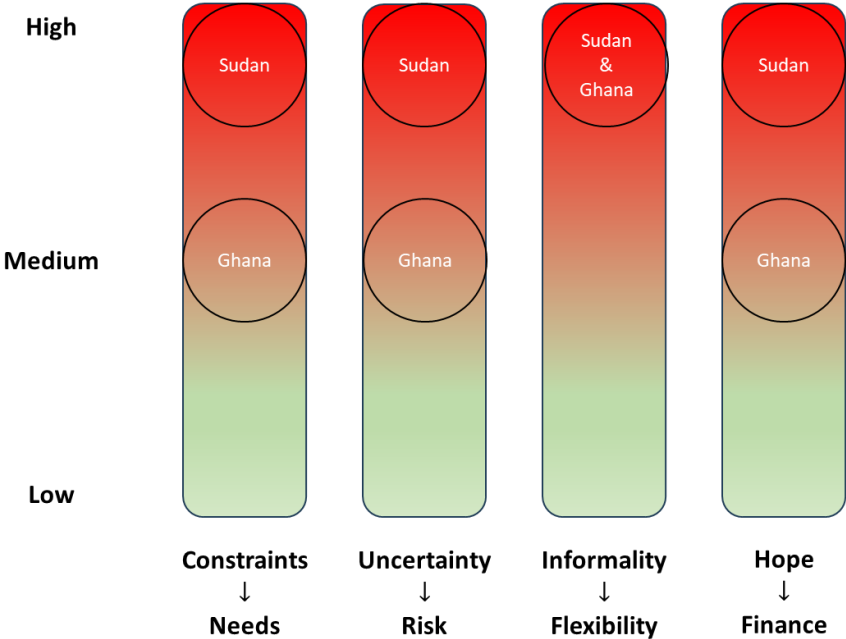


Figure 1: Levels of fragility experienced by young innovators in the entrepreneurial ecosystem. Own illustration.

2.1 Ecosystem and lived realities

In 2023, the situation in Sudan has deteriorated from being institutionally and socially fragile to becoming conflict-affected, as classified by the World Bank ⁹. The ecosystem description below is based on the lived experiences of young innovators in Sudan before the conflict erupted and does not represent the current realities or aims to be exhaustive.

Innovators’ Lived Experiences in Sudan

Our study shows that the Sudanese entrepreneurial ecosystem can be categorized as early stage and, due to the recent conflict, has reached an emergency stage. The Sudanese population continuously suffers from an ongoing and sustained economic crisis, internal displacement, political instability and conflict, economic inequality, as well as a climate crisis. In general, entrepreneurs in Sudan face a multitude of challenges, including poor educational standards and support for entrepreneurship education, unfavorable and ineffective government policies for inventors, inadequate financial support, limited entrepreneurship services and incubators, and a risk-averse culture. Sudan is a fragile setting, now turned into a conflict zone, where young innovators and entrepreneurs report high levels of uncertainty and risk, inhibiting business sustainability (see Figure 1). Additionally, high levels of informality, where word of mouth (dis)approval is important, but very much person dependent, add to this uncertainty. Formal institutions are fragile, for example legal frameworks are often not enforced or do not adequately support small and medium enterprises. Therefore, the financial opportunities are also limited and entrepreneurs’ social capital (e.g., personal network, tribal affiliations) become even more crucial for their success. Young innovators describe how there

⁹ <https://www.worldbank.org/en/topic/fragilityconflictviolence/brief/harmonized-list-of-fragile-situations>

is little hope for a better future and, therefore, long-term planning and investment is at an all-time low. Resources are scarce, resulting in highly impactful necessity-based innovations to meet the many unmet needs of the Sudanese population. Hence, these factors affect the process of young innovators and the types of innovations that are developed by them, as described in the subsequent chapters. In this section, the economic, political, social, and technical elements of the ecosystem will be described in more detail, depicting the lived realities of the young innovators that participated in this study¹⁰.

Economic Factors

In Sudan, subsistence agriculture is the primary economic activity, and many people are employed in the informal sector. This has impacted the purchasing power of the Sudanese pound. Participating entrepreneurs claim that the technology enabling their innovative solutions is expensive, which is at odds with the pervasive poverty in Sudan. Consequently, the price of innovative products and services, is perceived as costly. This hinders the growth and success of inventive startups. Despite being less effective, the traditional, less costly solutions are more enticing to the population.

The appetite for innovation and entrepreneurship has also been influenced by the deteriorating economic climate, which was exacerbated by the coup of 2021. One study participant explains:

“Because of the economic situation and especially in 2021 when there was a huge kind of revolution. Before, people wanted to engage in different sectors, including entrepreneurship and startups. Following the coup, a lot of people struggled, and they had to close down. I think that’s still fresh in people’s minds in terms of seeing your peers attempt something and struggle so much, sometimes you lose appetite.”

Before the coup, study participants perceived the economic situation to be better for innovators within the entrepreneurial ecosystem. After the coup, the growth experienced by entrepreneurs in Sudan took a downturn due to the economic crisis.

Access to finance

Sudanese youth entrepreneurs are mostly funded through their personal network (e.g., family, friends) or through different development partners (e.g., aid programs). Banking services do not adequately cater to the financing needs of startups, because of high interest rates (30-50%) and requirements for collateral. It is challenging for entrepreneurs in Sudan, especially at an early to medium stage, to receive financing through formal institutions and ensure business survival. The funding environment is underdeveloped and there is a lack of Venture Capital and Angel Investors. This can be especially problematic for techpreneurs, as one of the study participants stated:

“Access to finance in Sudan is not easy like other different African countries. So it’s very difficult to get a fund for technology-based startups. So, we don’t have the required fund”.

Due to these funding difficulties and costs of maintaining and developing their offerings, entrepreneurs often end up selling their innovations out of financial necessity. In addition, their potential customers are not able to pay similar prices for their innovative

¹⁰ For a more extensive ecosystem report, please refer to the INCLUDE literature review and OC ecosystem mapping.

products/services compared to competing platforms in other countries, making it even more challenging to turn their business into profitable ventures in the short term.

Several participating entrepreneurs assert that the political circumstances have exacerbated their financial difficulties. Businesses in Sudan are closing down at alarming rates and their competitive advantage is eroding.

“The political situation has caused financial issues in the country and that makes the production costs so high that our product price is above market average. No one is going to buy our product, so they are throwing businesses away. And if you look at the statistics or numbers of industry in Sudan this year, you will find that a lot of factories are shutting down. I'm not sure of the number, but I think more than 3000 factories are shutting down or minimizing their production. And that will just tell you that we have been hit strongly in a way that I don't know how we will be able to amend it”.

The entrepreneurs also mention problems caused by the banks' reluctance to fund startups due to their perceived limited capacity to repay loans. Although certain banks offer assistance in the form of affordable financing, some participants believe that there is not enough money to go around. These funding restrictions even more negatively impact startup founders from underrepresented groups and women than more well-connected and mainstream startups.

Political Factors

Sudan's considerable level of insecurity and fragility impacts all the ecosystem actors we interviewed. Due to the unstable government and ongoing conflict, business owners in this environment must pay for security costs, infrastructure damage, production stops, labor relocation, and lost investment opportunities. All the entrepreneurs in Sudan who participated in this study, including the creative and innovative ones, deal with these difficulties. One of the participants describes how the coup of 25 October 2021 had an impact on any sense of political stability they had in the entrepreneurial ecosystem:

“We're trying to change the law, we're trying to change the taxes, we are trying to lobby, we are trying to get organized. We had a plan, we had a very good plan, and we had some progress. And then the coup.”

The insecurity and uncertainty also harmed several respondents' financial situation. For example, one of the startup founders with a fledging business explains:

“So we're reviewing this year's revenue and last year's revenue. It is decreased more than 80% after the military coup. So, we were thriving and then the military coup came. And since then, until now we are on a survival mode. We are not on a growth mode.”

A participant who works with clients in rural areas further clarifies the effects of political fragility and the risk that goes along with it:

“When there is political instability, there are security issues. And I work with rural regions, remote rural regions. That means insecurity is a threat to us and something to worry about. So we have suffered from..., let's say; we lost some of our equipment sometimes. Then it would go from losing equipment up to even the time that farmers work... When the situation is stable, they start working 5am, they will continue working till 5pm. That's a long time and that's profitable for us, because if the farmers are working in this time, that means from the sunrise to the sundown, that's the most perfect time for us to work in. But when there is insecurity that time will definitely change to working from 8am to 12pm maximum. They can't do more than that because of the risk. So it can influence the amount of time we spend in the business, it can influence the security of our own equipment, it can even influence the way we transport our products, the

way we store them. It's all connected to the security. And with political instability, security is always a threat, so that's another challenge we always had to deal with."

For these reasons, entrepreneurs in Sudan always need to assess the dangers to their enterprises and themselves and the likelihood of instability and escalating insecurity following each political transition.

Regulatory and administrative barriers

In Sudan, bureaucracy is perceived as a barrier to entrepreneurship. One of the most frequently voiced grievances concerned business registration and the way that bureaucrats on the ground replace legal compliance procedures with their own interests, as a participant in the study mentions:

"Registration is a monster of a bureaucracy that's very corrupt. And so bribes are required on the way. The use of personal capital and use of personal network is definitely required. High costs are incurred and also just lack of parity on information or requirements and so on. I had an experience when I went to register a business and every lawyer that I would speak to says a different price and a different process and it took a bail on time. And that's just to register the business let alone in terms of a specific specialized registrations or access to government support and so on. And I think even the ministry of investment, to receive support from them it's a very laborious process and it obviously requires the use of personal networks or to pay a fee to engage in that. So I really would say the environment is very aggressive. I would say corruption and marginalization are key issues in Sudan".

In addition, the fragile and underdeveloped legal system makes it difficult for innovative digital and social startups to register, forcing them to apply more conventional business methods. A study participant was informed about this barrier during an effort to register their digital enterprise:

"Hey, there is no registration for online things. We don't believe in online things".

Another difficulty is the cost and length of enrollment, as one entrepreneur notes:

"So, in general, registration is difficult. It's not easy and in the last two years it became even more difficult. The process for a business name will take about one month and the process for a company will take between two to three months. The cost of registration for the business name will be around 200-500 US dollar, or 300-500, and for the company from 2000 to 4000 US dollar. So it is extremely expensive. It was better like four years ago. Though it was not very good, but it was cheaper and takes less time. So things are getting much worse."

The pricey and constrained regulatory environment makes it difficult for startups to operate. Also, study participants mention that large and small firms are subject to the same tax laws, making it less advantageous to start a new business. Some study participants believe that the absence of an effective state and public sector institutions has allowed corruption to flourish, because it has forced people to employ informal techniques to get around corrupt individuals who, for the most part, work in government ministries, agencies, and departments. These regulatory and administrative barriers affect the process of formalizing and running a business.

Social Factors

Due to the early-stage ecosystem, entrepreneurs need to rely more on their own social capital when starting a business. Families, friends, and tribal affiliations provide important financial

and social support to entrepreneurs that is necessary to develop their innovative ideas. However, at the same time, our study participants describe a risk-averse culture where traditional jobs are valued highly by their families compared to entrepreneurship, especially for women. Most industries are male dominated, except for sectors that have traditionally been associated more with females (e.g., beauty, nutrition). Nevertheless, the status of entrepreneurship in Sudan is changing due to the large youth population that is showing novel pathways for generating income and making impact in their communities. Impact is stated to be part of almost every business in Sudan due to the urgent needs of its people. In addition, the migrant population in Sudan is changing the entrepreneurship culture by bringing new knowledge and business into the country.

Technical Factors

The three main technical hurdles Sudanese entrepreneurs face are the lack of connection between knowledge institutes and ecosystem activities, the outdated university curricula, and limited access to technological knowledge. These factors inhibit the Research & Development capabilities of young entrepreneurs and the innovation capacity within their startups and the larger ecosystem, as one of the participating founders explains:

"I will give you an example. For example, we need to do a lot of research, but we cannot afford it because companies that provide research are very expensive. And hiring experienced researchers is also expensive. Doing the research by our own, it's time consuming, and it still requires money."

The difficulty in finding technical talent also poses a significant obstacle to developing digital jobs in Sudan, according to one of the participants:

"Yeah, many different challenges. For example, access to the talent that will help build this platform. This is one of the major problems that we're still currently facing. We're trying to improve the employment in Sudan in small scale. So we are not working directly in the problem of employment, but our part is to employ people from inside the country. And this is very difficult because we still need the talent with the needed skills to work on the platform and it's very difficult to find it inside the country. So this is one of the major problems."

In addition, innovators face issues as they pursue their entrepreneurial endeavors due to the poorly developed infrastructure. Three of Sudan's most prevalent infrastructural problems are poor road access, poor and overly regulated internet connectivity, and problems with the country's electricity supply. One of the entrepreneurs clarifies how this affects his business:

"When I say poor infrastructure that means we don't have appropriate roads that allows this, we don't have, it will be hard by car. We don't even have trains or any other way they would actually send it from the rest of the world. And the other side is the lack of energy. Only a third of the population has energy access. So even if they wanted to conserve the product by cooling them, for example, that won't be a choice because they don't have energy access to do so...And what happens in seasons is that different regions around Sudan are not well connected. The infrastructure in the country does not support the sector. So in rainy seasons the local market will be flooded. And it is hard for farmers, like my grandfather for example, to send his products from the state we're in to another state where the market actually needs the product because of the infrastructure. And lack of energy is also another reason why they can't even conserve the product."

Another technical barrier to business is that the government occasionally restricts internet access. By shutting down the internet, you can also alter startup operations to the point that entrepreneurs are forced to work abroad, as the creator of an e-learning platform explains:

“One of the challenges I didn't tell you about is that when the military coup happened last year, they shut down the internet for one month and a half. So, I had to drop it to Egypt, because one month and a half, and my business depend on the internet, that's not bearable. So I went to Egypt; I was thinking about operating from there.”

The digital difficulties are even more apparent by the price and caliber of the internet connection when the government reinstates it. These challenges are accompanied by the number of digitally underserved people within the target market, as one of the techpreneurs explains:

“One of the other problems is the people. Not many people have laptops, so we have to develop it for phones. And the phones are not advanced. So the majority are not using, for example, iPhone 12 or iPhone 14. They are using an old galaxy or Android phones. So, there is the problem of needing an application that doesn't require high storage in the phone so we can download it or we can access it. The more you go, the more challenges you will face.”

The centralization of entrepreneurial support in the nation's capital Khartoum presents another barrier to startups in other regions whose needs are not always met. Several entrepreneurs who received assistance in Khartoum criticize the oversimplification and generalization of support programs (e.g., trainings, funding), including that provided by the Orange Corners (OC), as one of the innovators explains:

“They over generalize what kind of knowledge the Sudanese young entrepreneurs need. So that's one aspect. The other aspect is how they do the funding, I know that it's always different from one African country to another in terms of percentage, but the amount of funding and the legal structure give or less is still the same. And they need to work on that.”

These innovators mention that, although their businesses have been supported through grants and visibility, there is still a need for more knowledge sharing and tailor-made trainings that better fit with the needs of each category of entrepreneurs participating in incubation programs.

Comparison to Innovators Lived Experiences in Ghana*

Ghana is widely regarded as one of the region's most stable countries. Therefore, it was selected as a comparison case for the purpose of this study. Ghana ranks 38th out of 163 nations, second in Sub-Saharan Africa, and first in West Africa, with a GPI value of 1.72 (Statista, 2021). This relative stability translates into the lived experiences of innovators in Ghana and its ecosystem dynamics. In comparison to Sudan, the entrepreneurial ecosystem in Ghana can be categorized as rather developed and very active, where the participating young entrepreneurs report medium levels of uncertainty and risk (see Figure 1). There are a multitude of actors that provide entrepreneurial support to the point that the environment has become fragmented. The entrepreneurial programs are regarded as more supply driven and not always aligned with the entrepreneurs' stage of development (acceleration vs. startup). The uncertainty and risk that entrepreneurs in Ghana experience are mainly the result of economic fragility (instead of the political or social instability in Sudan). In recent years, Covid had a negative effect on the market and the Ghanaian Cedi has devaluated, leading to high costs for entrepreneurs. Similar to Sudan, entrepreneurs in Ghana also experience high levels of informality due to unenforced regulation and difficult registration processes. However, Ghanaian entrepreneurs do report hopes for a better future and work on their entrepreneurial endeavors to meet their needs and that of their communities, albeit being less urgent than the needs reported in Sudan. However, access to finance is a major barrier, because it requires proof of concept and scaling potential based on more substantive R&D than is currently feasible for entrepreneurs. These factors affect the process of young innovators and the types of innovations that are developed by them, as described in the subsequent chapters. In this section, the economic, political, social, and technical elements of the ecosystem will be described briefly, depicting the lived realities of the young innovators that participated in this study.

Economic Factors

Ghanaians' low purchasing power has an impact on the market size of startups, especially when innovative products/services are offered. Ghana's economic and political climate is conducive to innovators during the early phases, but not to scale-up. According to our study participants, Ghanaians are not early adapters and innovation is perceived as costly compared to the traditional alternatives. Having a large number of late adopters is detrimental to innovation diffusion, limiting feedback to the entrepreneur and product/service recommendation to others. These factors also negatively influence the country's foreign direct investment (FDI), which is critical to strengthen the Ghanaian economy as well as increase exports and cash inflows. In addition, the currency depreciation has increased the country's reliance on imports, decreased citizens' quality of life, and resulted in inflation. Consequently, businesses are closing down, because they cannot compete on price or are forced to downscale to remain competitive. Uncertainty in the forex market, where small market movements can have substantial unintended consequences, is another economic factor that provides challenges to startups by exposing them to high risk. All these elements lead to experiences of increased fragility by innovators within the Ghanaian entrepreneurial ecosystem.

Access to finance

Ghanaian startups face financial barriers due to collateral loan requirements, high bank interest rates, and a lack of patient capital and market information. Venture Capitalists (VCs) are stated to fund already popular ideas and find innovative ideas too risky to invest in. These challenges impact the R&D capacity of startups and their expansion potential. However, informal alternative sources of financing do exist for startups (e.g., family and friends). Also, despite these financial challenges, research has shown that entrepreneurs connected to accelerator programs in Ghana, have a higher chance of survival, access to capital, and employee development.

Political Factors

In Ghana, the National Youth Policy was introduced in 2010 and its implementation plan, focusing on technology and human development, was released in 2015 to address challenges confronting young entrepreneurs. Participants in the study indicate that, although beneficial policies do exist, they are not yet effectively implemented and treat all business the same (e.g., not distinguishing between types of startups and innovations). For example, social entrepreneurs state that they lack support and social innovation is not a government priority and, in some cases, even opposed (e.g., environmentally friendly practices). In addition, the high cost of registration, taxes, and licensing fees, for example, make doing business much more difficult for young innovators. In addition, government bureaucracy and corruption (e.g., withholding information, politicized and non-meritorious support for startups) pose a significant challenge to policy administration and implementation, making it difficult for young entrepreneurs to establish entities and raise capital. According to some participating entrepreneurs, policy frameworks are nearly all-inclusive, with all kinds of tax breaks and provisions that young businesses require. However, enforcement of these policies is lacking.

Social Factors

The Ghanaian culture is based on communal values (e.g., importance of family, respecting elderly, honouring traditions). In the entrepreneurial ecosystem, this translates into startups inherently including social elements in their businesses and, therefore, contributing to the family, social group, and community. In some cases, our study participants mention that community expectations can also result in fear of failure and that innovative practices, especially by young people, are not fully recognized. There is a predominantly risk averse culture exacerbated by the uncertainty in the market and poverty within communities. Traditional career paths (e.g., medicine, law, engineering) are less risky and socially more respected. The entrepreneurial ecosystem can, therefore, be challenging to Ghanaian innovators and cause psychological stress due to the pressure to succeed, especially for women. There are many female-owned SMEs in Ghana and they can successfully operate in the ecosystem. However, female innovators lack social and institutional support to scale due to stereotypes in technical sectors and high skilled jobs. In addition, study participants report that female innovators lack mentorship as there are few women in the industry. An entrepreneurial lifestyle is still regarded unsuitable for women by some. It is critical to note that the abovementioned economic and political factors, such as a lack of risk capital, social learning, and inadequate institutional support systems, play an important role as well and influence the entrepreneurial mindset.

Technical Factors

Within Ghana's ecosystem, numerous service providers exist to support entrepreneurs' ideation and growth. Most are accelerators, incubators, co-working spaces, hubs, and enterprise support organizations. For example, study participants acknowledge the importance of Orange Corners in assisting business development through training and setting an example for similar programs to support innovators. Also, there are organizations that connect innovators with foreign markets and partners to help them scale. However, some local service providers, such as hubs and accelerators, are limited in skills and workforce. They cannot adequately attend to entrepreneurs' needs, because they are nascent themselves and face similar challenges to their constituents. These initiatives are stated to encourage entrepreneurship out of necessity rather than passion, interest, and opportunity. According to our study participants, the focus for the near future needs to be more on quality than on quantity. Also, more investment in Research and Development (R&D) is required within the Ghanaian entrepreneurial ecosystem. The high costs for R&D have increased the price of innovation in an already small market. There is a lack of technical expertise (e.g., green technologies, renewable energy) and limited number of experts partly due to weak linkages between universities and the private sector. The digitally underserved population lack the infrastructure to scale innovation. There is also limited media awareness of what is happening in Ghana's ecosystem or innovation space. As a result, understanding the ecosystem and curating a reputation to be emulated within society is difficult.

*For a more extensive ecosystem report, please refer to the INCLUDE literature review and OC ecosystem mapping.

2.2 Innovation process

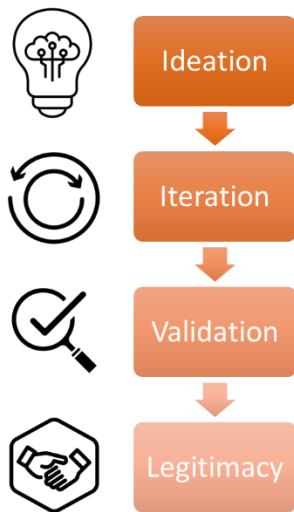


Figure 2: Innovation process. Own illustration. Icons from Good Father, Thomas Marijnissen and Yeyen.

Innovation process in Sudan

“I could see that one of the main problems of the health care system in Sudan is the lack of proper training. So, the doctors and nurses are not trained sufficiently during universities and there is no proper training opportunity for them after they graduate. That's why I decided to start this startup, so I can bridge this gap. We are working to bridge the gap in skills of the medical graduates. So, we are targeting doctors and nurses after they graduate from universities. We are upskilling them with training and knowledge and match them to jobs so they can provide better care for the patients and better outcomes.”

Ideation: Necessity is the mother of invention

Entrepreneurs in extremely fragile settings experience many constraints, both personally and professionally. These constraints highlight certain needs in their communities that they aim to address with their ideas. The novelty of their ideas is often a result of their experiential knowledge of the challenges in their communities and exposure to other context (e.g., work in other settings, travel to other regions/countries). The lack of viable alternative opportunities (e.g., employment), makes it necessary for these entrepreneurs to embark on the entrepreneurial journey.

Iteration: School of life

Due to the underdeveloped ecosystem, entrepreneurs in fragile settings experience many adversities in venture development (e.g., unreliable financing and regulations). Their ability to deal with uncertainty and risk are honed as they ‘learn on the job’ to test their minimum viable product and keep iterating, because of constantly changing circumstances (e.g., government coups). Entrepreneurs’ capacity to pivot in crisis (e.g., surges of violent conflict) depends on the strength of their network and access to fast finance, from so-called ‘friends, families, and fools’.

Validation: The power of community

When formal institutions are lacking or fragile, the informal institutions become paramount in providing the necessary financial, social, and human capital to entrepreneurs. These entrepreneurs need to validate their products and services in their communities before they can scale their products and services in the market. This is not an easy process, especially for women, because the novelty of their work brings resistance. However, entrepreneurs’ reliance

on their own community, also brings the input necessary to improve the impact for that community.

Legitimacy: Inclusion through entrepreneurship

Through evidence-based practices, entrepreneurs can gather acceptance from key individuals/organizations, leading to a crucial tipping point for advancing their mission. In addition, the entrepreneurial journey in itself, if successful, can lead to the economic inclusion of the entrepreneur and its employees. In addition, their voice can be recognized by key decisionmakers, because of their elevated status. Due to the fragility of the formal institutions, this is often more frequently the case in the private and social sector or by local/tribal decisionmakers instead of those on a national level.

Comparison to innovation process in Ghana

Ideation

The most viable ideas from young innovators in Ghana address existing needs and challenges of their communities, similar to Sudanese innovators. A notably different aspect of the process is the use of advocacy activities (e.g., campaigns) to co-create ideas and solutions with potential customers. Due to the high level of competition in the mainstream market by private sector actors, developing offerings for niche markets is stated to be more complementary and, thus, more sustainable. To gain exposure, some Ghanaian entrepreneurs travel to other countries to learn and develop their skills, as well as import ideas they can replicate back home.

Iteration

Due to scarce resources for R&D the iteration process of young innovators in Ghana strongly depends on peer feedback. Hubs, such as Orange Corners, help foster a network that, in some cases, eventually self-organize and form organic support groups. Also, access to mentors and coaches helps startups to learn from lessons in the industry. A notable approach for some innovators is engaging in serial entrepreneurship to improve their ideas (e.g., setting up multiple businesses to test solutions in target sectors).

Validation

Successful innovators in Ghana are able to make a large time investment in validating their products/services in the market to ensure competitiveness and scalability. Due to limited access to R&D knowledge and patient capital, not all entrepreneurs are able to comprehensively test their offerings. A way for entrepreneurs to overcome this barrier is to develop inclusive business models that involve customers and communities during the validation process, impacting employment, skill development, and wealth creation—albeit at micro levels.

Legitimacy

The important role of network to ideate, iterate, and validate can lead to larger acceptance of innovations by its customers, impacting startup growth. However, the quality of the innovation depends on access to finance and specific R&D knowledge in important Ghanaian sectors. The entrepreneurial ecosystem, at the moment, cannot adequately address this need, making the role of entrepreneurs' community (and customers) paramount in providing the legitimacy needed to scale operations.

2.3 Innovation types

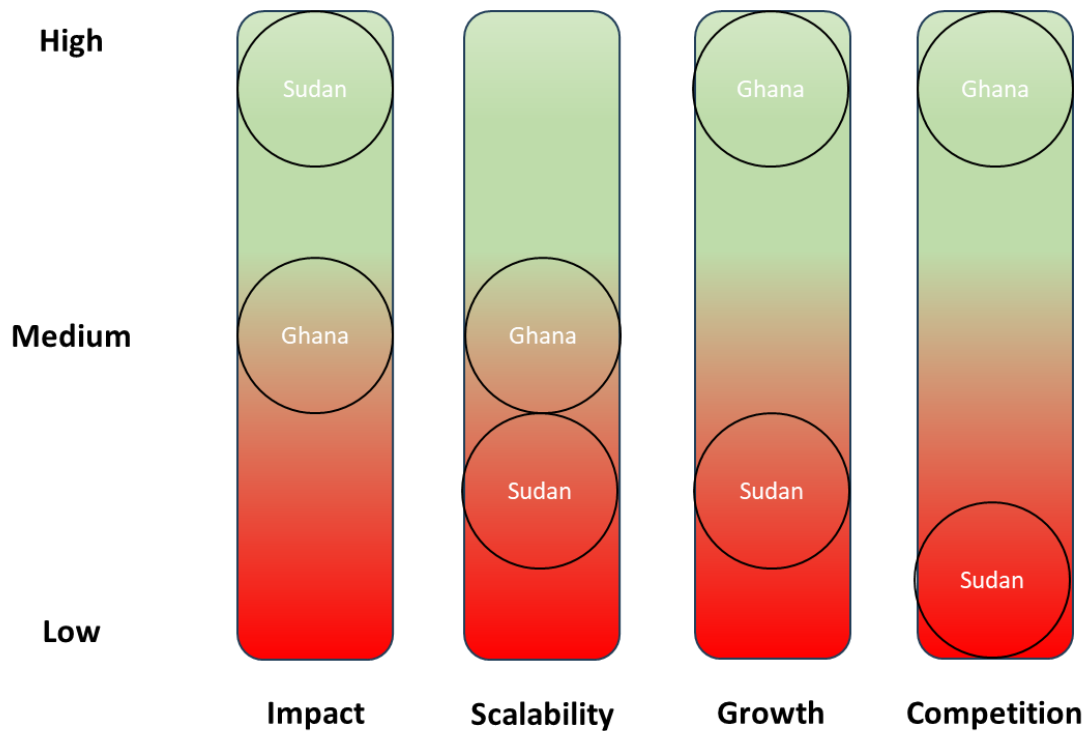


Figure 3: Characteristics innovations. Own illustration.

Innovation types in Sudan

“We can say it’s new to the areas. I’m introducing it, because drying, solar drying, is not new to the country. The entire country has dried fruit as part of its culture. What we’re doing is taking this culture and just doing a little bit of upgrading. In our culture, we dry Okra for example. That’s a very popular product in the country. Mango, on the other hand, is not very popular. Specific tribes dry them, but not nationwide. Banana is not dried at all in the country. So, what we do actually, we use the culture, we add our own upgrading in terms of the product itself and the process of drying.”

The innovations described by the Sudanese entrepreneurs and ecosystem actors in this study occurred in their organization, their products/services, marketing, and process (as categorized by the OECD). To deal with the uncertainty and risk of operating in an extremely fragile setting, the entrepreneurs engaged in the following activities.

Organizational differentiation

This entails the adaption of organizational forms to meet the needs of their customers and target groups, despite the formal structures. Entrepreneurs described how their organizational form, for example a platform or a social enterprise, was not recognized by formal institutions. They registered and adopted the structures that formally needed to be in place, but informally they adjusted to the most suitable approach for their enterprise.

Product diversification

This entails the development of new product lines and revenue streams to decrease the risk of entrepreneurs’ entire operation and enhance long-term survival. In some case, these entrepreneurial opportunities can be seemingly unrelated. The innovation lies in the ability and skill of the entrepreneur to develop and manage these product development processes.

One can expect cross-over effects (positive and negative) to occur, but gathering this data was out of the scope of this study.

Digital marketing

Digital tools are used to access markets and lower the operational costs of entrepreneurial ventures. This has especially been impactful for women in more traditional settings, allowing them to build their business from home. In addition, digital tools were used to provide services to groups that could not be reached by traditional institutions, for example in the educational sector.

Adaptive replications

This entails the replication of products and services from other context to Sudan and adapting its features to the local contexts. Entrepreneurs can be exposed to other entrepreneurial ecosystems by travelling or working abroad. Engagement with diaspora also influences this process. In addition, based on their own experiences and backgrounds, migrants and refugees that are hosted in Sudan bring new business ideas into the market that were not there before.

Because of the constraints experienced by the entrepreneurs and their communities, these necessity- and need-driven innovations can be categorized as highly impactful, if implemented successfully. However, due to the less developed entrepreneurial ecosystem they were only able to grow and scale their ventures to a moderate extent (e.g., lack of financing and market access). The outbreak of conflict reduced their ability to operate to a minimum. However, in some cases, entrepreneurs pivoted their model to address the newly raised needs in their communities (e.g., access to basic services, internet, energy). Market competition in the entrepreneurial ecosystem is at an all-time low. Before the conflict, this was perceived as nonthreatening for the entrepreneurs as it provided them space to develop their businesses over time. Now, it is limiting their operations as it is difficult to find suppliers to restart the production process, among other barriers.

Comparison to innovation types in Ghana

According to our study participants, innovations in Ghana tend to be more incremental and process-focused, because of the financial and R&D constraints experienced by entrepreneurs and the highly competitive market. In general comparison to Sudan, the impact of these innovations can be categorized as medium, addressing less urgent yet still highly important needs and challenges. Entrepreneurs are able to scale their innovation to a moderate extent due to the above-mentioned barriers. However, innovation in organizational approaches (e.g., process, marketing, digitalization) is an important factor that can lead to high growth and impact, providing that the needed support is available.

Impact in process

The Ghanaian entrepreneurs in this study report on integrating community needs and members in the process of building their businesses. While there are entrepreneurs who create novel solutions, there are also those who create impact with their novel approaches. For example, by hiring people who experience marginalization and workforce exclusion. In addition, some of the participating entrepreneurs adapt their process by delivering an innovative product as a service, leveraging the shared economy (e.g., accessibility through “use and pay” models).

Incremental innovation

Due to the above-mentioned constraints, incremental innovations allow Ghanaian entrepreneurs to compete in the market without taking too much risk. They make small and gradual improvements to an existing product, service, or process. These changes need less R&D investment (e.g., capital, time), but can bring novel offerings to customers, who cannot afford to be early adapters of more disruptive innovations.

Digital drives growth

Our study participants describe how they mainly use digital solutions within their organization (instead of in their offerings) to drive business growth. For example, by adopting a digital system for administration or marketing purposes. In this way, technology can help scale their startups, increase employment, and generate revenue.

Differentiation through social marketing

Most Ghanaian entrepreneurs, similar to Sudanese entrepreneurs, are inherently community entrepreneurs who aim to address existing needs and challenges. Young innovators proactively differentiate on this social aspect through their marketing to compete with more mainstream private actors. In addition, some entrepreneurs highlight their customer service excellence that creates shared value by putting the community at the center of their offerings.

2.4 Leverage points and country specific recommendations for Orange Corners

We have identified specific areas in the early-stage entrepreneurial ecosystem of Sudan that are worth tapping into to create a ripple effect, leveraging the innovative capacity of young entrepreneurs in extremely fragile settings. It is important to note, that these recommendations do not apply to the current realities of Sudanese entrepreneurs nor the current state of the entrepreneurial ecosystem, but to the situation where entrepreneurs experienced fragility (not conflict).

Social business development and impact measurement

Social and community enterprises are a very common phenomenon that bring social innovations to market and need tailored support. Incubators and other entrepreneurial support organizations need to offer knowledge and tools that are made specifically for social enterprises and that include, not only financial indicators, but also impact indicators as a measure for success.

Diversity of financial products for early-stage entrepreneurs

Young entrepreneurs in Sudan need finance and investment opportunities for early-stage ventures that are easily accessible (e.g., fitting guarantees schemes). To be able to implement their innovations and scale their venture, young entrepreneurs need to make an investment. However, they need the income to get proof of concept and develop their businesses. To address this paradox, financial institutions need to offer a more diverse range of financial products that fit the target group at different stages of their entrepreneurial journey.

Develop skills techpreneurs for disruptive innovations

Digital innovations can create inclusion in fragile settings, but need to be further developed and integrated into the core business of young entrepreneurs. Digital innovations are widespread, especially since corona, and often used for marketing purposes or to offer online services. However, by investing more in the technological skills of entrepreneurs, they can create more disruptive innovations to scale their impact. In addition, local alternatives make Sudanese entrepreneurs less dependent on external technology providers, countering difficulties regarding import.

Investment in grassroots and needs-based entrepreneurial ideas

Entrepreneurial products/services from and for the community are more viable and impactful than top-down or externally initiated ideas. In Sudan, tribal affiliations are an important part of people's knowledge, network, and identity, but often undervalued and underutilized. It is important to include a community perspective in entrepreneurial support and investment programs. Investing in grassroots entrepreneurs means investing in ideas that are contextualized and culturally appropriate, and in the end, often more successful.

Exchange between entrepreneurial ecosystems for adaptive replication

Innovations in the form of adaptive replications (e.g., frugal innovations) that result from exposure to different settings or spillovers can be further leveraged since the entrepreneurial ecosystem in Sudan is less developed. Entrepreneurial support programs can foster this type of innovations by developing exchange opportunities for young entrepreneurs to learn new approaches in new settings and build on each other's ideas.

Private sector alliances for strengthening the entrepreneurial ecosystem

In Sudan, besides international development programs, large companies are the biggest and most resourceful supporter of young entrepreneurs. There is little competition in the market and further developing the entrepreneurial ecosystem is also for the benefit of the whole private sector (e.g., more suppliers, more customers). Young entrepreneurs need 'on the job' professional skills development before or after incubation, which entrepreneurial support programs can set-up with companies that, in turn, need young talent.

Comparison to leverage points and country-specific recommendation for Ghana

Our recommendations for Ghana are based on the identified leverage points that can further consolidate the more stable and developed entrepreneurial ecosystem, compared to Sudan, and develop the quality of support provided to young innovators.

Fine-grained impact measurement tools

To advance insight into the impact of entrepreneurial activities and steer towards the most beneficial results, local service providers can co-develop (and adapt) Monitoring & Evaluation tools that more specifically focus on economic, social, and environmental outcomes of innovative products and services.

Invest in R&D skills of entrepreneurs

Research & Development skills are crucial to further develop the scaling potential of innovative startups. There is a need to invest in educational programs that provide entrepreneurs R&D knowledge and experience that is adapted to the local Ghanaian setting.

Affordable patient funding for innovations

To reduce the economic fragility experienced by entrepreneurs in Ghana, there is a need for patient funding that is affordable. By providing this type of funding, financial institutions can provide space to make the time investment needed to develop innovative offerings.

Support programs for niche areas

To address the reported fragmentation, local service providers can focus on niche areas (e.g., specific sectors, markets outside Accra, technology-driven innovation, social innovations) that require knowledge and skills that build on the existing, and often more general, entrepreneurship programs.

Acceleration that supports quality not quantity

To identify the sustainable and scalable businesses within the plethora of startup ideas in the Ghanaian entrepreneurial ecosystem, acceleration programs need to more rigorously select on qualitative indicators (e.g., market potential, needs-based products/services) versus quantitative indicators (e.g., number of ideas, trainings, entrepreneurs).

Longer-term tailor-made support

Entrepreneurial support programs need to address the need for applied expertise during product development. Ghanaian entrepreneurs require more tailor-made support for longer periods of time after incubation and during acceleration that can only come from sector experts (e.g., mentors, masterclasses).

Stimulate cooperation within the ecosystem

To go beyond incremental innovations, cooperation (instead of competition) with established companies and other important actors within the entrepreneurial ecosystem needs to be stimulated. These actors have the resources to support grassroots innovations and can become an important ally to young entrepreneurs.

3 PART 3 SUPPORTING INNOVATION IN FRAGILE SETTINGS

3.1 General recommendations for Orange Corners

By analyzing the innovation process of young entrepreneurs in Sudan as an extremely fragile setting and comparing it with Ghana as a relatively stable setting on the African continent, we distilled important insights on the process and types of innovation that can be supported, leading to our country specific recommendations (outlined in the previous chapter) and recommendations for the Orange Corners program (outlined below). In general, we recommend that the Orange Corners program includes fragility as a key defining factor in the formalized set-up of their program. Fragility affects entrepreneurs differently depending on the type and level of uncertainty and risk it brings. Similar to entrepreneurs in fragile settings, entrepreneurial support programs also need to be adaptable in changing circumstances while maintaining their mission. To achieve that in the Orange Corners program, we make the following suggestions.

- **Level up formalized flexibility depending on type of fragility:** The Orange Corners program can build a more responsive and flexible approach to support young entrepreneurs and their innovations by building different strategies for different types of fragility. This can be reflected in the Theory of Change (ToC) and the outcomes of the program. Specific strategies can then be co-created with incubators and other local ecosystem actors, with autonomy to define their own outputs. Reporting will then also more heavily focus on outcomes instead of outputs.
- **Create procedures depending on level of fragility:** The Orange Corners program can adjust program cycles and requirements, depending on the level of fragility. Higher levels of fragility can benefit from shorter program cycles to better fit the support offered with the most current needs of young entrepreneurs (e.g., support in registration, market access, social innovation). In addition, the Orange Corners program can develop a protocol on how to support entrepreneurs, incubators, and other ecosystem actors during outbreaks of conflict (e.g., psychologic support, redirecting funding, leveraging impact social entrepreneurs).
- **Improve OC's knowledge base for incubators:** There is existing knowledge on how incubators can best support young entrepreneurs and their innovations in fragile settings, also within the OC program. Gathering this knowledge to create easily accessible modules for all OC incubators that they can choose from and adapt based on the local needs (e.g., access to finance, business in conflict), can help improve the support and impact of the program.
- **Improve knowledge sharing within the OC team with case-based method:** It is important for the OC program to periodically share and discuss real-life cases on what works and what doesn't work in the different fragile settings they operate. The team members can share their knowledge and "teach each other", instead of the approaches being more PA-dependent. The key insights can be integrated in the ToC (see earlier recommendation) and used in day-to-day decision-making.
- **Include informal institutions in ecosystem mappings and strategy:** Informal institutions (e.g., family, tribe, religion, cultural attitudes) are important for understanding how young entrepreneurs can successfully innovate and build their business, especially in fragile settings. These aspects need to be included in the

ecosystem mappings (e.g., interviews, assessments) and strategies developed by the Orange Corners program in co-creation with the local ecosystem actors.

- **Formally foster inclusion in agreements:** To scale the impact of the Orange Corners program, the risk of working mostly with familiar networks needs to be mitigated. This is often the case in fragile settings, because of the uncertainty and difficulty to reach marginalized populations. Formal incentives need to be created to foster collaboration with ‘unusual suspects’ (e.g., criteria for subsidies).

3.2 General recommendations for policy makers

Based on the insights from this study, we also make the following general recommendations for policy makers that aim to support young entrepreneurship and innovation in fragility. We acknowledge the difficulties of implementing these suggestions in extremely fragile settings where there are formal institutional voids. In these cases, aligning interests at a local level is of paramount importance.

- **Develop an Act that fosters Public Private Partnership:** Fragile settings require some groundwork to establish a robust public sector and foster public-private partnerships that support young innovators. However, this is an important element to be able to provide institutionalised collaborative support to develop the entrepreneurial ecosystem, starting with a strategy for developing trust between both stakeholders.
- **Address legal and regulatory barriers:** To enable youth involvement in digital and social innovation, there needs to be a supportive legal and regulatory environment. This can, for example, require revising outdated laws and regulations, developing clear digital and social innovation guidelines, and enhancing protection of data and intellectual property.
- **Develop a Start-Up Act:** It is beneficial to establish a policy specifically aimed at fostering the creation and development of start-ups in fragile settings. This act can, for example, address the tax burden on small businesses, the registration of venture capital, the incentives for angel investors, and the registration of digitally companies.
- **Create a Free Trade Zone policy:** Due to the often widespread insecurity and lack of infrastructure in fragile settings, a policy to establish free trade zones will allow for a safe virtual and physical business environment for innovators.
- **Promote social innovation:** Fragile settings face various societal challenges, such as poverty, food insecurity, and lack of access to healthcare. To address these challenges, policies should be implemented to promote social innovation, which involves using novel approaches (e.g., digital, community-based, frugal) to create social impact. Policies can, for example, focus on providing funding for social entrepreneurs, developing partnerships with NGOs, and creating tax incentives for businesses that prioritise social impact.
- **Invest in Research and Development:** Investing in R&D is critical to support the growth of digital and social innovations in fragile settings. Policies can, for example, focus on funding knowledge institutions (e.g., universities, research centers) to study beneficial practices in relevant areas, such as artificial intelligence, machine learning, and blockchain.

4 Conclusion

Orange Corners takes a systemic perspective towards supporting young entrepreneurs in Africa, Asia, and the Middle East so they can contribute to a more sustainable, inclusive, and prosperous society. Our study shows that the young entrepreneurs in fragile settings are resilient and a source of innovation in the face of high levels of uncertainty and risk. Our country specific recommendations to the Orange Corners program aim to address leverage points in the Sudanese and Ghanese entrepreneurial ecosystem to support their innovation process. In addition, we provide general recommendations to the Orange Corners program on how it can include fragility as a key defining factor in the formalized set-up of their program. This explorative study aims to further our understanding of different entrepreneurial journeys, including needs that can be addressed, and impact that can be scaled. More research is needed in fragile settings where the uncertain circumstances make it difficult to gather data. However, by working in a participatory and flexible manner, novel innovations can be uncovered that are worth investing in to ignite the next generation of entrepreneurs.