



Do-Hyung Kim
dokim@unicef.org

World Space Forum
19 November 2019

Table of Contents

Overview

UNICEF Office of Innovation
Innovation fund
GIGA

Projects

Drone projects
Blockchain
Magic Box

Space tech developments

Research activities
Kazakhstan cubesat project
Global youth challenge



epidemics

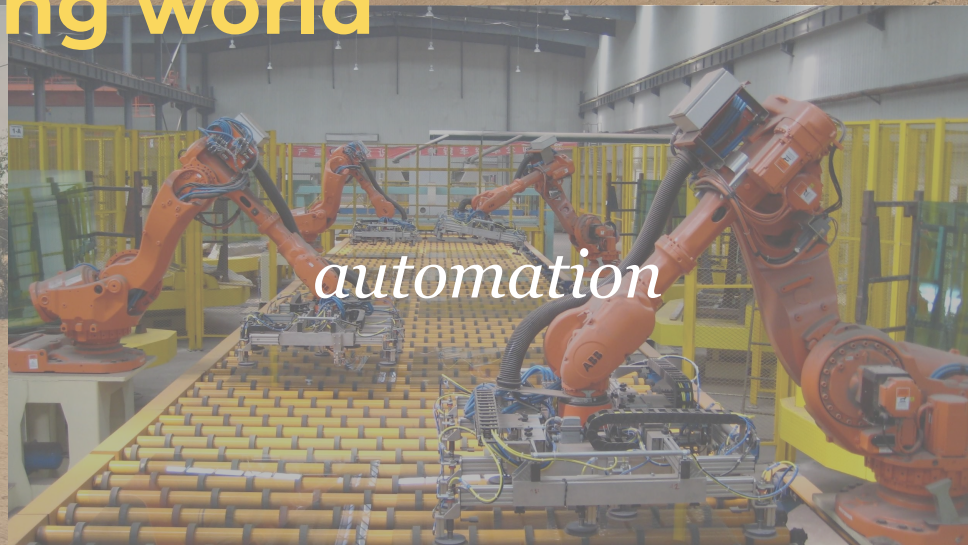


displacement

a changing world



climate change



automation

**Technology and
innovation are changing
the world.**



UNICEF Innovation



Machine Learning



Drones



Artificial Intelligence



Blockchains



*Virtual &
Augmented
Reality*



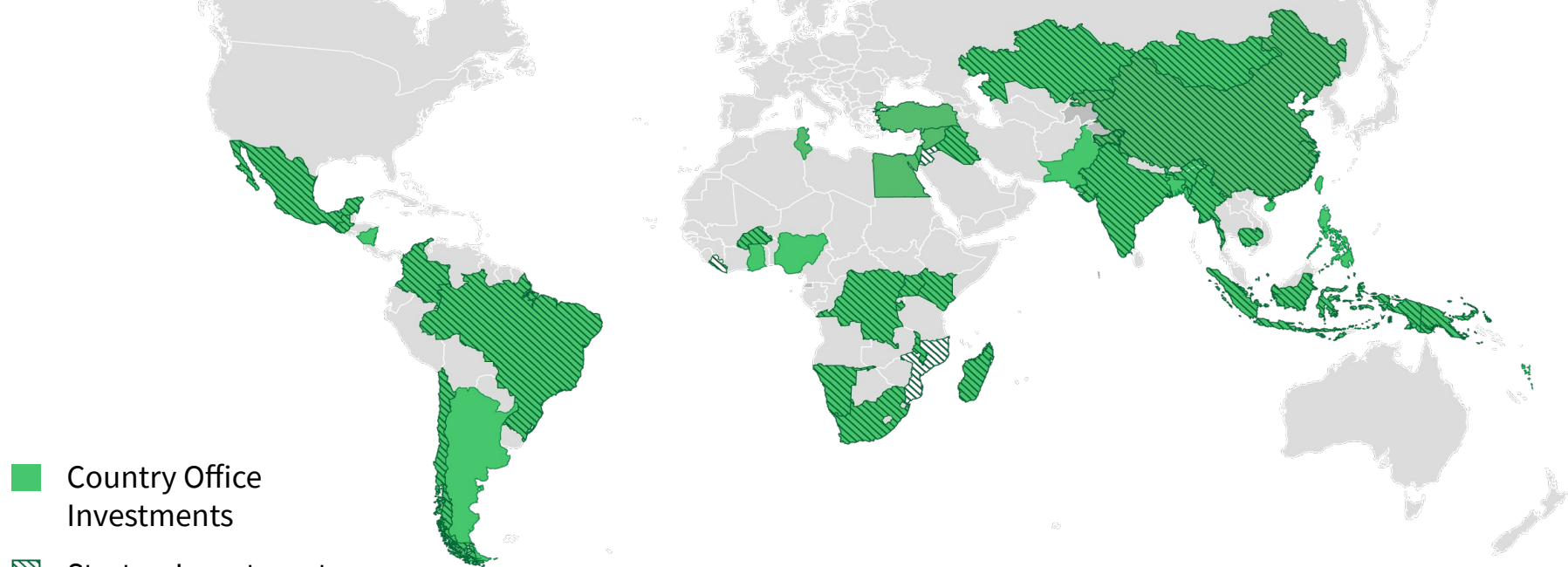
3D Printing



Venture Fund

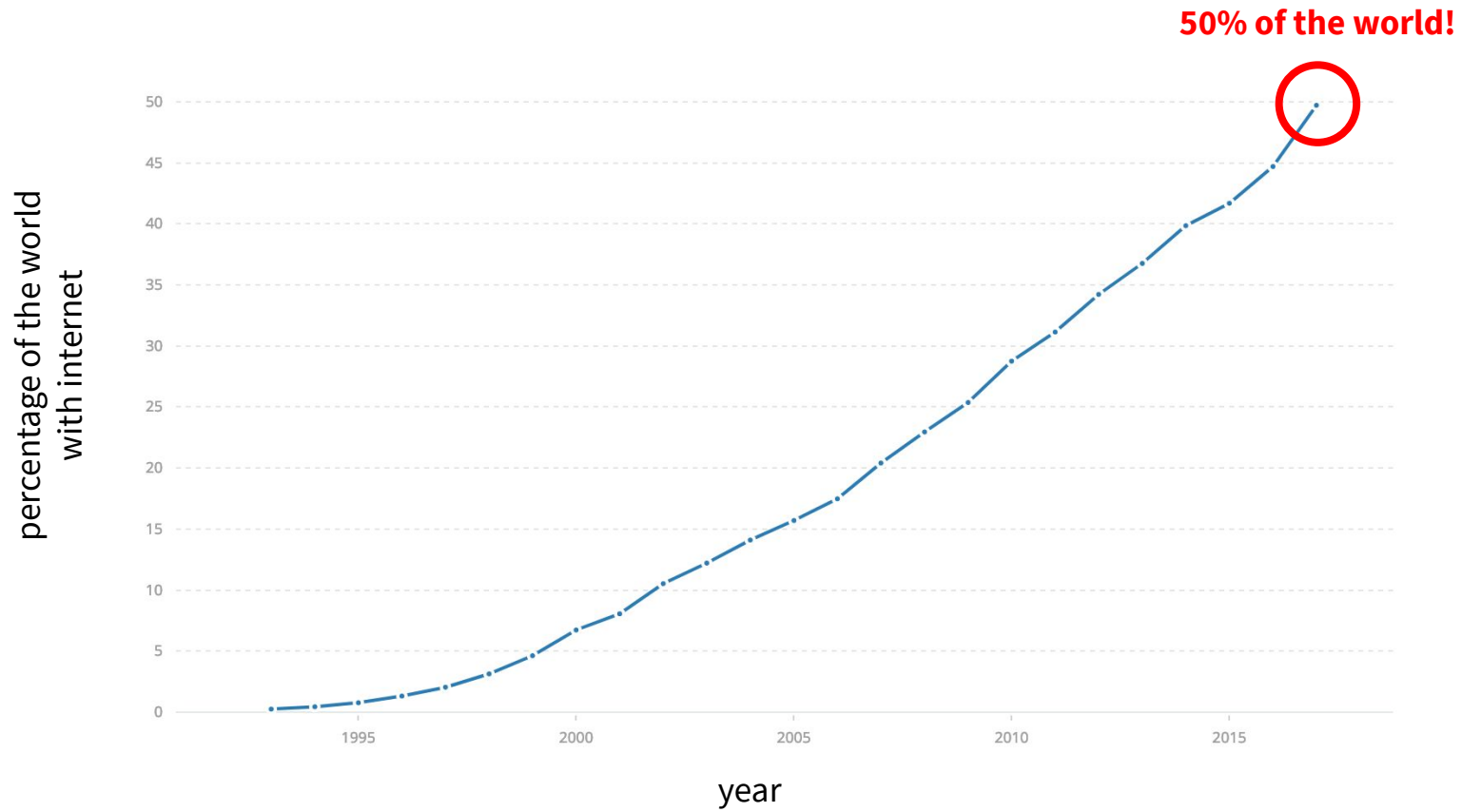
The first venture capital vehicle in the UN for investing in digital public goods, creating internal UNICEF capacity as well as entrepreneurial capacity in our program countries.

77 investments in digital public goods across 39 countries



- Country Office Investments
- Startup Investments

As of March 2019



GIGA: A “GAVI for Gigabytes”

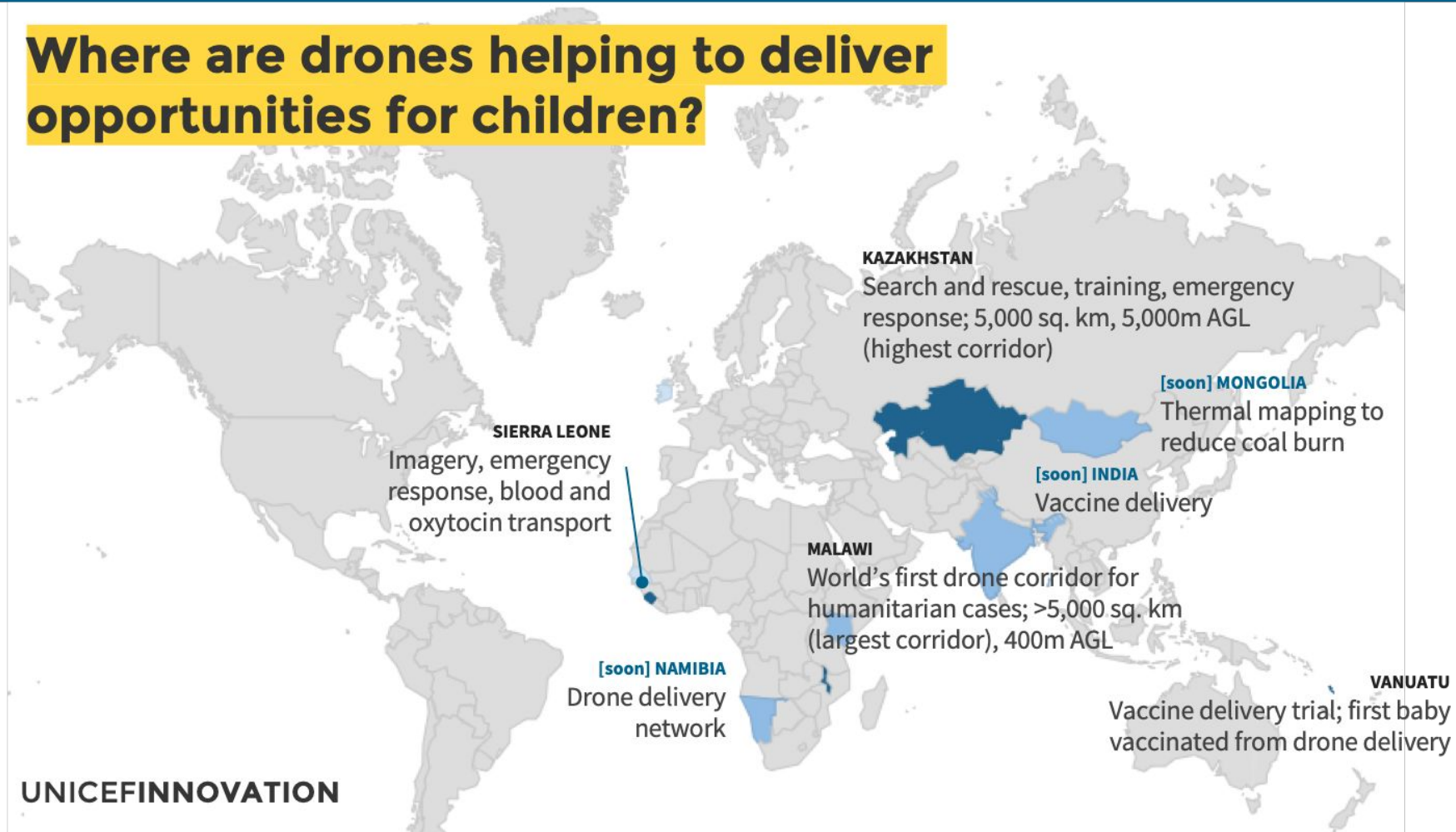
UNICEF and ITU have launched “GIGA”, a new initiative to connect every school to the internet, and every young person to information, opportunity and choice.



**what the Office of Innovation
focuses on**



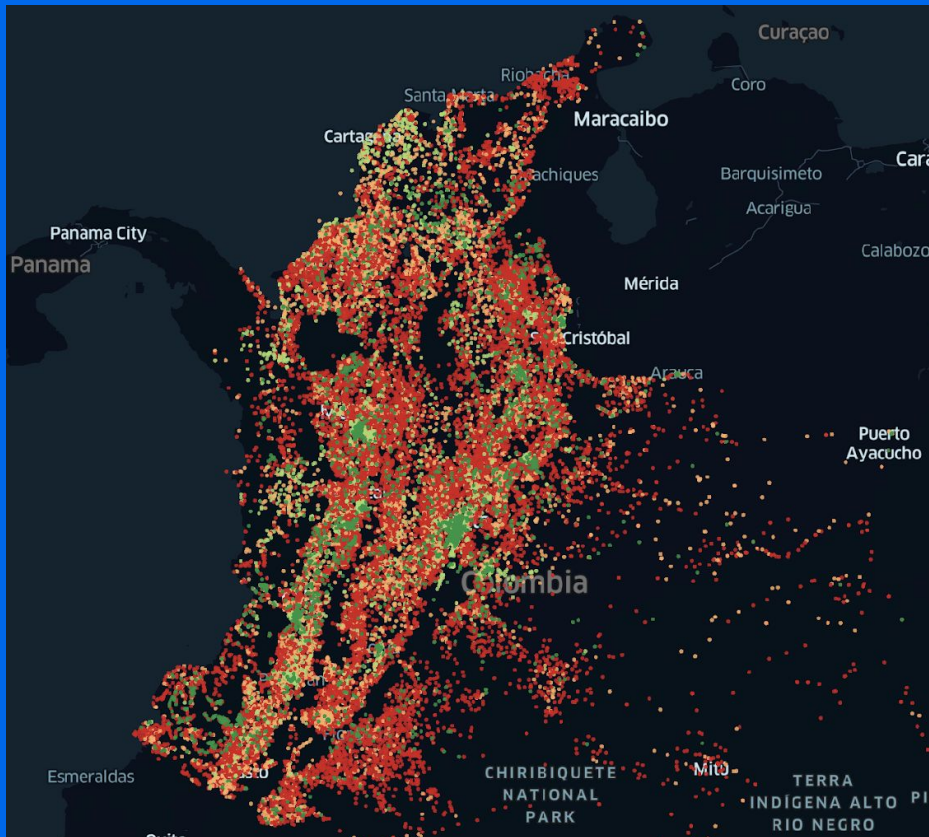
Where are drones helping to deliver opportunities for children?



```
300     uint public version = 2;
301
302     // Transaction structure to remember details of transaction lest it need be saved
303     struct Transaction {
304         address to;
305         uint value;
306         bytes data;
307     }
308
309     // constructor - just pass on
310     // the limit to daylimit
311     function Wallet(address[] _owners, uint _required,
```

Blockchain





● School with connectivity above 3Mbps

● School with connectivity below 3Mbps

● School with no connectivity

CASE STUDY

Using machine learning and satellite imagery we identified 7000 unmapped schools in **Colombia**

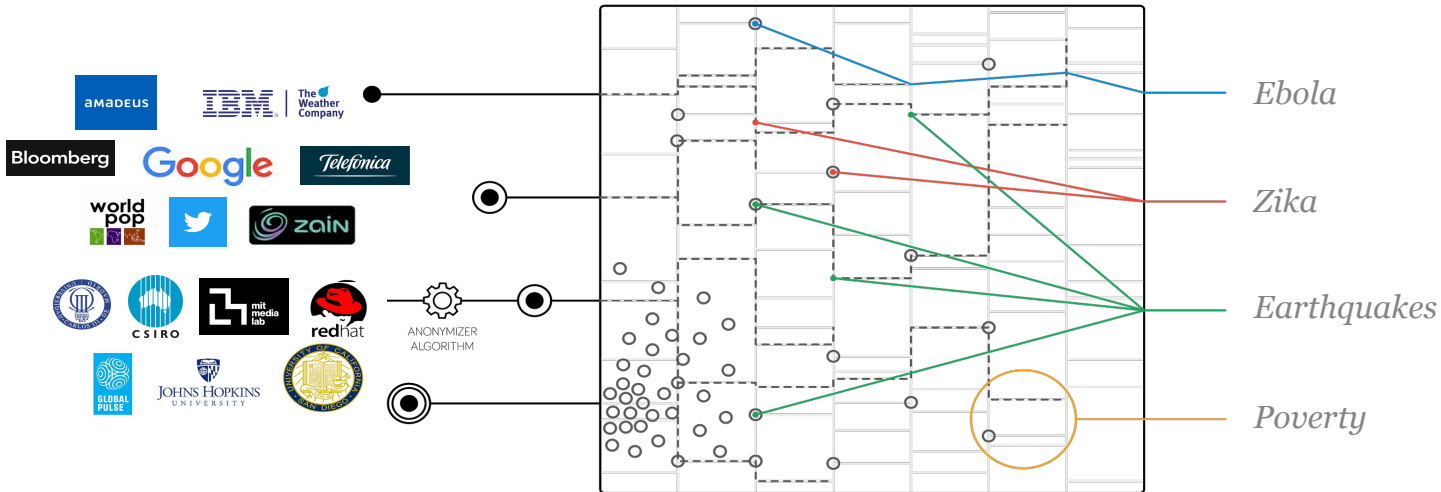
You can see disparities of wealth and also opportunities for investment in human potential

Platforms for Collaboration

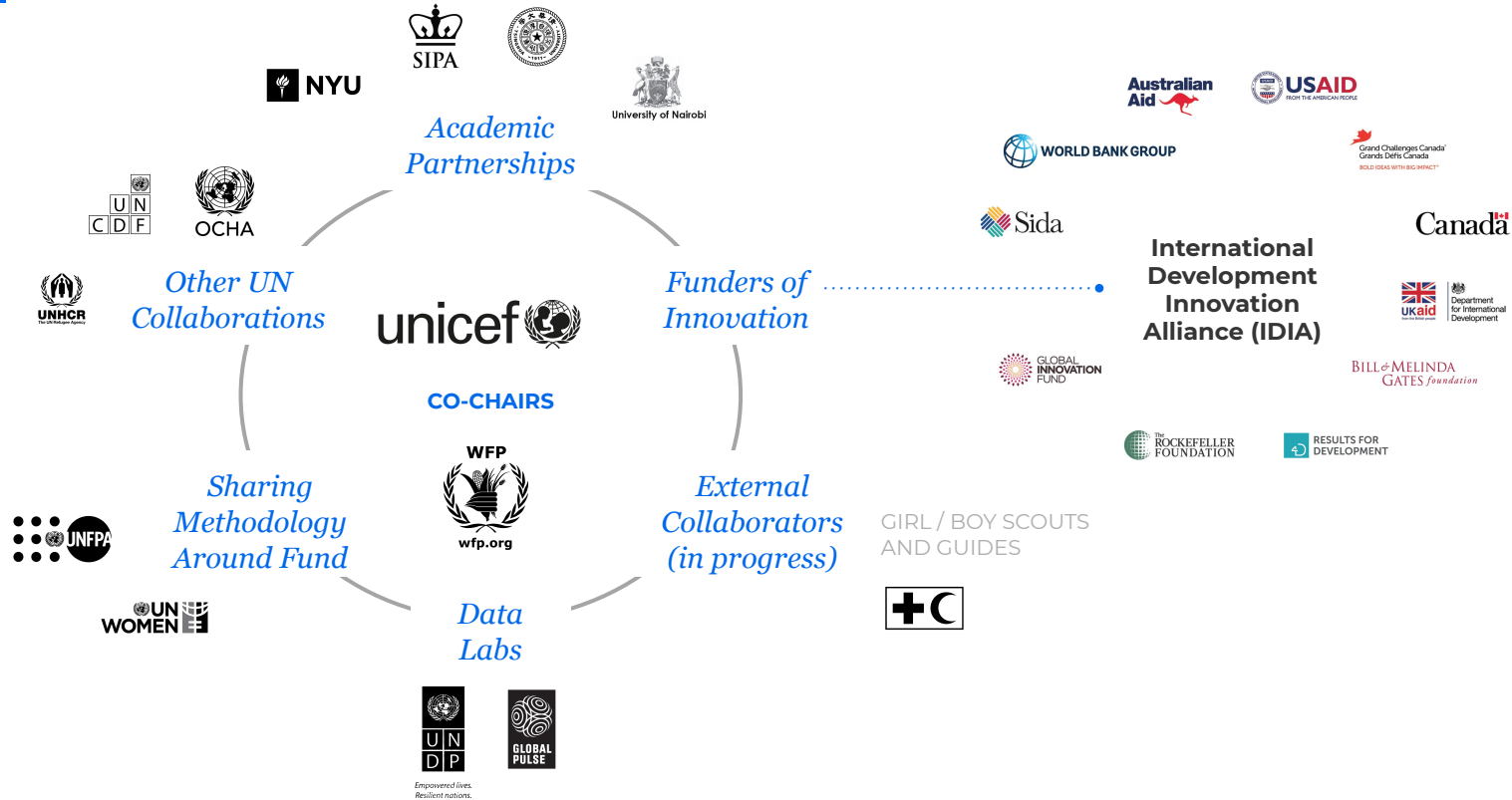


Data in

Insights out



UN Innovation Network



UNICEF Kazakhstan Cubesat Project



A Russian Soyuz-FG rocket launches 5 satellites from Baikonur launch site on July 22, 2012, at 10:00 Moscow time. (Image: © Roscosmos)

Skills for Girls:

Nano-satellites Programme in Kazakhstan

First innovation fund project on cubesat development

Focus on youth education

- participation is only open to female students.
- developing a small satellite development course for youth.

Development Plans



Kazakhstan project plan

Q3-Q4 2019

Feasibility assessment, mapping of the existing study programmes and adaptation the curricula to 14 week educational programme

Q1-Q2 2020

Implementation of Educational programme for girls on STEM and nano-satellites (which includes face to face 2 week sessions during the winter break followed by distance learning (12 weeks)

Q3-Q4 2020

Documenting the results of the programme and developing a detailed guide for further potential scale up of the project

Exploitation of international collaboration opportunities

Research activities



Space generation advisory council

2018-2019

CASE STUDY ON CUBESAT RADIO FREQUENCY-BASED GEOSPATIAL DETECTION AND ITS APPLICATIONS, 2019

2019-2020

1. State of access to aerospace technologies and opportunities in developing countries
2. Lessons learned from small satellite projects
3. *Review of small satellite constellations to provide communications*



SPACE GENERATION
ADVISORY COUNCIL



Future Plans



Global Cubesat Challenge

Pilot

Kazakhstan project ends in July

Private-public partnership

reduce cost for test and launch

Type of sensor

Beyond optical sensor doing case studies on the types of sensors.

July 2019

Mar 2020

Apr 2020

July 2020

July 2021

Pilot starts

Call for
application

Selection finish

Pilot ends, global
change launches

Launch
@unicefinnovate

Thank You

www.unicefstories.org/unicefinnovationfund/

dokim@unicef.org

[@UNICEFinnovate](#)