Forest-Smart Fiscal Reforms for the Extractive Industries

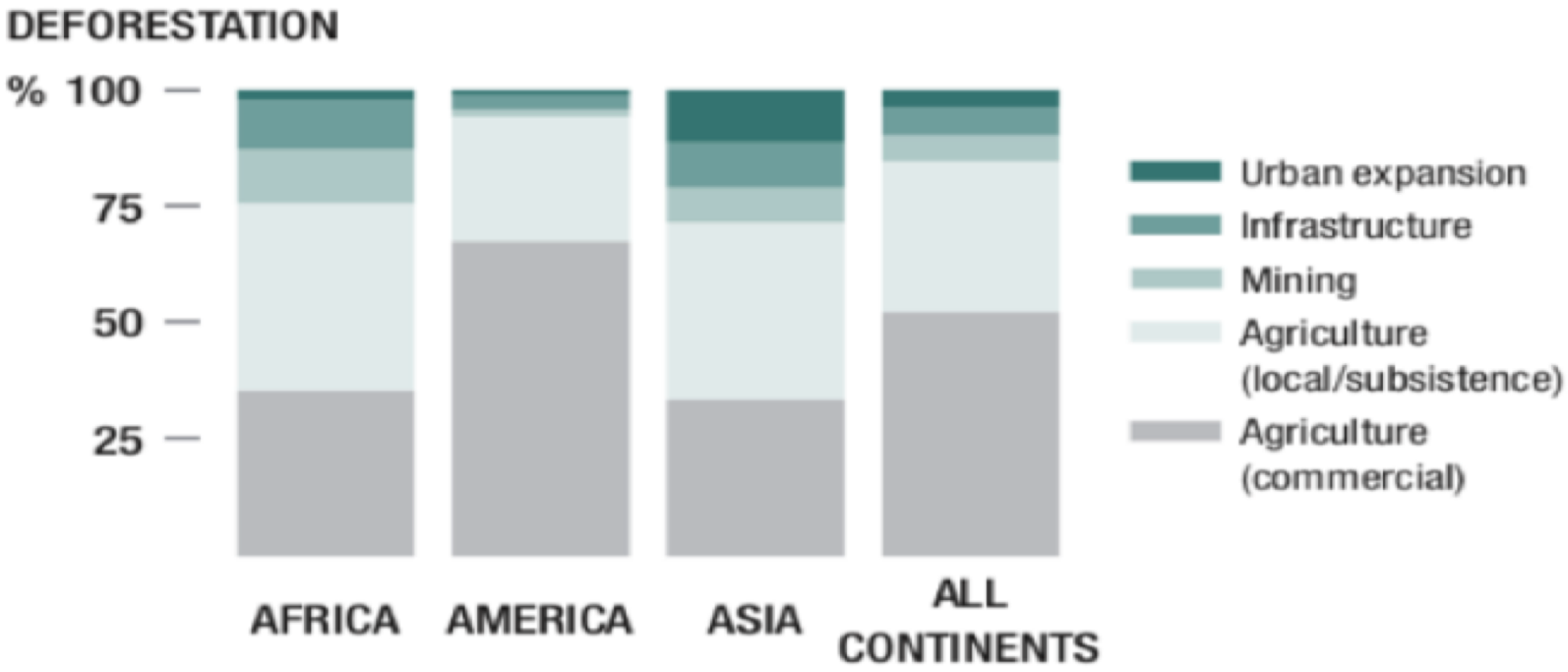
Tuan Minh Le
and
Erin Hayde

Presentation Plan

- The EI sector and impact on deforestation and forest degradation.
- Special features of EI and EI policies: Paradox of Plenty!
- EI value chain: Environmental fiscal regimes, challenges and policy implications.
- Fiscal policies and beyond.

The EI sector and impact on deforestation and forest degradation

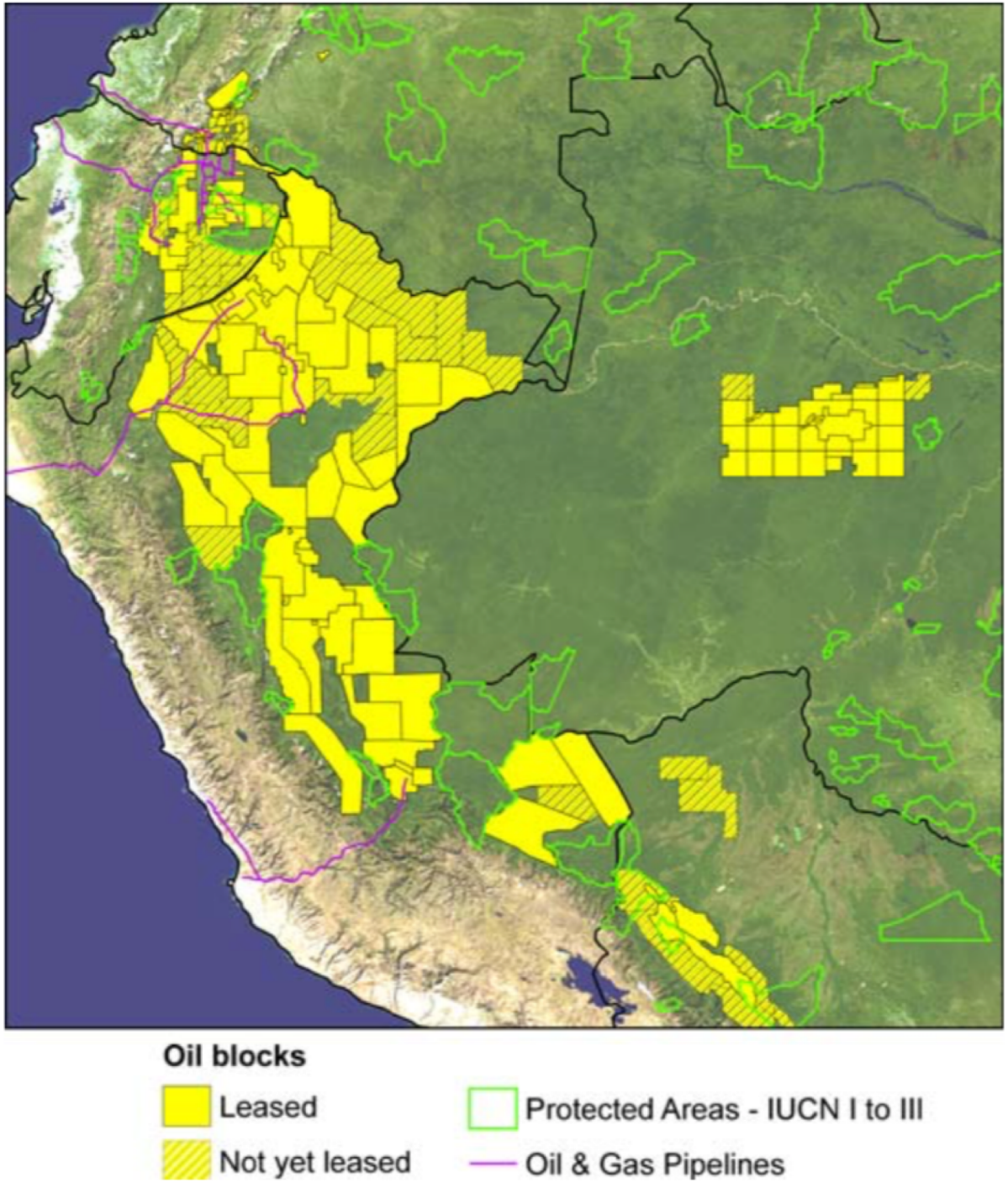
Extractive Industries and Deforestation and Forest Degradation



Principle drivers of forest loss in tropical and subtropical countries, 2000-2010.
Source: McFarland et al., 2015

Location of Extractive Industry Production

Encroachment into forest basins



Oil and gas blocks in the western Amazon. Solid yellow indicates blocks already leased. Hashed yellow indicates proposed blocks. Protected areas are those considered as such according to IUCN Categories I – III.

Source: Finer et al., 2008

Special features of EI and EI policies: Paradox of Plenty!

Extractive Industries: Blessing or Curse?

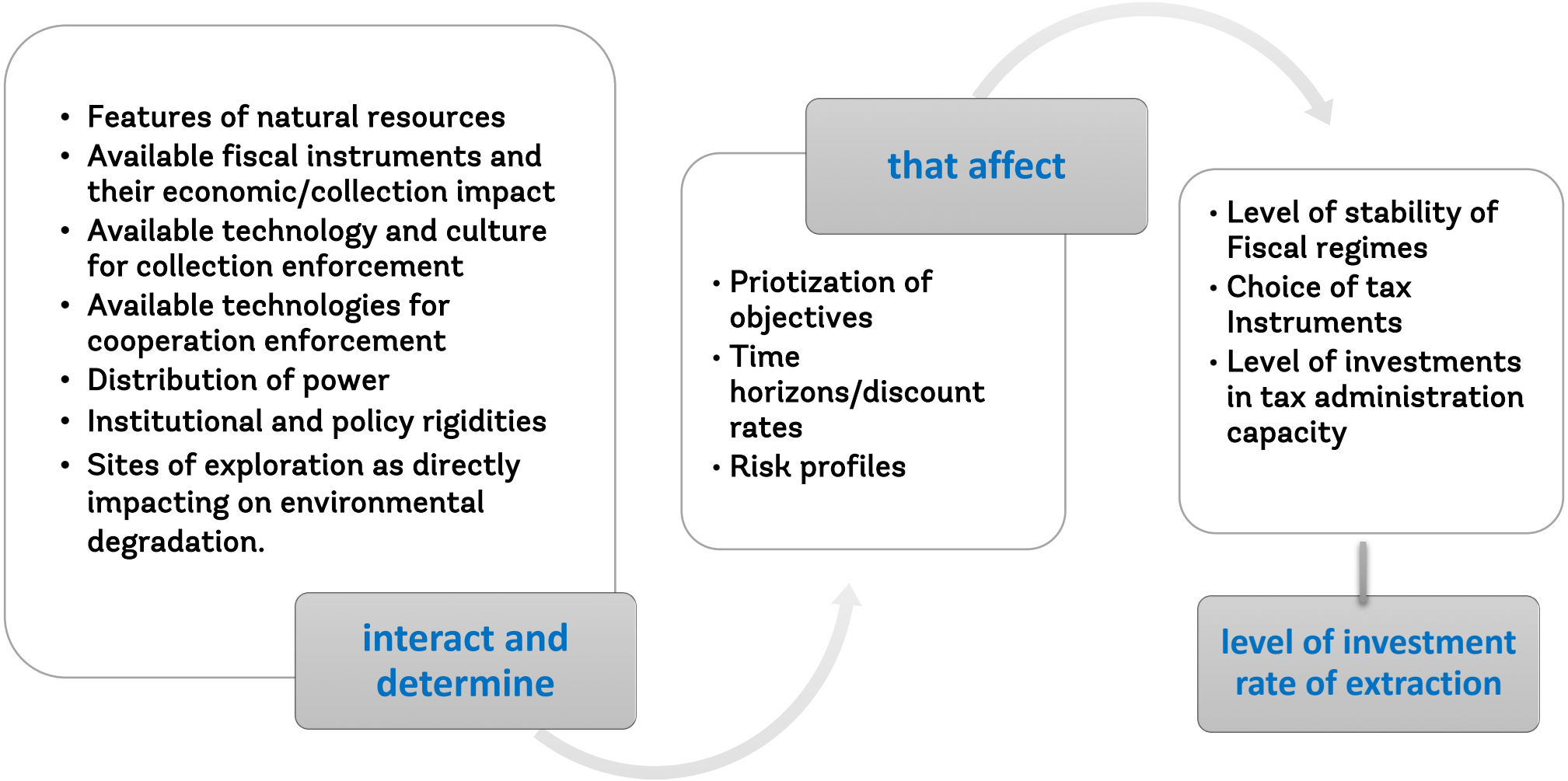
- Extractive industries are key components of many developing countries' economies.
- EI as blessing…When well-managed.
- However, it can be a curse! …With weak institutions, poor legal frameworks, and insufficient local capacity.
  - During the 1970s Dutch Disease or macroeconomic mismanagement was the popular theory behind the resources curse.
  - However, increasingly resource economists focus on governance as central to the problem.

Special Features of EIs Leading to Differentiated Views on Fiscal Regime

GIVE GOOD DEALS TO EI INVESTORS	CAPTURE FAIR SHARE OF REVENUES BY GOVERNMENTS
• Inter-temporal exploitation decision; and ore grades play an important role in exploitation decision. • Uncertainty and unpredictability. • Significant exploration expenditures and associated risks precede the start up stage and mine development is highly capital intensive. Rationales for 'Race to the Bottom' in fiscal incentives?	• As the resources are exhaustible, a user cost associated with their exploitation. • A "Resource Rent" associated with exploitation--optimization rule is: MR = MC + RR. • Cost to economy significant, including: ✓ Environmental degradation: Deforestation, forest degradation, damage to air and waterways. ✓ When mining ceases, no income to deal with mine closure and environmental costs.

NR Charter: The government should carefully consider the whole chain of decisions, taking measure of all environmental, social and economic factors, before making a decision on extraction.

Institutional and political determinants of fiscal design



Minerals tax/fiscal instruments

Profit Based Taxes (Progressivity enhancing)	Production Based Taxes (Regressive)
• CIT. • Profit taxes on dividends. • Royalties based on profit or income. • Withholding taxes on remitted dividends.	• Unit-based and ad valorem royalties. • Sales and excise taxes. • Import duties. • Registration fees.

Core principle: Government to receive a 'fair' share of revenue. But what does it mean 'fair'? How to measure and account for the environment risk?

EI value chain: Environmental fiscal policies, challenges and policy implications

Following the Chain: EI Value Chain

Contracting and Licensing

CHALLENGES

- Companies negotiate favorable terms which include the ability to ignore environmental legislation (E.g., Zambia).
- During contract negotiation and FS, EIAs and other environmental considerations take place.
- But if insufficient weight is given to environmental criteria, any CBA skewed against environmental considerations.

POLICY IMPLICATIONS

- Mining and other EI CBA given sufficient weight to environmental criteria.
- EIA should include both on- (direct) and off-lease (indirect/cumulative) deforestation impacts.
- Contract negotiations should not allow for environmental concessions.
- Fiscal incentives related to deforestation removed.

Pre-operation: Exploration & Discovery

CHALLENGES	POLICY IMPLICATONS
• EI concessions frequently located in the most ecologically diverse forest landscapes (E.g., the Amazon or Congo Basins). • Mining production expanding and intensified into new territories due to price increase; declining oil and gas reserves. • EI concessions encroach or located within ecologically designated sites, including Protected Areas (PAs), National Parks, and other high conservation value (HCV) areas.	• Sufficient budget allocated to line ministries (i.e., Ministry of Environment) for enforcement. • Protected Area and other HCV site boundaries should be enforced, so that encroachment onto ecologically important sites is minimized. • Area-based fees (i.e., property taxes)/royalties used– to reduce overly-large concessions and need for expansion. • Differential land taxes applied to land with higher conservation value. • E.g., land --identified as HCV or ecological important, due to high biodiversity, provision of ecosystem services, or other determination--could be charged a higher land tax rate.

Operation: Extraction, Processing, Infrastructure Development

CHALLENGES	POLICY IMPLICATIONS
• Forests cleared on concession sites to make way for extraction, processing, and infrastructure development. • Mining and EI also creates substantial amounts of waste, which is usually discharged into the forest. • EI waste and its disposal have resulted in contamination of water sources, overflow leading to soil contamination, and other environmental degradation	• Higher tax burdens for EI sector overall ✓ EIs typically under-taxed, relative to manufacturing and other sectors ✓ Increasing the overall tax burden/choice of fiscal instruments may cause firms to foregone low-grade sites. ✓ If low-grade sites coincide with ecologically important forests, this would reduce harmful environmental impacts (e.g., biodiversity loss). • Higher tax burdens within ecologically important sites (Protected Areas, NPs, National Reserves, HCV sites). • One way to offer fiscal incentives for SFM is through the 'feebate' (or taxation-rebate).

Type of tax	Extraction profile	Grade selection profile	Cutoff grade	Cost of administration	Revenue variability
Per-unit royalty on output (nominal)	Present to future	Present to future	Increases	Low	Low
Ad valorem royalty	Function of discounted price Path	None	Increases	Intermediate	Intermediate
Variable royalty	Function of rate of growth of prices and tax rates	Function of rate of growth of prices and tax rates	Increases	Intermediate	Intermediate
Profits tax	None	None	Unchanged	High	High
Profits tax with cost depletion	Future to present	Future to present	Decreases	High	High
Profits tax with percentage depletion	Function of discounted price path	None	Decreases	High	High
Property tax	Future to present	Future to present	Increases	Intermediate	Low

Source: Shukla and Le 1999.

Post-Operation: Closure, Land Reclamation, and Remaining Infrastructure

CHALLENGES

- EI production has environmental impacts after operation largely due to the quality of land and type of infrastructure remaining after site closure. Post-mining forest recovery is often slow and "qualitatively inferior compare to regeneration following other land uses".
- Land degradation from EI has spillover effects by reducing the supply of arable land.
- Remaining infrastructure from EI concessions as biggest indirect causes of deforestation. Concession infrastructure encourages economic activity expansion, including logging, hunting and settlement, into previously isolated forests.

POLICY IMPLICATIONS

- Effective land reclamation is needed to ensure that a former mining site is sustainably productive, ecologically healthy, and economically attractive.

  ✓ - Incentives for afforestation, agroforestry
  ✓ - Feebate schemes

- Remaining infrastructure
  Control system – fees for road use?

Revenue Management

CHALLENGES	POLICY IMPLICATIONS
• Suboptimal revenues which could have been used for environmental or development projects.	• Tax revenues are used appropriately. ✓ provide a secure investment environment through the provision of public services, including health, education, and infrastructure ✓ Revenues saved and budgeted for land reclamation, forestation etc. ✓ Diversification of the economy.

Fiscal policy in a ‘Smart Mix’

- Fiscal instruments of primary importance in balancing the immediate needs for growth and minimizing damaging impact on environment.
- Forest smart fiscal reforms require broadening/diversion in view of effective/efficient tax regimes.
- Fiscal instruments only effective if put in a ‘package’: Combined with regulatory, environmental protection policies, wide stakeholder participation.
  - Transparency beyond EITI.
  - Environmental weights in cost-benefit analyses before licensing.
  - Strong environmental standards.
  - Monitoring and chain of custody (CoC) systems/enforcement capacities.
- Remaining infrastructure/roads control systems:
  - In Protected Areas or other ecologically important sites, “the road access should be destroyed or, at the very least, a control system should remain in place.”
- Last but not least, strengthen government capacities in enforcing fiscal regimes and environmental legislation.