



# Market Review | Rwanda

April, 2020

# Table of Contents

## Country Profile



Economic Indicators



Technology Infrastructure



Government Policy

## Developer Population



Demographics



Education



Employment



Experience

## Technology Ecosystem



Innovators



Investors



Educators



Enablers



# Country Overview



Population & Economy

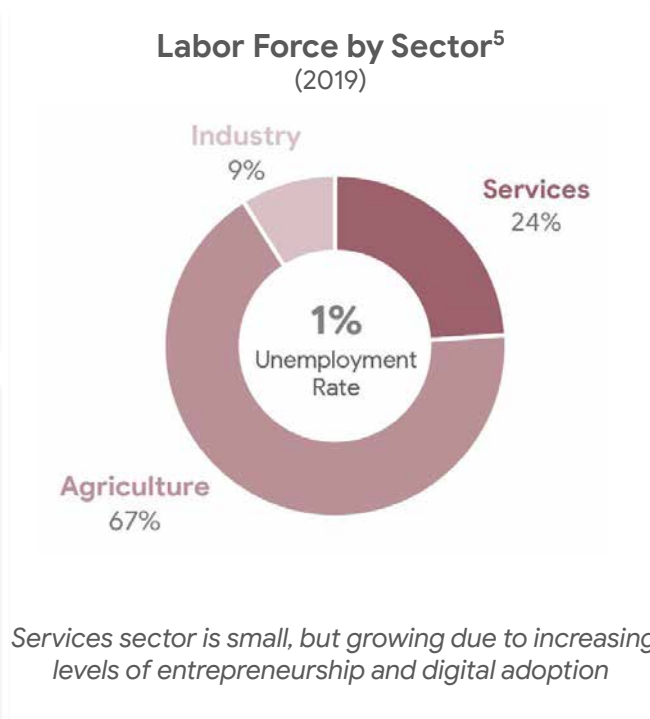
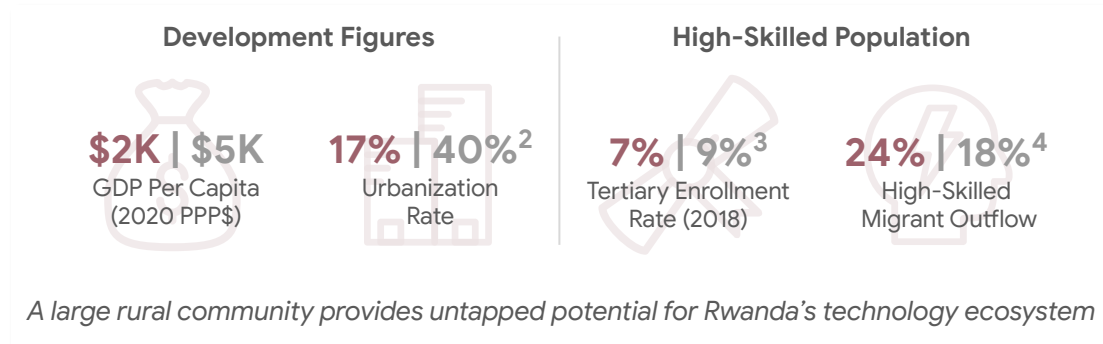
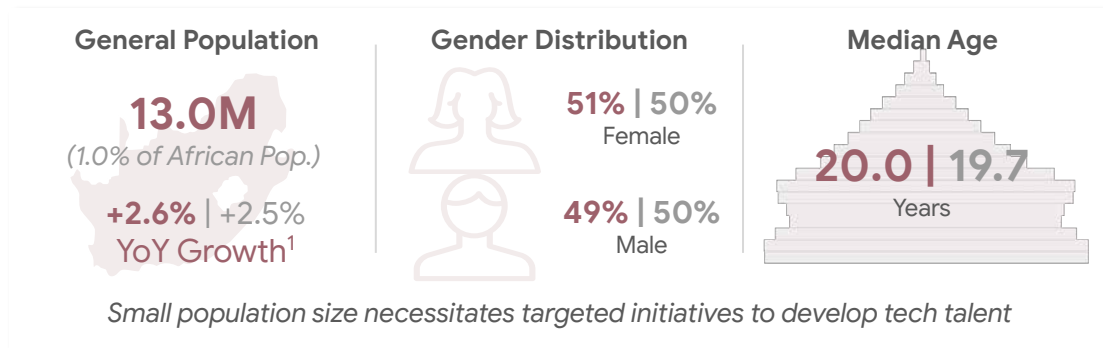


Technology Infrastructure



Government Involvement

# Rwanda produces high-quality tech talent despite a relatively small population and rural economy due to investments in technology-focused education



# Rwanda struggles with accessibility and quality of fixed broadband, but mobile coverage is widely available

## Infrastructure Indicators

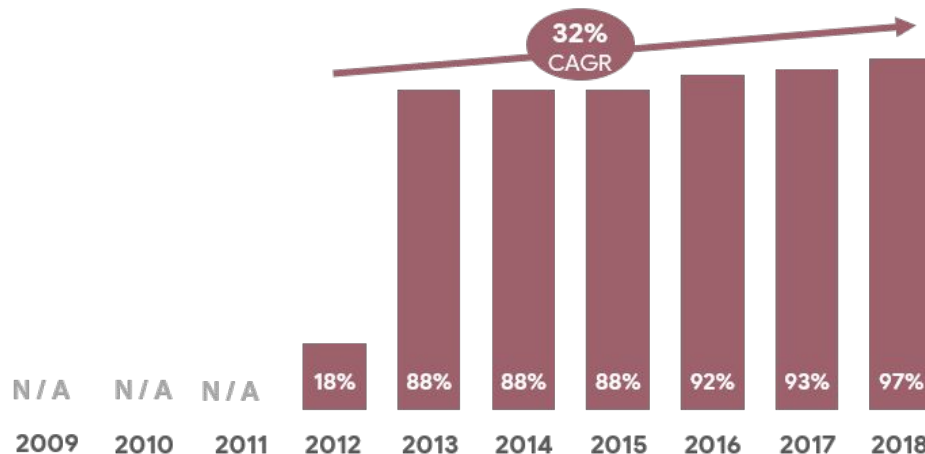
Above / Below Global Average | Global Average

|                                       |                                                  |
|---------------------------------------|--------------------------------------------------|
| <b>29%</b>   59%                      | <b>79</b>   69                                   |
| Internet Penetration (FY20E)          | Mobile Phone Subscriptions per 100 People        |
| <b>10.1</b>   30.5                    | <b>\$0.56</b>   \$8.53                           |
| Mobile Internet Download Speed (Mbps) | Cost of 1GB Mobile Internet (PPP\$)              |
| <b>20.5</b>   74.3                    | <b>\$230</b>   \$50                              |
| Fixed Internet Download Speed (Mbps)  | Monthly Cost of 5GB Fixed Internet (PPP\$)       |
| <b>35</b>   1,620                     | <b>34%</b>   89%                                 |
| Servers shipped (FY20E)               | Population with Access to Official Electric Grid |

Rwanda is heavily mobile-first, as low speeds and high prices reduce accessibility of fixed broadband

## Population Covered by at Least 3G (2018)

(90% global average)



Rwanda 3G coverage spiked from 2012-2013, increasing by 4x but has stabilized since then, maintaining a coverage well above the global average

# Rwandan government built a progressive tech ecosystems by enacting policies to support entrepreneurship and ICT education

## Notable Government Policies



Rwanda has established a **\$100m venture fund to support early stage startups** and achieve 100 local tech companies valued over \$50m by 2030



**Entrepreneurship visas and 15-minute business registration** are offered to fast-track startup creation and attract foreign talent

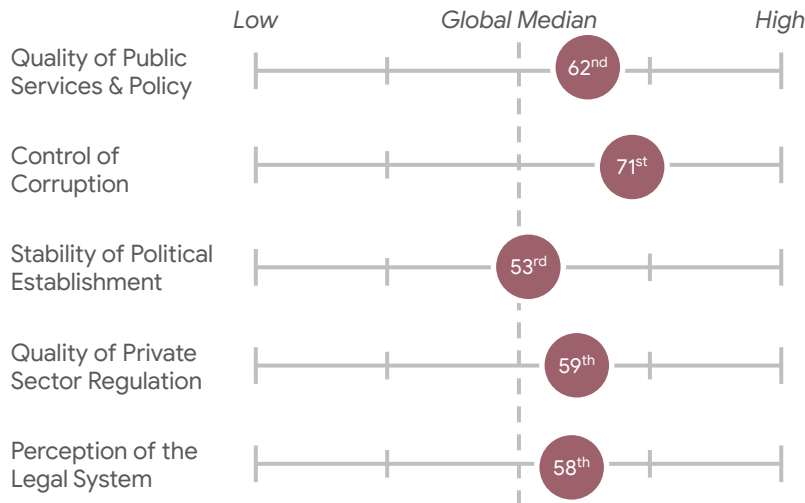


Rwanda government partnered with Carnegie Mellon in 2011 to create a CMU campus in Rwanda that offers **world-class ICT education**



**Government partners with private sector players to deliver public services**, such as Zipline for drone deliveries and Nokia for smart city tech

## Governance Indicator Percentiles



*Rwanda's government performs above the global median, with a steady political establishment and high-quality regulation*



# Developer Population



Demographics



Education



Employment



Experience

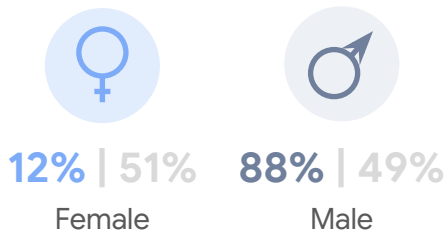
Rwanda's developers are young and primarily learn how to code on their own or through university programs

### Developer Population (FY20E)

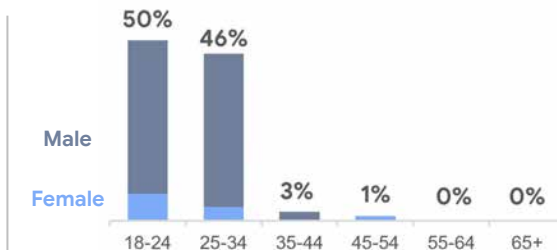


### Gender Breakdown<sup>1,2</sup>

Developer Pop | Rwanda General Pop



### Age Distribution<sup>1,2</sup>



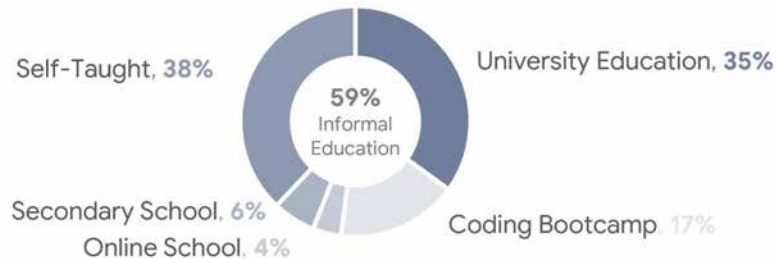
### Top Cities for Developers

- 1 Kigali
- 2 Gisenyi
- 3 Butare, Byumba (Tied)

### Activities<sup>1</sup>



### Technical Education



# Over 40% of Rwandans attend universities or public secondary schools for technical training as coders

## FORMAL EDUCATION

University<sup>3</sup>, Secondary School

41%<sup>1</sup>

### Gender<sup>2</sup>



82% 18%

### Top Industries

- 1 Software & Hardware
- 2 Gov. Services
- 3 Agriculture

### Median Age

25-34

### Avg. Monthly Salary

\$600

### Full-Time

64%

## INFORMAL EDUCATION

Bootcamp, online courses, on-the-job, self-taught

59%<sup>1</sup>

### Gender<sup>2</sup>



91% 9%

### Top Industries

- 1 Software & Hardware
- 2 Gov. Services
- 3 Consumer Products

### Median Age

18-24

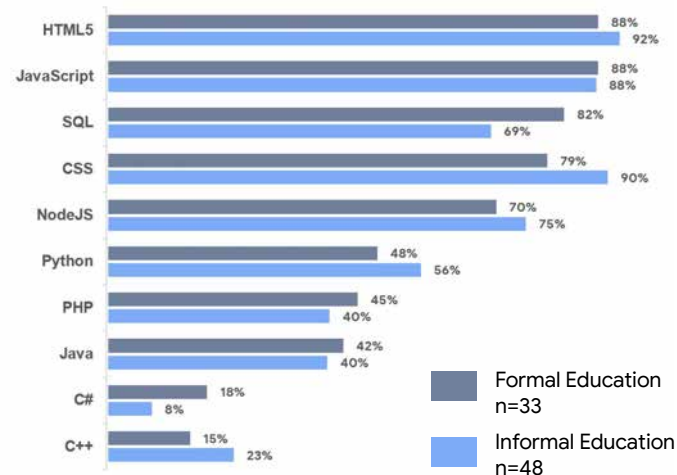
### Avg. Monthly Salary

\$500

### Full-Time

54%

## LANGUAGE PROFICIENCY by EDUCATION



*"Rwanda has Carnegie Mellon, the best university on the continent, producing extremely high-quality developers."*  
-Investor, Pan-Africa

Question: How did you primarily learn to program or code?



Sources: Accenture Surveys, Accenture Analysis

Notes: Source data directional due to small N (N/A used if fidelity of data is too low), Survey was partially distributed by GDGs; 1. n=81; 2. Does not include those who refrain from answering, 3. Only universities with ICT programs are included in this analysis

# The majority of developers work full-time roles unlike in most African countries

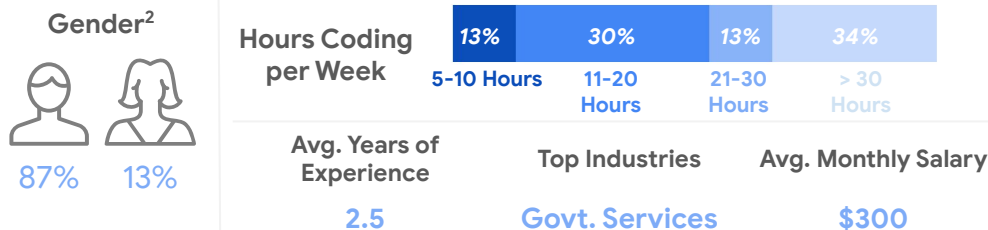
## FULL-TIME ROLE

69%<sup>1</sup>

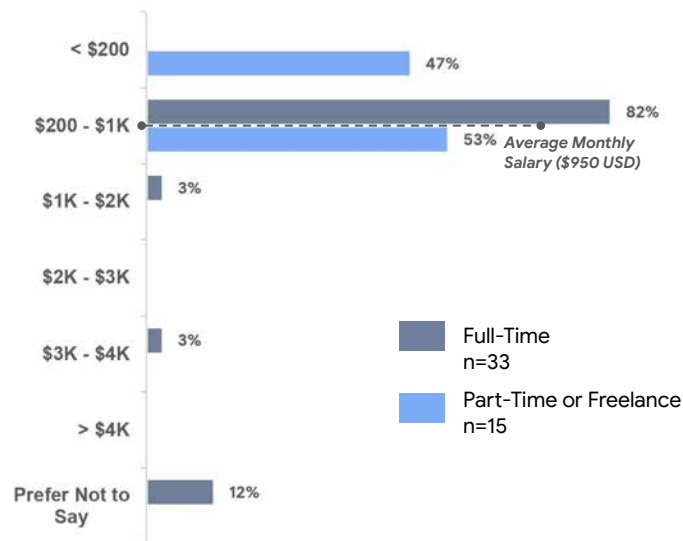


## PART-TIME or FREELANCE ROLE

31%<sup>1</sup>



## MONTHLY BASE SALARY FROM CODING



Question: How do you spend your time coding or programming?

# Developers are predominantly junior coders focused on mobile and web

## JUNIOR DEVELOPER

Less than 6 years of coding experience

94%<sup>1</sup>

### Gender<sup>2</sup>



89% 11%

### Open Repository Contributions



11% Once a year  
8% Once every 6 months  
27% Once a month  
11% Once a week  
43% Have never contributed

### Top Languages

1. HTML5
2. JavaScript
3. CSS

**Top Industry** Software & Hardware  
**Avg. Monthly Salary** \$500  
**Full Time** 58%

## SENIOR DEVELOPER

Over 6 years of coding experience

6%<sup>1</sup>

### Gender<sup>2</sup>



60% 40%

### Open Repository Contributions



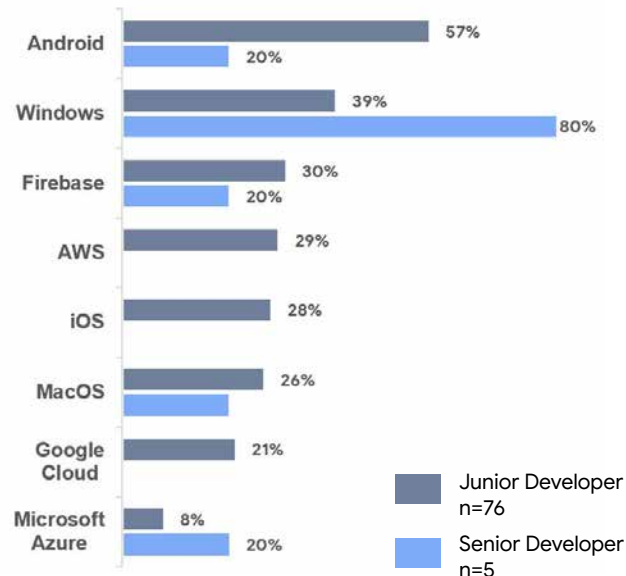
40% Once a year  
20% Once every 6 months  
0% Once a month  
0% Once a week  
40% Have never contributed

### Top Languages

1. JavaScript
2. NodeJS
3. Java

**Top Industry** Govt. Services  
**Avg. Monthly Salary** \$1,600  
**Full Time** 60%

## DEVELOPER PLATFORMS OF CHOICE



Question: How many years of professional coding or programming experience do you have?



# Technology Ecosystem



Innovators (*focus areas*)



Innovators (*fundraising*)



Investors



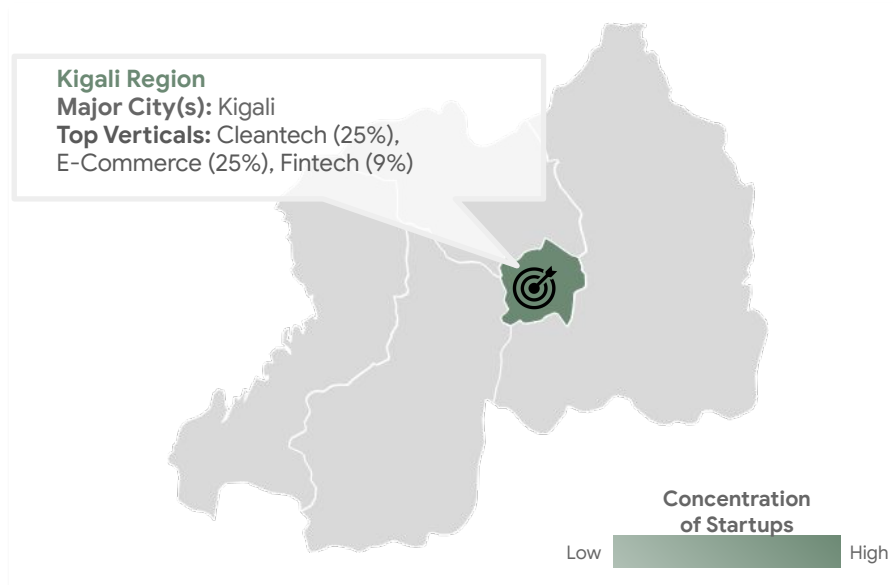
Educators



Enablers



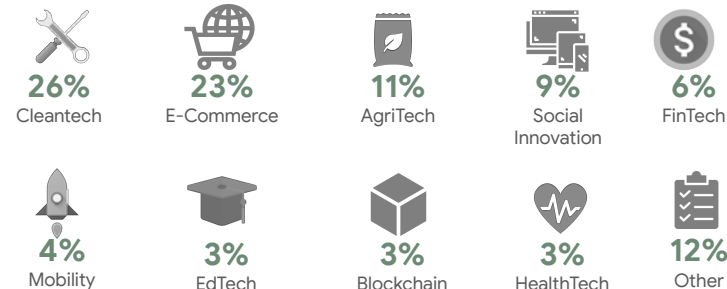
# Cleantech solutions are in high demand followed by e-commerce and agritech



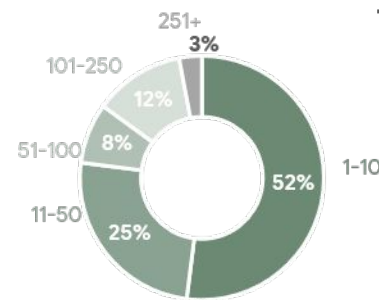
*"The government is looking to increase their startup fund from \$30M to \$70M. The government also hinders tech from other countries entering Rwanda."*

*- Investor, Kampala*

## Breakdown by Top Verticals



## Headcount & Founder Demographics (2020)



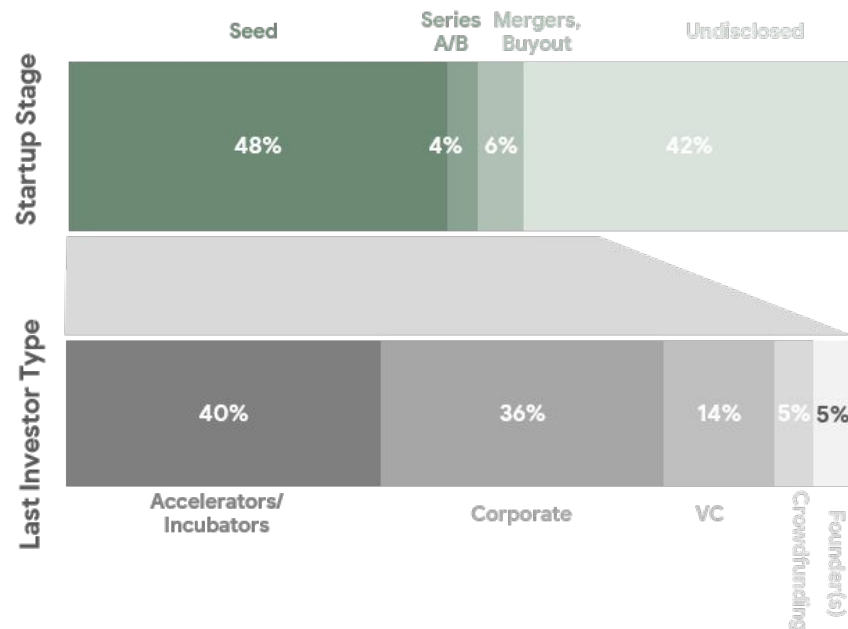
**30%**

Startups with **at least one woman founder**; of which e-commerce & social innovation are leading verticals



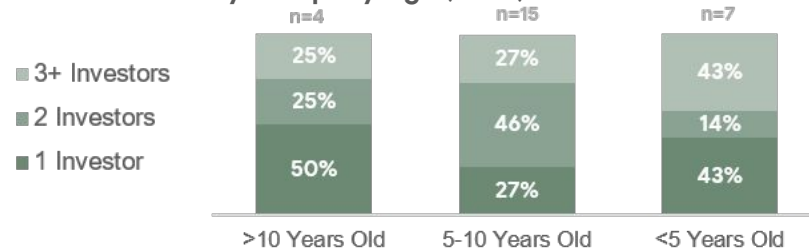
# Rwandan startups attract a substantial amount of corporate investment relative to other African markets

## Distribution of Startups by Stage (2020)



Most startups are in seed rounds of funding and are largely funded by accelerators, incubators and corporations

## Investor Count by Company Age (2020)



The majority of Rwandan startups are between 5-10 years old and have gained traction with two or more investors

## Innovator Characteristics

40%

of startups  
primarily focus on  
the B2B market



41%<sup>1</sup> of the startups operating  
in Rwanda are headquartered  
internationally

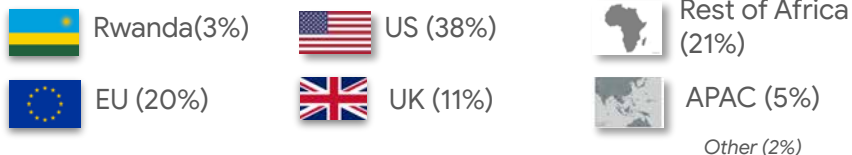


17% of the startups are part of  
the agriculture, forestry and  
fishing sector



# Foreign investment firms view Rwanda as a high potential growth market

## Investors



## Leading Rwandan Investors



**Face the Gorillas** makes real time investments in a Shark Tank format allowing ventures to gain upto \$200K in investments and potential accelerator support.



**Crystal Ventures** provides growth capital investments to companies in civil, agriculture and telecom sectors, with 1 exit thus far.

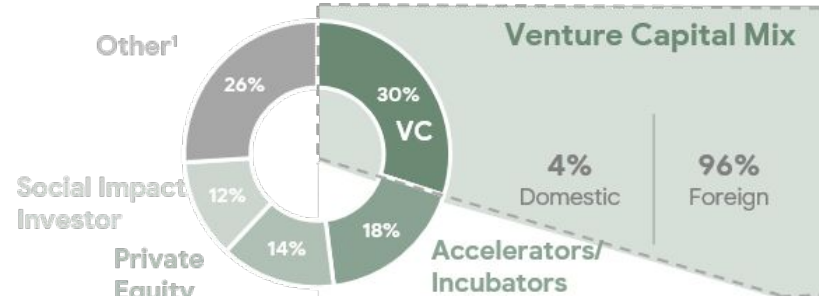


**AECF** invests in agriculture, renewable energy and financial services/comms focusing on rural areas. They've invested in 3+ Rwandan ventures.

*"Foreign investors are labeling Rwanda as the next hub for innovation and tech-enabled ventures.."*

*- Investor, Germany*

## Type of Investors (2020)



## Areas of Focus



**38% of foreign investors only invest in seed or early stage**



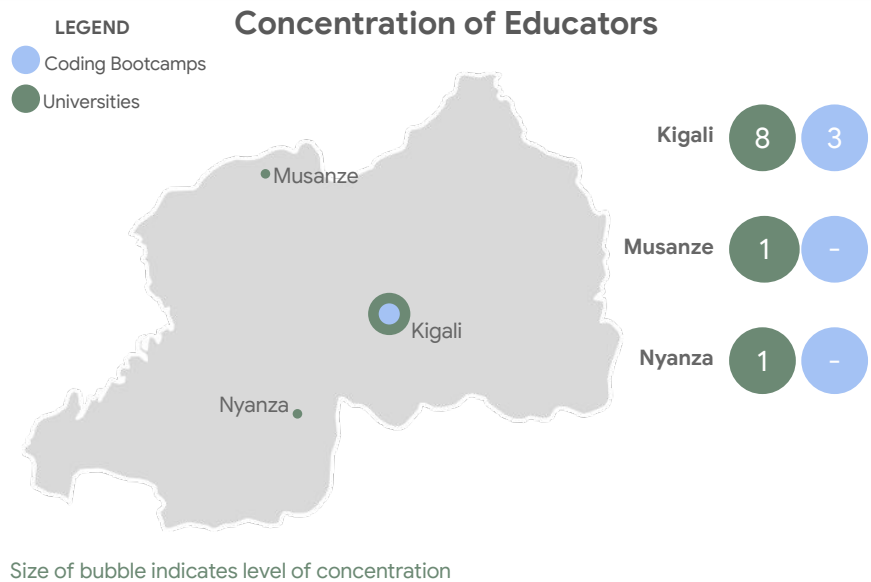
**58% of investors active in Rwanda invest in the software sector**



**32% of investors active in Rwanda invest in cleantech**



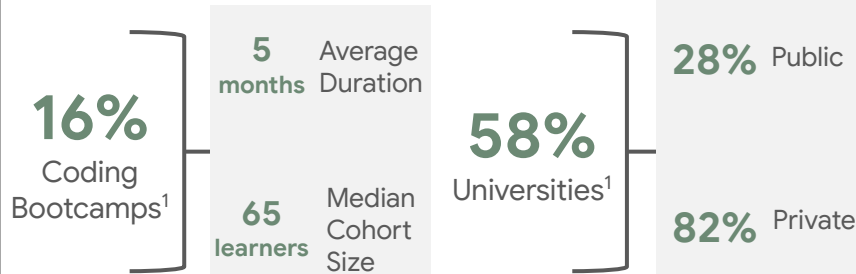
# Kigali provides multiple formal and informal options for technical training



*"Andela has helped shape the ecosystem in Rwanda by providing young talent with training, which drove growth of meetups and developer communities forming."*

*-Educator (Tokyo-based company), Kigali*

## Educator Type Breakdown



## Case Study: Davis College

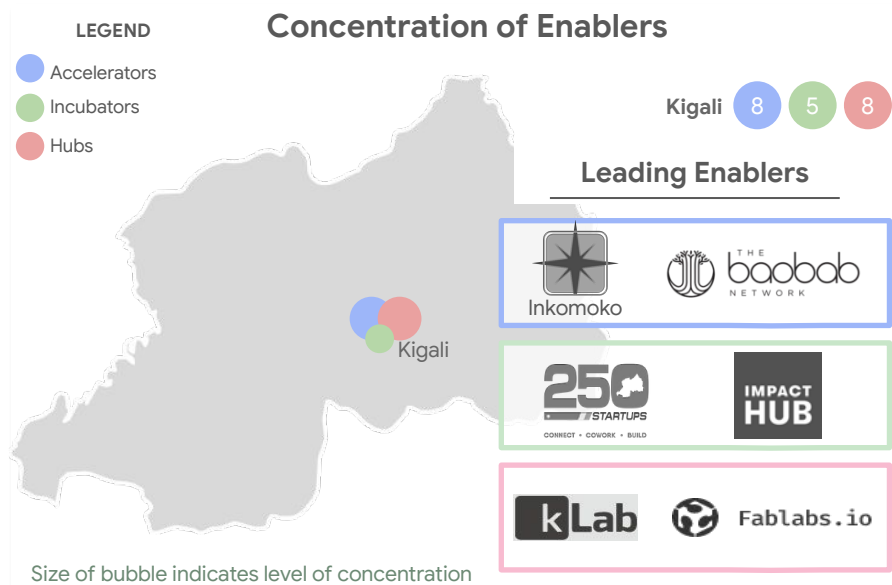
**Overview:** A unique **hybrid of a liberal arts education with technical curricula**. Students learn entrepreneurship and coding, compete in startup competitions, complete internships, and participate in conferences to receive a **2-year Advanced Diploma**

### Tech Stack (sample):





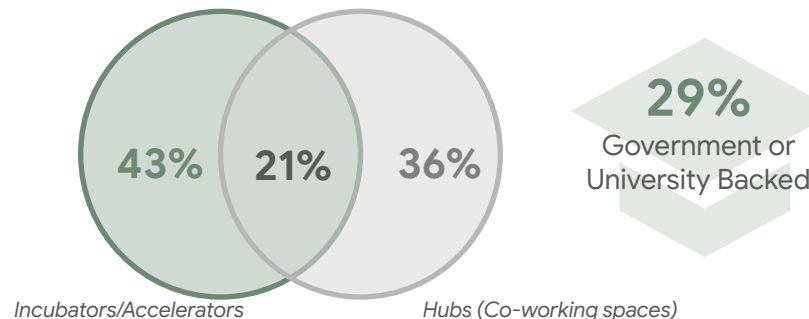
# Kigali is the central hub for enabler networks and is expanding with government support



*"By investing in startups and local talent pool, the government is trying to develop a mini-ecosystem for startups to succeed and develop additional jobs."*

*-Educator, Kigali*

## Incubators/Accelerators vs Hubs



## Case Study: IBS Rwanda

**Overview:** A project of the Rwanda Development Board and the South Korea Cooperation Agency, they provide guidance and investment to technology-based startups and **connect them with the South Korean tech ecosystem**. They have incubated **80 startups**.

### Focus Industries (sample):



Media &  
Entertainment



Travel &  
Tourism



Software



Agriculture



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## Supporting Materials

# Glossary

| Term                   | Definition                                                                                                                                                                                                                                                                     |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Countries Analyzed     | South Africa, Egypt, Morocco, Nigeria, Kenya, Ghana, Rwanda, Ethiopia, Uganda, Tanzania, Ivory Coast                                                                                                                                                                           |
| African Startup        | A company that meets the following criteria: <ul style="list-style-type: none"> <li>• In growth stage of funding (e.g., seed round, series A - F)</li> <li>• Technology-focused</li> <li>• Headquartered in Africa or driving the majority of its revenue in Africa</li> </ul> |
| Tech Ecosystem         | The network of people, organizations and institutions that enable innovation                                                                                                                                                                                                   |
| Innovator              | African startup (see definition above)                                                                                                                                                                                                                                         |
| Investor               | Provides funding in the tech ecosystem (e.g. venture capital, corporate venture capital, angel investors, government funding, private equity)                                                                                                                                  |
| Educator               | Provides technical training or education (e.g. university, bootcamps, online courses, on-the-job training)                                                                                                                                                                     |
| Enabler                | Provides support in the form of work space, training, education, mentorship or funding (e.g. accelerators, incubators, work hubs)                                                                                                                                              |
| Professional Developer | An individual that is employed in a job that involves coding and spends 5 or more hours per week coding                                                                                                                                                                        |
| Junior Developer       | An individual with less than six years of coding experience                                                                                                                                                                                                                    |
| Senior Developer       | An individual with six or more than six years of coding experience                                                                                                                                                                                                             |
| Formal Education       | Universities or secondary schools that provide information communication technology (ICT) curriculum                                                                                                                                                                           |
| Informal Education     | Bootcamps, online course, self-taught or on-the-job curriculum to teach coding skills                                                                                                                                                                                          |
| Female Founded Startup | Startup with at least one female founder                                                                                                                                                                                                                                       |