



Introduction to Green Finance

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GEF Expanded Constituency Workshop - Congo, 2017

GREEN FINANCE: DEFINITION

**Use of financial products and services,
such as loans, insurance, stocks, private equity & bonds
in green (or eco-friendly) projects**

Green finance is more than climate finance, but includes land, forests, water, oceans, conservation, resilience--indeed every type of GEF investment

“Introduction to Green Finance” brochure - goo.gl/VzoRVF



NEED FOR ADDITIONAL FINANCE

Annual funding needed:

Conservation

\$400-600 billion (spent only \$50-62 billion)

\$300-\$400b gap = 1% of private sector investments

Public \$ can cover less than 15%

Energy

Access - \$45 billion (spent \$9 billion)

Renewables - \$320 billion (spent \$154 billion)

Efficiency - \$390 billion (spent \$225 billion)

Additional finance (**gap**) - \$350 billion

Climate

\$392 invested in 2014 (>60% private\$) - still falling short \$250 billion



SESSION OVERVIEW

1. Main financial instruments in conservation

- Debt / Equity / Guarantees

2. Leveraging private sector capital

3. Cases

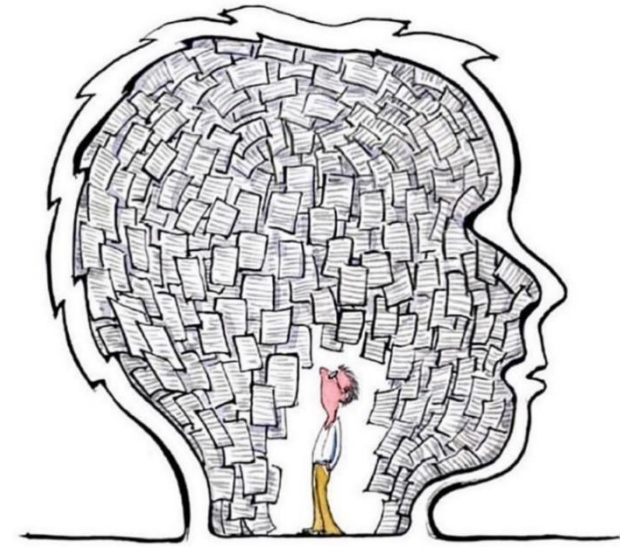
- Forestry fund
- Fisheries fund
- Energy efficiency program

Audience: professionals entering Green Finance space



WHY THIS SESSION?

- ✓ **Private capital** - the biggest part of conservation/climate funding
- ✓ To access private finance, we need to **know how it works**
Finance can be **explained in simple terms**
- ✓ **We can apply this knowledge** to answer the following:
 - How do we develop socially beneficial projects which attract private finance?
 - How do we make the project sustainable long term (after the funding is over)?
 - How do we prioritize our work program to attract more capital?



**All the knowledge in the world
is useless without action.**

GREEN FINANCE: BRIEF HISTORY

Investment in conservation evolved:

- 19th century: simple public sector financing
(taxes, fees, stamps and government spending)
- 20th century: mix of public & philanthropic finance
- Last 25 years: **growing involvement of the private sector**
+ the development of new financial mechanisms

E.g. we can use **tropical forest** assets to generate **revenues** from operations in fields of **sustainable timber, agriculture and ecotourism**

Financial innovations: social policy bonds, crowdsourcing initiatives (online platforms to mobilize capital) – will transform raising capital



GREEN FINANCE: ASSET CLASSES

Asset class - group of financial instruments:

- with similar **characteristics**,
- that **behaves** similarly in the marketplace,
- and subject to the same **laws/regulations**

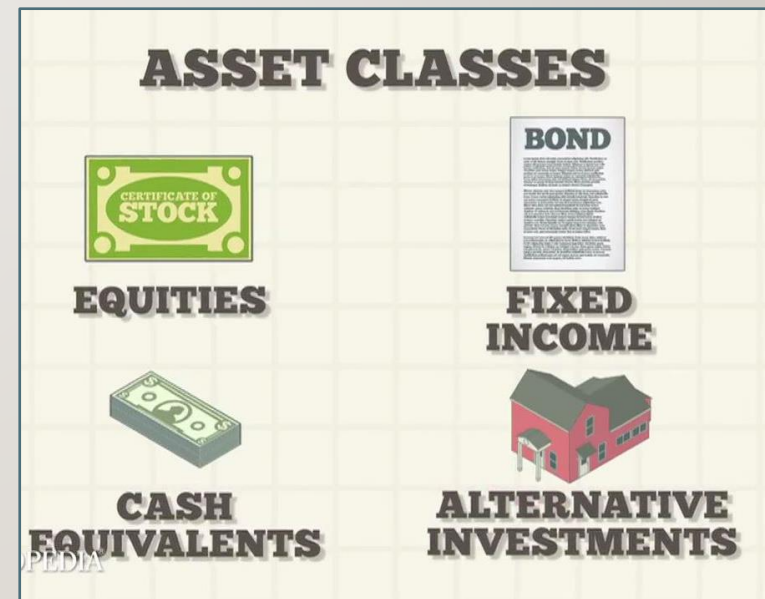
2 Asset classes / financial instruments

commonly used in green finance:

(1) Equity (Stocks)

(2) Debt Fixed Income)

+ risk management tool: **Guarantees**

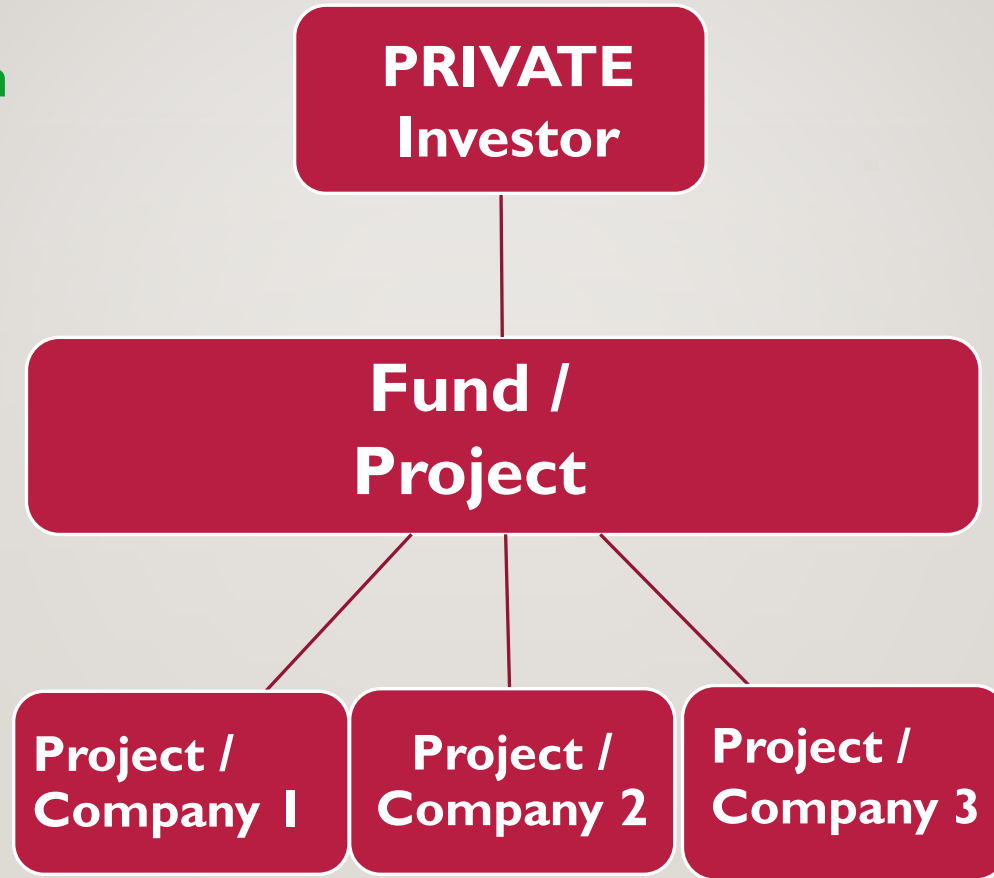


BLENDED FINANCE – HOW IT WORKS

Can Invest **\$8m**

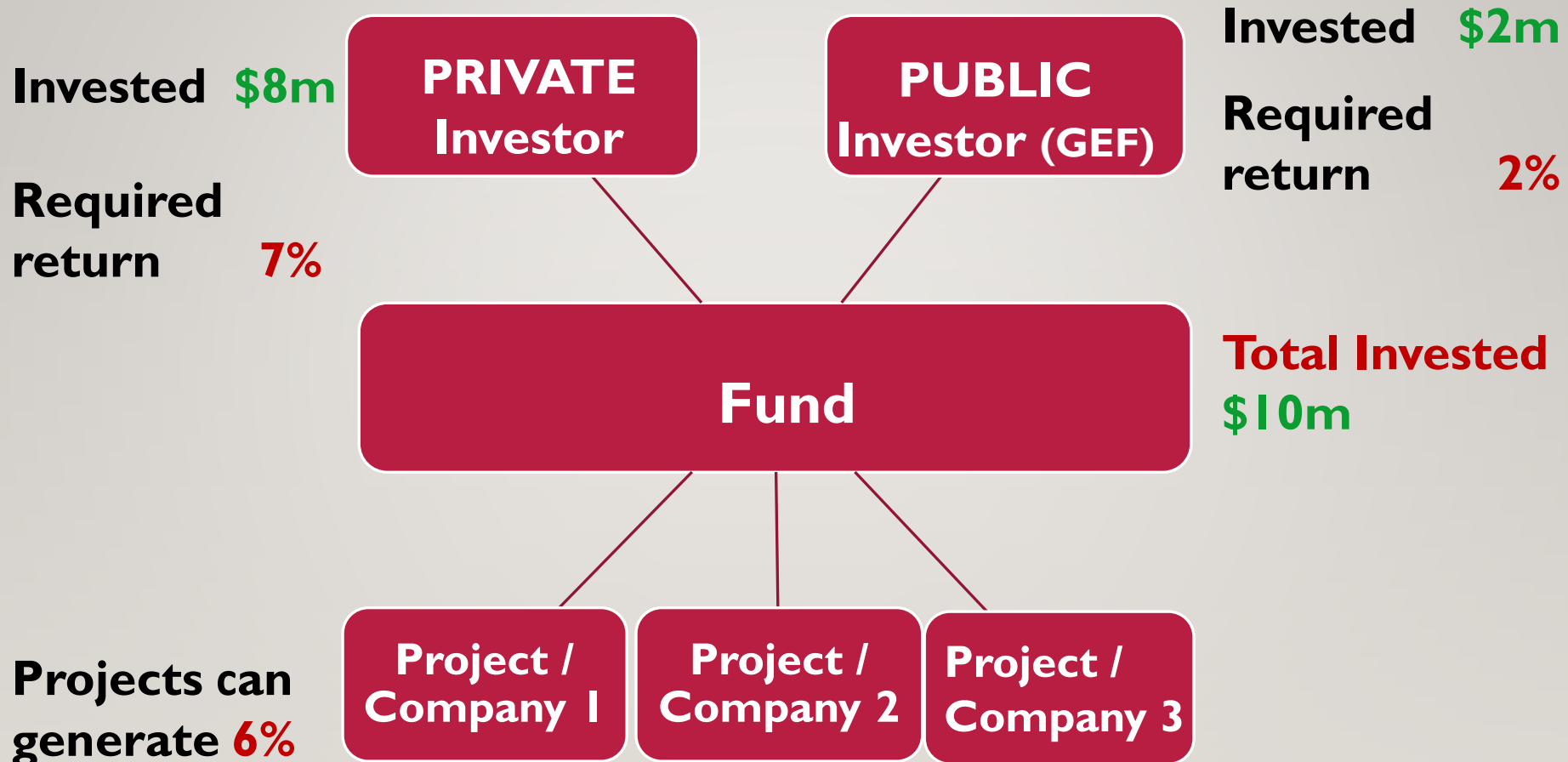
Required
return **7%**

Projects can
generate **6%**



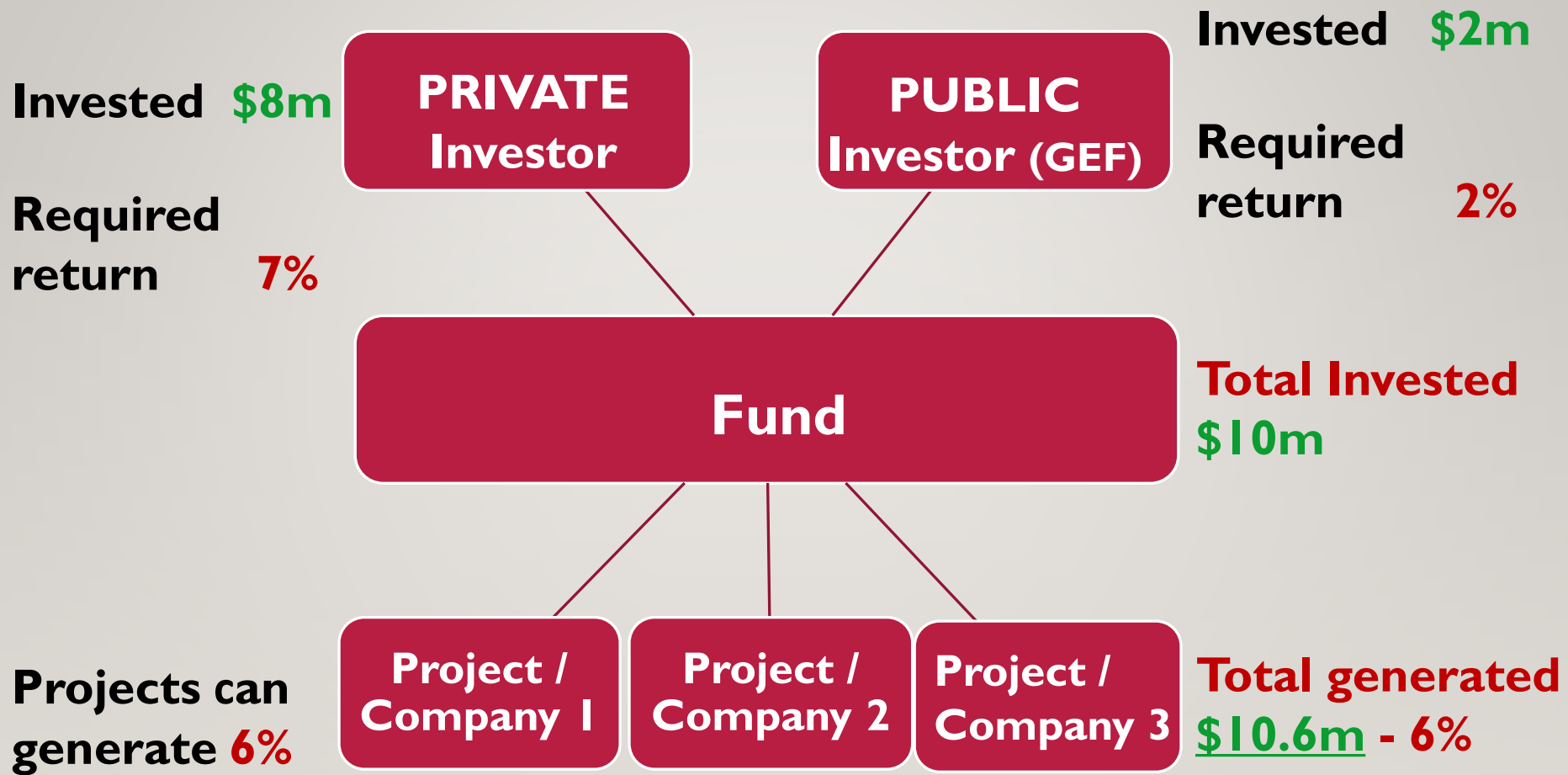
To simplify calculations, we assume projects last only 1 year

BLENDED FINANCE – HOW IT WORKS



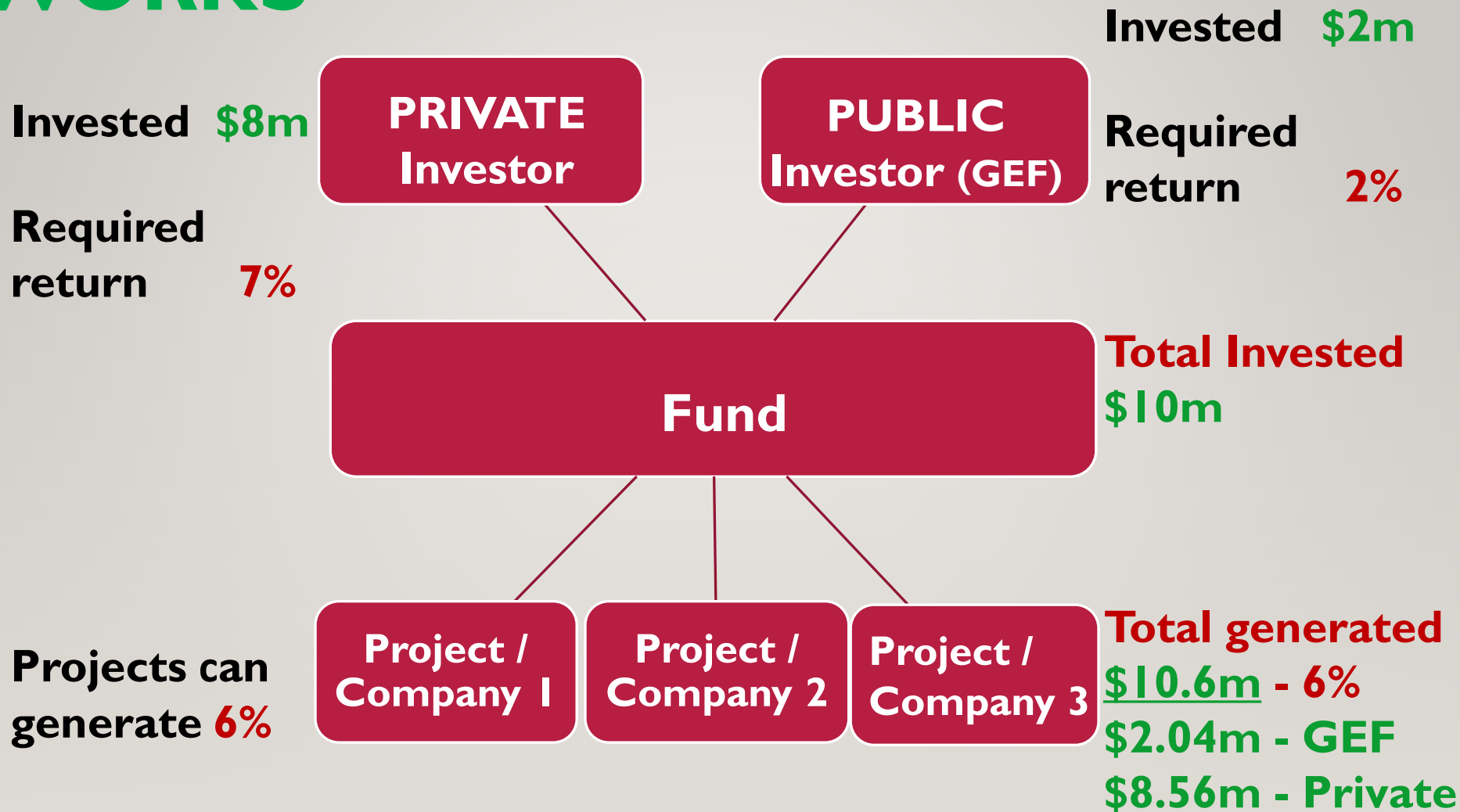
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BLENDED FINANCE – HOW IT WORKS



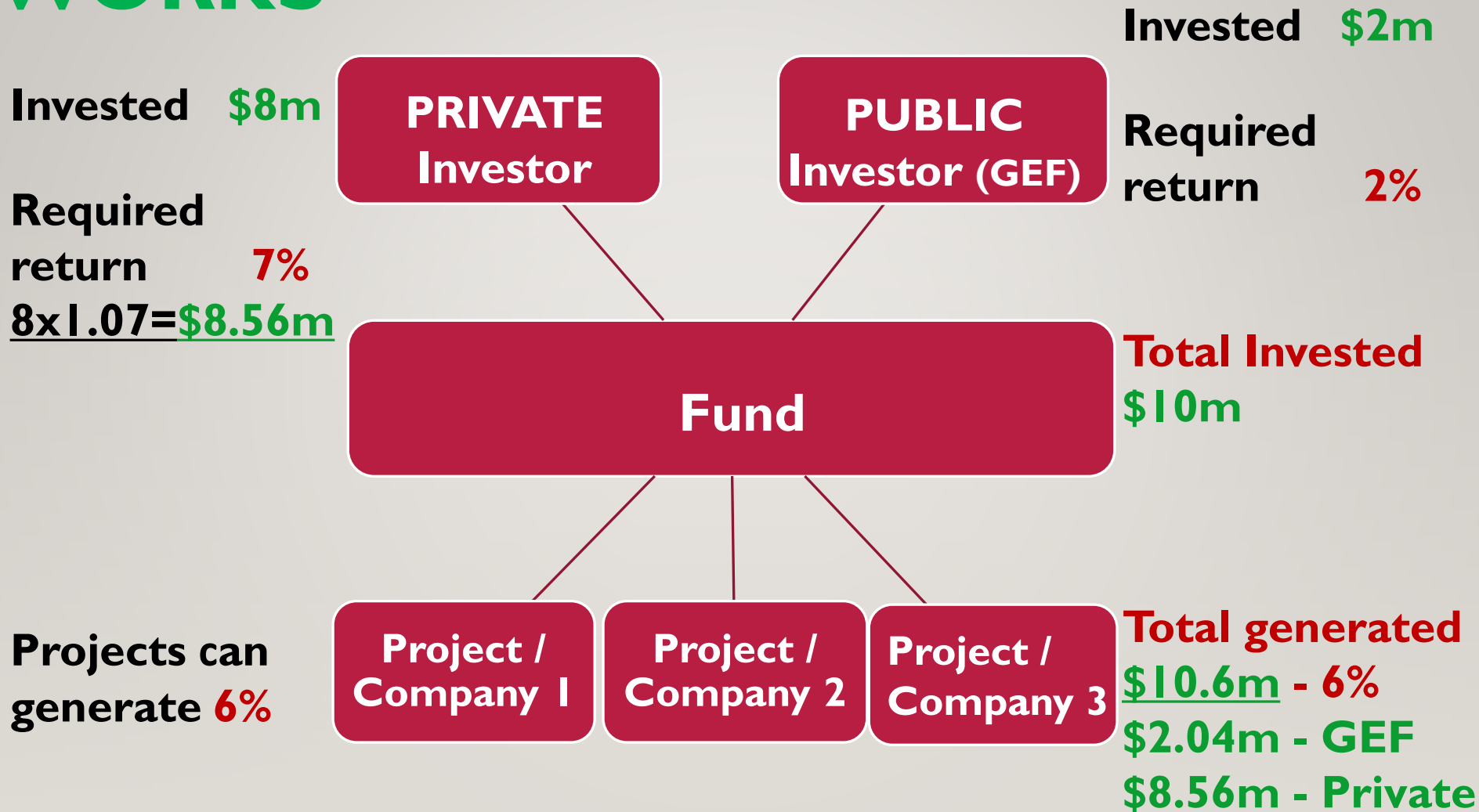
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BLENDED FINANCE – HOW IT WORKS



To simplify calculations, we assume projects last only 1 year

BLENDED FINANCE – HOW IT WORKS



To simplify calculations, we assume projects last only 1 year

EQUITY FINANCING

Equity - ownership in the business


Common shares (junior equity) vs Preferred shares

- Junior shares are subordinated to preferred shares
- Liquidation: preferred stockholders paid first
- Dividends: different/greater for preferred shares

Public institutions often invest in **junior equity** → absorbs risks of first losses (but perhaps also seeks risk-adjusted returns);

Private investors invest in preferred shares (senior shares)

Private Investors, DFIs, IFIs	Senior/Preferred Shares, Senior Debt
Public Donors, GEF	Junior Shares, Grants



EQUITY IN GEF PROJECTS

Objective: Supporting small-scale clean energy projects to reduce CO₂

Input:

- GEF invested \$4.5m in junior equity of Africa Renewable Energy Fund (AREF) with capped return of 4%
- African Development Bank (AfDB) and other Donors provided \$25m
- Co-financing of at least \$150m

Process and Output:

- AfDB manages AREF
- AREF invests in clean energy projects
- GEF capped return enables returns to other investors to increase by 2-3%
- Number of projects to be developed (currently 18 at project initiation)

Impact: reduction of 3.8 million tons CO₂ during the project life (10 years)


DEBT FINANCING

Notes, bonds, loans, debentures, certificates, mortgages, leases & other agreements

- **Loan:** \$ from a bank to a company, with interest payment, over specific time
 - collateral to guarantee repayment (if difficult → equity preferred)
- **Bond:** \$ from the public market to a company
 - trade on public market and involve larger amounts (typically min \$100m)

Seniority

- **Senior debt:** greater security (lower risk) & lower interest payment
- **Debt is senior to Equity** - creditors are paid before shareholders

Private Investors	Senior Debt (Senior Notes, Loans)	
Public Donors, GEF	Subordinated Debt (Subordinated Notes, Loans)	

DEBT IN GEF PROJECTS

Objective: Improving freight transport efficiency to reduce GHG emissions in the Black Sea Region

Input:

- GEF provided \$16.4m in subordinated debt (junior funding)
- Co-financing: \$155m during, and \$250m after project completion

Process and Output:

- EBRD manages The Green Logistics Program (ongoing)
- GEF investment in subordinated debt reduces the cost of project financing (reduces required interest rates) → enabling EBRD investment

Impact: estimated GHG reduction by 9.1 million tons CO₂e

GUARANTEES

Reduce the probability of default

Support the flow of private investments - in projects where investors and lenders are seeking to mitigate risk

- **Credit guarantee – covers non payment by private borrowers.** Full or partial guarantee. Partial guarantee – up to a predetermined amount
- **Performance guarantee** - agreement between a client and a contractor for the contractor to perform all of their obligations under the contract



GUARANTEES IN GEF PROJECTS

Objective: Supporting land restoration in Latin America

Input:

- GEF invested \$15m in guarantees and subordinated loans
- Co-financing \$120m by Inter-American Development Bank and others

Process and Output:

- Private sector interested in restoration of degraded lands. These investments have long payback periods & high financial risk →
- GEF reduces risk → enables private investments + public investment (IADB)
- Activities: landscape regeneration; intercropping; shade-grown systems for coffee and cocoa; timber and non-timber product; improving soil, water and temperature regulation by improving agric. land management

Impact: restoration min 45,000 ha, emissions reductions 4.5m tCO₂e

Example of Blended Capital Structure

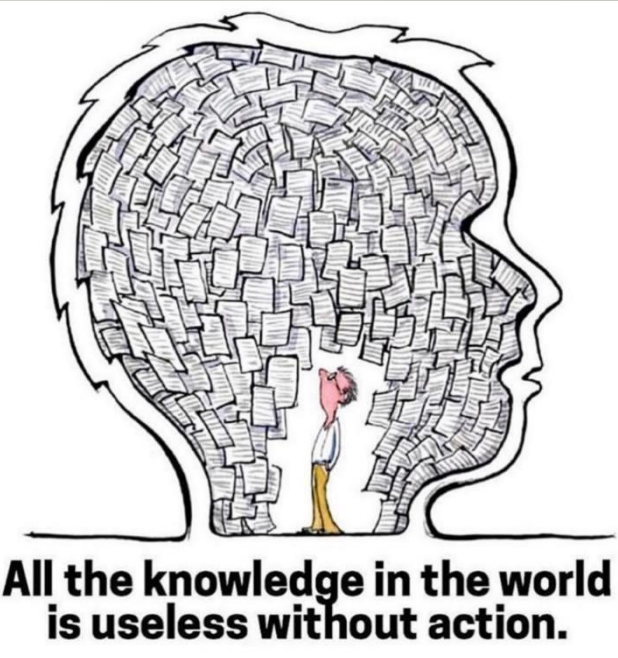
Source of Capital:	Structure No. 1:	Structure No. 2:
Private Investors	Debt (Notes)	Senior Debt (Senior Notes, Loans)
DFIs, IFIs	Senior Shares	Subordinated Debt (Subordinated Notes, Loans)
DFIs, IFIs	Mezzanine Shares (Hybrid of Debt & Equity)	Senior Shares
Public Donors	Junior Shares	Junior Shares
	Guarantee	Grant

BARRIERS FOR PRIVATE CAPITAL

- High search costs - attractive risk returns, sufficient and predictable cash flows, bigger projects
- Lack of track record of projects and developers
- Monitoring of conservation impact
- Scalability/replicability for future projects



SO WHAT'S NOW?



- ✓ **New types of collaboration** btw investors, NGOs /project developers & public entities
- ✓ **Blending** of non-concessionary and concessionary capital
- ✓ **Addressing the barriers within the GEF framework:**
 - How do we develop socially beneficial projects which attract private finance?
 - How do we make the project sustainable long term (after the funding is over)?
 - How do we prioritize our work program to attract more capital
- ✓ **GEF-led Green Finance Community of Practice** – site coming soon

A close-up photograph of a large, irregular hole in a weathered tree trunk. The wood is aged, with visible grain and some dark, charred areas. Through the hole, a bright green forest is visible, with the trees reflected in a calm body of water. The word "CASES" is superimposed in white, bold, sans-serif capital letters across the center of the image.

CASES

CASE I: FORESTRY FUND

Investors (GEF and others) → Forestry Fund → Forestry projects/businesses

- (1) Forestry companies need capital. But private sector investors reluctant to invest due to: long payback periods, lack of track record and uncertainty over product prices.
- (2) The Fund will provide long-term **(debt / equity)** funding to 5-6 existing projects to scale them up, so they can further attract **(debt / equity)** financing from financial institutions
- (3) The GEF has taken a **(lower return & higher risk / higher return & lower risk)** position in the fund, which helps lower risks for private sector investors
- (4) The interests of private sector **(debt / equity)** investors are closely aligned with those of the other shareholders: they want to add value by ensuring effective governance and high environmental & social standards of funded companies.



CASE I: FORESTRY FUND (I/4)

(1) Forestry companies need capital. But private sector investors reluctant to invest due to: long payback periods, lack of track record and uncertainty over product prices.



CASE 1: FORESTRY FUND (2/4)

(2) GEF helps establish the Forestry Fund, which will provide long-term **(debt / equity)** funding to 5-6 existing projects to scale them up, so they can further attract **(debt / equity)** financing from financial institutions.



CASE I: FORESTRY FUND (3/4)

(3) The GEF has taken a **(lower return & higher risk / higher return & lower risk)** position in the fund, which attracts private sector investors.

CASE I: FORESTRY FUND (4/4)

(4) The interests of private sector **(debt / equity)** investors are closely aligned with those of the other shareholders: they want to add value by ensuring effective governance and high environmental & social standards of funded companies.



CASE I: FORESTRY FUND

ANSWERS

Investors (GEF and others) → Forestry Fund → Forestry companies

- (1) Forestry companies need capital. But private sector investors reluctant to invest due to: long payback periods, lack of track record and uncertainty over product prices.
- (2) The Fund will provide long-term **equity** funding to 5-6 existing projects to scale them up, so they can further attract **debt** financing from financial institutions
- (3) The GEF has taken a **lower return/higher risk** position in the fund, which helps lower risks for private sector investors
- (4) The interests of private sector **equity** investors are closely aligned with those of the other shareholders: they want to add value by ensuring effective governance and high environmental & social standards of funded companies.



CASE 2: FISHERIES FUND

(1) **Fund for sustainable small-scale fisheries** will be one of the very few financial institutions providing long term financing in community fisheries.

(2) Fund Will provide long-term **(debt / equity / debt and equity)** investments to promising enterprises operating in the sustainable wild-caught seafood and mariculture sectors.

Capital to be used for the acquisition of fixed assets by borrowers.

(3) GEF invests in **(stocks / loans)** of 5-7 years and expects to earn 10-15% return.



CASE 2: FISHERIES FUND (1/3)

(1) Fund for sustainable small-scale fisheries will be one of the very few financial institutions providing long term financing in community fisheries.

CASE 2: FISHERIES FUND (2/3)

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Capital used for the acquisition of fixed assets by borrowers.



CASE 2: FISHERIES FUND (3/3)

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CASE 2: FISHERIES FUND

ANSWERS

(1) **Fund for sustainable small-scale fisheries** will be one of the very few financial institutions providing long term financing in community fisheries.

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Capital to be used for the acquisition of fixed assets.

(3) GEF invests in **loans** of 5-7 years and expects to earn 10-15% return.



CASE 3: ENERGY EFFICIENCY PROGRAM

(1) Energy Service Companies (ESCOs) - private enterprises that implement improvements to reduce energy consumptions. Require lending for equipment and process improvements. However they lack access to **(commercial credit / capital markets)**.

(2) The banks conventionally lend against high levels of **(fixed asset collateral / guarantees from other financial institutions)**. ESCOs often cannot meet these requirements.

(3) The project objective is to develop energy efficiency industry, through **(risk sharing / co-investing)** with commercial lenders.

(4) GEF funds will be used to create a **(performance risk guarantee / credit enhancement guarantee)** program. The program includes creation of the Risk Facility.

(5) The Risk Facility will be used to share the risk with commercial banks. Its funds would be paid out to participating banks in the event of a loss or default - partial coverage of banks risk exposure. Thereby ESCOs can obtain a bank debt with a **(lower / higher)** cost and a **(shorter / longer)** term.

Banks	
Risk Facility	Banks
Risk Facility	



Final 10% Loss: Banks

Next 80% Loss: Shared equally between Risk Facility and banks

First 10% Loss: Risk Facility

CASE 3: ENERGY EFFICIENCY PROGRAM (1/5)

(1) Energy Service Companies (ESCOs) - private enterprises that implement improvements to reduce energy consumptions. Require lending for equipment and process improvements. However they lack access to **(commercial credit / capital markets)**.



CASE 3: ENERGY EFFICIENCY PROGRAM (2/5)

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CASE 3: ENERGY EFFICIENCY PROGRAM (3/5)

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CASE 3: ENERGY EFFICIENCY PROGRAM (4/5)

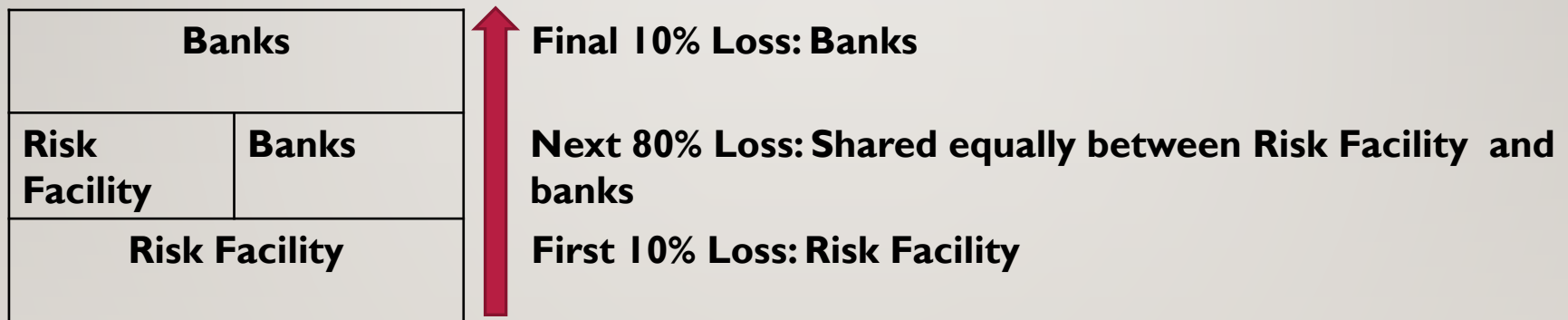
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CASE 3: ENERGY EFFICIENCY PROGRAM (5/5)

(5) The Risk Facility will be used to share the risk with commercial banks. Its funds would be paid out to participating banks in the event of a loss or default - partial coverage of banks risk exposure.



Thereby ESCOs can obtain a bank debt with a **(lower / higher)** cost and a **(shorter / longer)** term.

CASE 3: ENERGY EFFICIENCY

ANSWERS

- (1) Energy Service Companies (ESCOs) - private enterprises that implement improvements to reduce energy consumptions. Require lending for equipment and process improvements. However they lack access to **commercial credit**.
- (2) The banks conventionally lend against high levels of **fixed asset collateral**. ESCOs often cannot meet these requirements.
- (3) The project objective is to develop energy efficiency industry, through **risk sharing** with commercial lenders.
- (4) GEF funds will be used to create a **credit enhancement guarantee** program. The program includes creation of the Risk Facility.
- (5) The Risk Facility will be used to share the risk with commercial banks. Its funds would be paid out to participating banks in the event of a loss or default - partial coverage of banks risk exposure. Thereby ESCOs can obtain a bank debt with a **lower** cost and a **longer** term.





Thank you!

QUESTIONS?

Brochure: goo.gl/VzoRVF

GEF COMPARATIVE ADVANTAGE IN GREEN FINANCE SPACE:

- Global reach, especially through Agencies and partners
- Cutting edge knowledge on environmental practices
- Brand recognition
- Cheap source of public funding
- Success with previous private sector engagements:
 - Non-grant instrument
 - Earth Fund
 - Africa Renewable Energy Fund
 - Challenge Fund, etc.

REMOVING GREEN FINANCE BARRIERS

Supply side of capital (private sector, financial institutions)

- **Need for strengthening of regulations** (new security regulations, carbon pricing regulations) **and innovative green finance mechanisms** (such as green bonds and sustainable equity funds)

Demand side of capital (project developers)

- **Need for developing Bankable projects** – projects that would generate revenues and thus attract private sector financing
 - thus effectively addressing the lack of investable projects, which often stems from the lack of capacity of environmental professionals and project developers in navigating financial system.
 - need to **build financial capacity of environmental professionals**



PARTNERSHIP EXAMPLE

The Coalition for Private Investment in Conservation (CPIC) is a group of leading civil society organizations, **private and public sector financial institutions** and academia working to deliver a material increase in private, return-seeking investment in conservation.

Initial priority investment sectors:

- Coastal Resilience
- Forest Landscape Conservation and Restoration
- Green Infrastructure for Watershed Management
- Sustainable Agriculture Intensification
- Sustainable Coastal Fisheries

To increase deal flow in these sectors, the CPIC is developing replicable, scalable investment “blueprints”.

CPIC serves as a hub, connecting investors and financial institutions with in-country partners, who can help develop and execute investable deals that eventually produce an environmental and financial return.

The Steering Committee currently consists of Cornell University, **Credit Suisse**, IUCN and The Nature Conservancy **NatureVest** (the four founding organizations).



Fig. 1: Top Hedge Fund Managers by Assets under Management

Manager	Location	Year Established	Assets under Management
Bridgewater Associates	US	1975	\$149.9bn as at 30 June 2016
AQR Capital Management	US	1998	\$84.1bn as at 31 March 2016
Man Group	UK	1983	\$52.9bn as at 30 June 2016
Och-Ziff Capital Management	US	1994	\$42.4bn as at 01 July 2016
Standard Life Investments	UK	2006	\$37.6bn as at 30 June 2016
Winton Capital Management Ltd.	UK	1997	\$34.9bn as at 30 June 2016
Renaissance Technologies	US	1982	\$34.7bn as at 30 June 2016
Millennium Management	US	1989	\$33.3bn as at 30 June 2016
Baupost Group	US	1982	\$29.2bn as at 30 June 2016
Viking Global Investors	US	1999	\$29.0bn as at 29 February 2016
Elliott Management	US	1977	\$28.8bn as at 30 June 2016
BlackRock Alternative Investors	US	2005	\$28.6bn as at 30 June 2016
Two Sigma Investments	US	2001	\$27.6bn as at 31 June 2016
Adage Capital Management	US	2001	\$27.5bn as at 31 December 2015
D.E. Shaw & Co.	US	1988	\$26.0bn as at 1 July 2016
Marshall Wace	UK	1997	\$26.0bn as at 31 August 2016
Davidson Kempner Capital Management	US	1990	\$25.4bn as at 31 March 2016
Citadel Advisors	US	1990	\$24.0bn as at 30 June 2016
York Capital Management	US	1991	\$22.0bn as at 31 December 2015
Bracebridge Capital	US	1994	\$21.8bn as at 31 December 2015

Source: Preqin Hedge Fund Online

Fig. 2: Top Fund of Hedge Funds Managers by Assets under Management

Manager	Location	Year Established	Assets under Management
Blackstone Alternative Asset Management	US	1990	\$69.0bn as at 30 June 2016
UBS Hedge Fund Solutions	US	2000	\$34.6bn as at 30 June 2016
Goldman Sachs Asset Management	US	1997	\$28.9bn as at 31 December 2015
HSBC Alternative Investments	UK	1994	\$26.8bn as at 30 June 2016
EnTrustPermal	US	1971	\$26.7bn as at 30 June 2016
Grosvenor Capital Management	US	1971	\$25.1bn as at 31 March 2016
Morgan Stanley Alternative Investment Partners	US	2000	\$21.6bn as at 30 June 2016
BlackRock Alternative Advisors	US	1995	\$20.6bn as at 30 June 2016
J.P. Morgan Alternative Asset Management	US	1995	\$12.5bn as at 30 June 2016
Man FRM	UK	1991	\$11.9bn as at 30 June 2016
SkyBridge Capital	US	2005	\$11.7bn as at 30 June 2016
Mesirow Advanced Strategies	US	1983	\$11.6bn as at 30 June 2016
Rock Creek Group	US	2002	\$11.6bn as at 30 June 2016
Credit Suisse Alternative Funds Solutions	US	1998	\$10.5bn as at 30 June 2016
LGT Capital Partners	Switzerland	1994	\$10.5bn as at 30 June 2016
Aetos Capital	US	2001	\$10.3bn as at 30 June 2016
KKR Prisma	US	2004	\$10.3bn as at 30 June 2016
Aberdeen Asset Management	UK	1998	\$10.2bn as at 30 June 2016
K2 Advisors	US	1994	\$10.1bn as at 30 June 2016
Pacific Alternative Asset Management Company	US	2000	\$10.1bn as at 30 June 2016

Source: Preqin Hedge Fund Online

Apple Inc - Balance Sheet

Note 2 – Financial Instruments

Cash, Cash Equivalents and Marketable Securities

The following table show the Company's cash and available-for-sale securities' adjusted cost, gross unrealized gains, gross unrealized losses and fair value by significant investment category recorded as cash and cash equivalents or short- or long-term marketable securities **as of September 27, 2014 (in millions):**

	2014						
	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash and Cash Equivalents	Short-Term Marketable Securities	Long-Term Marketable Securities
Cash	\$ 10,232	\$ 0	\$ 0	\$ 10,232	\$ 10,232	\$ 0	\$ 0
Level 1:							
Money market funds	1,546	0	0	1,546	1,546	0	0
Mutual funds	2,531	1	(132)	2,400	0	2,400	0
Subtotal	4,077	1	(132)	3,946	1,546	2,400	0
Level 2:							
U.S. Treasury securities	23,140	15	(9)	23,146	12	607	22,527
U.S. agency securities	7,373	3	(11)	7,365	652	157	6,556
Non-U.S. government securities	6,925	69	(69)	6,925	0	204	6,721
Certificates of deposit and time deposits	3,832	0	0	3,832	1,230	1,233	1,369
Commercial paper	475	0	0	475	166	309	0
Corporate securities	85,431	296	(241)	85,486	6	6,298	79,182
Municipal securities	940	8	0	948	0	0	948
Mortgage- and asset-backed securities	12,907	26	(49)	12,884	0	25	12,859
Subtotal	141,023	417	(379)	141,061	2,066	8,833	130,162
Total	\$ 155,332	\$ 418	\$ (511)	\$ 155,239	\$ 13,844	\$ 11,233	\$ 130,162