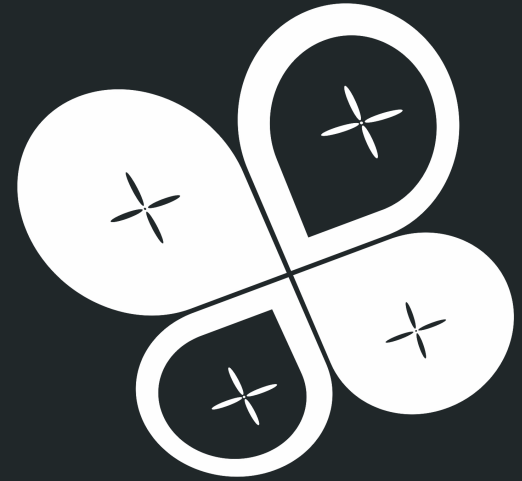


Wallace de Oliveira, M.Sc.

walace.oliveira@angeldrones.com.br

www.angeldrones.com.br



Angel Drones

Using UAVs in Brazil for Social Good

Paving the way for a future **Brazil** FlyingLab



**IF YOU WANT TO GO FAST,
GO ALONE.
IF YOU WANT TO GO FAR,
GO TOGETHER.**

AFRICAN PROVERB



Sometimes, we need to go fast and far.



A little bit about myself - Who am I?



January 2011 - The Worst Brazilian Natural Disaster



January 2011 - The Worst Brazilian Natural Disaster



January 2011 - impressive numbers

- More than 1,000 people killed in less than two days
- Near 1 billion dollars in economic damages - agriculture, tourism, infrastructure, etc.
- 30 thousand people displaced
- Near 30 year to recover
- Diseases spread: cholera, dengue, zika, leptospirosis, etc
- Huge environmental damages



Ana Julia

Brazil

The Land of Contrasts



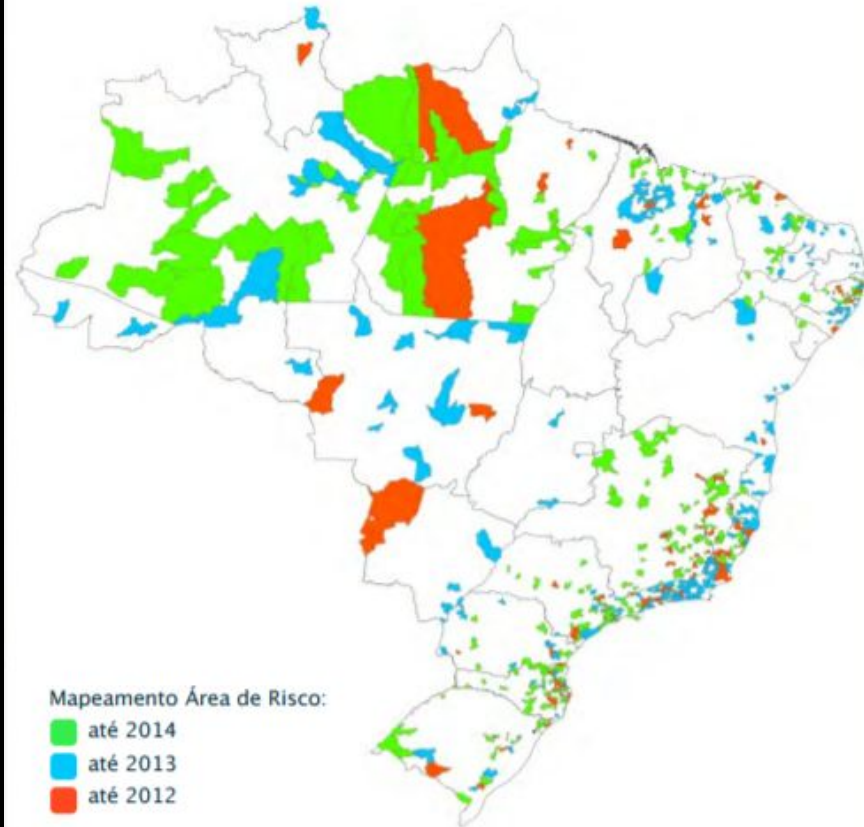
Brazil

The Land of Contrasts



Brazil: the land of contrasts

- **Population: 200 million people**
- **Territory: bigger than Europe (4th largest in the world)**
- **One of the top agricultural producing countries**
- **Between the 15 most unequal countries in the world (#12)**
- **Near 11 million people live in favelas (poverty-stricken communities - extremely violent)**
- **831 cities under risk of floods and landslides**
- **Top 10 CO2 producers (deforestation)**



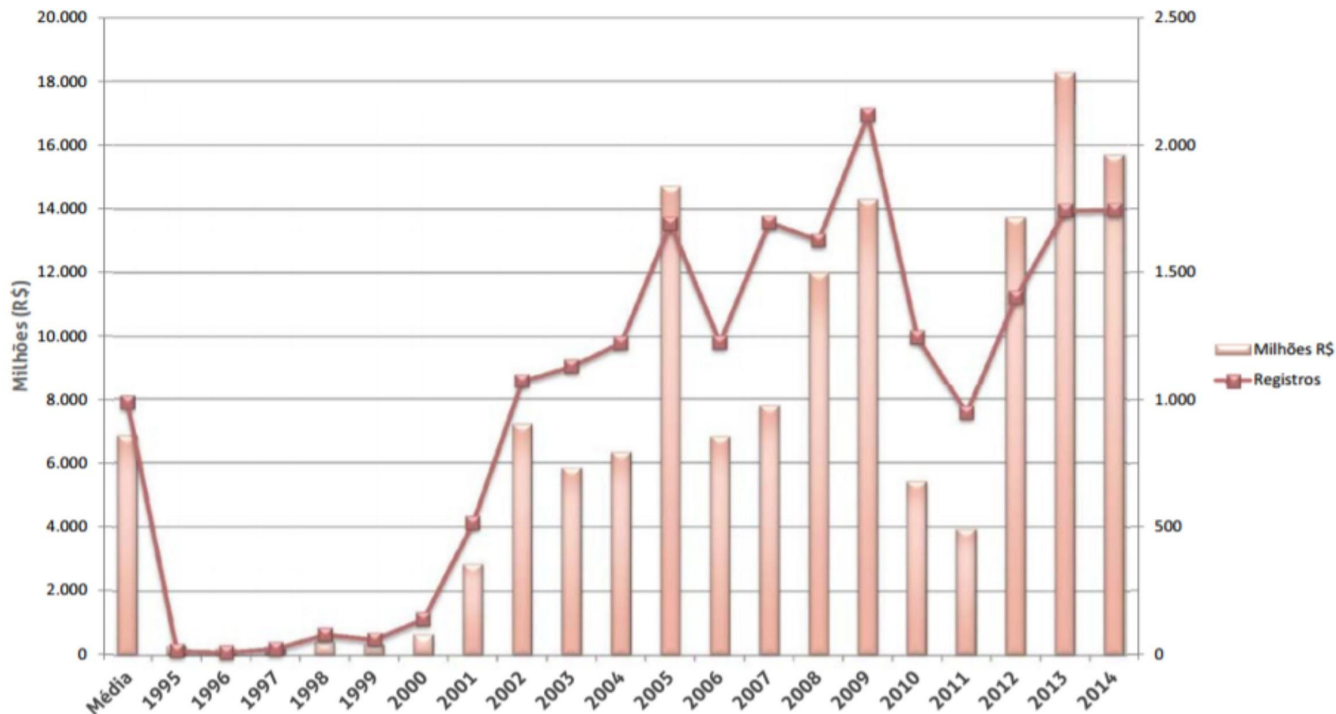
Economic damages due to natural disasters - 1995-2014

Prejuízos Totais: R\$ 137.299.250.307

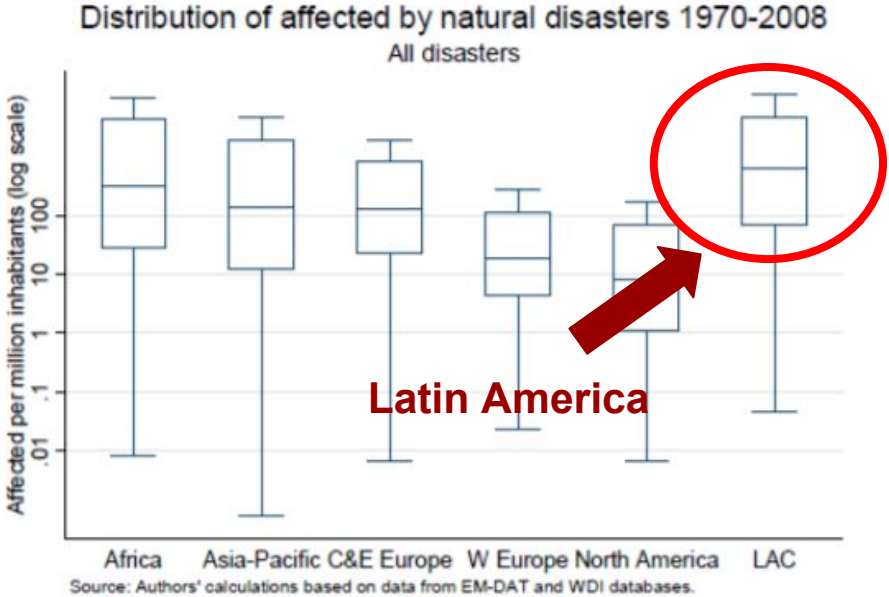
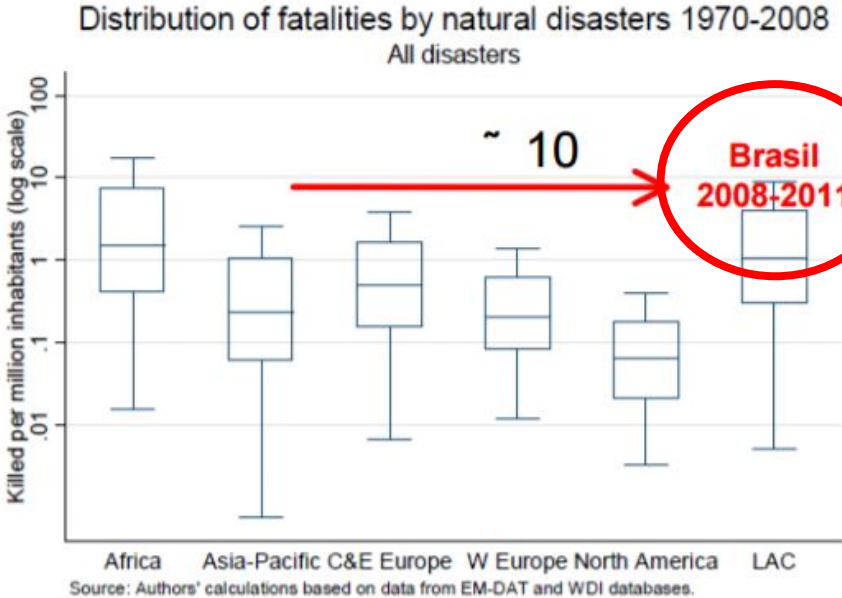
Registros: 19.732

42.8 billion dollars in 19 years ~ Slovenia GDP in 2016 - on average 2.25 billion dollars a year

Gráfico 133 – Brasil – Prejuízos Totais – Distribuição Anual



Fatalities in the world by natural disasters



Spreading of tropical diseases

Zika Virus - 2016

SCIENTIFIC
AMERICAN.

Costs of Zika

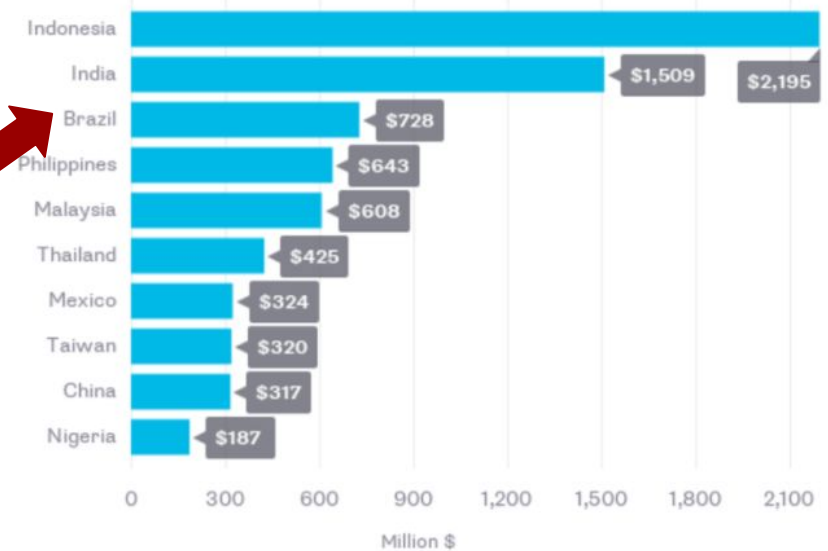
The World Bank estimated Zika will cost the world about \$3.5 billion in 2016. Here's a breakdown of the costs in different countries.

COUNTRY	ESTIMATED COST
Mexico	\$744 million
Cuba	\$664 million
Dominican Republic	\$318 million
Brazil	\$310 million
Argentina	\$229 million
Jamaica	\$112 million
Belize	\$21 million
Other	\$1.08 billion
Total	\$3.48 billion

Dengue Fever

An Expensive Disease

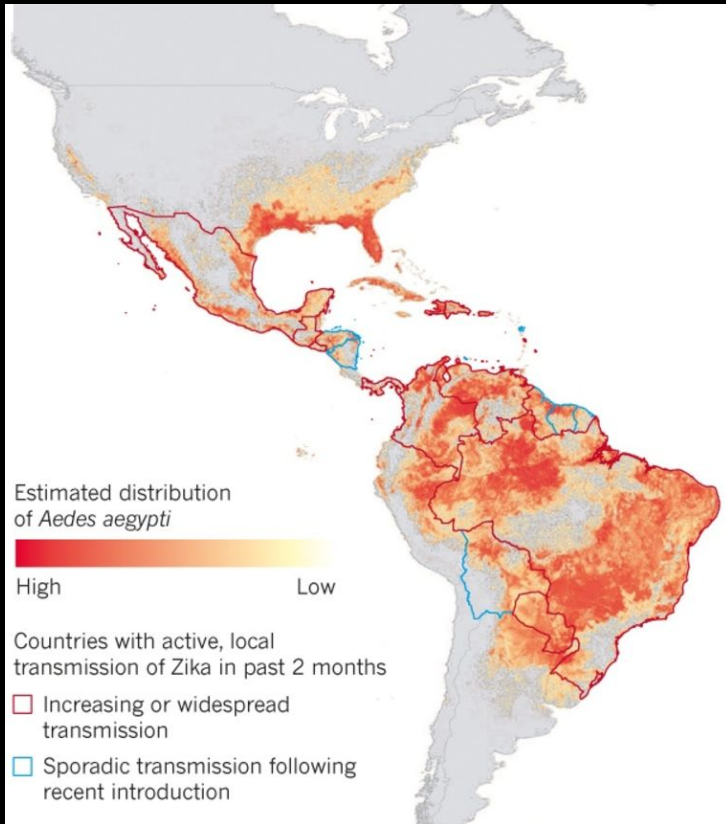
Top 10 countries with the highest aggregate cost of dengue illness



Source: DS Shepard, EA Undurraga, YA Halasa and JD Stanaway

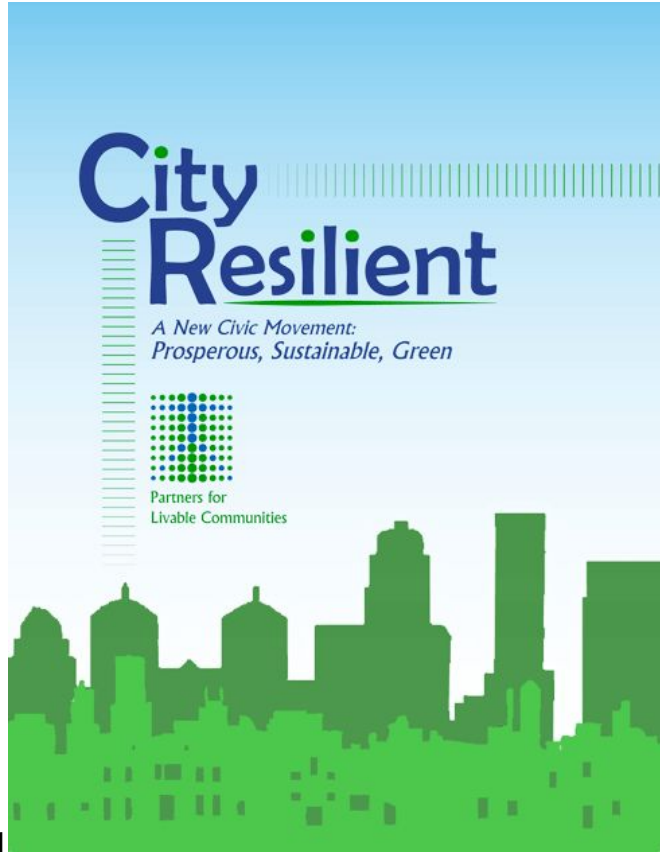
BloombergView

Spreading of tropical diseases



More than 2,000 microcephaly cases in 2016

The solution: more resilient cities

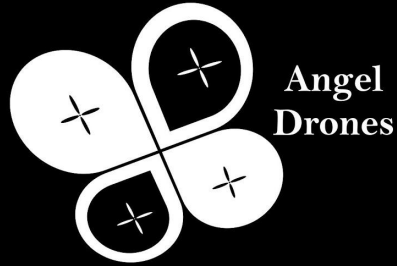


Our inspiration - WeRobotics FlyingLabs



We cannot wait! - Angel Drones - Social entrepreneurship

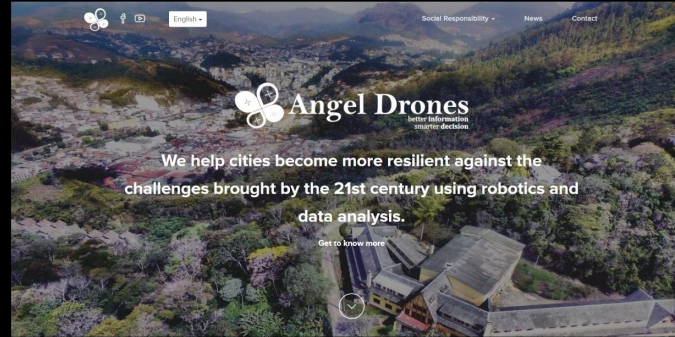
Logo



Mr. Peter Miler - Coach



Web Site



UNISDR - Be a change agent



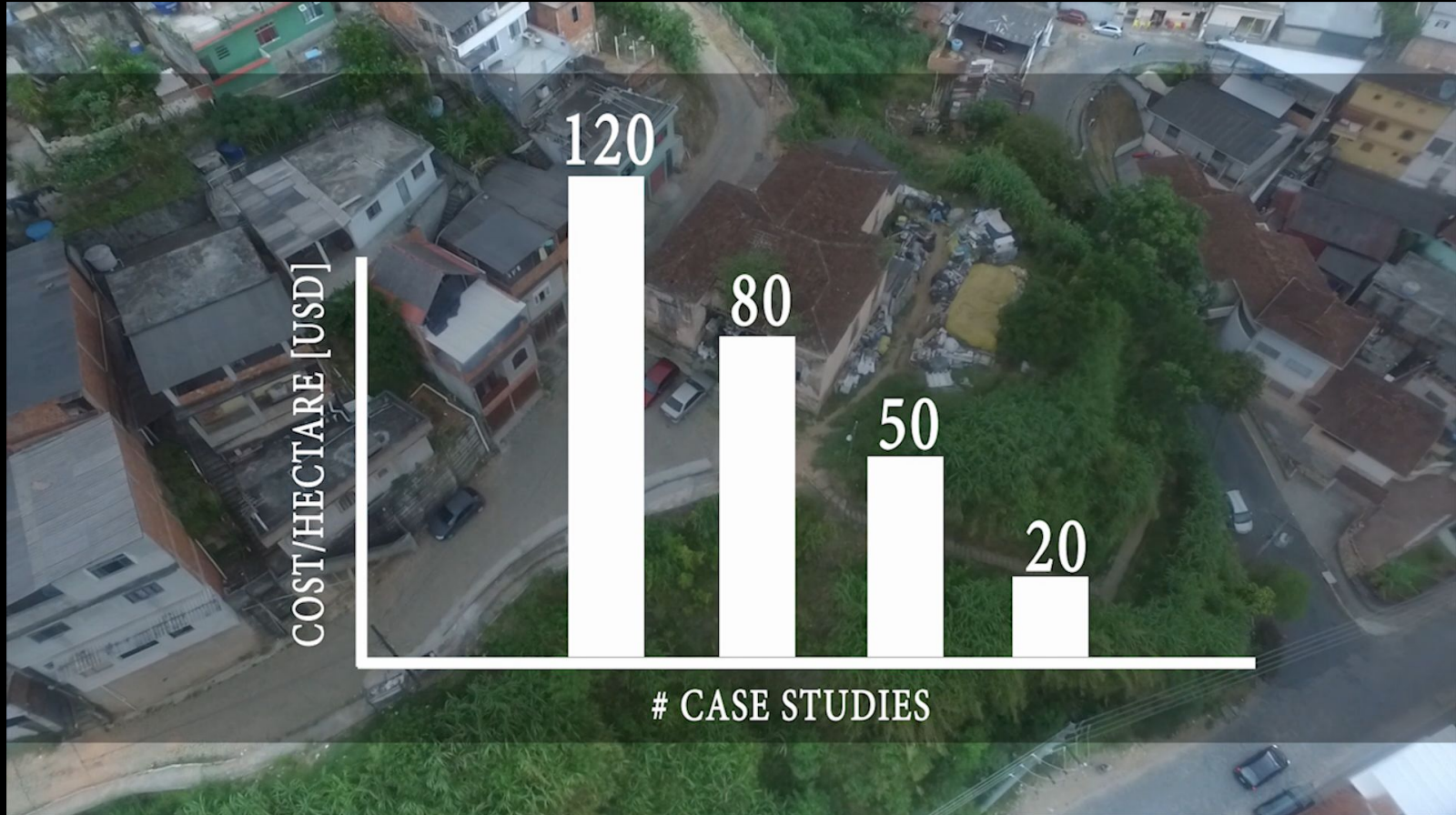
Angel Drones - Team

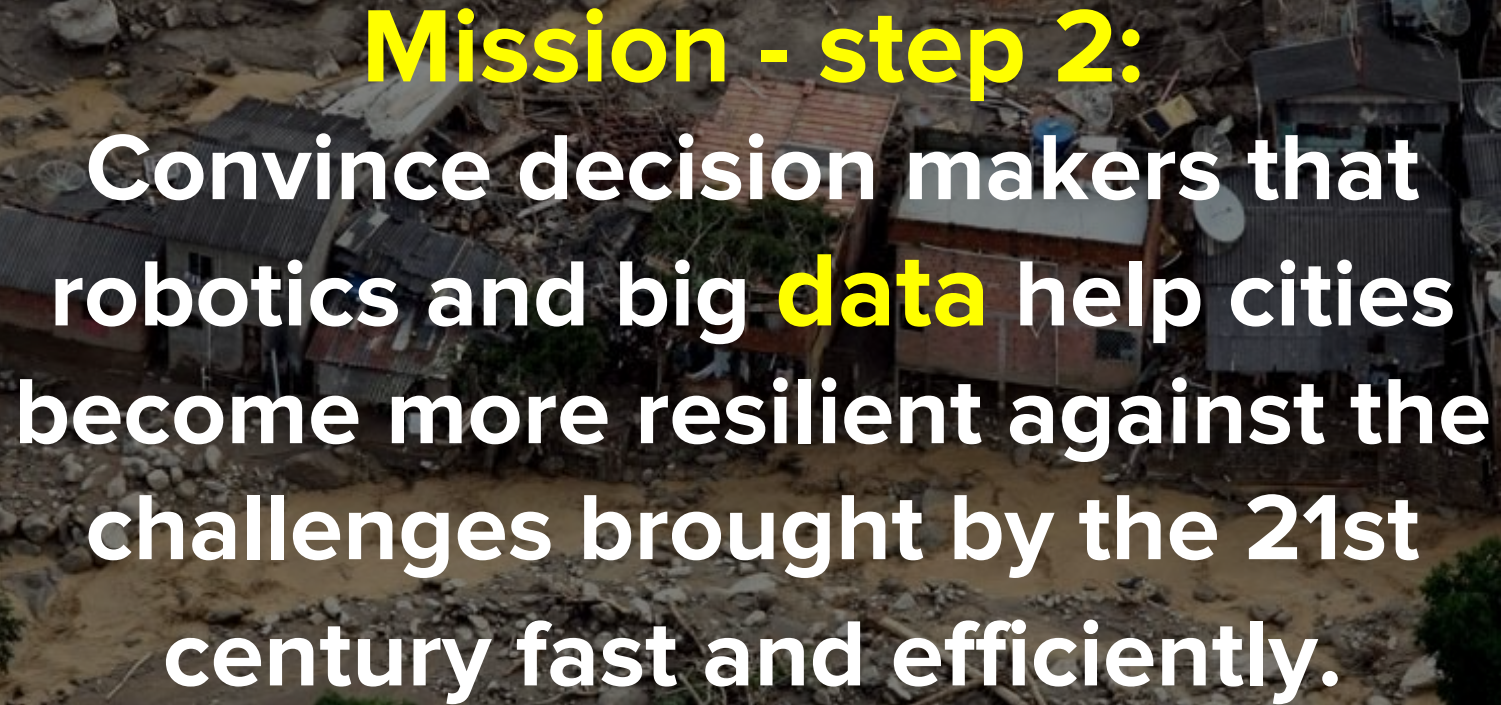


An aerial photograph showing a village with several houses, some of which appear damaged or partially destroyed. The houses have corrugated metal roofs and are situated on a hillside. A muddy, brown river flows through the village, and the surrounding area is littered with debris, including rocks and branches. The overall scene suggests a disaster, possibly a flood or landslide.

Mission - step 1:
**Affordability, case studies, validation,
optimization.**

Angel Drones - Case Studies Cost



An aerial photograph showing a village that has been severely damaged, likely by a natural disaster. The ground is covered in mud, rocks, and debris. Several buildings with corrugated metal roofs are visible, some of which appear to be partially destroyed or tilted. The overall scene is one of devastation and loss.

Mission - step 2:
Convince decision makers that
robotics and big **data** help cities
become more resilient against the
challenges brought by the 21st
century fast and efficiently.

Some Results

Lazareto neighborhood
January 12th, 2011



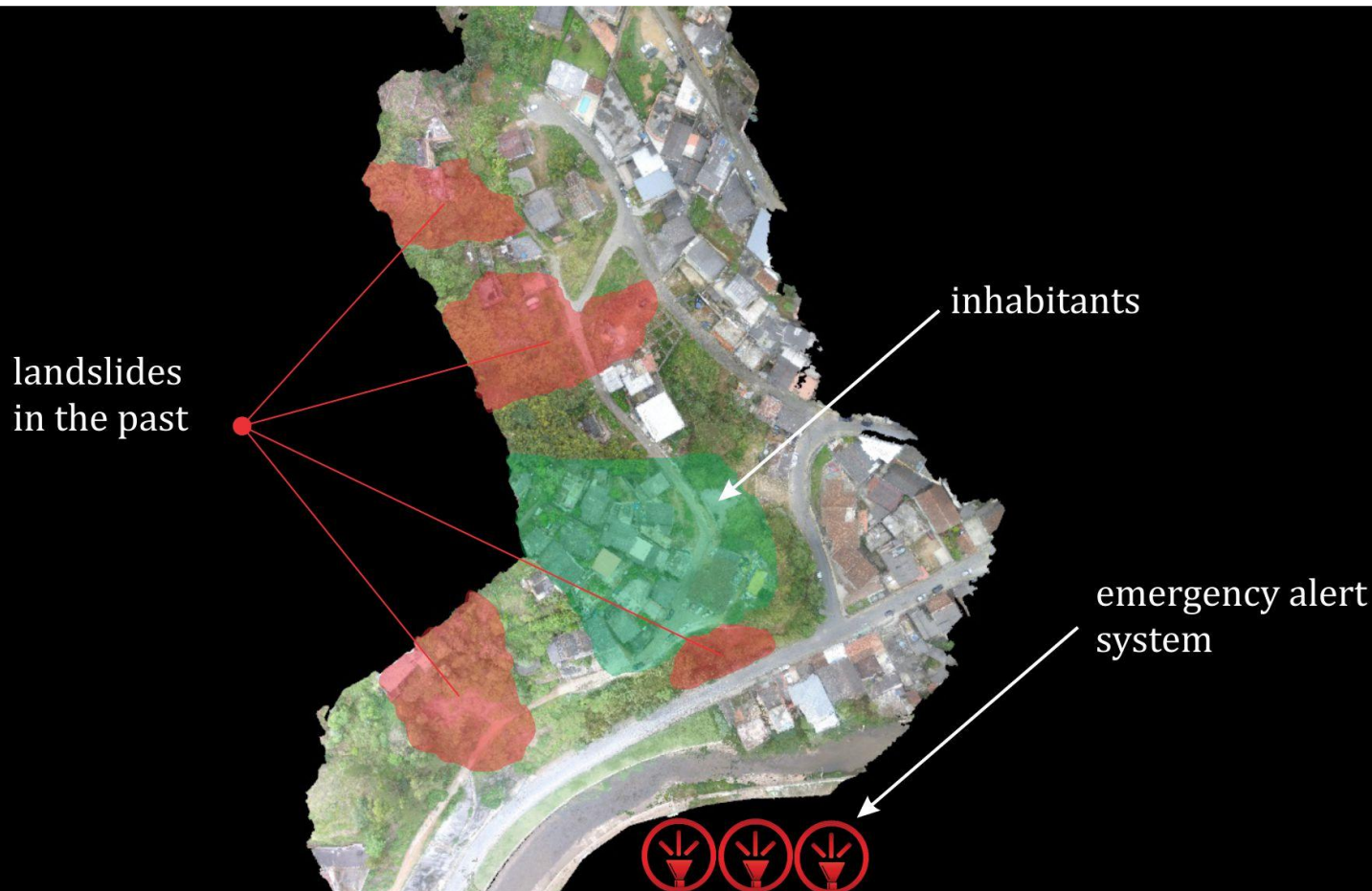
Some Results

3D mesh

November 7th, 2016



Some Results



Some Results



Our Plan

Action plan Nova Friburgo City - Swiss Colonization



Local government
Civil defence
Industries
Corporate social responsibility



Consulate of Switzerland in Brazil
SwissNex
Drones and software startups
Humanitarian agencies
Brazil FlyingLab

2017

2018



Angel Drones



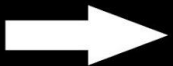
Nova Friburgo
200 years

Our connections

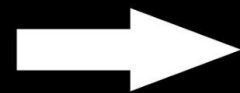
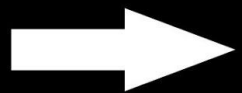
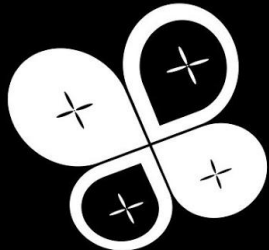
Switzerland



FSD
Sense Fly
Pix4D
International Red Cross
CARE



SwissNex
Brazil



Brazil
FlyingLab

Nova Friburgo
200 years

Mr. Peter Miler - Coach

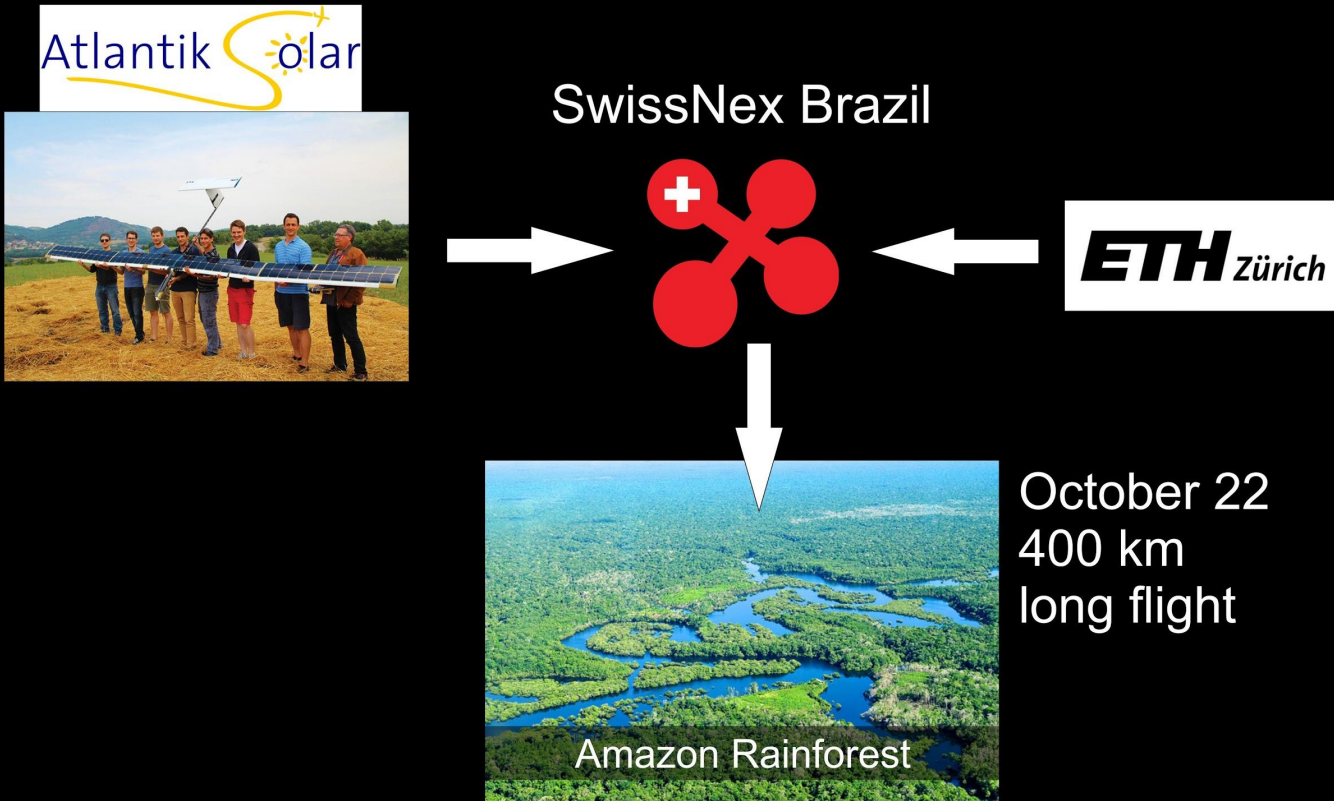


Corporate Social
Responsibility
Commercial Applications
Self Sustainable

Our connections



Our connections



Our achievements: convincing decision makers





Goal:
Use UAVs to find the best places to
plant 200,000 native trees in the Mata
Atlantica Rainforest by 2018

Please, join us!

Thank you so
much!

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