

Building Ecological, Social and Financial Resilience of Communities



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Why Build Resilience Now?

- Climate crisis
- Sea level rise
- Managed retreat from coastal areas
- Climate refugees?
- The future of agricultural work?
- Hyper Consumption
- Social inequity

**Every dollar invested in resilience, can generate 4 dollars
of economic value- World Bank**



Why do we need social capital?

- **For climate, health or financial crises**
 - Communities with social capital recover sooner, better
 - Covid-19 and other information/misinformation
 - Support in financial crises
- **For public safety**
 - Neighborhood watch groups
- **For holding governments accountable**
 - Civil Society organizations
- **Negotiating fair wages**
 - Labor unions
- **For happiness and well being**



3 types of wealth and triple bottom-line accounting



Financial
Capital







Ecological
Capital



Social
Capital



Building Resilience in Communities

Resilience strategies	Ecological Capital	Social Capital	Financial Capital
Mitigation 	<ul style="list-style-type: none"> • Conservation • Value Ecosystem Services 	Address elements causing loss of social capital	<ul style="list-style-type: none"> • Diversify incomes • Expand funding sources
Adaption 	<ul style="list-style-type: none"> • Regenerative Ag • Enhance forests, • Decrease Pollution • Build soil health 	<ul style="list-style-type: none"> • Promote shared goals • Shared accountability 	New ways to calculate agriculture and forest prices.
Future Planning 	Climate resilient/native crops	Plan future resilience needs and response	<ul style="list-style-type: none"> • Informed Planning • Community buy-in • Prepare for impact of AI in Agriculture jobs of the future
Inter-generational Justice 	Transition to clean energy	Engage, connect young and old	Equitable incomes opportunities across ages



Social Capital is the glue...

“...that holds societies together and without which there can be no economic growth or human wellbeing. Without it the society at large will collapse, and in today’s world we are seeing many sad examples of this. “

- World Bank Working Paper 3, 1998

Elements of Social Capital include:

1. Trust in each other and in the public institutions
2. Social networks and norms
3. Community involvement and cohesion



Many national and international organizations are recognize social capital

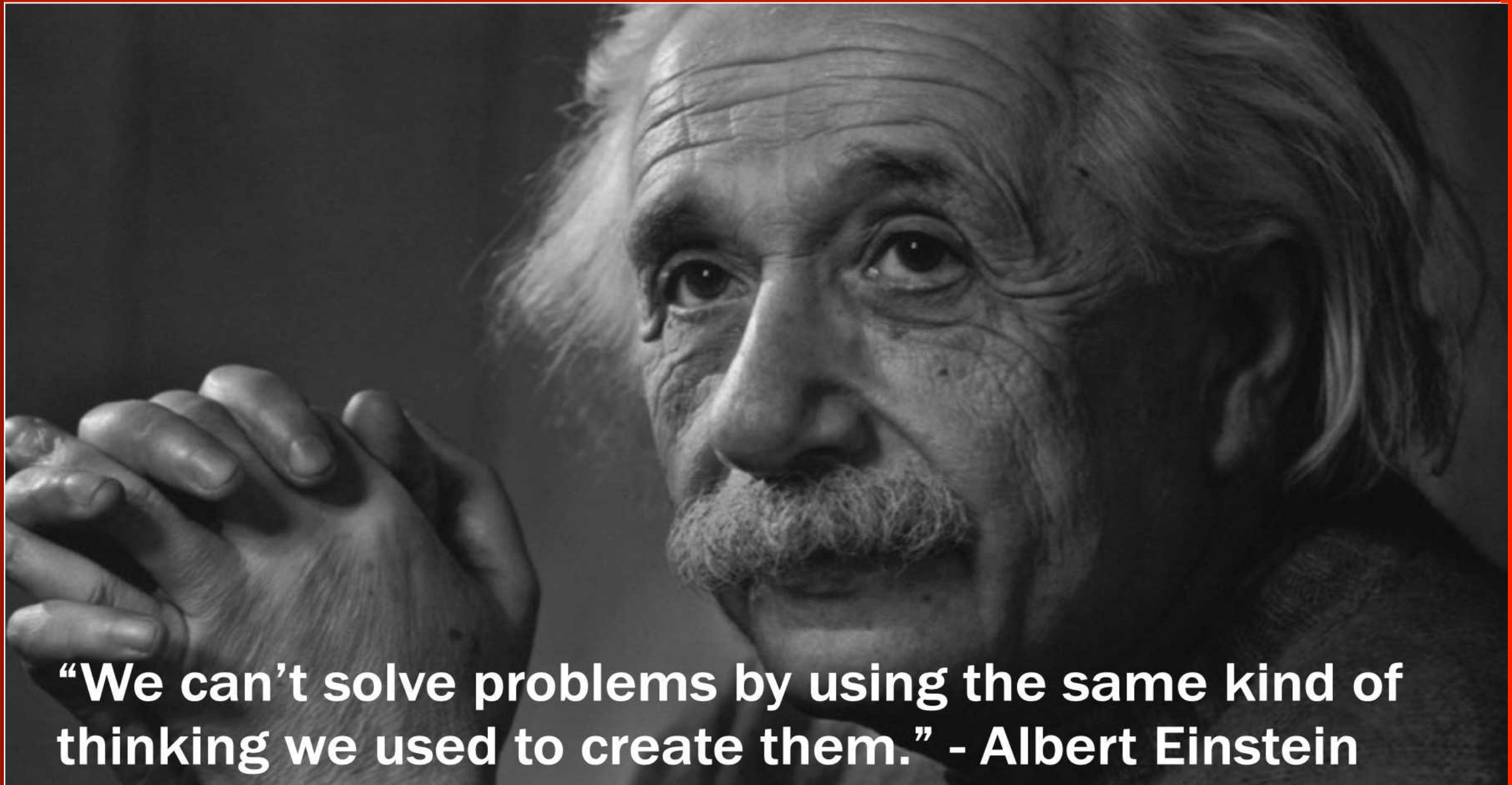


Federal Emergency Management Agency (USA)

National Advisory Council Report 2020 instructs agency to Measure Social Capital Metrics and work to increase them:

- Strengthen community networks
- Strengthen networks between partners
- Enhance social connectivity and equity
- Build trust between community members and institutions





“We can’t solve problems by using the same kind of thinking we used to create them.” - Albert Einstein

Change the Math:

Count the co-benefits of social and ecological capital;

Close the Return on Investment (RoI) gap between
polluting and healing projects



Envisioning the Future Landscape

Transition towards community-driven, equitable development by

- Co-management with local communities
- Building local capacity through education, upskilling
- Build pathways for innovation for large scale impact
- Local people moving up the value chain in Blue- Green jobs
- Strengthening of institutions
- Institutionalization of local knowledge
- Better value of ecosystem to social systems to drive more investment for them
- Blue Green Bonds and Impact Investing
- Mitigation Banking

How can farmers, markets and micro investments help drive change?



Ecosystem Services

- **Provisioning:** such as production of food and water
- **Regulating:** such as the control of climate and disease, protection against erosion
- **Supporting:** such as nutrient cycles, oxygen production,
- **Cultural:** such as spiritual and recreational benefits.

Portfolio Effect: compares biodiversity to stock holdings, where diversification minimizes the volatility of the investment, or in this case, the risk of instability of ecosystem services



Restoration of the Catskills Watershed helped avoid costs that would otherwise be incurred



- Restoration of the Catskills Watershed cost less than the construction of a water purification plant
- Social capital affects, and is affected by, the management of natural resources
- Select holistic Key Performance Indicators (KPIs)



Eco-system services, green jobs



East Kolkata Wetland: A Ramsar Site, India

A natural sewage treatment system, where 254 fisheries on 3800 acres produce 4 tons/ha of Carp and Tilapia + 50% of Kolkata's vegetables



InVEST

Integrated Valuation of
Ecosystem Services and
Tradeoffs



STANFORD
UNIVERSITY

UNIVERSITY
OF MINNESOTA



The Nature
Conservancy



SoCCCs

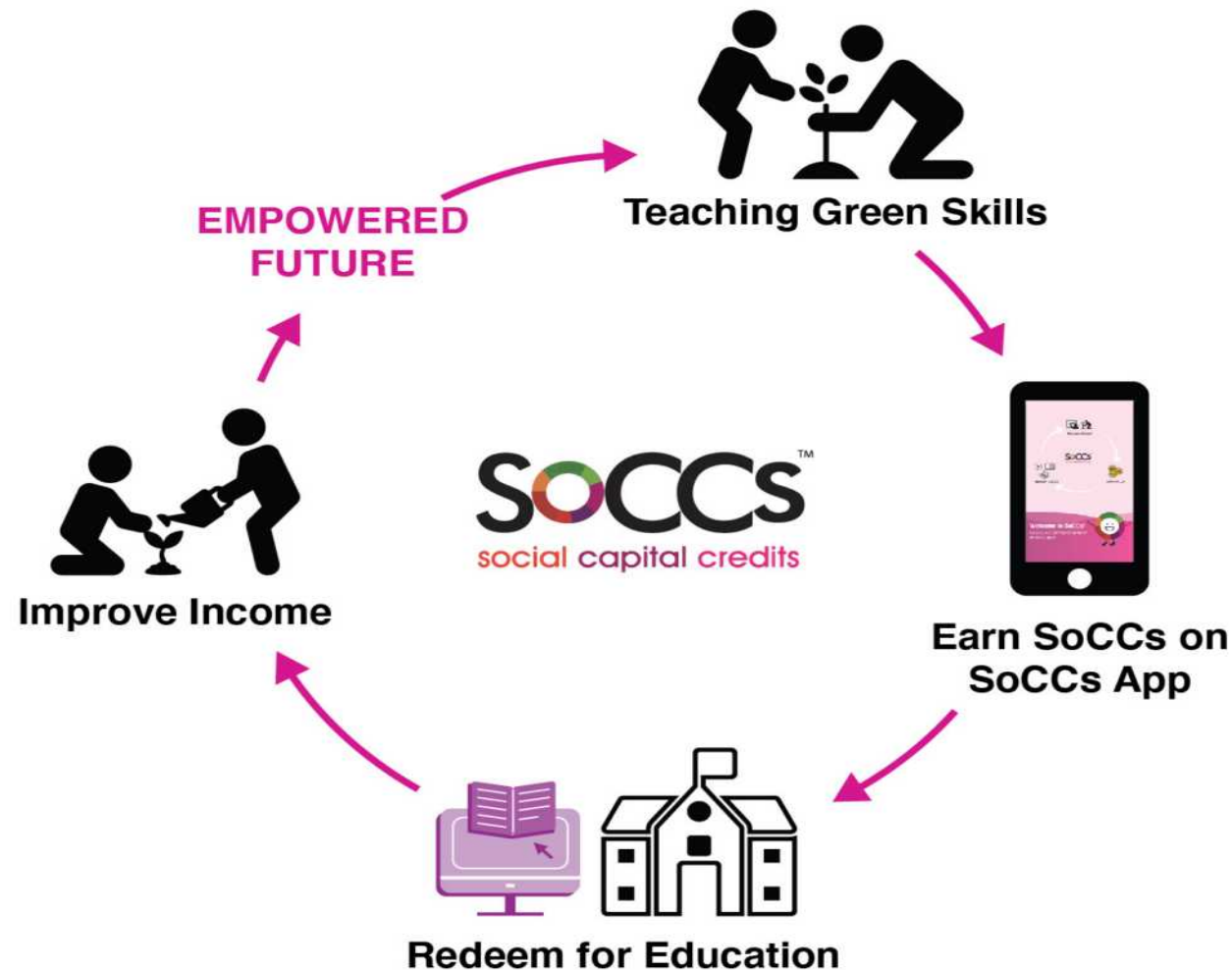
social capital credits

The community currency for social good



SoCCs™ (Social Capital Credits)

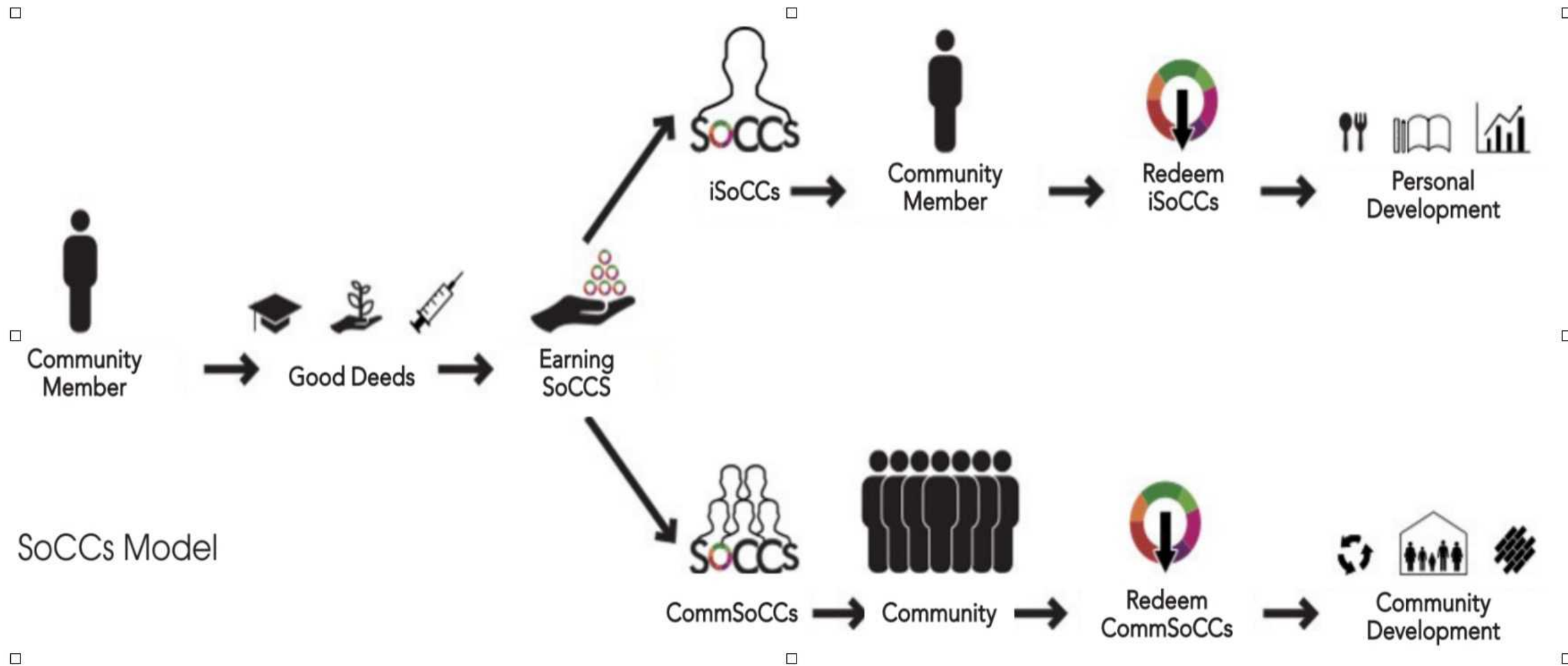
Cascade of Green upskilling



In Cascade of Upskilling program, people teach others the skills they have to earn SoCCs. They can then spend SoCCs on their own education, upskilling, certification, or micro loans for their businesses.



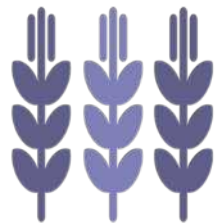
iSoCCs also accrue CommSoCCs for community projects



Asia Initiatives Projects & Awards Received



SoCCs Incentivize Behavior Change Across Sectors



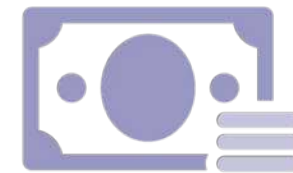
Agriculture
and
Environment



Education
and
Upskilling



Energy, & Climate
Change



Micro-
Finance



Gender



Health



Crime, Violence,



Social
Protection



Payment for Ecosystem Service protection with SoCCs

- Governments cannot make these cash transfers forever
- Cash transfers do not strengthen the social capital and therefore resilience of communities.
- P2P SoCCs transactions can fulfill hyper local needs, thus reducing government burden

Payments for Ecosystem Services (PES) include:

- Payments to refrain from environmentally damaging behavior (e.g. cutting trees)
- Payments to engage in environmentally beneficial behavior (e.g. plant trees)
- Varying payment models (before vs. after outcomes are observable)



Creation of rain water harvesting structures with SoCCs in Bundelkhand and Maharashtra



SoCCs™ Cascade of Green Up-skilling

550 women who were taught SRI (System of Rice Intensification) are earning SoCCs for teaching 1100 more farmers



SoCCs for Vaigai River Restoration, Madurai



Riverfront was divided into 500-1000m stretches; communities invited to become Custodians of the River; SoCCs redeemed for the honor of leading Chithirai Festival



SoCCCs™ Cascade of Green Up-skilling in Kenya



We trained women in Kibera, Nairobi to grow vertical kitchen gardens, and they are teaching others



Diversification and market access is helping improve incomes



SoCCs at Bantama Market, Kumasi, Ghana

SoCCs earned for:

- Keeping the market clean
- Getting health checks
- Sending daughters to school
- Planting trees

SoCCs spent on:

- Low interest micro credit
- School fees
- Telephone talk time



SoCCs in Manyatta, Kenya

SoCCs Earned for:

- Keeping neighborhoods clean
- Planting kitchen gardens, making playgrounds
- running sports programs

SoCCs Redeemed for:

- Solar cookers
- School uniforms
- Sports equipment



SoCCs for CURRIDABAT, COSTA RICA



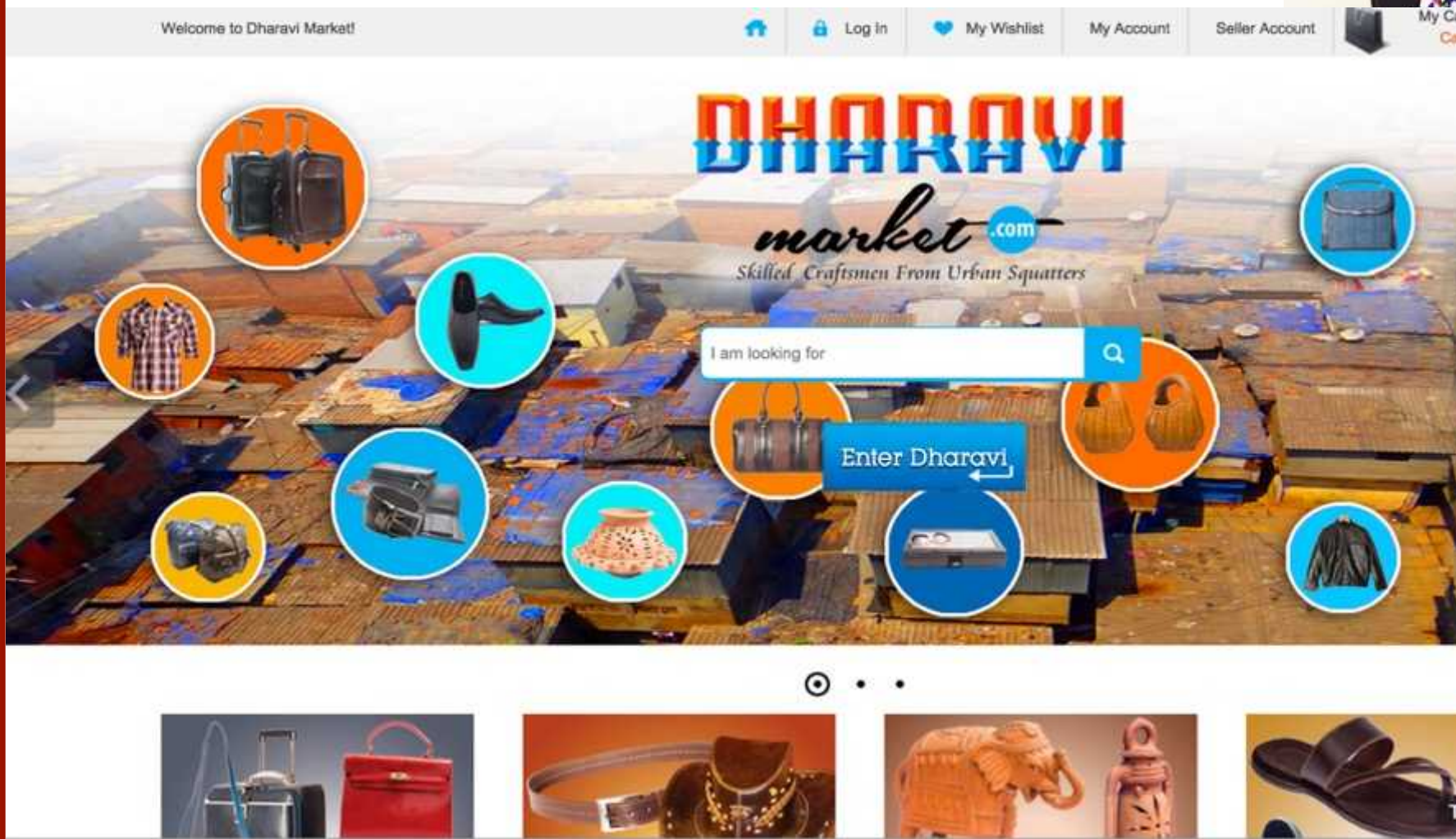
Client: Curridabat Mayor's Office

SoCCs earned for joining neighborhood watch groups, maintaining public parks, and helping children with school work

Government provides Internet and services in exchange for SoCCs



SoCCstars get grants to start small businesses



SoCCratic dialogues are hyper local

...leading to user-generated SoCC menus



In Washington DC, USA



In Pune, India







SoCCratic dialogues are hyper local

...leading to user-generated SoCC menus



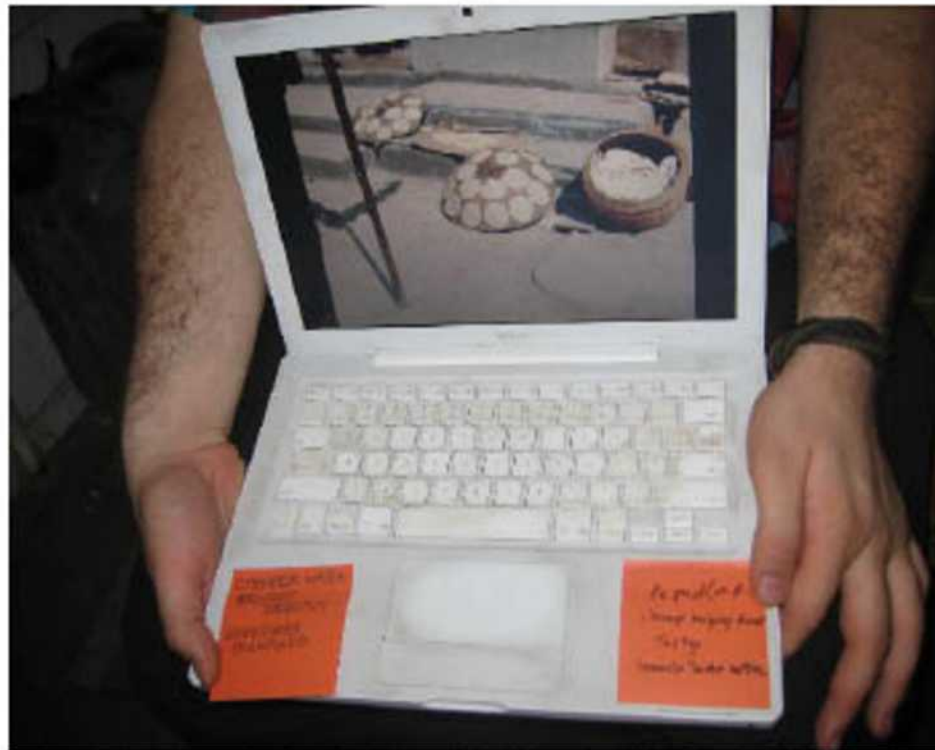
Earning Menu Suggestions

	Cleaning streets		Attending computer skills classes
	Painting public walls		Greening the neighbourhood
	Sending children to school		Teaching neighbourhood children
	Getting vaccinations		Story telling/ passing down skills
	Attending hygiene/health workshops		Waste management
	Caring for the elderly		Attending skills training workshops

Redeeming Menu Suggestions

	Getting a kiosk		Getting provisions
	Public amenities		Mobile phone talk time
	Setting up community library		Getting better community toilets
	Health checks		Community activities/ teashop
	Children's playground		Childcare
	School supplies		Women's empowerment programmes





USER RESEARCH AND VISUAL NARRATIVES



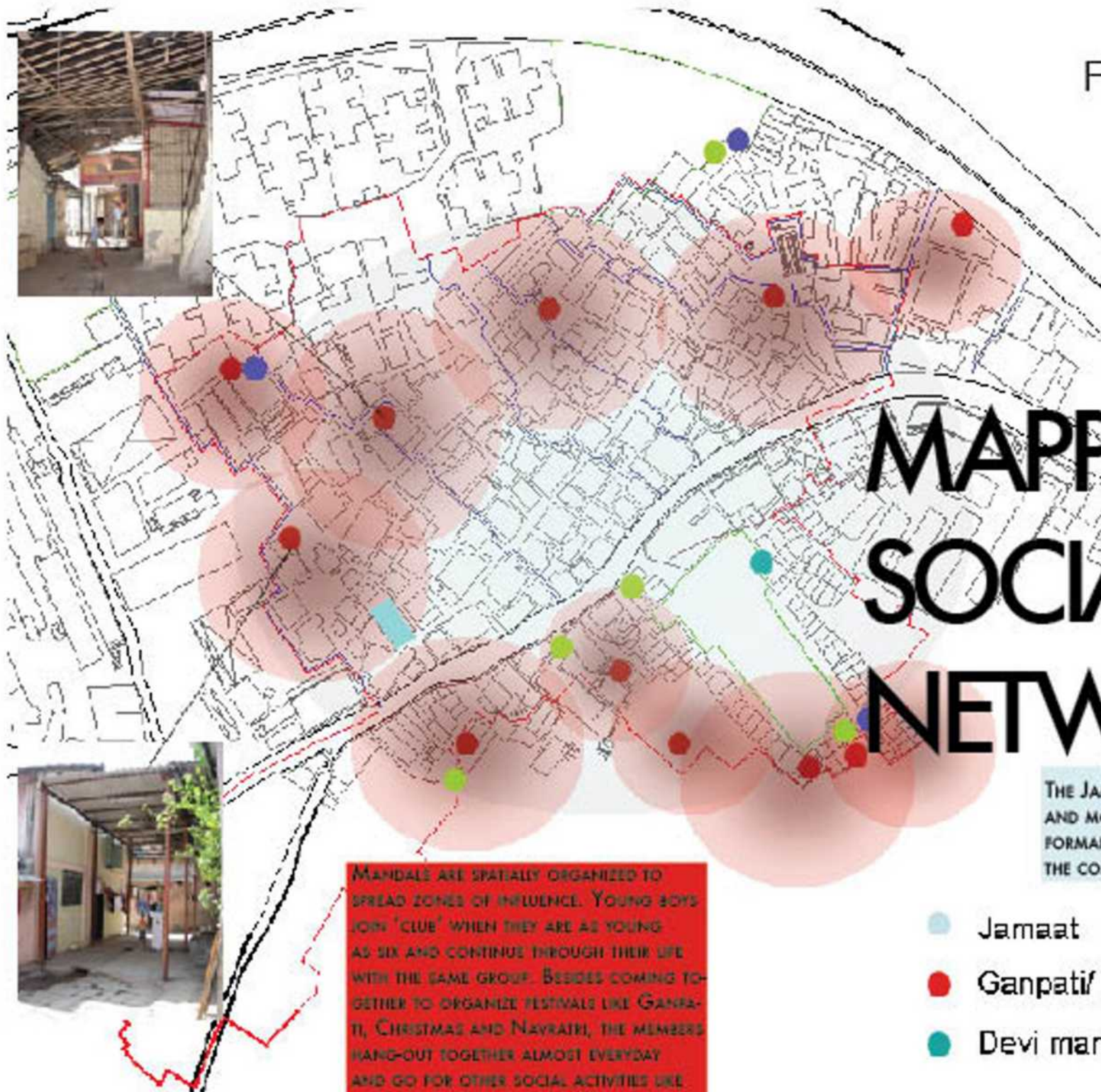
" People have gone and left, but come back again because of a community."

URBAN TYPHOON WORKSHOP 2008: KOLLIWADA



THE METHODOLOGY FOR THIS WAS TO MAKE A NUMBER OF IMAGES OF THE AREA AND THEN THESE WERE SHOWN TO THE INHABITANTS IN TWO FOCUSED GROUPS BEING GIRLS/ WOMEN AND BOYS/ MEN. THESE GROUPS WERE ASKED TO GIVE THEIR IMMEDIATE REACTIONS TO THESE IMAGES AND THESE WERE RECORDED AND THEN CLASSIFIED INTO SIX CATEGORIES WHICH HELP TO UNDERSTAND THE AREA.





Formal groups

MAPPING SOCIAL NETWORKS

THIS EXERCISE FOCUSED ON UNDERSTANDING THE SOCIAL STRUCTURES AND SOCIAL DYNAMICS OF THE PUBLIC SOCIAL GATHERING SPACES AND INSTITUTIONS WHICH EXIST IN THE AREA. THIS MEANT AT LOOKING AT FORMAL SMALL INSTITUTIONS SUCH AS MANDALS AND AT THE SAME TIME SEEING COMMON PUBLIC/COMMUNITY SPACES SUCH AS THE FISH MARKET ETC. THE METHOD INVOLVED FOUR YOUNG BOYS FROM KOLIWADA WHO LITERALLY WALKED US AROUND THE AREA AND IDENTIFIED ALL THE RELEVANT SOCIAL COMMUNITY SPACES SUCH AS THE MANDALS. WE ALSO WENT THROUGH THE AREA AND MAPPED THE COMMON PUBLIC SPACES SUCH AS OPEN COURTYARDS IN BETWEEN BUILDINGS, THE FISH MARKET, THE RELIGIOUS PLACES ETC.

THE JAMAAT IS THE OLDEST AND MOST WIDELY SUPPORTED FORMALIZED SOCIAL SYSTEM IN THE COMMUNITY.

MANDALS ARE SPATIALLY ORGANIZED TO SPREAD ZONES OF INFLUENCE. YOUNG BOYS JOIN 'CLUB' WHEN THEY ARE AS YOUNG AS SIX AND CONTINUE THROUGH THEIR LIFE WITH THE SAME GROUP. BESIDES COMING TOGETHER TO ORGANIZE FESTIVALS LIKE GANPATI, CHRISTMAS AND NAVRATRI, THE MEMBERS HANG-OUT TOGETHER ALMOST EVERYDAY AND GO FOR OTHER SOCIAL ACTIVITIES LIKE PICNICS AND SPORT MATCHES.

- Jamaat
- Ganpatif Mitra mandal
- Devi mandal



URBAN TYPHOON WORKSHOP 2008: KOLIWADA



People who are closest to the problems are also closest to the solutions



Children designers and critics



URBZ workshop in Istanbul



Uganda: PES can decrease deforestation



In Uganda, PES reduced deforestation despite low take-up.

121 villages were randomly assigned to receive PES offer, annual payment.

Results:

- Take up was 32%
- Tree cover declined by 4% in treatment villages compared to 9% in control
- No displacement of deforestation to other land
- \$0.46 per ton CO₂ delayed
- Benefit of delayed carbon emissions was 2.4 times costs



Jayachandran, Seema, Joost de Laat, Eric F. Lambin, Charlotte Y. Stanton, Robin Audy, and Nancy E. Thomas. "[Cash for carbon: A randomized trial of payments for ecosystem services to reduce deforestation.](#)" *Science* 357, no. 6348 (2017): 267-273 .

Source: Maike Pfeiffer, J-PAL



Feedback relationship between social capital and ecosystem service



Madagascar's locally managed marine area

Local resource users are being increasingly integrated into the management of natural resources in response to the failures of top-down governance and the lack of state capacity in low-income countries

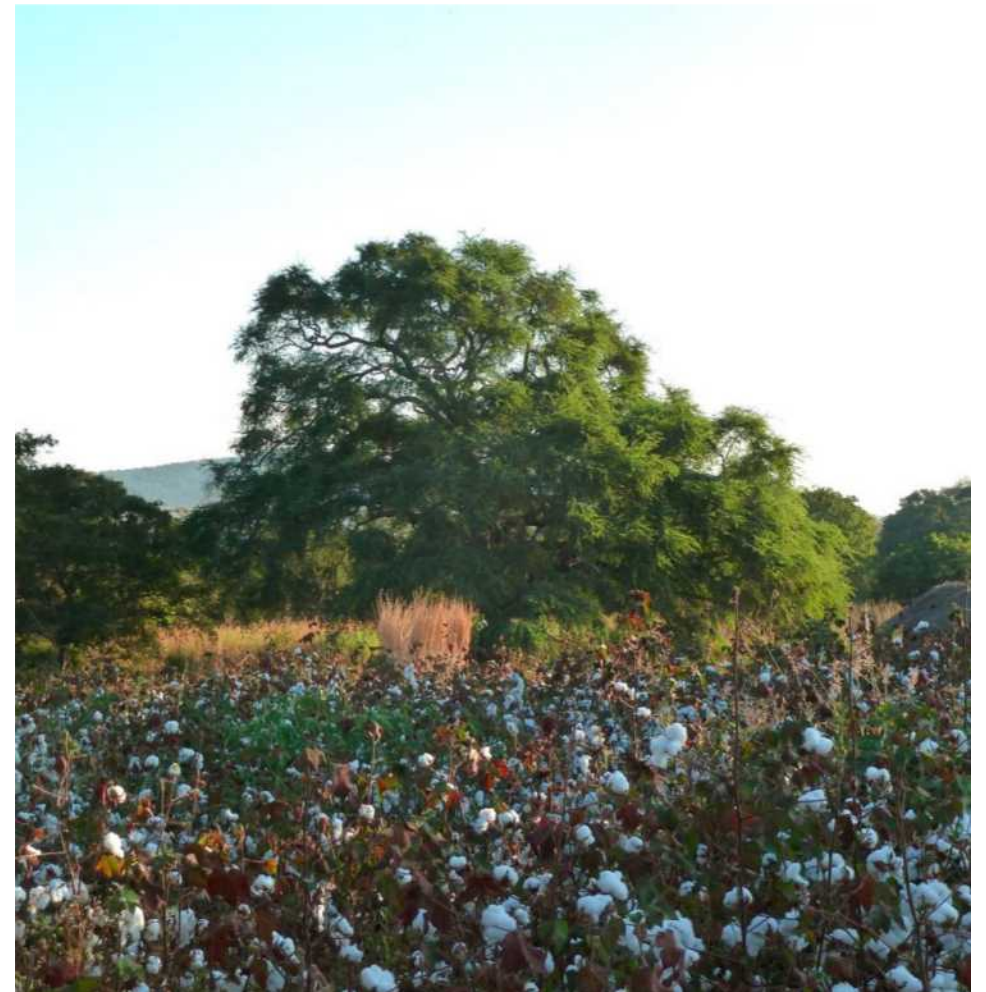


PES for reforestation may not be effective if the costs of caring for trees are too high



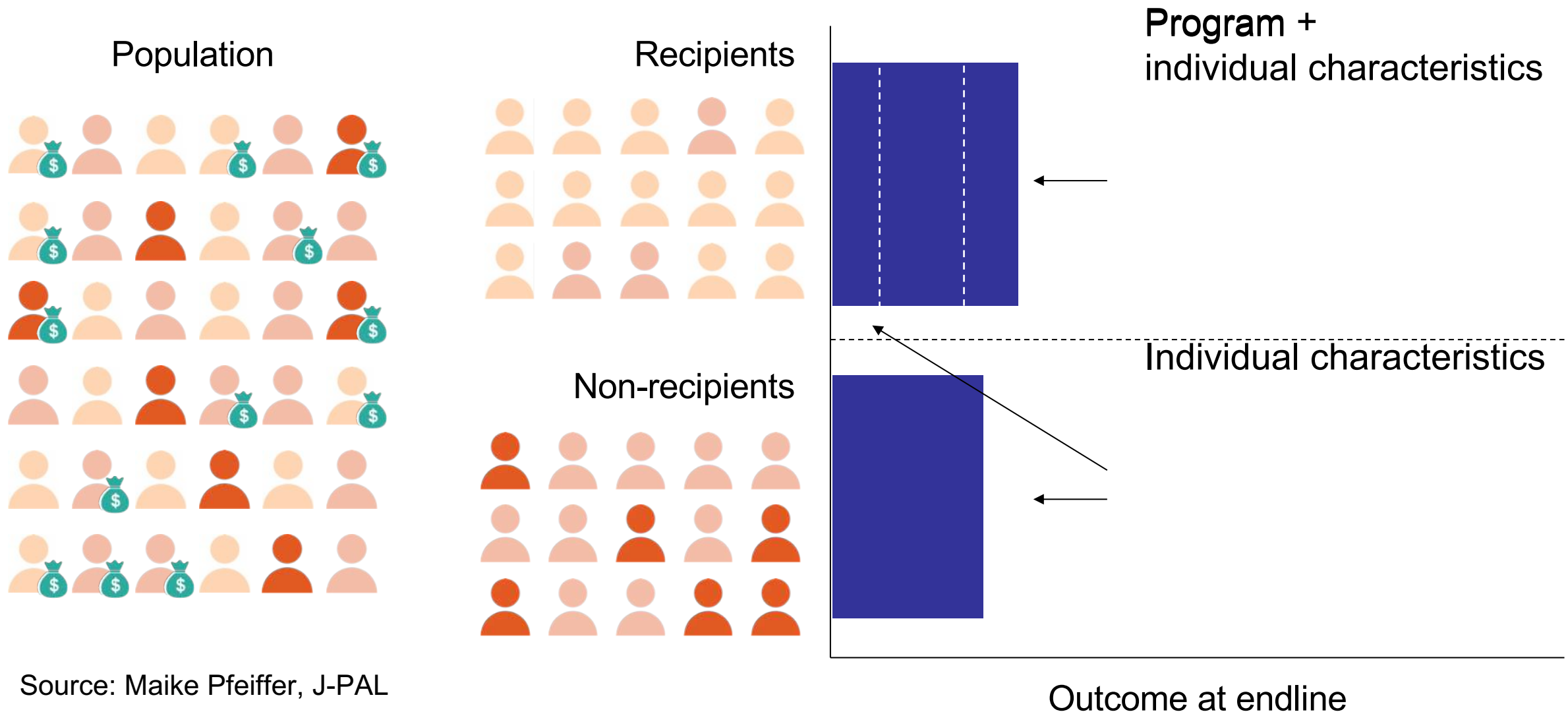
Malawi (Jack and Santos, 2017): targeting PES via auction rather than lottery increased tree survival. Benefits did exceed costs, though there may be more cost-effective ways to sequester carbon.

Zambia (Jack et al., 2015): most farmers abandoned raising nitrogen fixing trees within a year; costs of caring for trees was higher than expected.



Necessity of Randomized evaluations

If individuals were allowed to choose who receives the program, recipients and non-recipients may systematically differ from each other.



Source: Maïke Pfeiffer, J-PAL



J-PAL ongoing PES work

- **Piloting Models of Payment for Ecosystem Services to Prevent Deforestation in India** (Mitra, ongoing)
 - Testing feasibility of PES in the Indian context with oversight of forest cover in neighboring areas; Incorporating data on local timber markets
- Potential areas for future research:
 - Targeting the landowners most likely to cut down trees
 - Optimal payment frequency and level of monitoring
 - Role of initial subsidies
 - Communal property rights
- **Forest Conservation on a Budget:** Redesigning Payments for Ecosystem Services in Mexico to Increase Cost-effectiveness (Jayachandran et al., ongoing)
 - Testing impacts of targeted landholders enrolling all vs. or parts of their land in Mexico's national PES program

Source: Maïke Pfeiffer, J-PAL



J-PAL Ongoing PES Work



- **Market Based Schemes for Air Pollutants** (Greenstone et al., ongoing)
 - Collaborating with pollution control Boards in India (Punjab and Gujarat) to design, implement, and scale emissions markets for air pollution.
 - Reduce cost of compliance with environmental regulations
 - Reduce emissions of targeted air pollutants
- **Renewable Energy Investments: Micro-Finance Support for Small Businesses and Micro Enterprises in Pakistan** (Frölich et al., ongoing)
 - Catalyze investments into newer, environmentally friendly technologies
 - Working with microfinance institute in Pakistan to enable small and micro entrepreneurs to purchase technology conducive to income generation & cut emissions

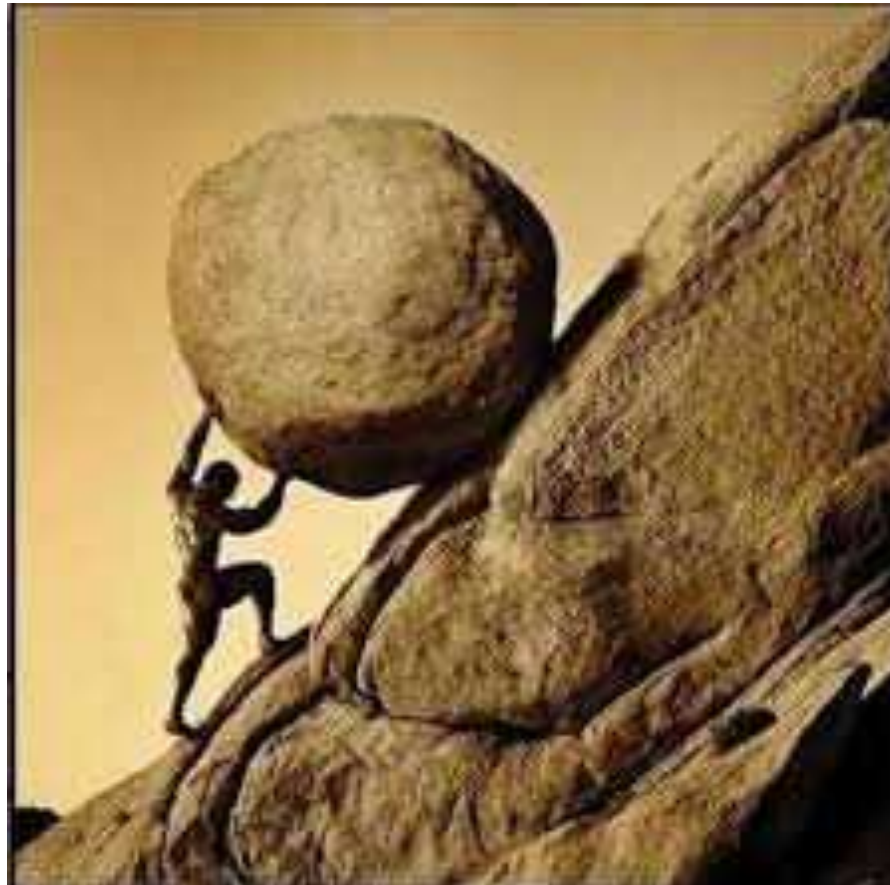
Source: Maïke Pfeiffer, J-PAL



Corporatization, Artificial Intelligence, and the Future of Agriculture Work

$$r > g$$

Return on private capital exceeds the economy's growth rate
Increasing inequality and depleting the social capital and happiness



Funding Sources

- Promote new investment asset classes: Natural Capital, social capital
- impact finance (RoI and the slow growth of Mangroves?)
- Blended Financing- government + pvt investments
- Green Bonds- the Nature Conservancy

Examples:

- *AECOM and Arup are a part of the Coalition for Climate Resilient Investment in the USA, comprised of private companies with USD 5 trillion of assets under management, alongside Governments and multilateral organizations.*

<https://www.weforum.org/platforms/climate-action-platform/projects/coalition-for-climate-resilient-investment>

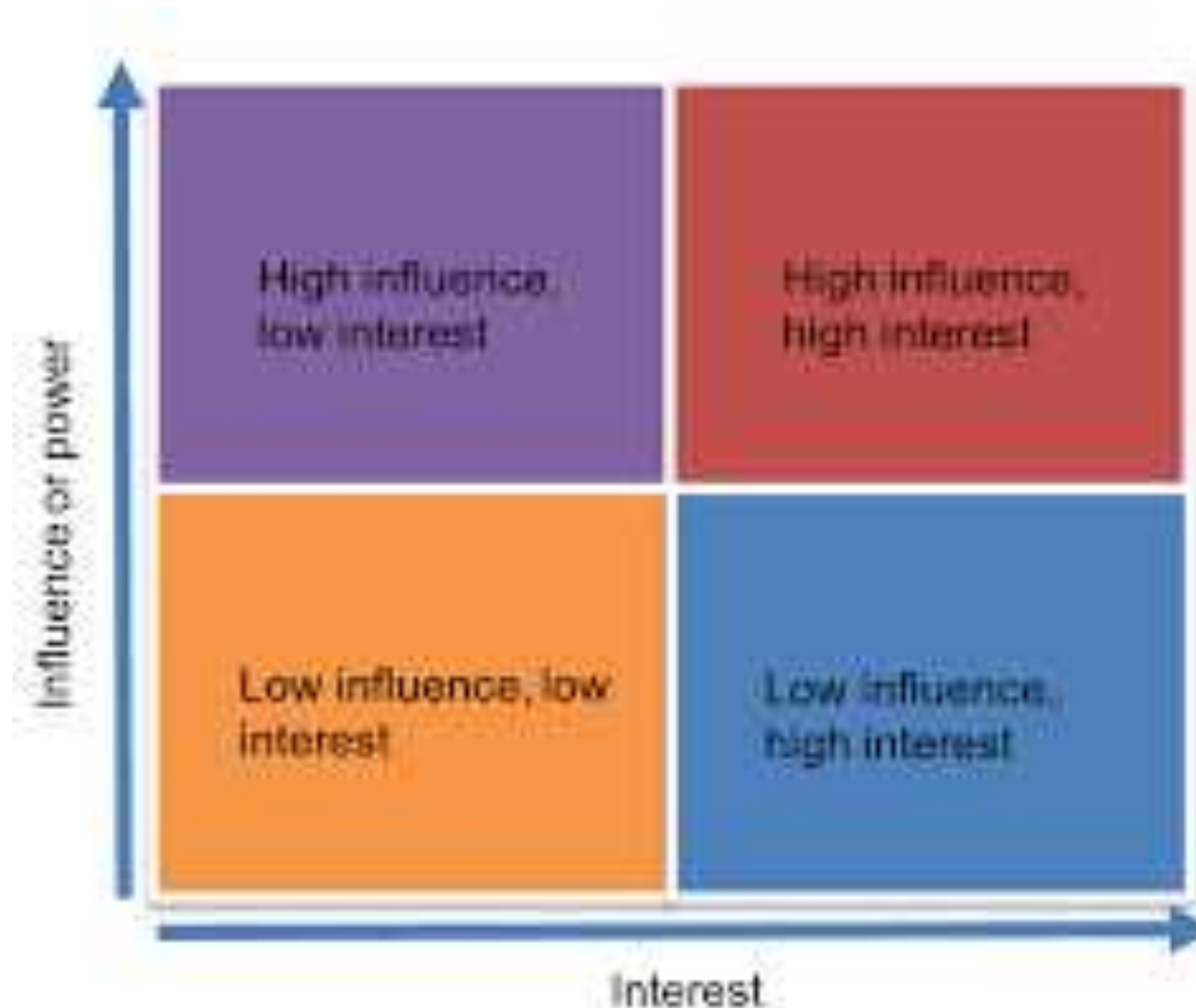
- US Climate Resilience toolkit

<https://toolkit.climate.gov/content/funding-opportunities>



Building Coalitions

- Government Institutions: Technical, Funding
- Private Sector
- NGOs (Global or Local)
- Local stake holders



17 UN Sustainable Development Goals are about

Social capital: 8

Ecological capital: 5

Financial capital: 4



Thank you
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Founding of Asia Initiatives was Inspired by Prof. M.S. Swaminthan,
father of the Green Revolution and advocate for Evergreen Revolution in India

