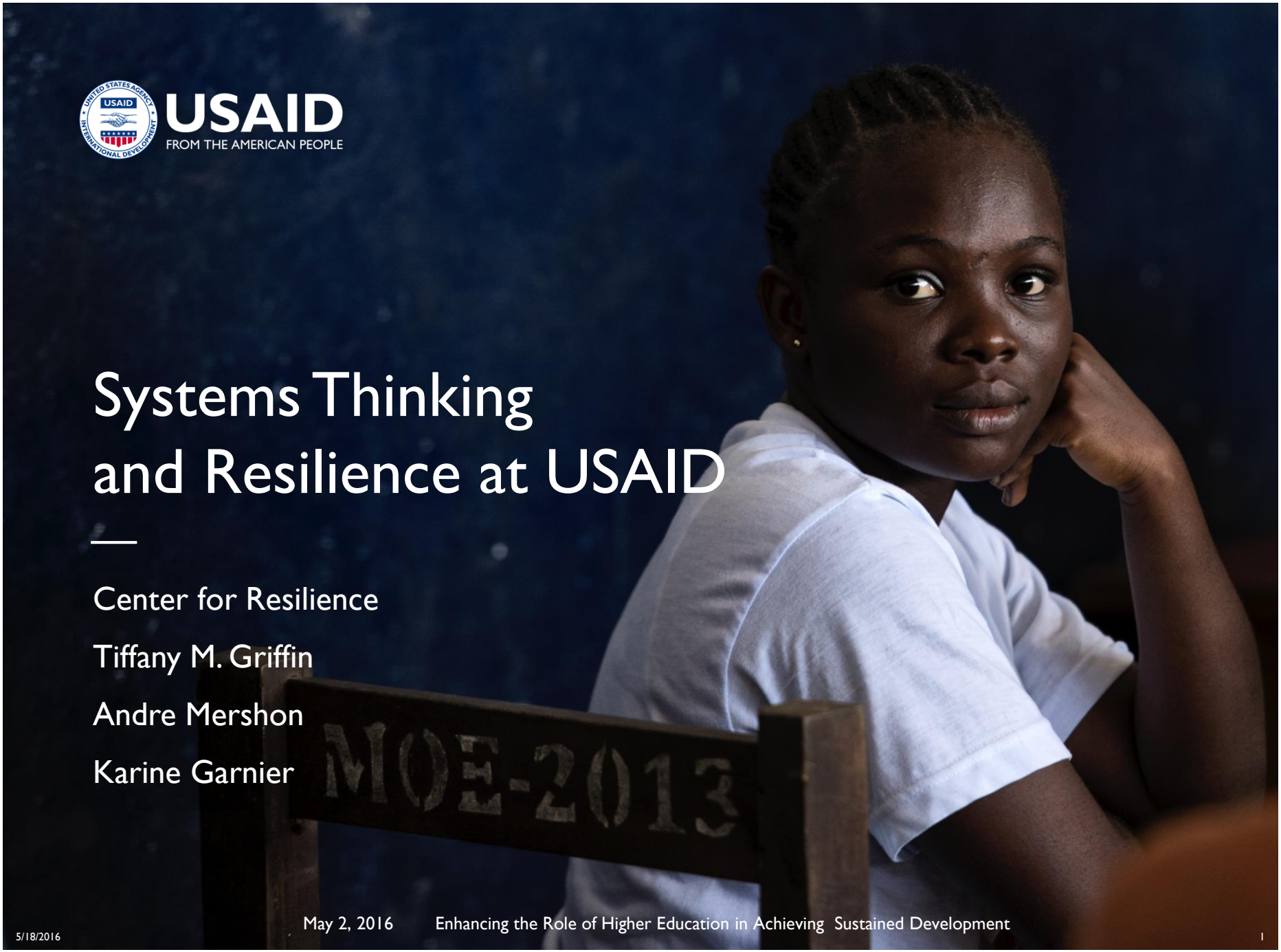


Systems Thinking and Resilience at USAID

Center for Resilience

Tiffany M. Griffin

Andre Mershon

Karine Garnier

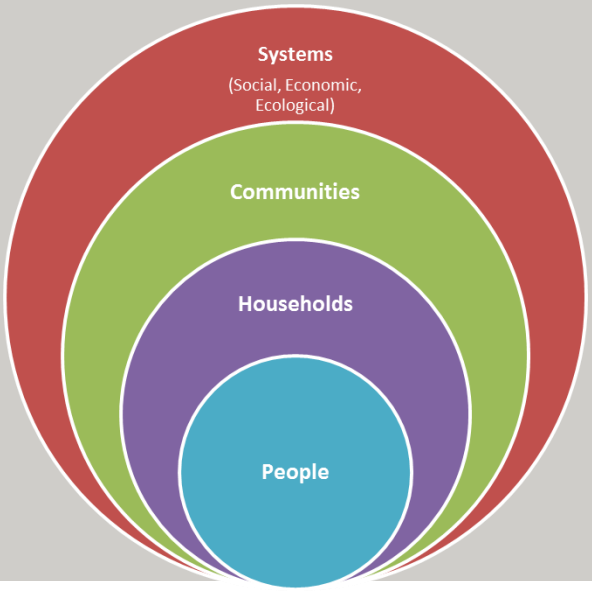
BLUF: Bottom Line Up Front

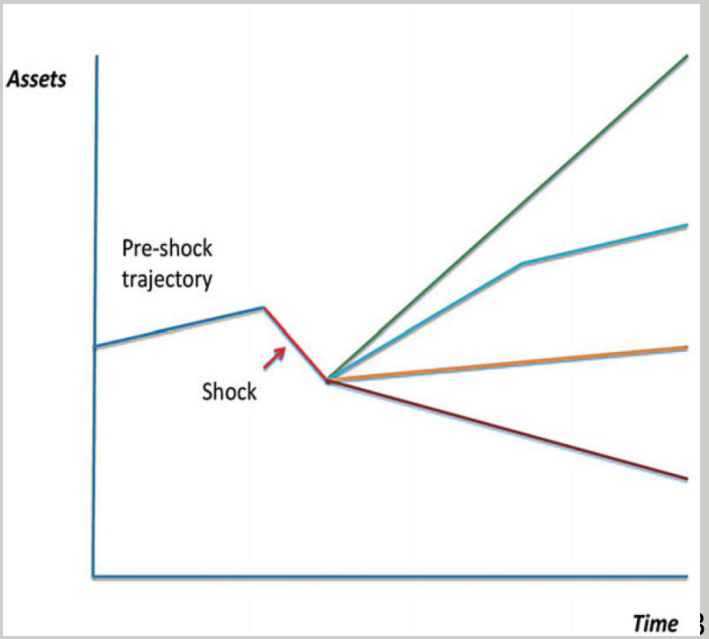
- Increasingly complex risk environment
- New, holistic responses needed
- Embedded in our strategies, our measurement/M & E, and our approach to learning and adapting

Defining Resilience:

USAID defines resilience as "**the ability** of people, households, communities, countries and systems **to mitigate, adapt to and recover from shocks and stresses** in a manner that reduces chronic vulnerability and facilitates inclusive growth"

- USAID's Building Resilience to Recurrent Crisis (2012)





Systems thinking helps us see what keeps situations “stuck” even in the face of our best efforts to build resilience .

Why don't clean cook stoves projects improve health?

Why don’t job training programs decrease unemployment?

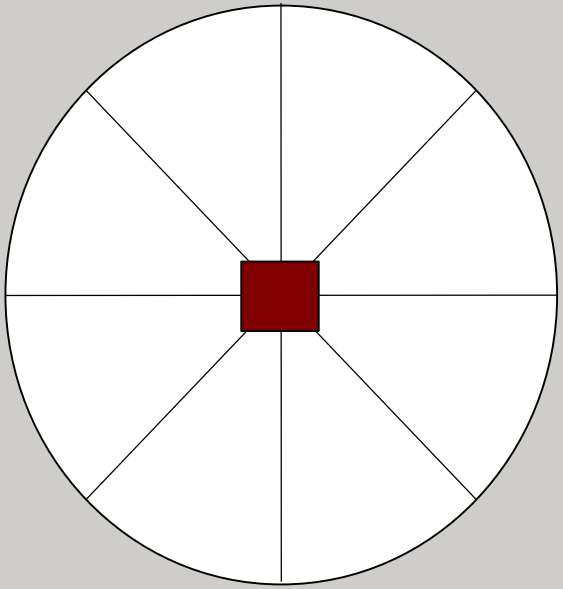
Why don't nutrition projects change nutrition outcomes?

Why is relevant academic research ignored in project design and implementation?

Strategy and Programming

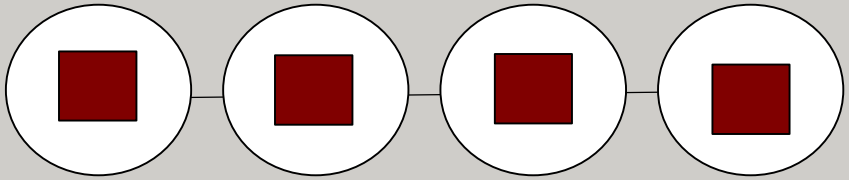
Strategy and Programming: Breaking Down the Silos

Formal Collaboration



Actors pursue the same objective, with each assuming a role in the unified strategy.

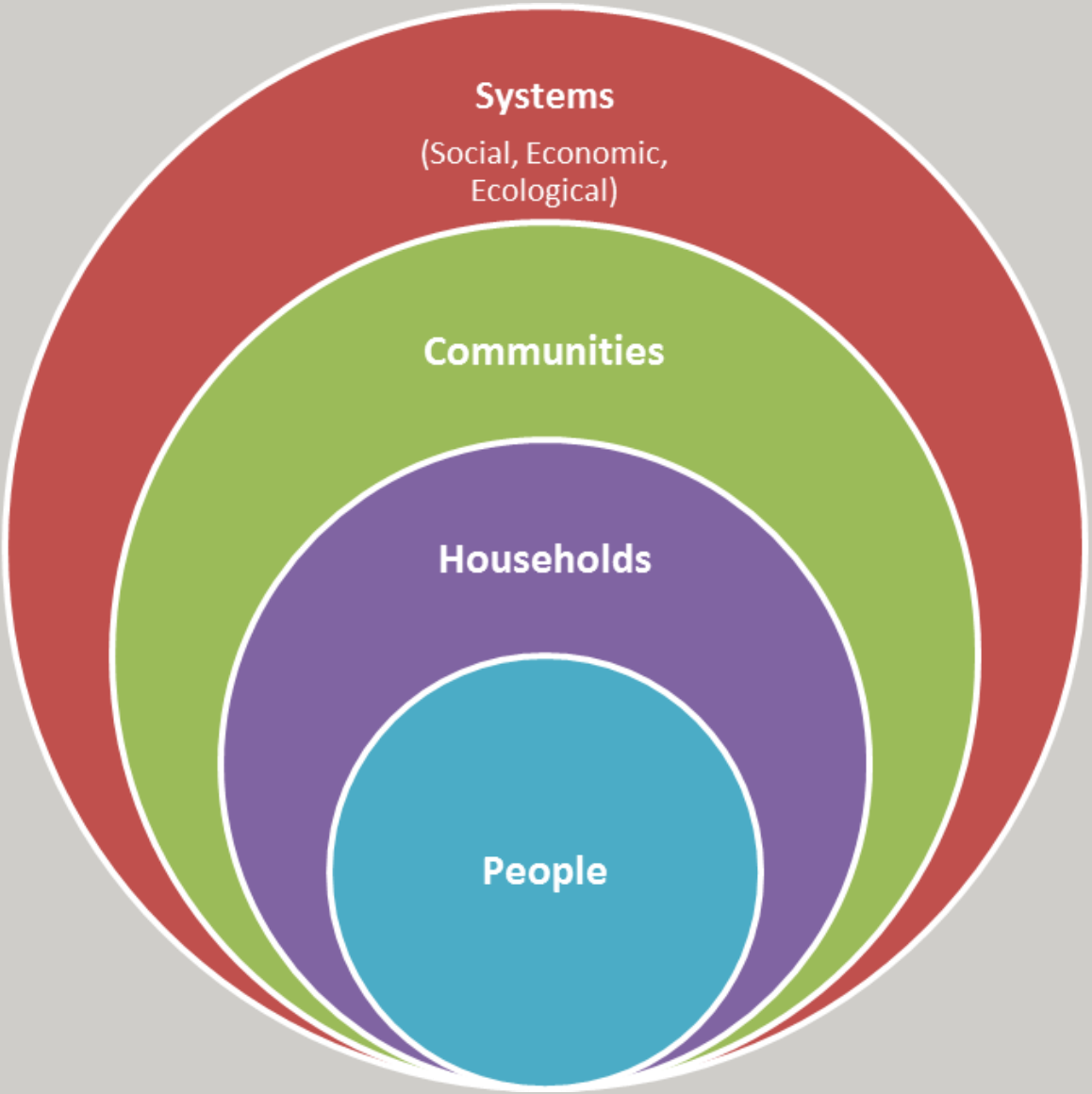
Alignment



Actors have shared interests and the same ultimate goal, but not necessarily the same objective. Actors consider how their actions affect others.

KENYA'S PREG

- Partnership for Resilience and Economic Growth
- Joint analysis, planning and implementation across humanitarian and development divides
- Different Funding Streams
  - Education
  - Governance
  - Agriculture
  - Conflict Mitigation
  - Environment/GCC
  - HIV/AIDS
  - Maternal and Child Health
  - Family Planning
  - WASH
  - Nutrition

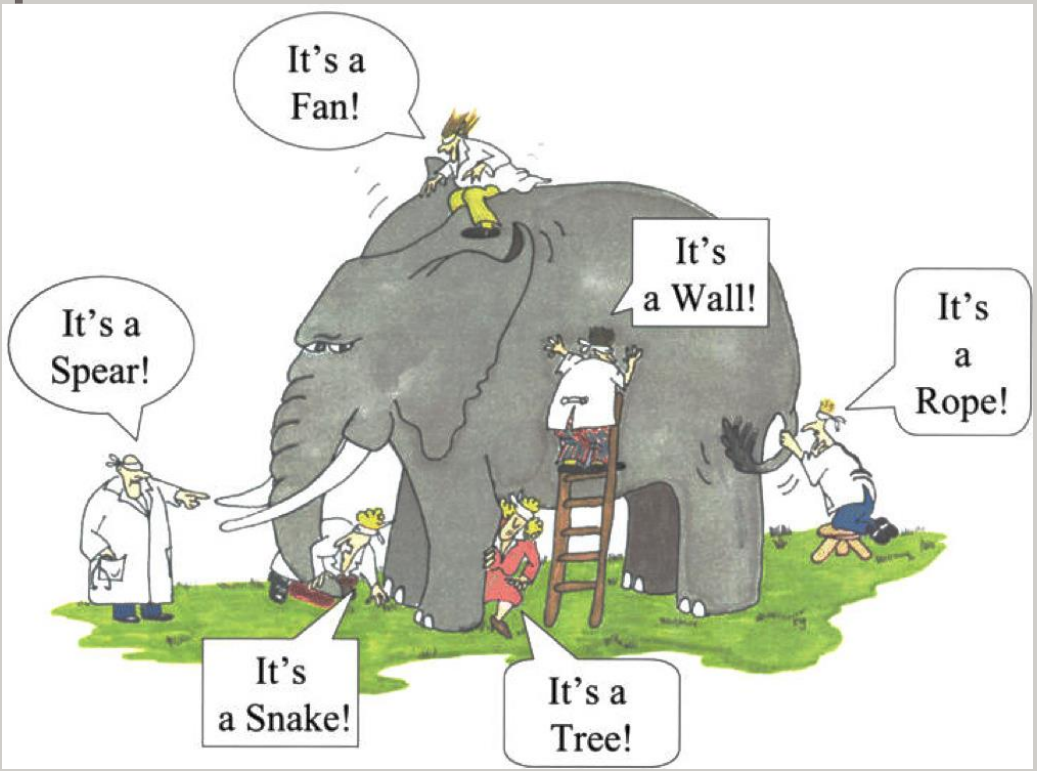


SYSTEMS THINKING IN AN EAR-MARKED WORLD

Joint analysis, planning and implementation across humanitarian and development divides (and the divides in each)

Key attributes:

- Joint problem definition
- Joint analysis to identify types of resources needed
- Systems thinking to engage complexity



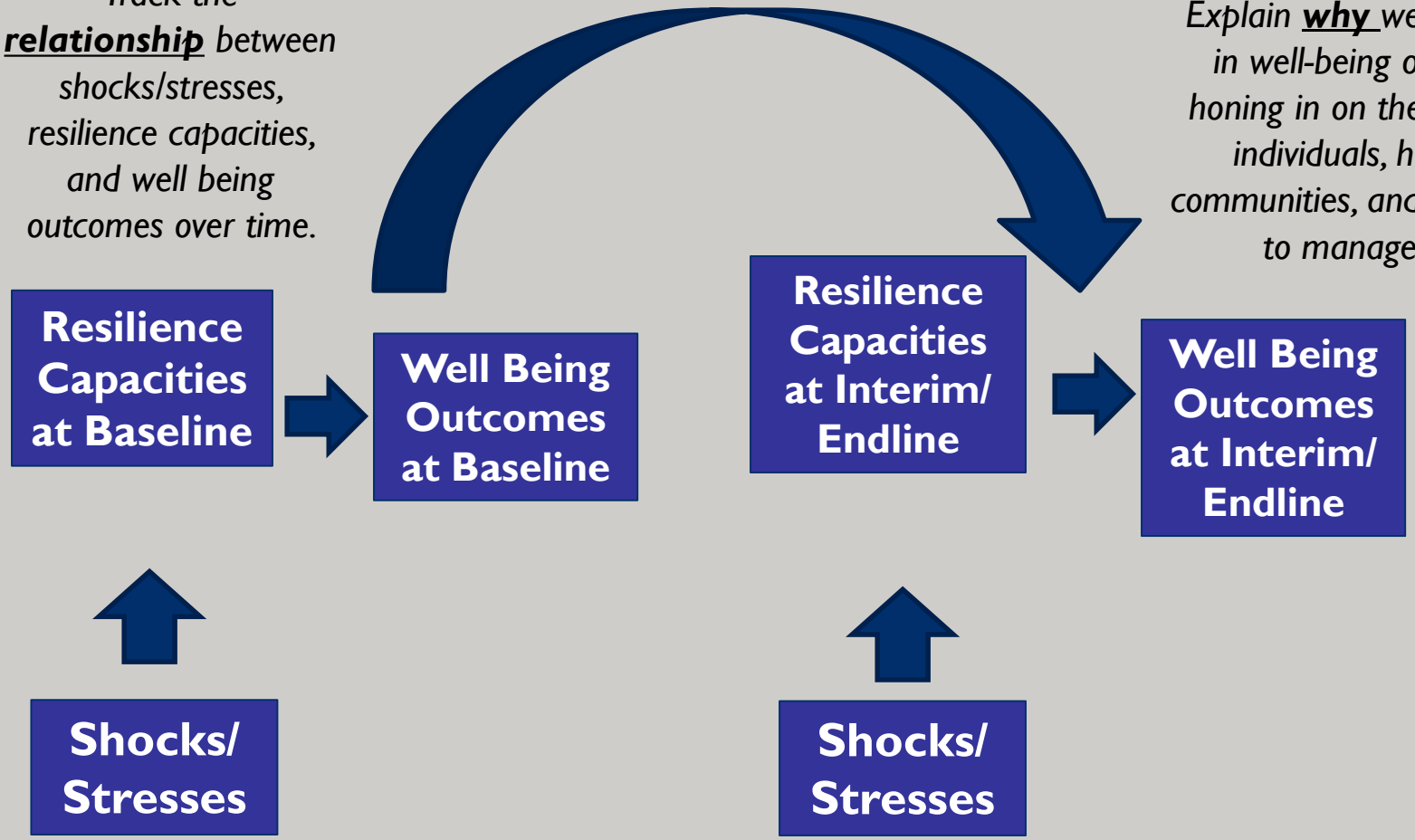
Measurement, M & E, and Strategic Analytics

Common Monitoring Approaches

Resilience Monitoring Approaches

*Track the **relationship** between shocks/stresses, resilience capacities, and well being outcomes over time.*

*Explain **why** we see changes in well-being over time by honing in on the **capacities** individuals, households, communities, and systems have to manage shocks.*



Learning and Adapting

Systems-focused Learning Questions

Are we doing the right things?

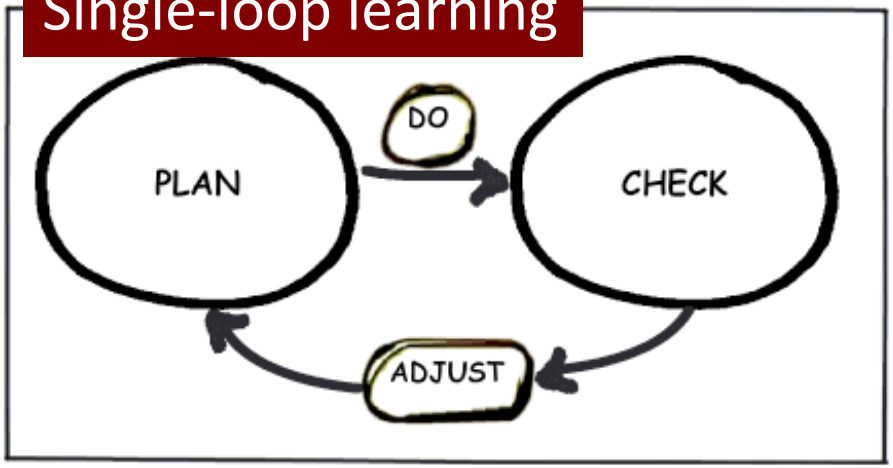
- How can we understand the problem better?
- How are people connected in the system?
- How is context affecting the system?
- What is and is not working now?
- What other scenarios are possible?

The *approach* to learning also differs.

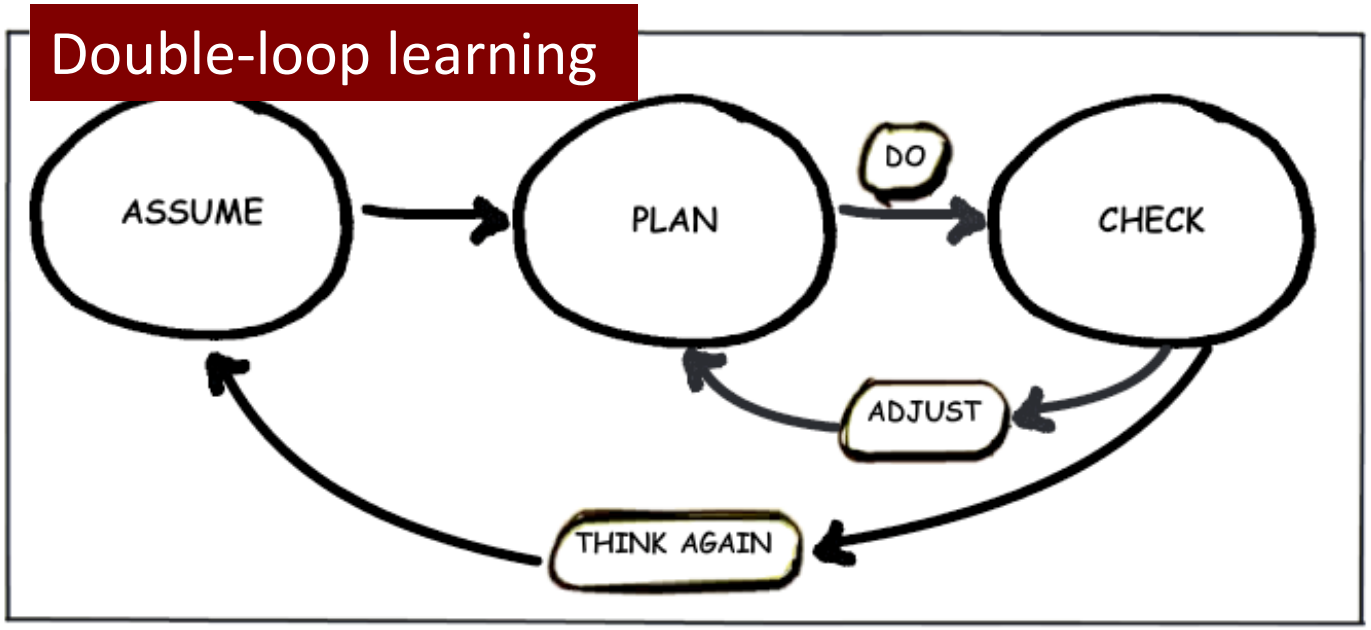
If a strategy yields different than expected results…

…feedback is taken and adjustments made.

Single-loop learning



Double-loop learning

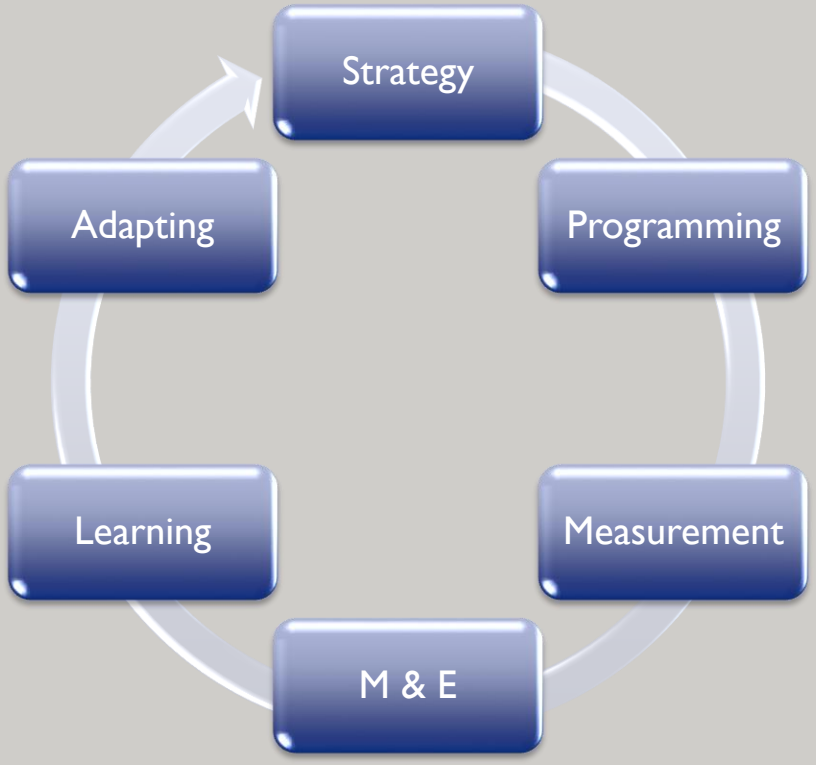


…goals, values, beliefs, and assumptions about the problem are reexamined.

SOURCE: Argyris, C., Schön, D.A. (1978). *Organizational learning: A theory of action perspective*. Reading, Mass.: Addison-Wesley.

Summary:
Resilience and Systems Thinking

- Increasingly complex risk environment
- New, holistic responses needed
- Embedded in our strategies, our measurement/M & E, and our approach to learning and adapting



Thank you!

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amershon@usaid.gov

kgarnier@usaid.gov

USAID
FROM THE AMERICAN PEOPLE

Using systems thinking for strategy development.

What are the leverage points?	Places where a shift in one thing can produce big changes in many things.
Where are the bright spots?	A dynamic supporting positive change in the system.
What are the attractors in the system?	Factors or dynamics that have a disproportionate impact on the system.
What might be unintended consequences?	Places where a positive shift in one place can produce negative effects in others.

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Systems Thinking Influences in Project Design & Implementation in the Bureau for Food Security

May 2, 2016

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Feed the Future, the U.S. Government's hunger and food security initiative, has mobilized billions of dollars in direct assistance and private resources to elevate food security on the global agenda, helping to reduce poverty and malnutrition.

U.S. GOVERNMENT PARTNERS

USAID
FROM THE AMERICAN PEOPLE

MILLENNIUM CHALLENGE CORPORATION
UNITED STATES OF AMERICA

USDA

OPIC

DEPARTMENT OF STATE
UNITED STATES OF AMERICA

USGS
science for a changing world

DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

EXECUTIVE OFFICE OF THE PRESIDENT OF THE UNITED STATES
OFFICE OF SCIENCE AND TECHNOLOGY POLICY

PEACE CORPS

THE DEPARTMENT OF THE TREASURY
1789

UNITED STATES AFRICAN DEVELOPMENT FOUNDATION

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Top Goals: Feed the Future is expected to reduce the prevalence of **poverty and stunting** by **20 percent** in the areas in which we work.

APPROACH EMPHASIZES LOCAL SYSTEMS

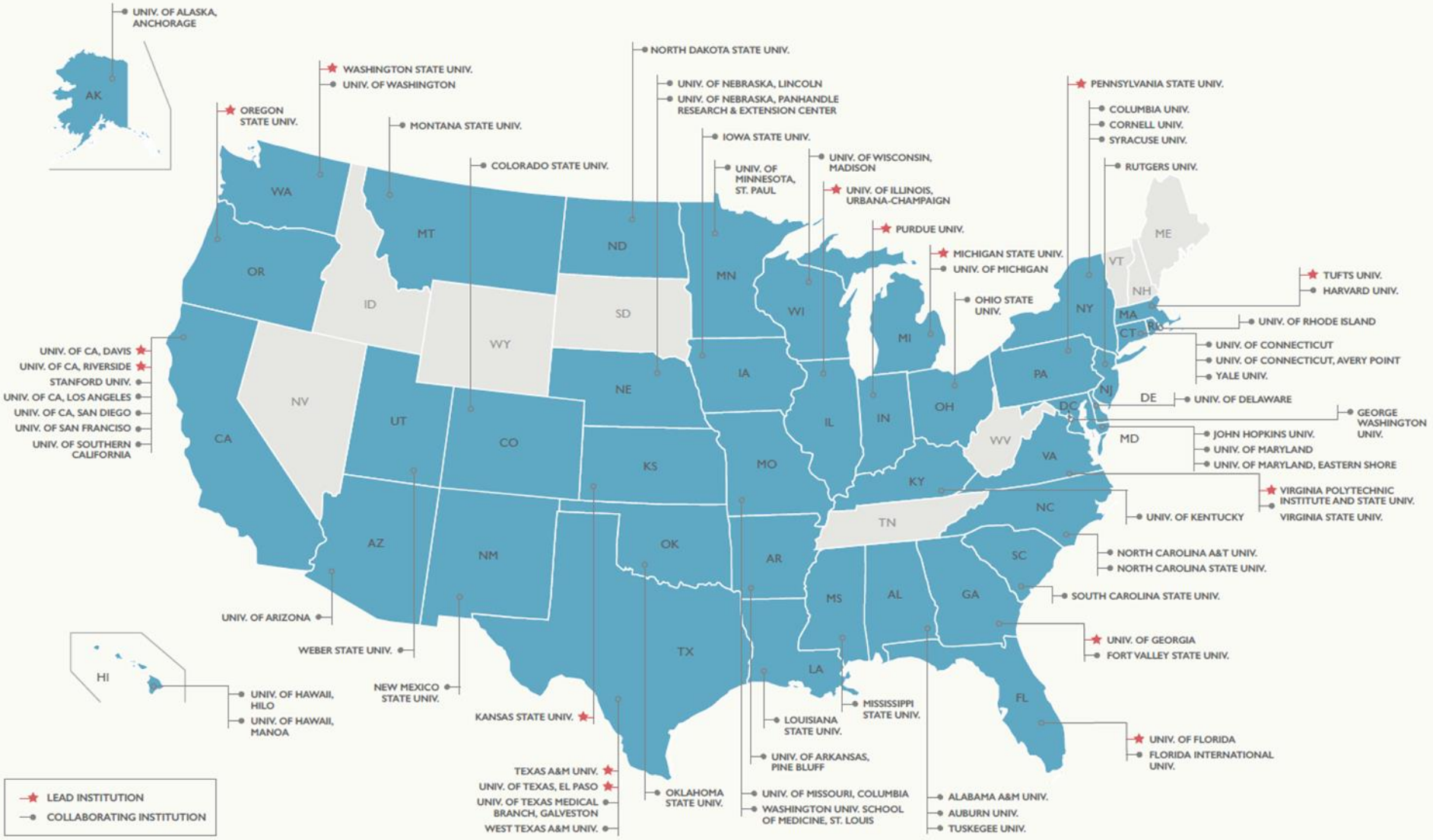
- Supporting *country led* strategies
- *Empowering* women
- *Integrating* agriculture and nutrition
- Embracing innovative *partnerships* and technologies to combat growing challenges including climate change.
- *Increasing resilience* to prevent recurrent crises and to help communities better withstand and bounce back from crises when they do happen
- Maximizing cost-effective results that create the conditions where our *assistance is no longer needed*

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

19 FOCUS COUNTRIES

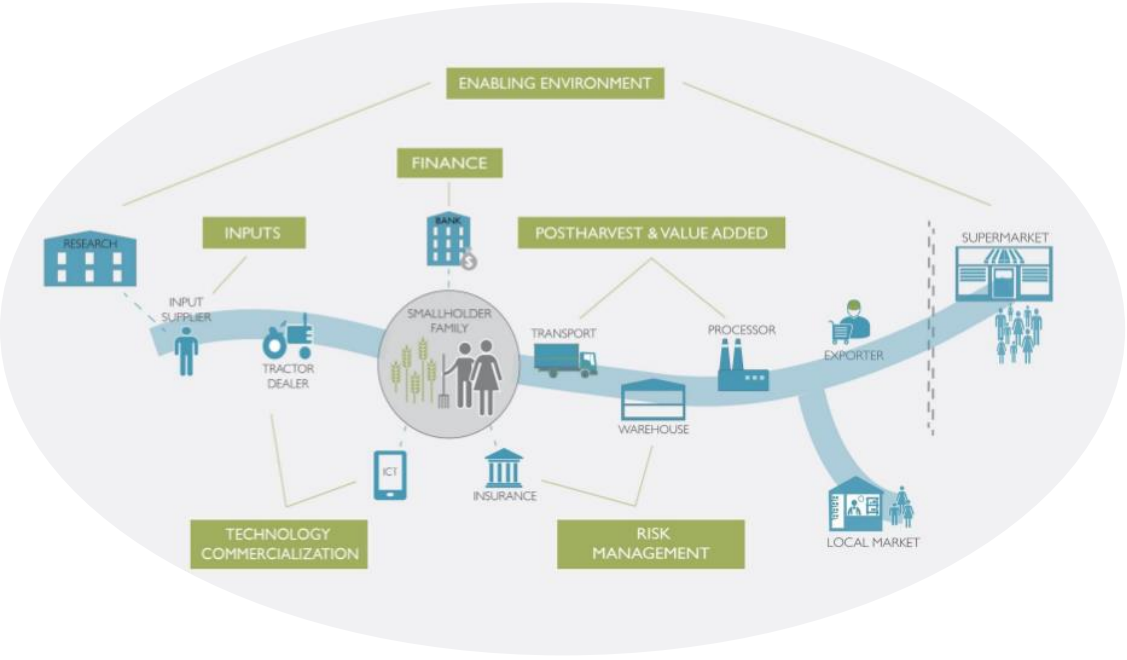
FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

FEED THE FUTURE WORKS WITH U.S. UNIVERSITIES TO FIGHT GLOBAL HUNGER



The Feed the Future initiative partners with universities throughout the world. This is a sampling of university partners located in the United States. For more information and updates, visit www.feedthefuture.gov or follow on Twitter @FeedtheFuture.

VALUE CHAIN SYSTEMS APPROACH



- Consider end market demand opportunities & risks
- Address underlying constraints, not symptoms
  - Economic, political, and social structures
  - Commercial and other incentives
- Sequence interventions appropriately
- Facilitate and catalyze performance improvements
  - “Crowding-in”/partnering
  - Inclusivity

FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

PROJECT EXAMPLES

iAGRI The Innovative Agricultural Research Initiative (iAGRI) aims to strengthen training and collaborative research capacities of Sokoine University of Agriculture (SUA) and the Tanzanian Ministry of Agriculture, Food Security and Cooperatives (MAFC) with the goal of improving food security and agricultural productivity in Tanzania.

1. Conversations that matter
2. Searching for ways that work: experiments & study tours
3. Institutionalize learning

innovATE
Innovation for Agricultural Training and Education

Youth, gender, and workforce development at the….

primary, vocational/technical, university and post-graduate levels.

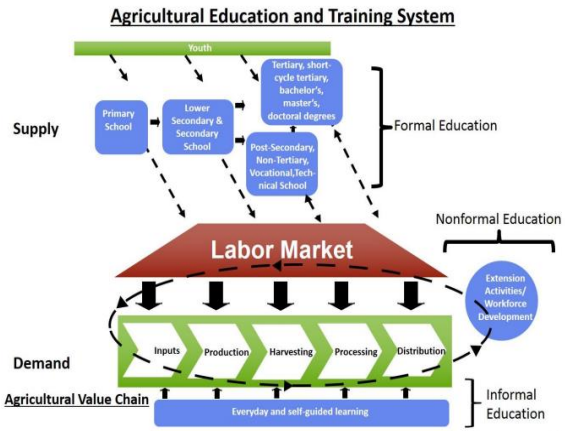
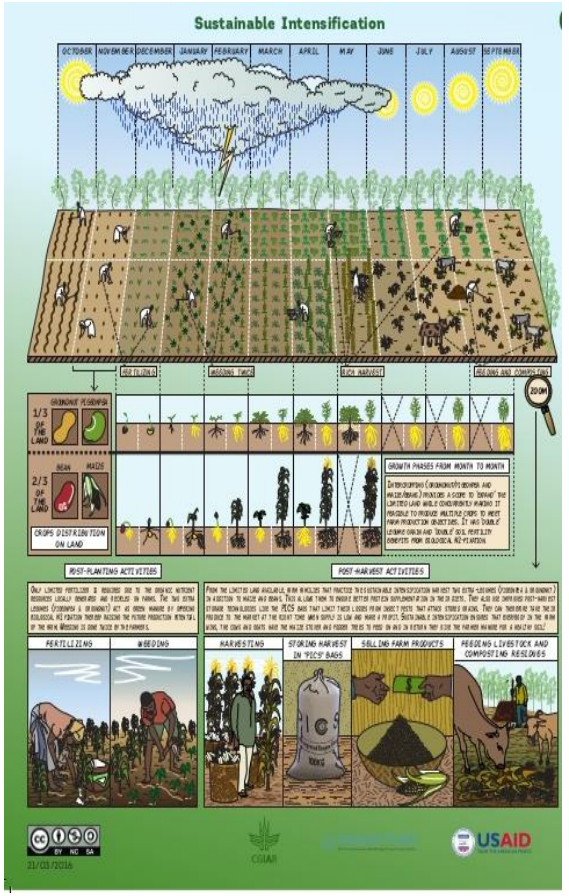


Image source: InnovATE

Africa RISING



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

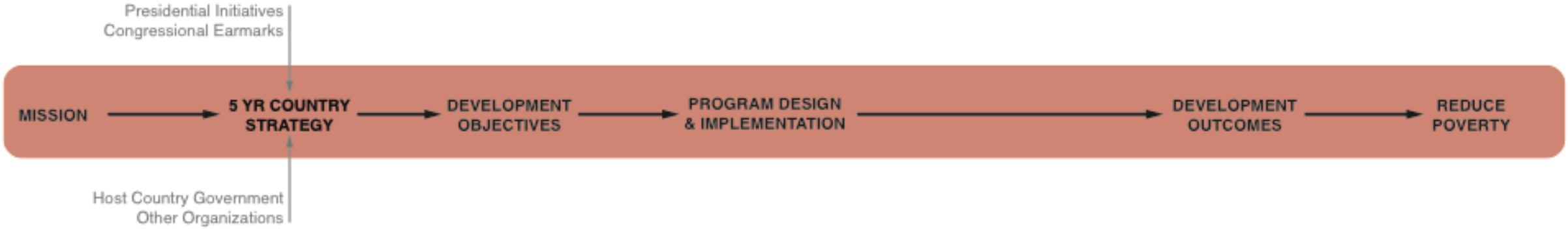
www.feedthefuture.gov

Matthew Jelacic

USAID
Franklin Fellow
Bureau of Economic Development, Education and the Environment
Office of Private Capital and Microenterprise

University of Colorado Boulder
- Assistant Professor- Environmental Design
- Associate Faculty- Engineering for Developing Communities
- Associate Faculty- Sustainability, Innovation, and Social Entrepreneurship Residential Academic Program

MISSION
5 YR COUNTRY STRATEGY
DEVELOPMENT OBJECTIVES
PROGRAM DESIGN & IMPLEMENTATION
DEVELOPMENT OUTCOMES
REDUCE POVERTY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Host Country Government
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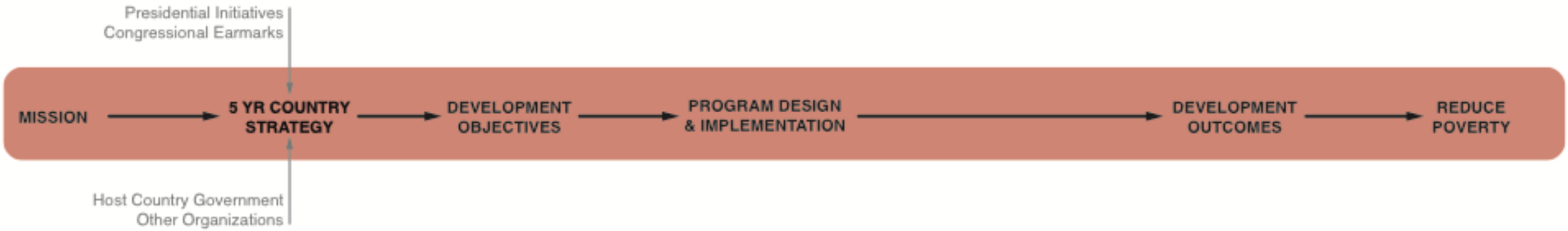
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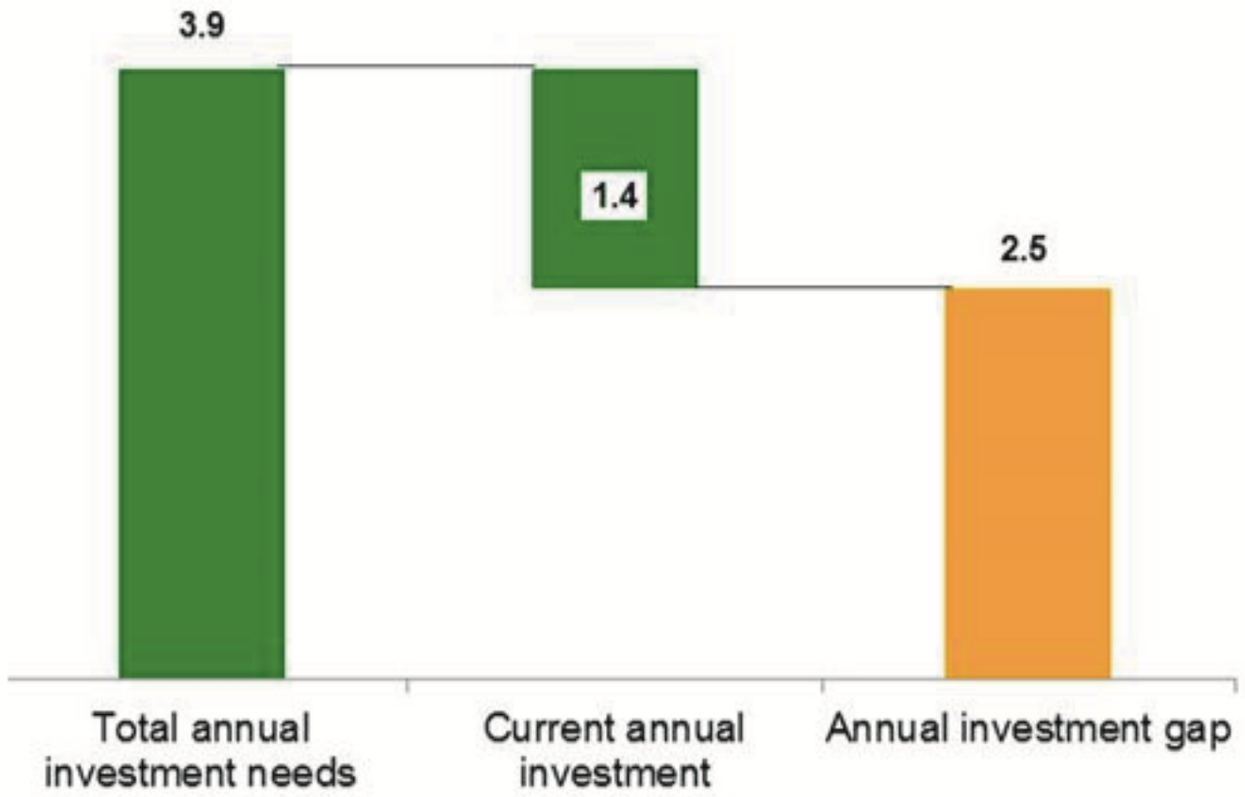
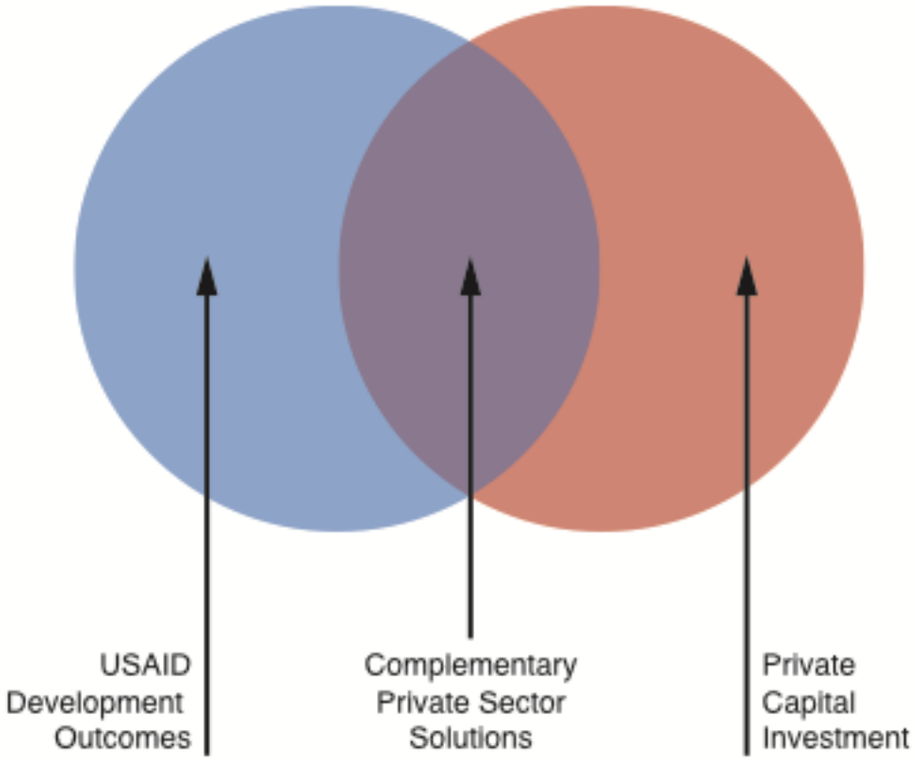

3.9
1.4
2.5
Total annual investment needs
Current annual investment
Annual investment gap

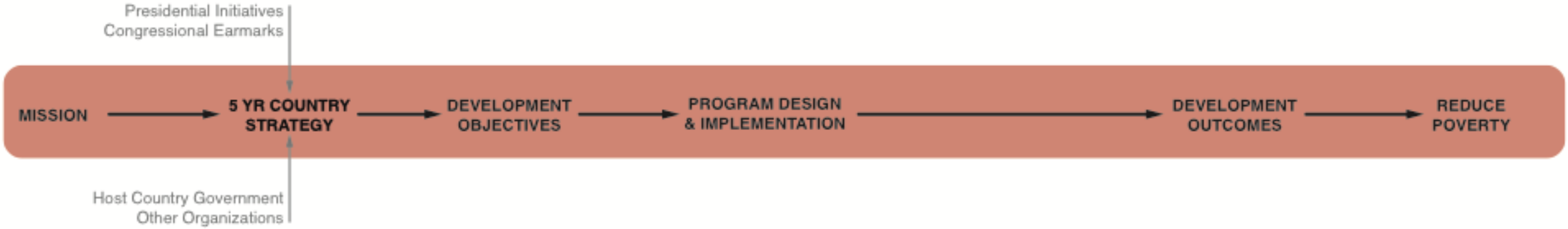
Presidential Initiatives
Congressional Earmarks

MISSION → **5 YR COUNTRY STRATEGY** → DEVELOPMENT OBJECTIVES → PROGRAM DESIGN & IMPLEMENTATION → DEVELOPMENT OUTCOMES → REDUCE POVERTY

Host Country Government
Other Organizations



Private Capital Investment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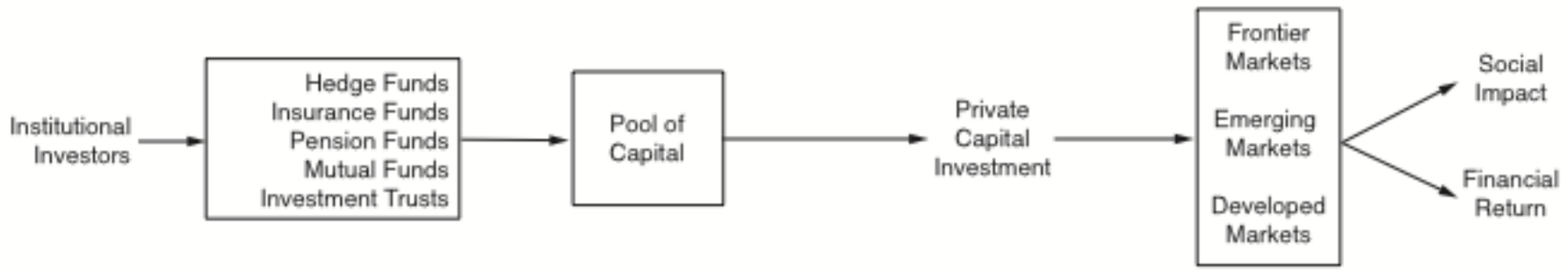
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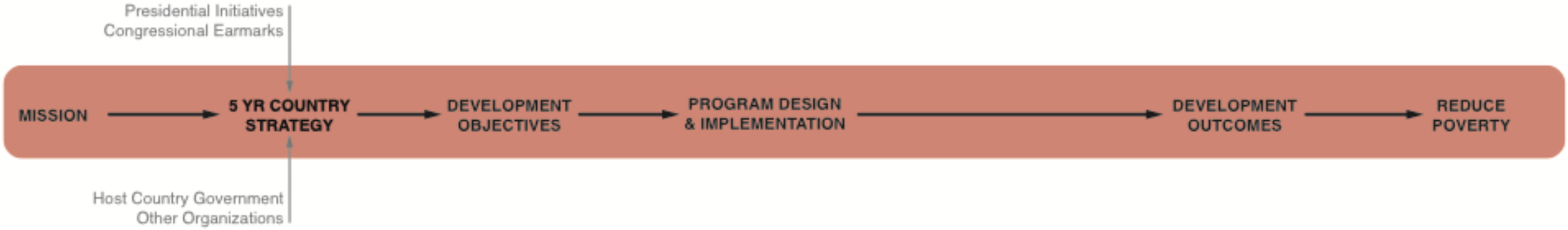
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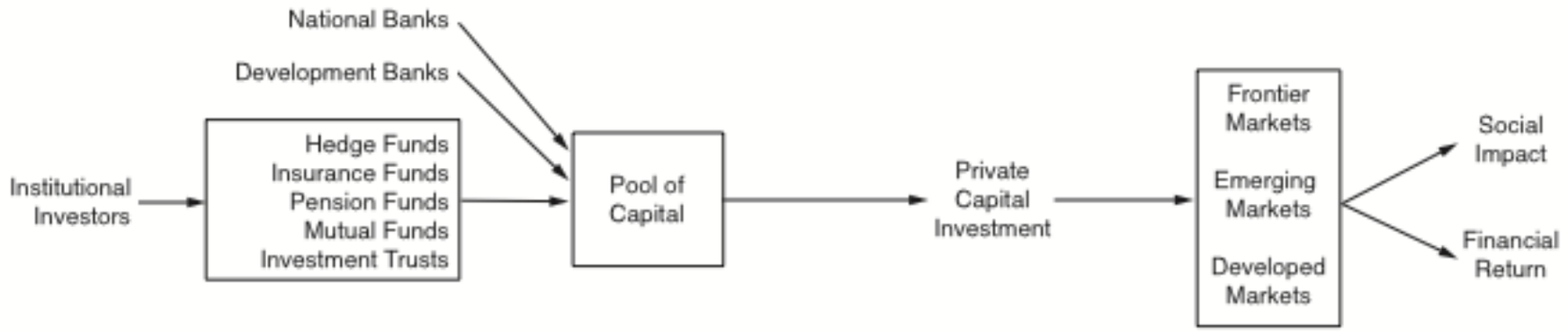
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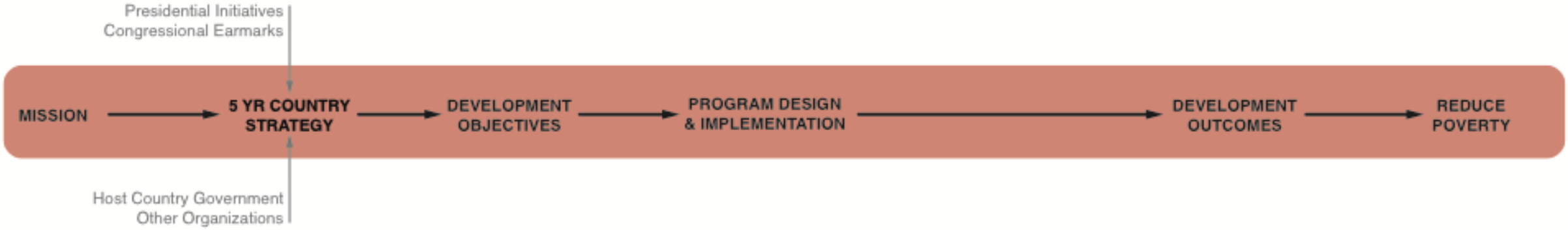
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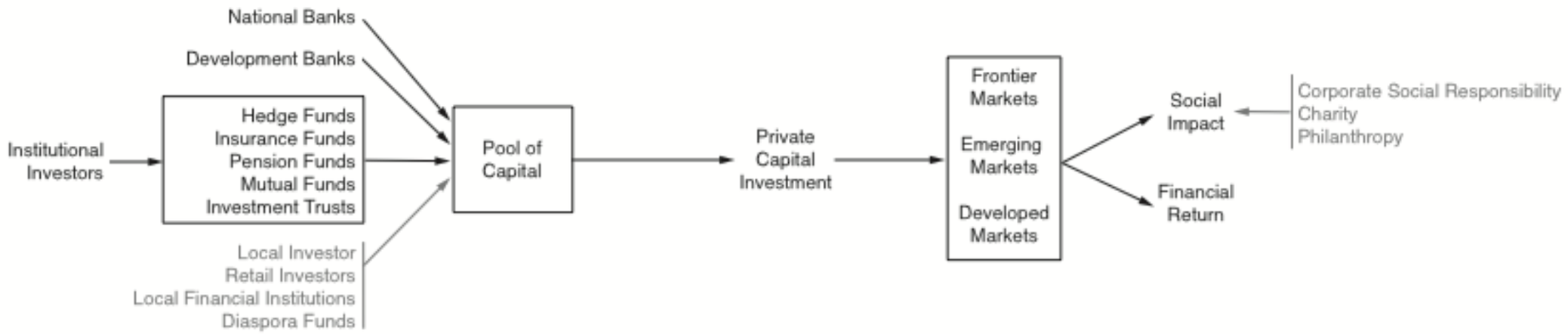
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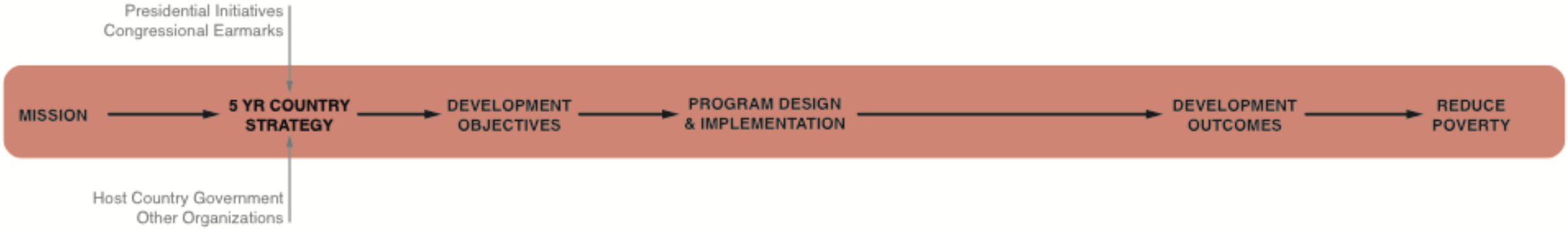
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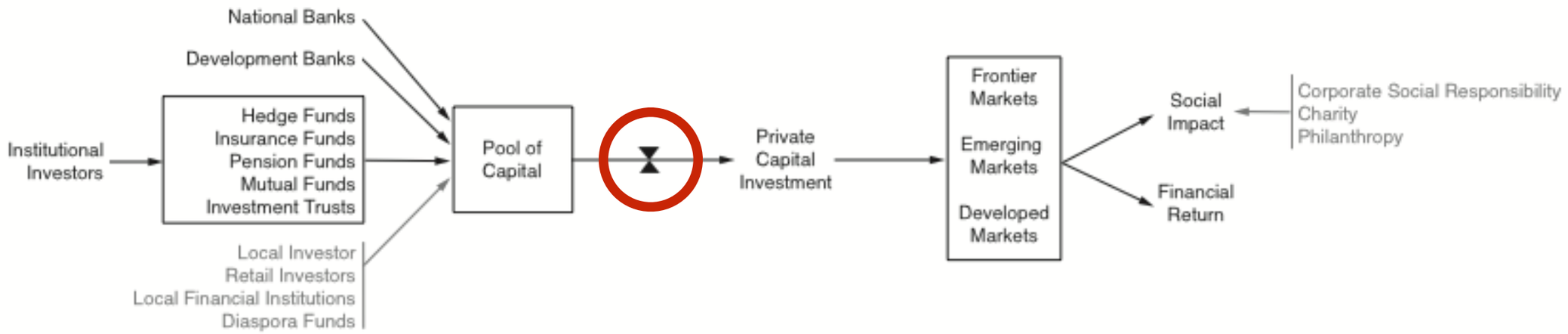
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Frontier Markets
Emerging Markets
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Philanthropy
Financial Return
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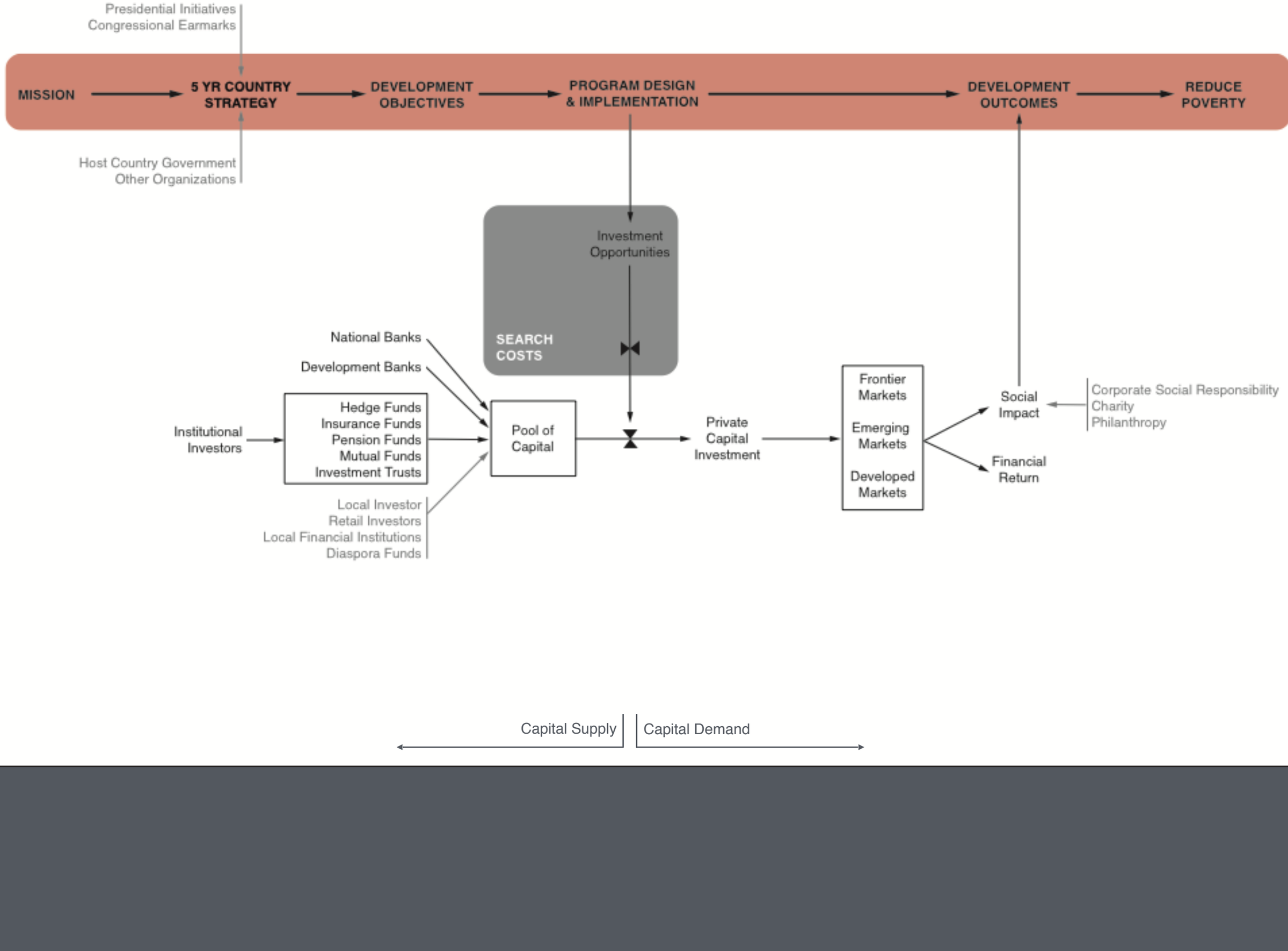
Capital Supply
Capital Demand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Congressional Earmarks
MISSION
5 YR COUNTRY STRATEGY
DEVELOPMENT OBJECTIVES
PROGRAM DESIGN & IMPLEMENTATION
DEVELOPMENT OUTCOMES
REDUCE POVERTY
Host Country Government
Other Organizations
Investment Opportunities
SEARCH COSTS
National Banks
Development Banks
Institutional Investors
Hedge Funds
Insurance Funds
Pension Funds
Mutual Funds
Investment Trusts
Pool of Capital
Private Capital Investment
Frontier Markets
Emerging Markets
Developed Markets
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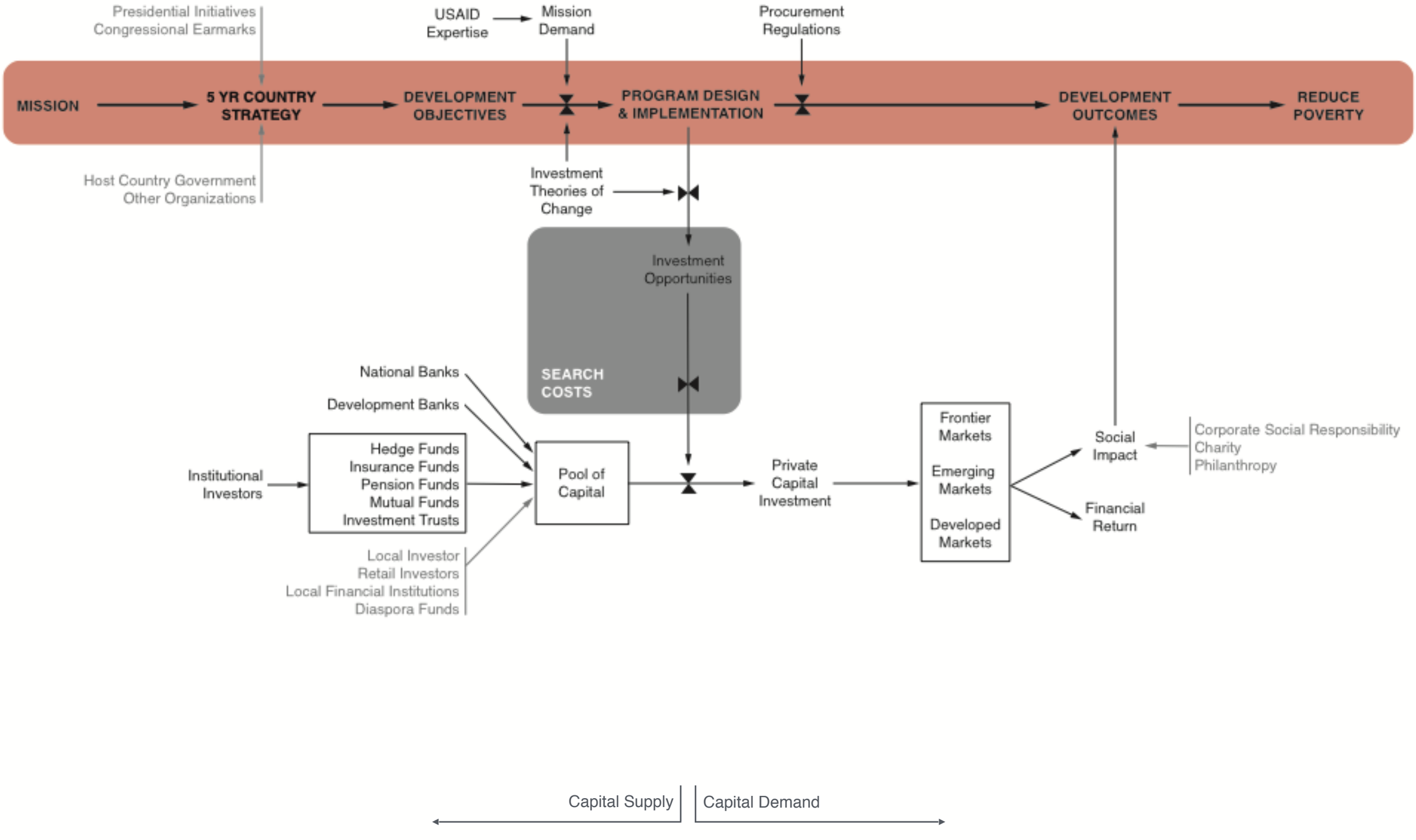
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Congressional Earmarks
USAID Expertise
Mission Demand
Procurement Regulations
MISSION
5 YR COUNTRY STRATEGY
DEVELOPMENT OBJECTIVES
PROGRAM DESIGN & IMPLEMENTATION
DEVELOPMENT OUTCOMES
REDUCE POVERTY
Host Country Government
Other Organizations
Investment Theories of Change
Investment Opportunities
SEARCH COSTS
National Banks
Development Banks
Institutional Investors
Hedge Funds
Insurance Funds
Pension Funds
Mutual Funds
Investment Trusts
Pool of Capital
Private Capital Investment
Frontier Markets
Emerging Markets
Developed Markets
Social Impact
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Charity
Philanthropy
Financial Return
Local Investor
Retail Investors
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Diaspora Funds
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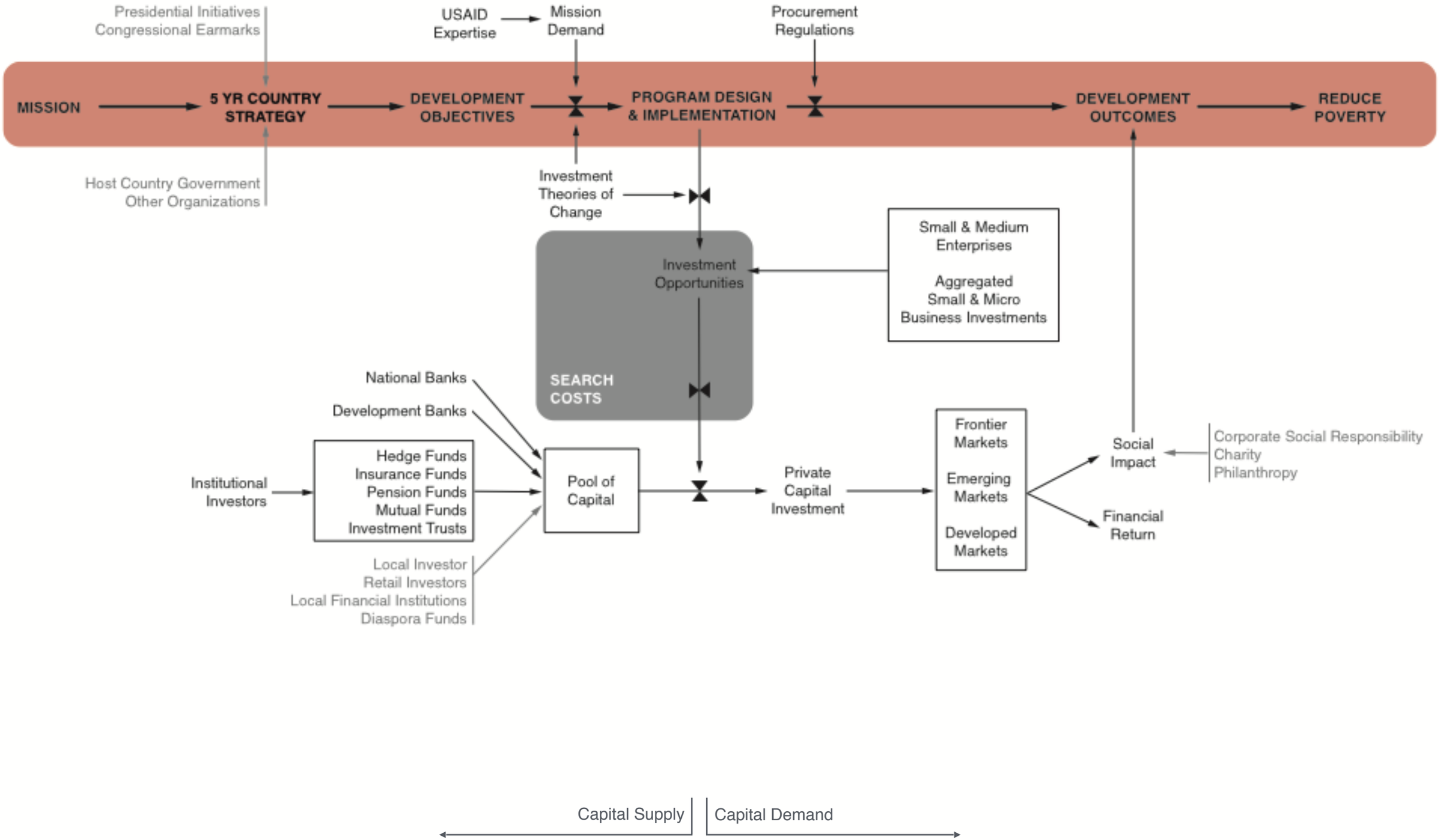
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Congressional Earmarks
USAID Expertise
Mission Demand
Procurement Regulations
MISSION
5 YR COUNTRY STRATEGY
DEVELOPMENT OBJECTIVES
PROGRAM DESIGN & IMPLEMENTATION
DEVELOPMENT OUTCOMES
REDUCE POVERTY
Host Country Government
Other Organizations
Investment Theories of Change
Small & Medium Enterprises
Aggregated Small & Micro Business Investments
Investment Opportunities
SEARCH COSTS
National Banks
Development Banks
Institutional Investors
Hedge Funds
Insurance Funds
Pension Funds
Mutual Funds
Investment Trusts
Pool of Capital
Private Capital Investment
Frontier Markets
Emerging Markets
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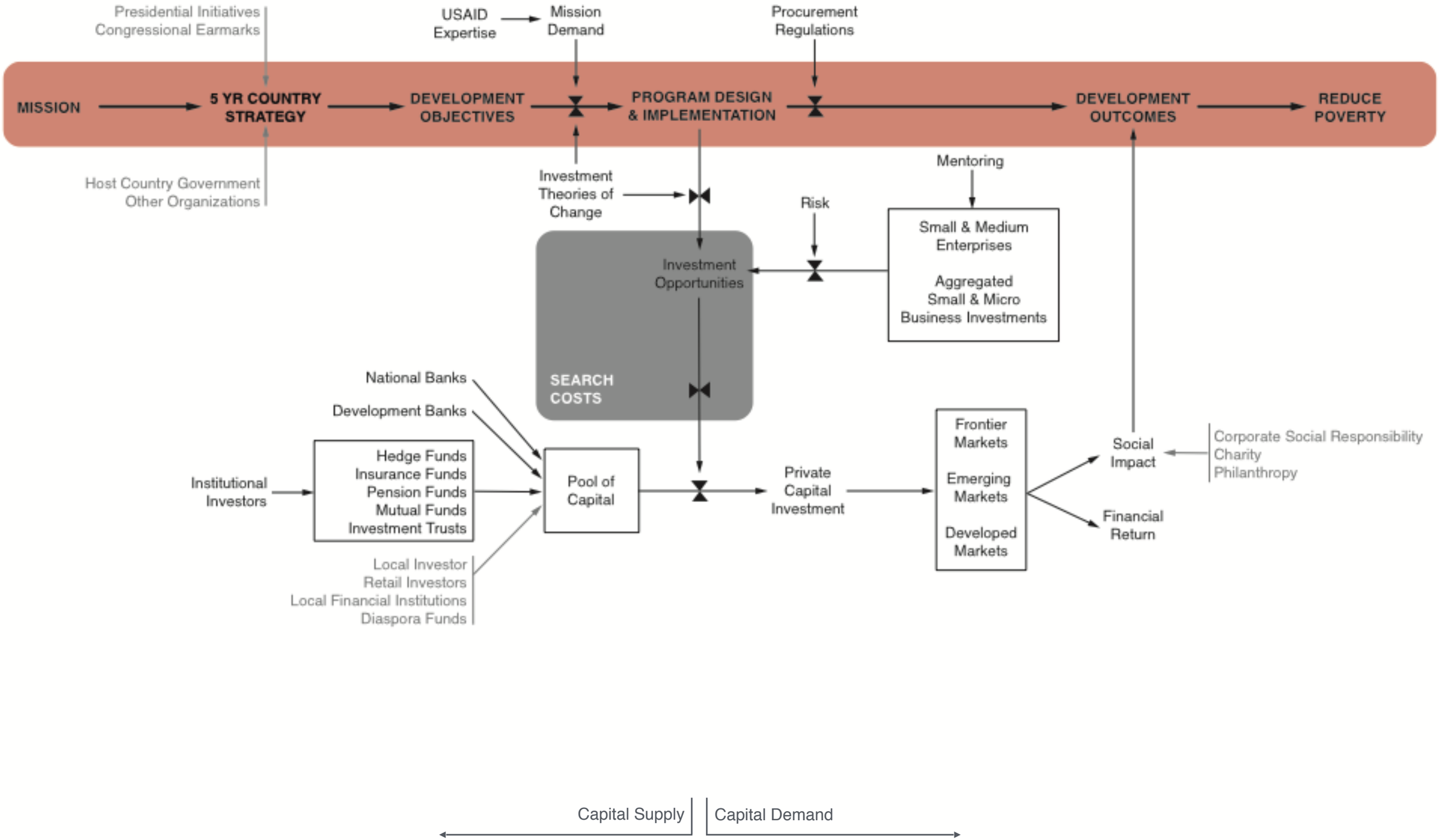
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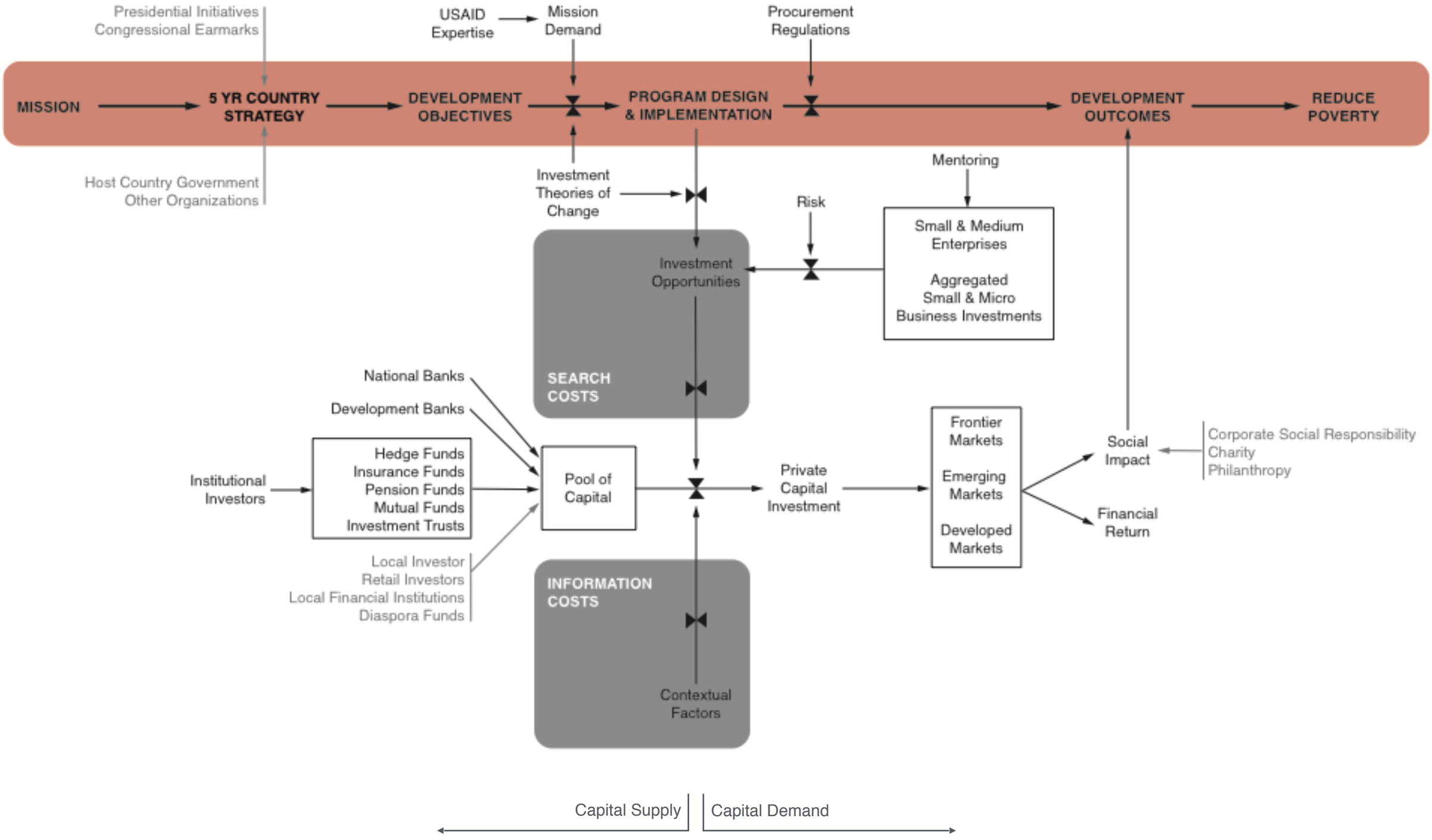
DEVELOPMENT OBJECTIVES
PROGRAM DESIGN & IMPLEMENTATION
DEVELOPMENT OUTCOMES
REDUCE POVERTY
Host Country Government
Other Organizations
Investment Theories of Change
Mentoring
Risk
Small & Medium Enterprises
Aggregated Small & Micro Business Investments
Investment Opportunities
SEARCH COSTS
National Banks
Development Banks
Institutional Investors
Hedge Funds
Insurance Funds
Pension Funds
Mutual Funds
Investment Trusts
Pool of Capital
Private Capital Investment
Frontier Markets
Emerging Markets
Developed Markets
Social Impact
Financial Return
Corporate Social Responsibility
Charity
Philanthropy
Local Investor
Retail Investors
Local Financial Institutions
Diaspora Funds
Capital Supply
Capital Demand


Presidential Initiatives
Congressional Earmarks
USAID Expertise
Mission Demand
Procurement Regulations
MISSION
5 YR COUNTRY STRATEGY
DEVELOPMENT OBJECTIVES
PROGRAM DESIGN & IMPLEMENTATION
DEVELOPMENT OUTCOMES
REDUCE POVERTY
Host Country Government
Other Organizations
Investment Theories of Change
Mentoring
Risk
Small & Medium Enterprises
Aggregated Small & Micro Business Investments
Investment Opportunities
SEARCH COSTS
National Banks
Development Banks
Institutional Investors
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Insurance Funds
Pension Funds
Mutual Funds
Investment Trusts
Pool of Capital
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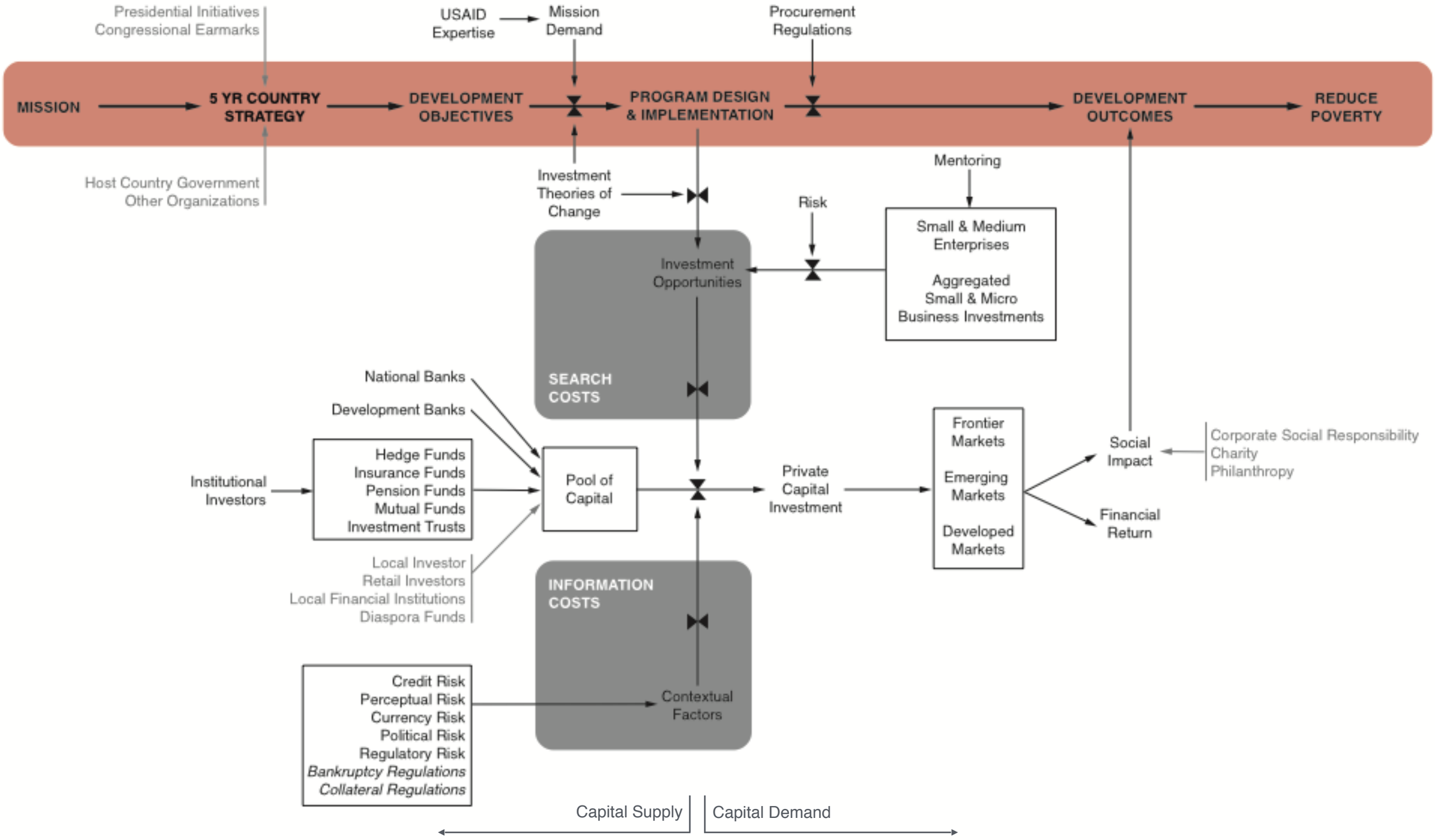
INFORMATION COSTS
Contextual Factors
Capital Supply
Capital Demand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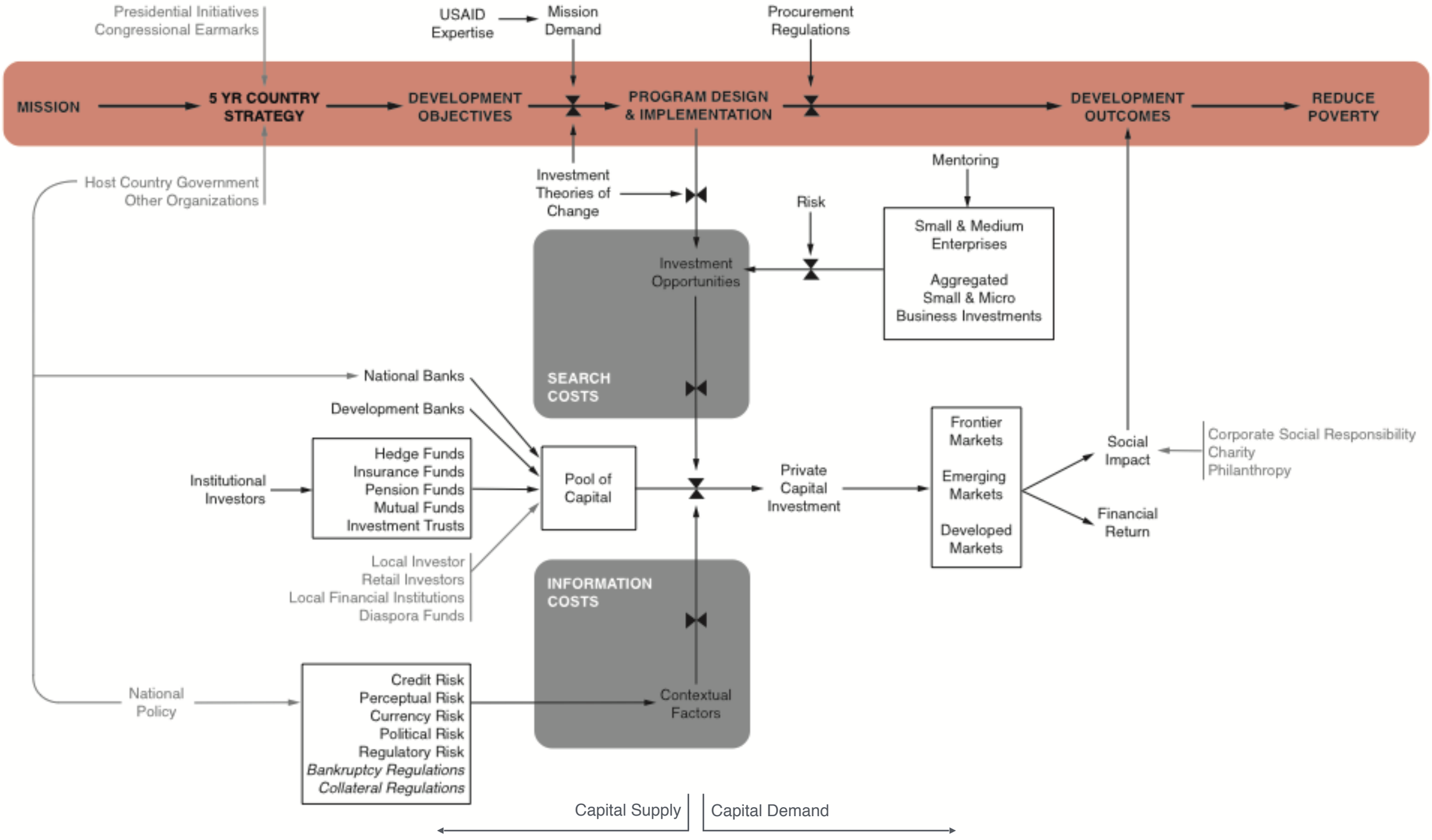
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DEVELOPMENT OUTCOMES
REDUCE POVERTY
Host Country Government
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Investment Theories of Change
Mentoring
Risk
Small & Medium Enterprises
Aggregated Small & Micro Business Investments
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Emerging Markets
Developed Markets
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Charity
Philanthropy
Local Investor
Retail Investors
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Diaspora Funds
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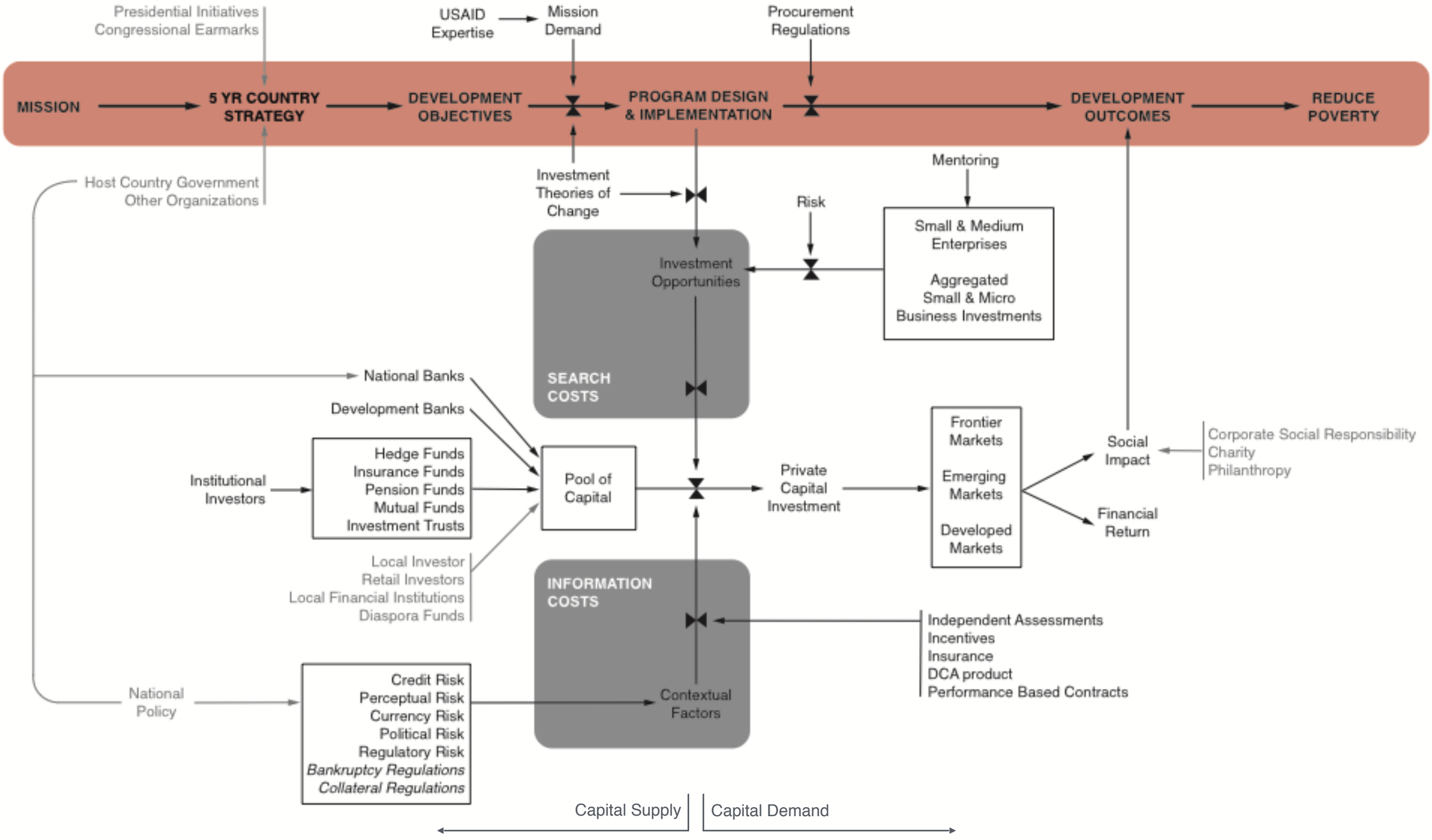
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DEVELOPMENT OUTCOMES
REDUCE POVERTY
Host Country Government
Other Organizations
Investment
Theories of
Change
Mentoring
Risk
Small & Medium Enterprises
Aggregated Small & Micro Business Investments
Investment Opportunities
SEARCH COSTS
National Banks
Development Banks
Institutional Investors
Hedge Funds
Insurance Funds
Pension Funds
Mutual Funds
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Frontier Markets
Emerging Markets
Developed Markets
Social Impact
Financial Return
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Charity
Philanthropy
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Retail Investors
Local Financial Institutions
Diaspora Funds
INFORMATION COSTS
Independent Assessments
Incentives
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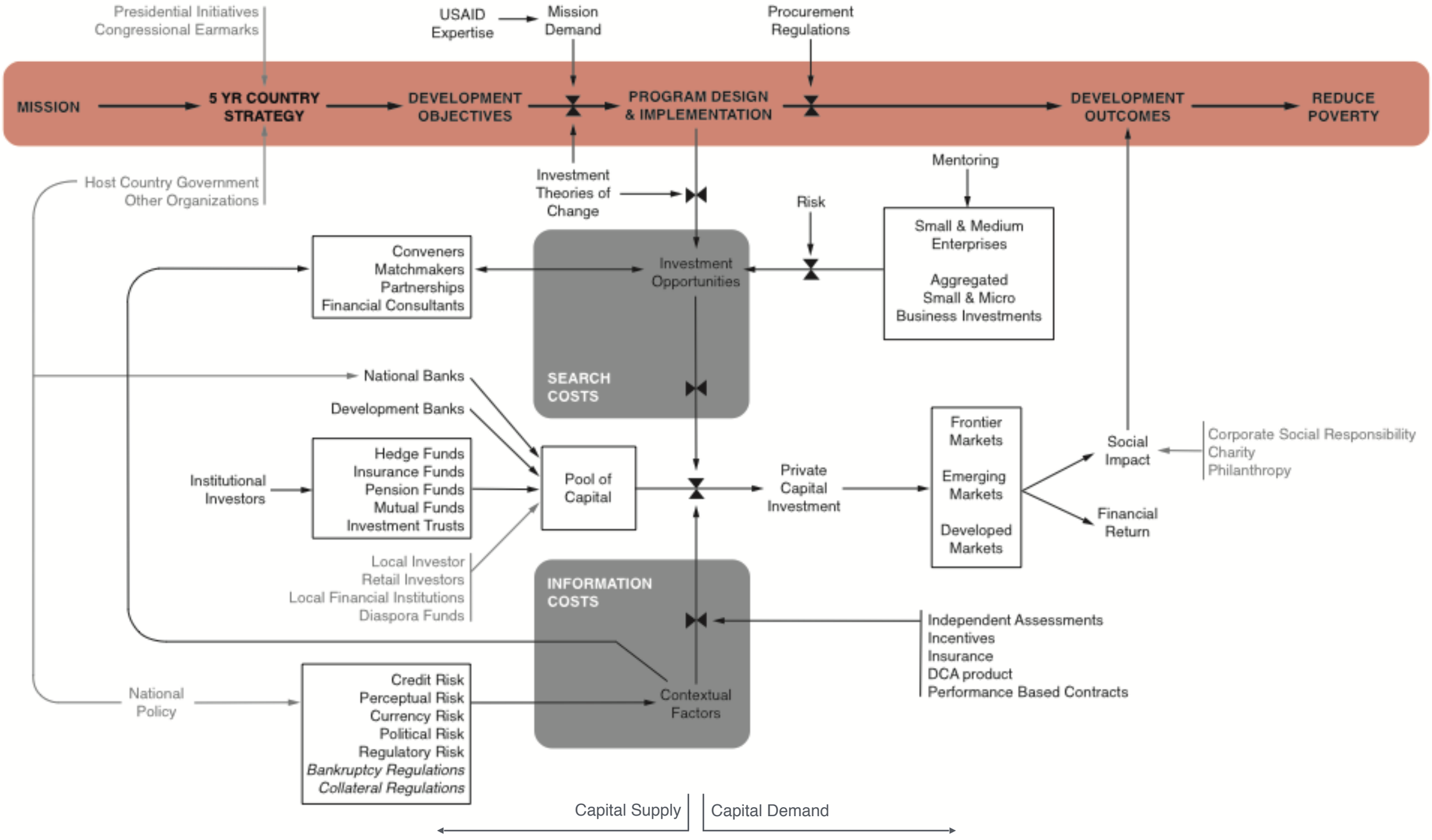
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REDUCE POVERTY
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Other Organizations
Investment Theories of Change
Mentoring
Risk
Small & Medium Enterprises
Aggregated Small & Micro Business Investments
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Matchmakers
Partnerships
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SEARCH COSTS
National Banks
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Hedge Funds
Insurance Funds
Pension Funds
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Investment Trusts
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Frontier Markets
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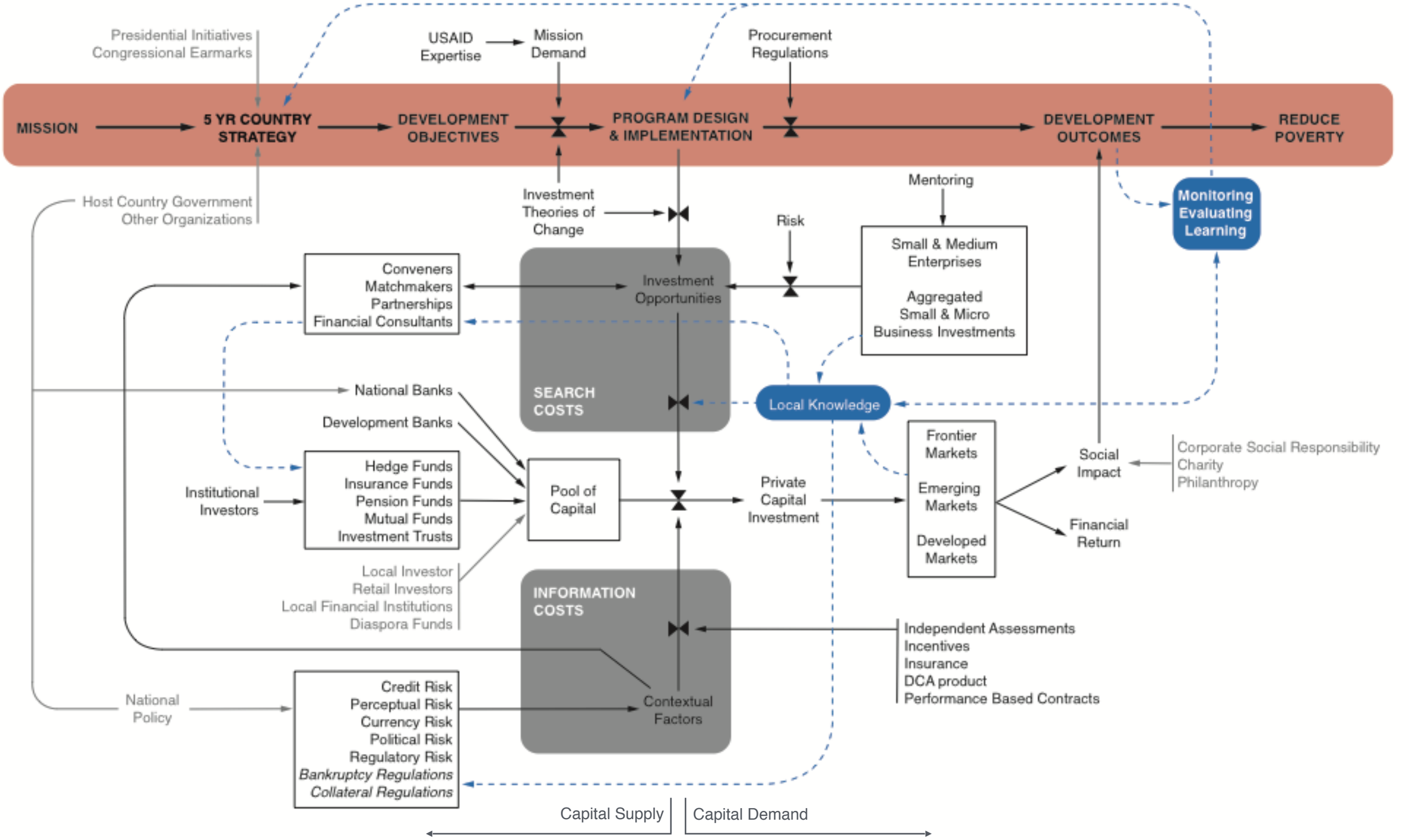
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Investment Theories of Change
Mentoring
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Small & Medium Enterprises
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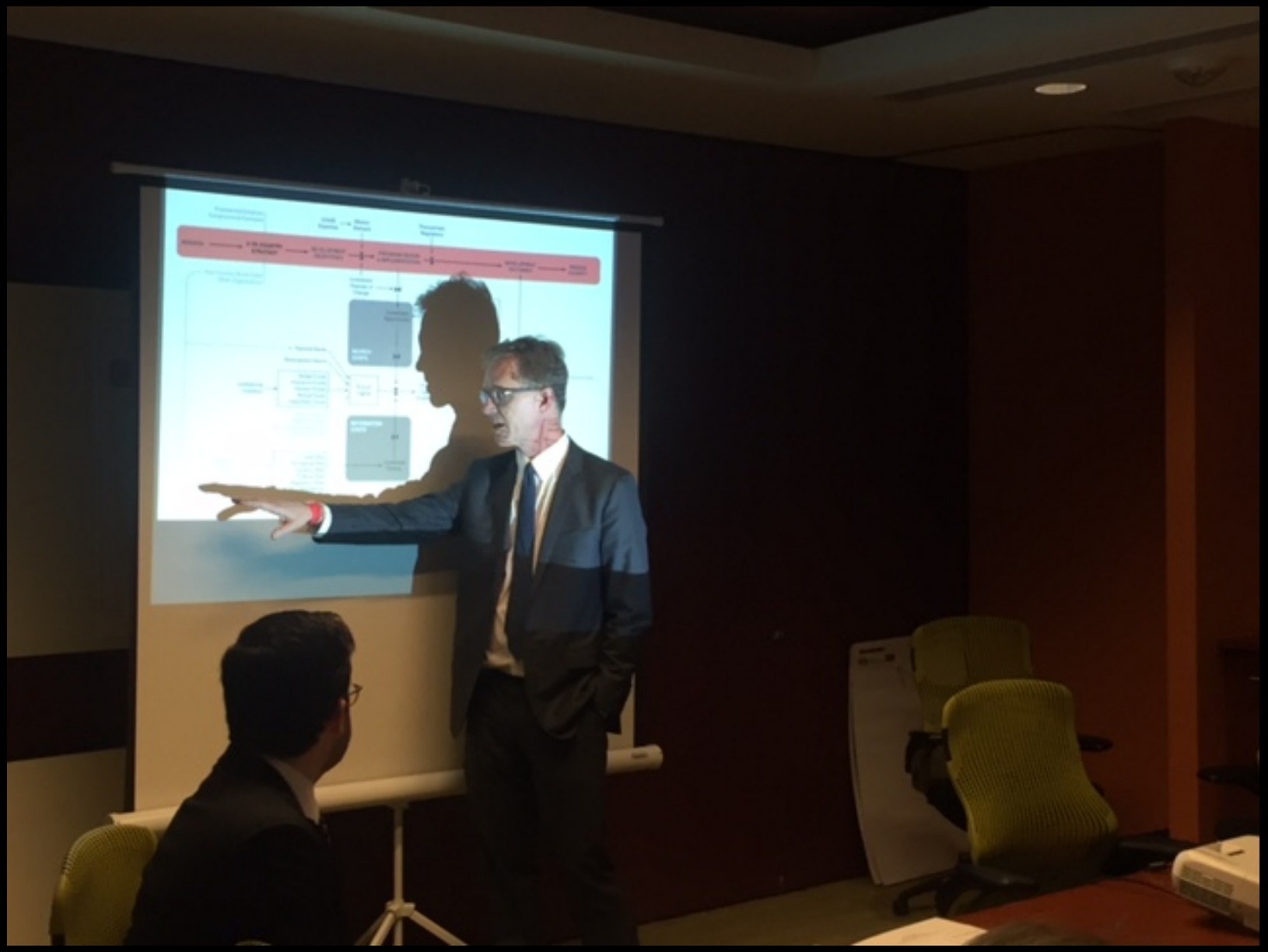

USAID Expertise
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Procurement Regulations
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Currency Risk
Capital Supply
Capital Demand

SEARCH COSTS

Local Knowle

Pool o
Capita

estment

rance Funds
ension Funds
Mutual Funds

WEAK RULE OF LAW

AMF
Institutional investors are risk adverse

RMA
FINANCIAL Design
Blending Public Funds with Private Investment

Lix Cap
Dev Co's
Deal Flow generation and Manageme

AMF
Risk mitigation for institutional investors

..due to
Lack of trust & understanding on both sides (investors & companies)

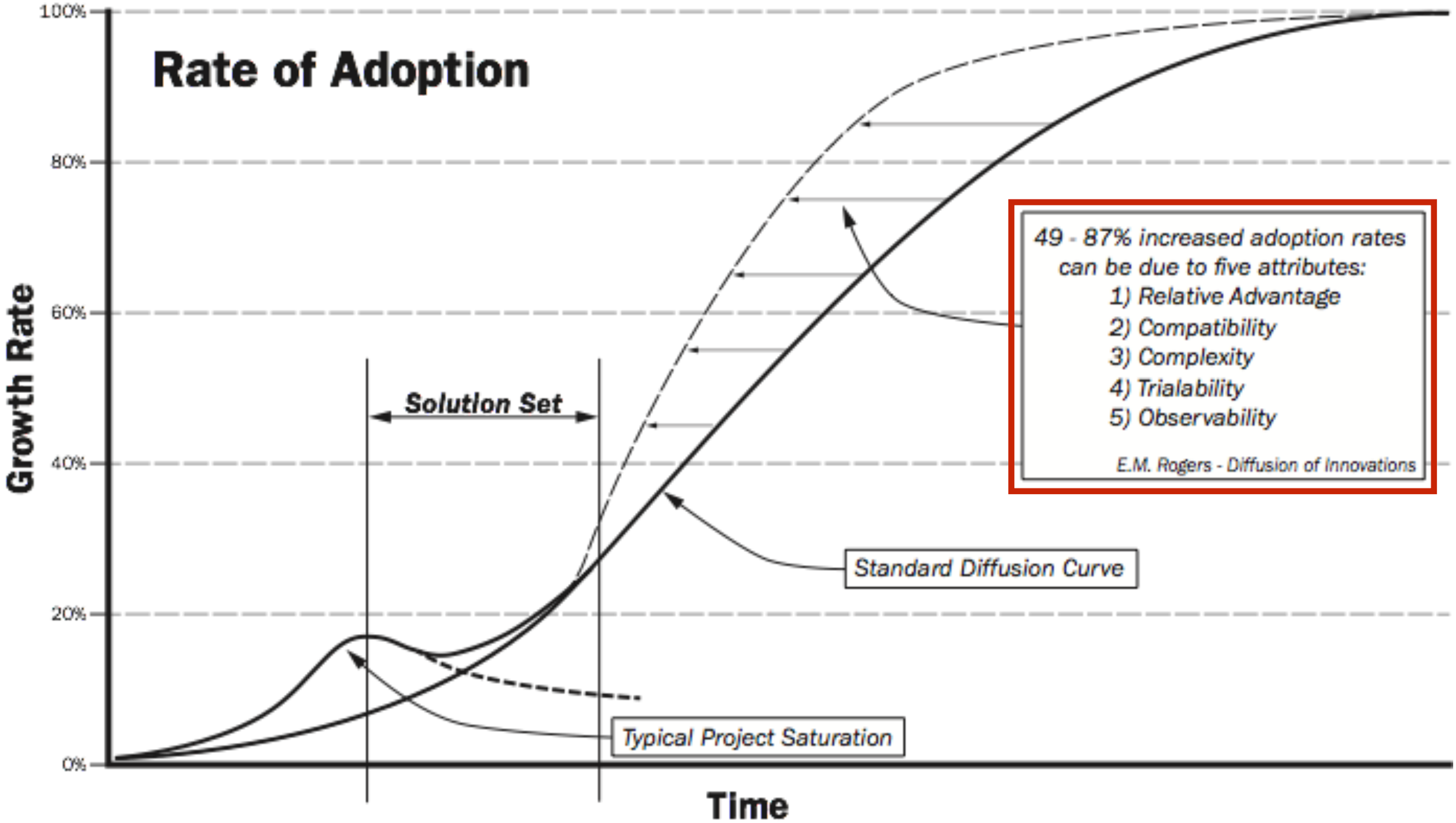
RMA
Risk mitigation

Sarona

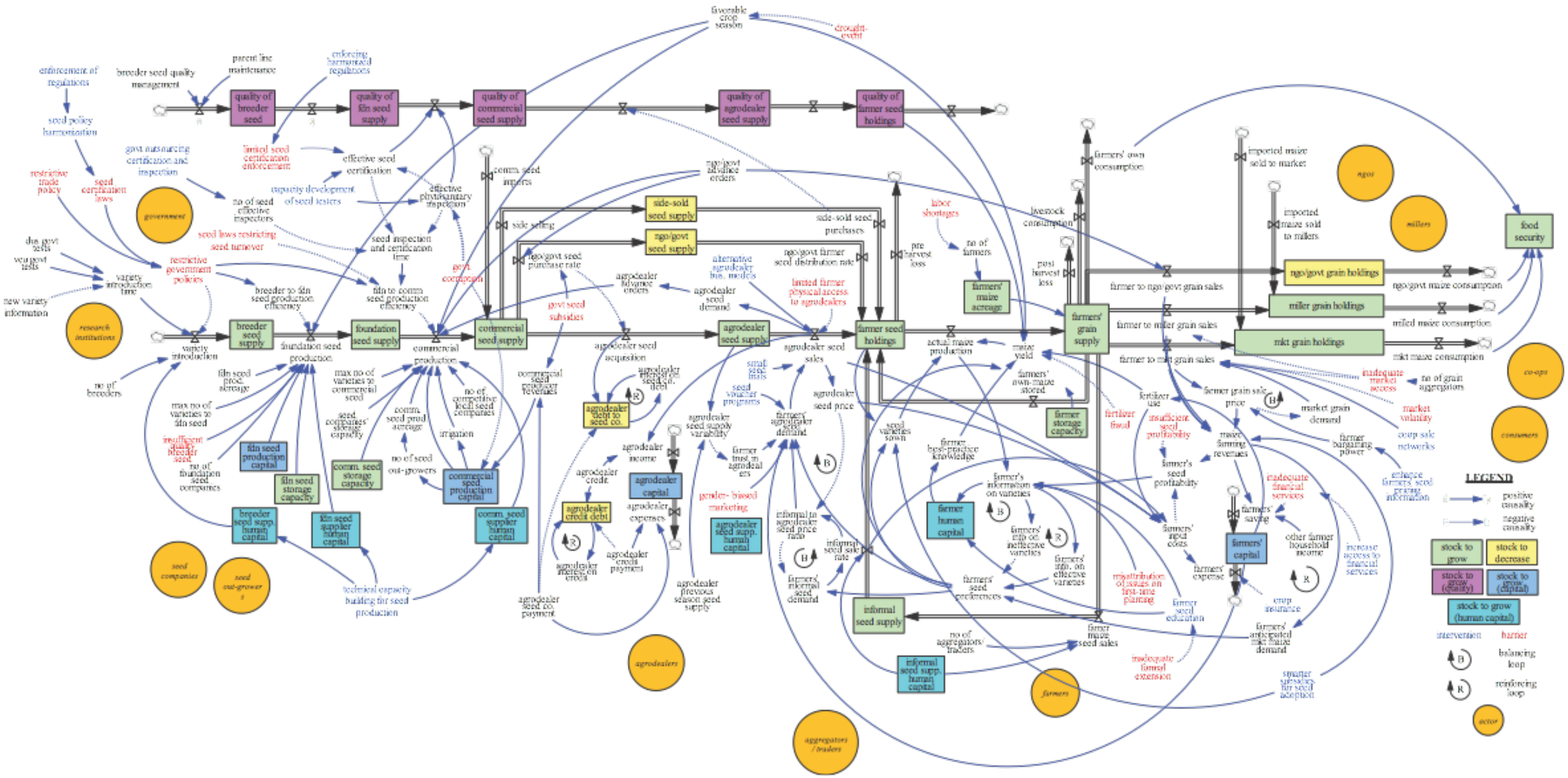
Credit Risk

Contextual

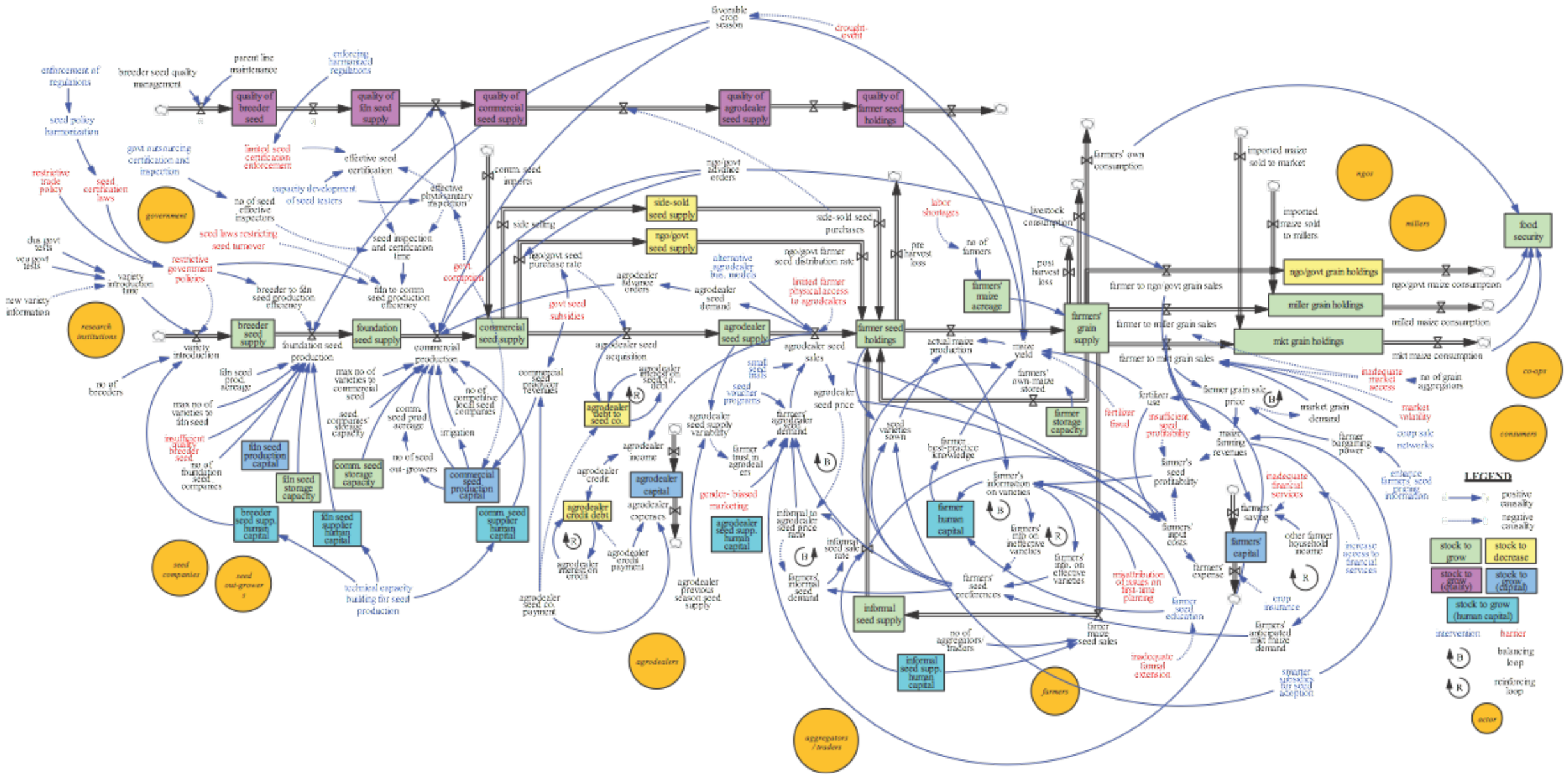
Convincing institutional investors information costs


Rate of Adoption
Growth Rate
100%
80%
60%
40%
20%
0%
Solution Set
49 - 87% increased adoption rates
can be due to five attributes:
1) Relative Advantage
2) Compatibility
3) Complexity
4) Trialability
5) Observability
E.M. Rogers - Diffusion of Innovations
Standard Diffusion Curve
Typical Project Saturation
Time

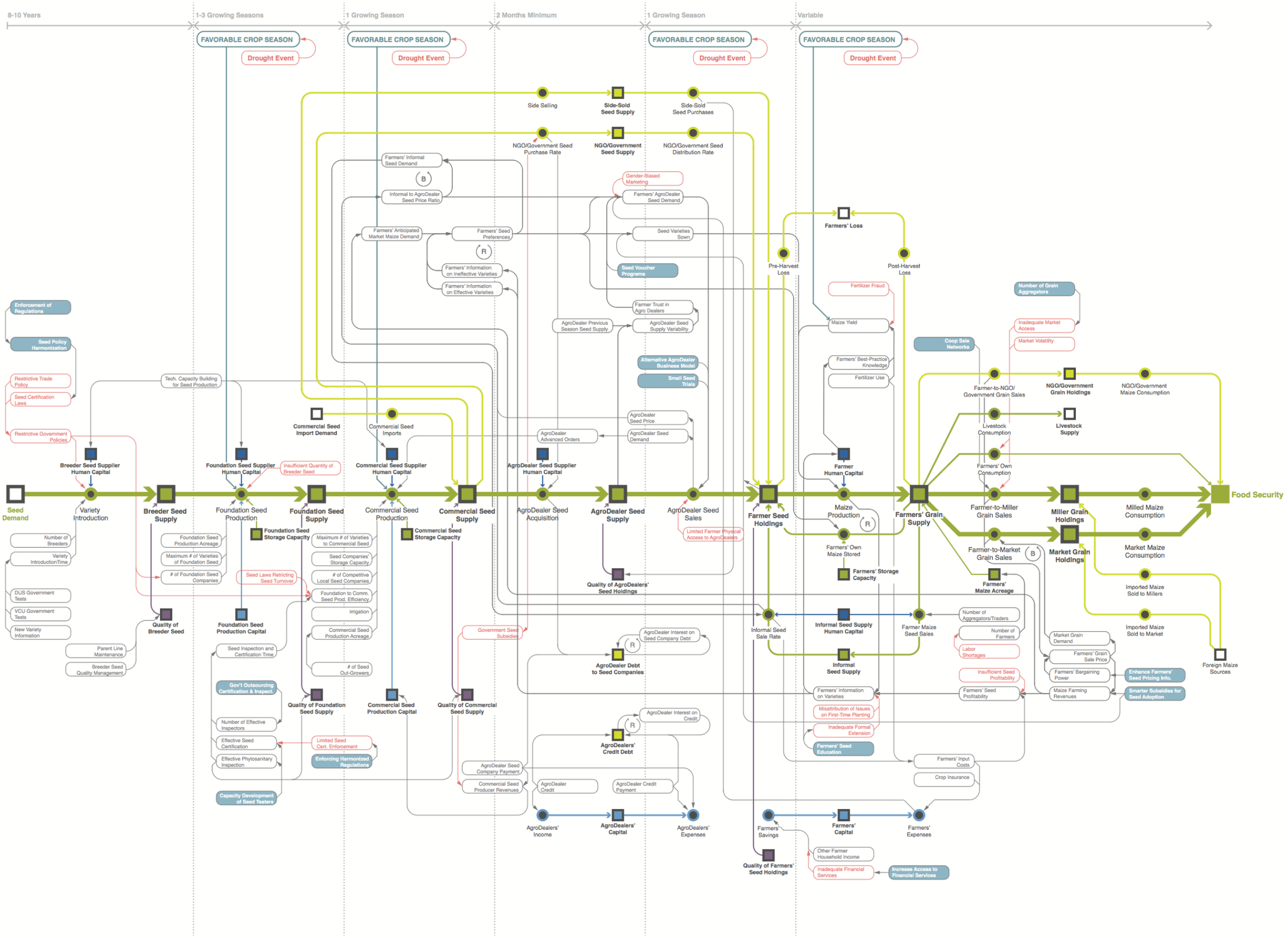
Scaling



Climate Resilient Maize



This is a job for Design Thinking!


8-10 Years
1-3 Growing Seasons
1 Growing Season
2 Months Minimum
1 Growing Season
Variable
FAVORABLE CROP SEASON
Drought Event
Side Selling
Side-Sold Seed Supply
Side-Sold Seed Purchases
NGO/Government Seed Purchase Rate
NGO/Government Seed Supply
NGO/Government Seed Distribution Rate
Farmers' Informal Seed Demand
Informal to AgroDealer Seed Price Ratio
Gender-Biased Marketing
Farmers' AgroDealer Seed Demand
Farmers' Anticipated Market Maize Demand
Farmers' Seed Preferences
Seed Varieties Sown
Farmers' Information on Ineffective Varieties
Farmers' Information on Effective Varieties
Seed Voucher Programs
Farmer Trust in Agro Dealers
AgroDealer Previous Season Seed Supply
AgroDealer Seed Supply Variability
Alternative AgroDealer Business Model
Small Seed Trials
Farmers' Loss
Pre-Harvest Loss
Post-Harvest Loss
Fertilizer Fraud
Maize Yield
Farmers' Best-Practice Knowledge
Fertilizer Use
Number of Grain Aggregators
Inadequate Market Access
Market Volatility
Coop Sale Networks
Farmer-to-NGO/ Government Grain Sales
NGO/Government Grain Holdings
NGO/Government Maize Consumption
Livestock Consumption
Livestock Supply
Farmers' Own Consumption
Enforcement of Regulations
Seed Policy Harmonization
Restrictive Trade Policy
Seed Certification Laws
Restrictive Government Policies
Tech. Capacity Building for Seed Production
Commercial Seed Import Demand
Commercial Seed Imports
AgroDealer Seed Price
AgroDealer Advanced Orders
AgroDealer Seed Demand
Breeder Seed Supplier Human Capital
Foundation Seed Supplier Human Capital
Insufficient Quantity of Breeder Seed
Commercial Seed Supplier Human Capital
AgroDealer Seed Supplier Human Capital
Farmer Human Capital
Seed Demand
Variety Introduction
Breeder Seed Supply
Foundation Seed Production
Foundation Seed Supply
Commercial Seed Production
Commercial Seed Supply
AgroDealer Seed Acquisition
AgroDealer Seed Supply
AgroDealer Seed Sales
Limited Farmer Physical Access to AgroDealers
Farmer Seed Holdings
Maize Production
Farmers' Grain Supply
Farmer-to-Miller Grain Sales
Miller Grain Holdings
Milled Maize Consumption
Food Security
Number of Breeders
Variety IntroductionTime
DUS Government Tests
VCU Government Tests
New Variety Information
Parent Line Maintenance
Breeder Seed Quality Management
Quality of Breeder Seed
Foundation Seed Production Acreage
Maximum # of Varieties of Foundation Seed
# of Foundation Seed Companies
Foundation Seed Storage Capacity
Seed Laws Retricting Seed Turnover
Foundation Seed Production Capital
Seed Inspection and Certification Time
Gov't Outsourcing Certification & Inspect.
Number of Effective Inspectors
Effective Seed Certification
Effective Phytosanitary Inspection
Capacity Development of Seed Testers
Quality of Foundation Seed Supply
Limited Seed Cert. Enforcement
Enforcing Harmonized Regulations
Maximum # of Varieties to Commercial Seed
Seed Companies' Storage Capacity
# of Competitive Local Seed Companies
Foundation to Comm. Seed Prod. Efficiency
Irrigation
Commercial Seed Production Acreage
# of Seed Out-Growers
Commercial Seed Storage Capacity
Commercial Seed Production Capital
Quality of Commercial Seed Supply
Government Seed Subsidies
Quality of AgroDealers' Seed Holdings
AgroDealer Interest on Seed Company Debt
AgroDealer Debt to Seed Companies
AgroDealer Interest on Credit
AgroDealers' Credit Debt
AgroDealer Seed Company Payment
Commercial Seed Producer Revenues
AgroDealer Credit
AgroDealer Credit Payment
AgroDealers' Income
AgroDealers' Capital
AgroDealers' Expenses
Quality of Farmers' Seed Holdings
Farmers' Savings
Farmers' Capital
Farmers' Expenses
Other Farmer Household Income
Inadequate Financial Services
Increase Access to Financial Services
Farmers' Storage Capacity
Farmers' Maize Acreage
Informal Seed Sale Rate
Informal Seed Supply Human Capital
Informal Seed Supply
Farmer Maize Seed Sales
Number of Aggregators/Traders
Number of Farmers
Labor Shortages
Insufficient Seed Profitability
Farmers' Seed Profitability
Farmers' Information on Varieties
Misattribution of Issues on First-Time Planting
Inadequate Formal Extension
Farmers' Seed Education
Farmers' Input Costs
Crop Insurance
Farmer-to-Market Grain Sales
Market Grain Holdings
Market Maize Consumption
Imported Maize Sold to Millers
Imported Maize Sold to Market
Foreign Maize Sources
Market Grain Demand
Farmers' Grain Sale Price
Farmers' Bargaining Power
Maize Farming Revenues
Enhance Farmers' Seed Pricing Info.
Smarter Subsidies for Seed Adoption

Food Security

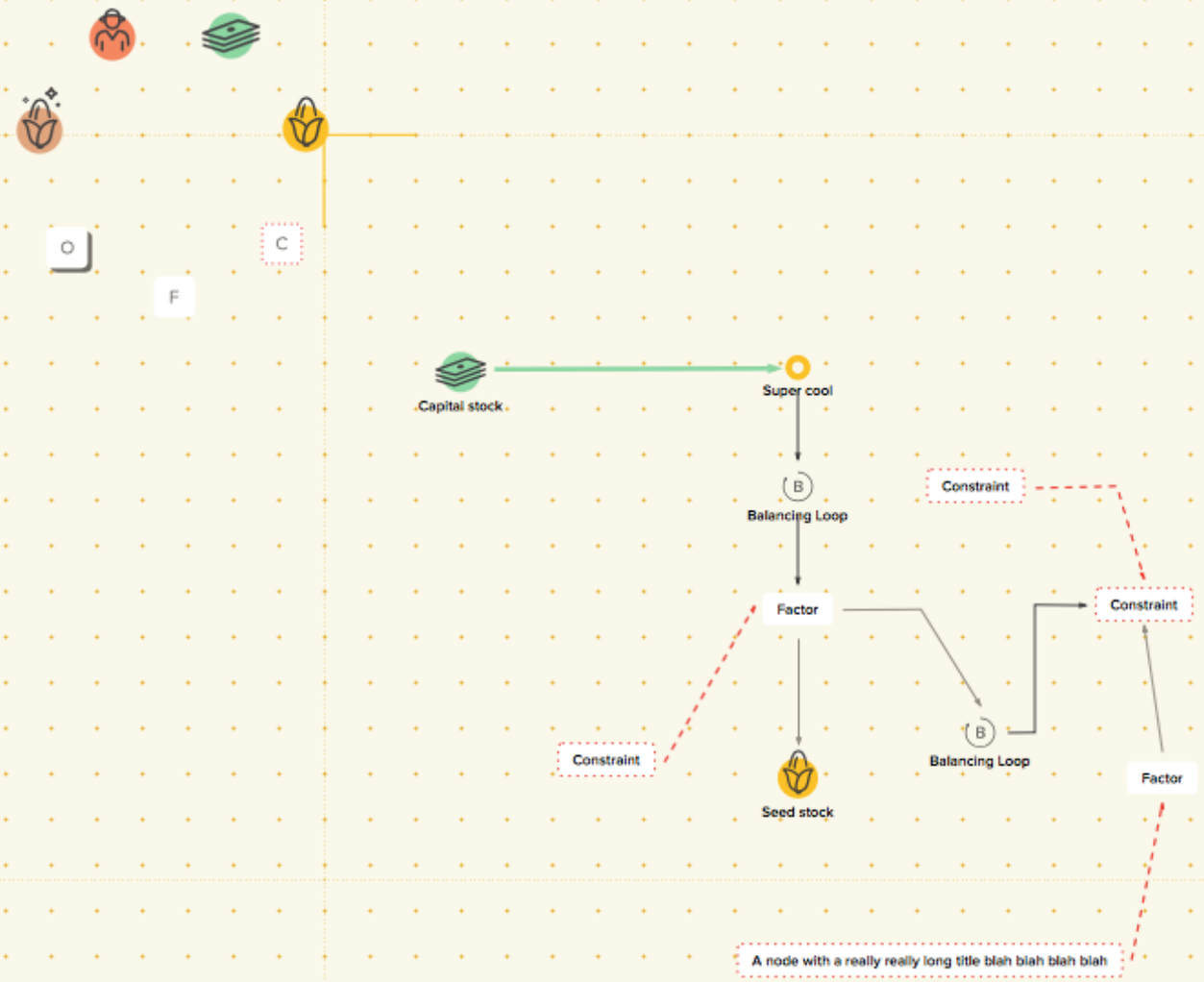
MAIZE SEED SYSTEM
IN SUB-SAHARAN AFRICA

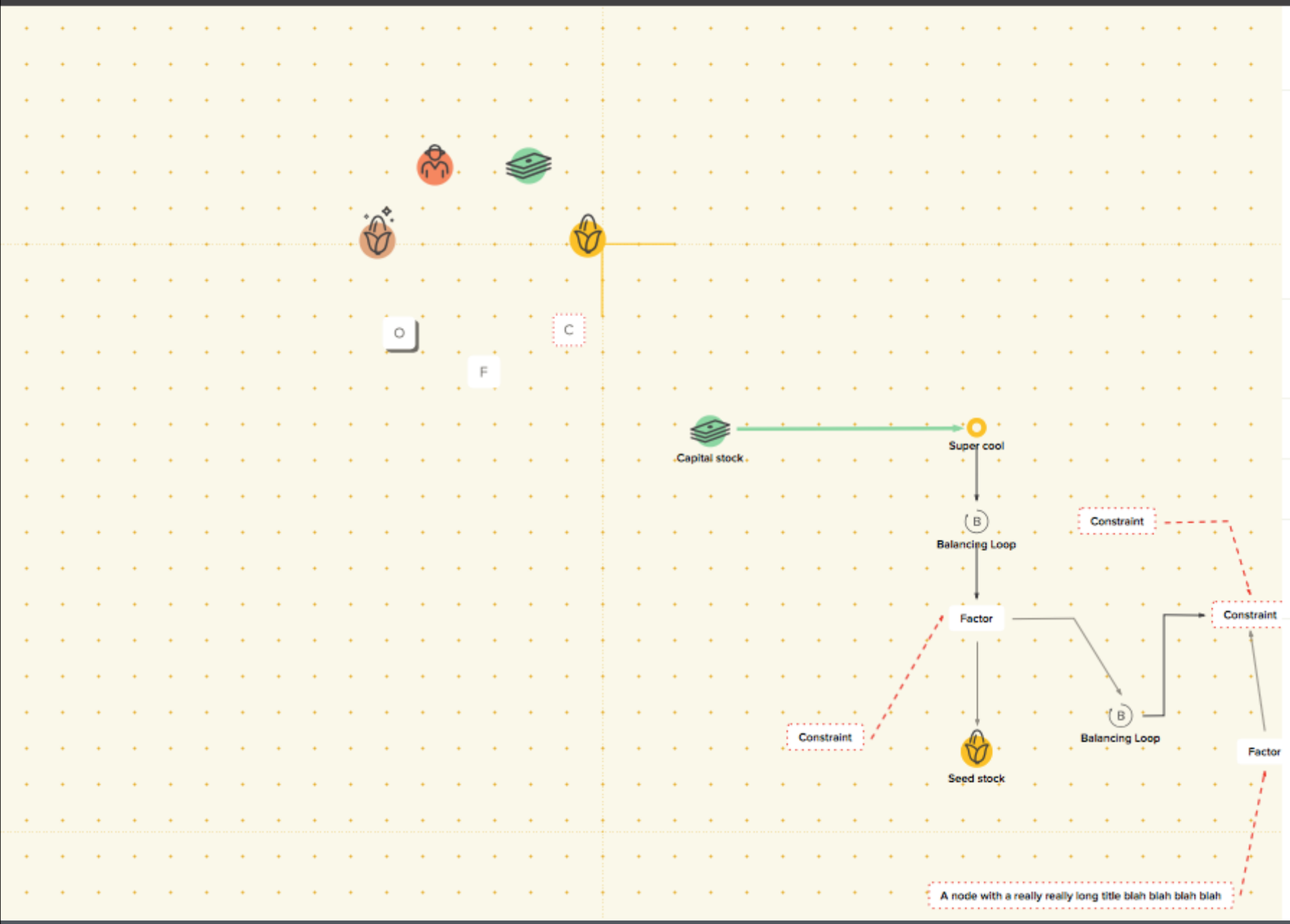
Lorem ipsum dolor sit amet, an vim quod dolor discere. In vis amet tamquam, an omnis torquatos assentior sit, justo porro postea has eu. Mutat scripta saperet ut sed. Ei mei aliquip feugiat vulputate. Cu debet scripta malorum ius.

EXPLORE THE MAIZE SYSTEM MAP

GENERAL MAP | COUNTRY SPECIFIC

Open #graph!gid=general on this page in a new window


O
C
F
Capital stock
Super cool
B
Balancing Loop
Constraint
Factor
Constraint
Constraint
B
Balancing Loop
Factor
Seed stock
A node with a really really long title blah blah blah blah



Add Keywords

close ×

Stocks Factors Actors

FINANCIAL

Capital stock

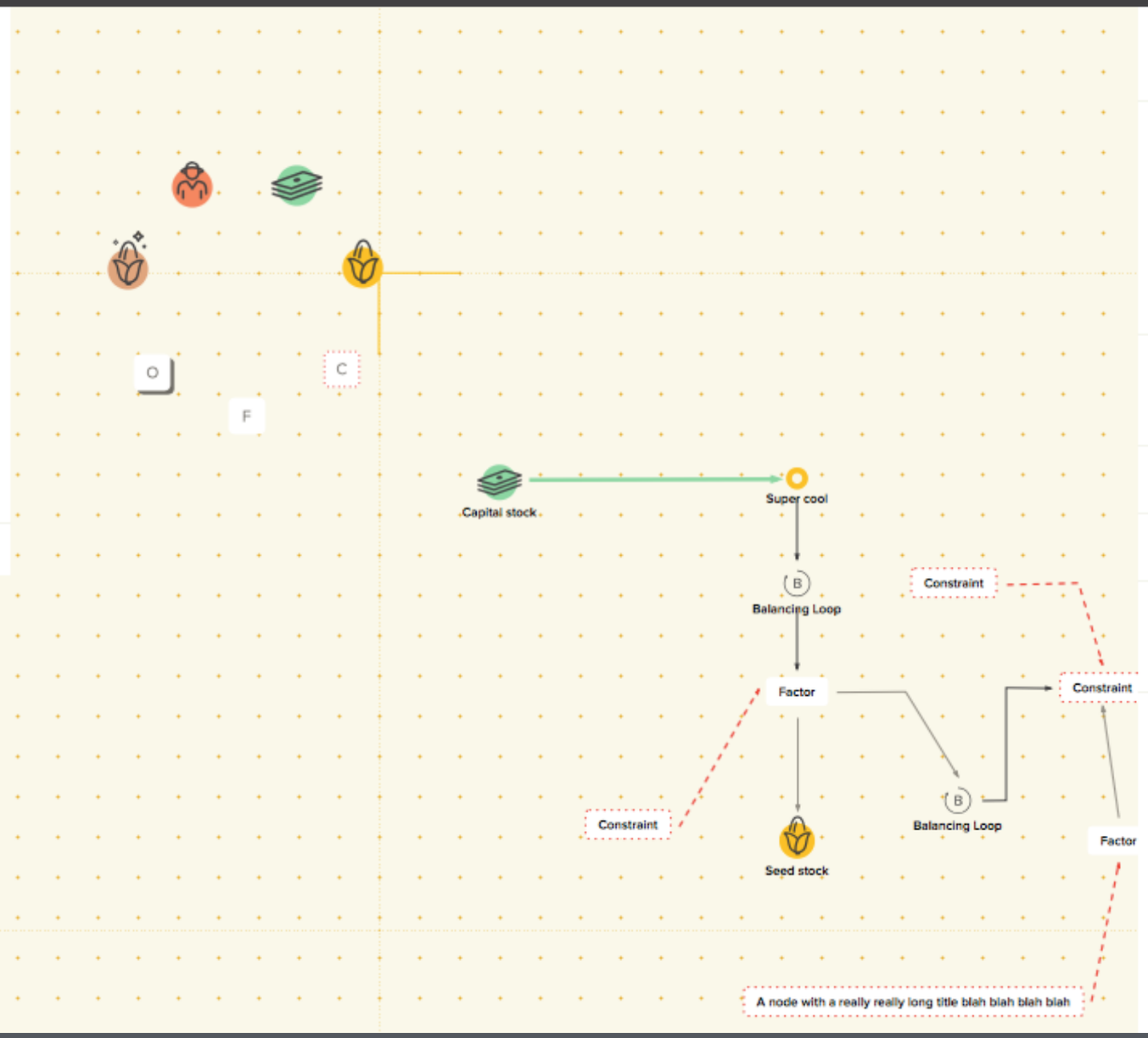
HUMAN

QUALITY

SEED

Seed stock

Ethiopia
Ghana
Kenya
Malawi
Mozambique
Nigeria
Tanzania
Uganda
Zambia
General Map



Add Keywords

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Stocks Factors Actors

FINANCIAL

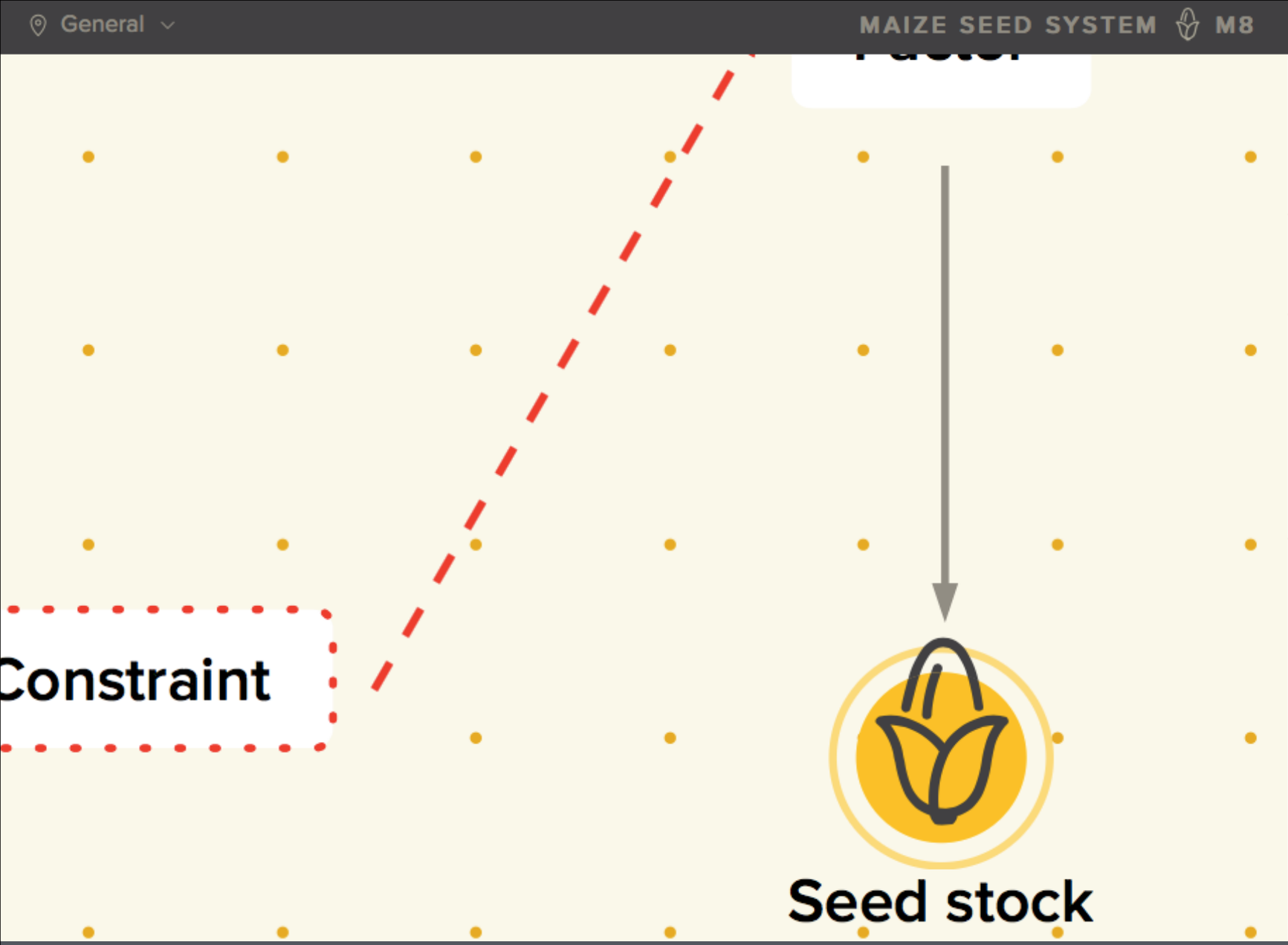
Capital stock

HUMAN

QUALITY

SEED

Seed stock



remove close

Seed stock

Seed

DESCRIPTION

No description given.

ORGANIZATION

Org 1 Government Agency

Legolas Greenleaf

Org 2 NGO

Gimli