RESILIENT HOUSING FOR RESILIENT CITIES

WORLD POPULATION GROWTH 1970-2010
+87%.
In flood plains: +114%.
In cyclone-prone coastlines: +192%.

FLOOD RISK AND HOUSING PRICES
1% increase in the yearly probability of flooding is associated with a 0.6% decrease in housing prices.
If the chance that a home will be affected by flooding this year is 1 in 100, over a period of 25 years, the chance is 1 in 5.

HUMAN CAPITAL LOSSES
The loss of income in a country for an occupied person dead in an earthquake: > 50x GDP per capita.
Earthquakes cause 44,585 deaths on average per year.

SHARE OF HOUSING ON TOTAL PRIVATE DAMAGES AND LOSSES
ANTIGUA AND BARBUDA 2017 hurricane: 36%
ST. VINCENT 2013 floods: 93%
GUATEMALA 2010 tropical storm: 44%
HAITI 2010 earthquake: 37%

ASSET LOSSES
US$ 327 billion on average per year.
From earthquakes:
From hurricanes:

WELL-BEING VS ASSET LOSSES
Well-being losses: 60% higher than asset losses.
People in the bottom 20%: Experience 11% of total asset losses but 47% of well-being losses.
Are 1.8 times more likely than the average person to live in highly vulnerable buildings.

THE NEED TO REBALANCE HOUSING POLICIES
Does not have a housing problem: Can purchase formal housing with a mortgage: Can purchase formal housing with a mortgage and government subsidy: Lives in informal and/or low-quality housing: 98% of housing prices increase explained by rising land prices.

AFFORDABLE AND RELIABLE HOUSING ASSESSMENTS
WHERE CAN RESETTLEMENT OR RETROFITTING INVESTMENTS SAVE AND IMPROVE LIVES?
How could we harness imagery taken from the sky and from the ground to mimic the expert eyes of a Structural Engineer and operate at scale and low cost?

THE NO-REGRETS STRATEGY
Prevent people to occupy hazards areas:
Ensure adequate use of public spaces and protect evacuation routes:

ARGENTINA
Self construction strategy proved to be successful.

GUATEMALA
By building trust and respecting legacy and cultural issues, it is possible to work with indigenous communities.

SAINT LUCIA
Successful housing solutions are those compatible with the circumstances of the beneficiaries.

NEW HOUSING IN SAFER AREAS
ARGENTINA
Guarantors
Safety
Affordability

BRAZIL
Guarantors
Safety
Affordability

SAFER HOMES IN EXISTING AREAS
ARGENTINA
Guarantors
Safety
Affordability

BRAZIL
Guarantors
Safety
Affordability

REGULARIZATION, FINANCING FACILITIES AND/OR GUARANTEES CAN INCENTIVIZE RETROFITTING INVESTMENTS

HOUSING RETROFITTING IS A SMART POLICY
Technically possible:
For earthquakes and hurricanes, preferably small structures.
Affordable:
5-20% of the value of a property. USA: earthquake retrofitting $4,000-$5,000.
Break even point: 10% in reduction of life-losses due to earthquakes.

5 BUILDING BLOCKS OF HOUSING POLICIES: Property Rights | Land with basic services | Finance for developers and end-users | Construction materials and technology | Effective Demand.

HOUSING = A MATTER OF LIFE AND DEATH | FAMILIES’ MOST IMPORTANT, AND SOMETIMES ONLY, ASSET | A SOURCE OF ECONOMIC GROWTH OR INSTABILITY.