

Creating a Seller

How New Zealand can effectively help reduce greenhouse gas emissions in developing countries

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Sir Nicholas Stern

“Climate change presents a unique challenge for economics: It is the greatest and widest-ranging market failure ever seen.”



Global 'prisoners' dilemma

All prefer to all cooperate

All want to free ride

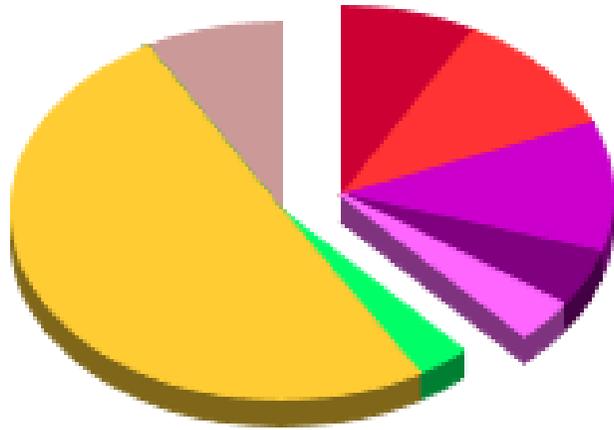


What's NZ's role?

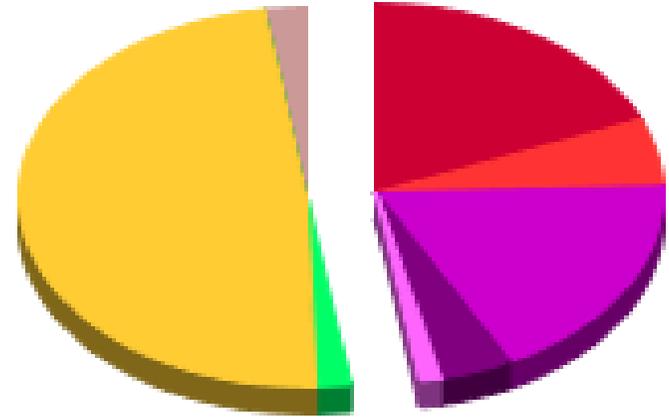
- We want to globally succeed
- We are 'rich'
- Clean-green image
- Innovators
- No international agenda
- Not corrupt
- Similar size and emissions profile to many developing countries



New Zealand vs. Colombia



Colombia



New Zealand

Yellow = agriculture



What is NZ's role?

1. Innovate at home
2. Disseminate ideas
3. Help finance mitigation abroad



What is NZ's role?

1. Innovate at home

- Agricultural Greenhouse Gas Research Center
- Smart farmers
- Pure Advantage / Hikurangi
- Carbonscape – winner of Clinton Global Initiative prize
- Emissions trading system

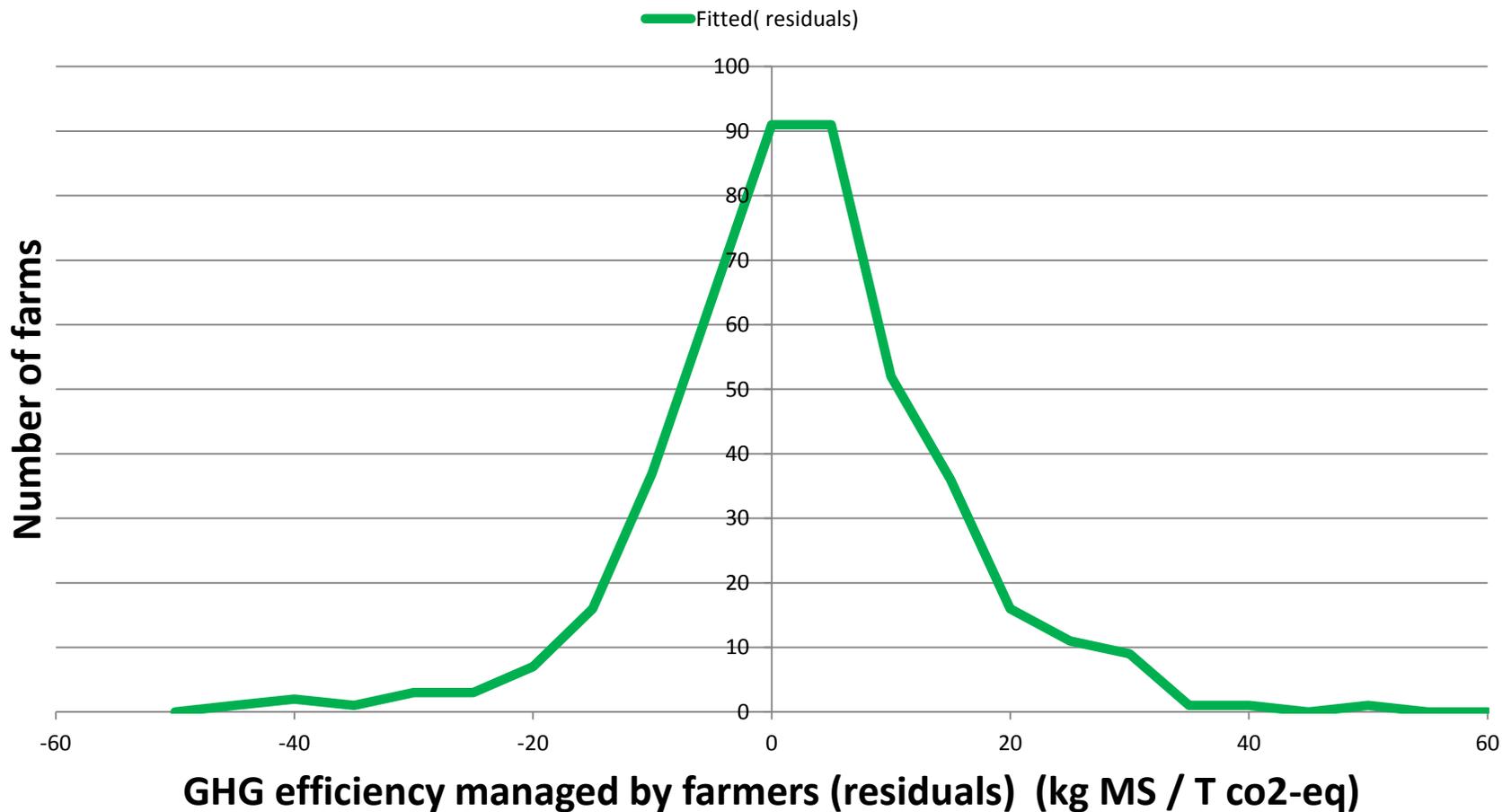


PURE
ADVANTAGE

GREEN GROWTH
FOR GREATER WEALTH

1. Innovate at home

- Emissions trading system
- Address agricultural emissions



If NZ wants to provide leadership on Ag emissions we must show that we can mitigate while avoiding adverse consequences

- Food security
- Farmers and rural communities
- Agricultural sector – NZ economy
- Tax payers
- Leakage



<http://agriculturalemissions.blogspot.co.nz/>



What is NZ's role?

2. Disseminate ideas

- Global Research Alliance
- International commercial relationships – e.g. geothermal; Fonterra in Chile
- Advice to foreign policy makers – e.g. Chile, Thailand, Colombia

GLOBAL
RESEARCH
ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES



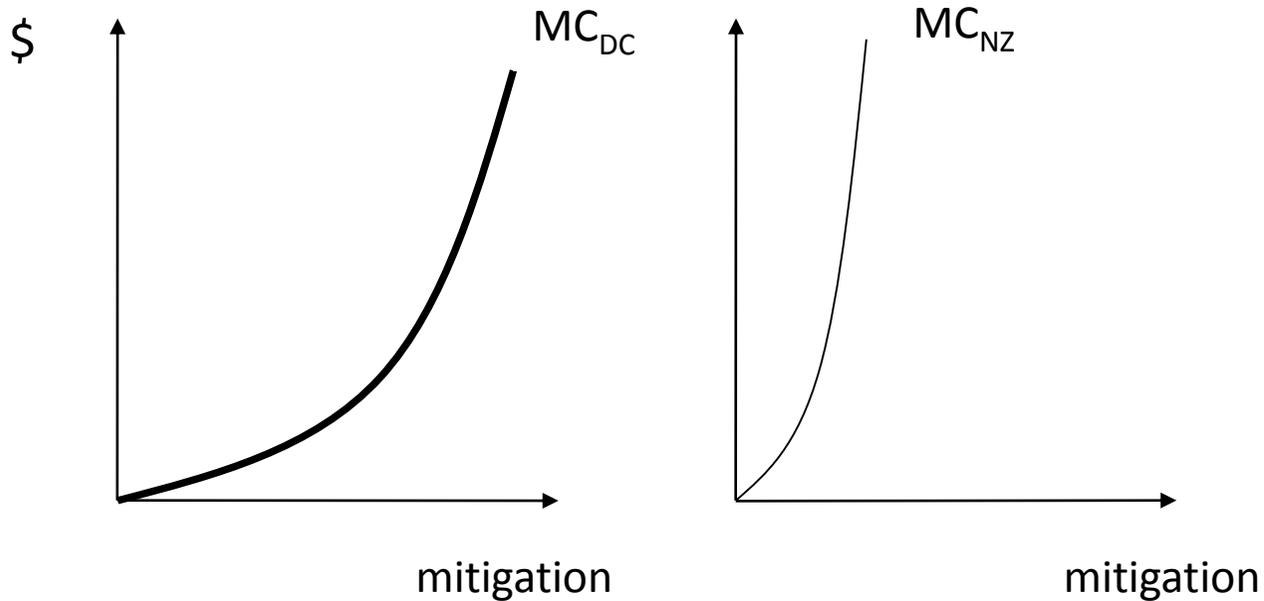
What is NZ's role?

3. Help finance mitigation abroad

Why?

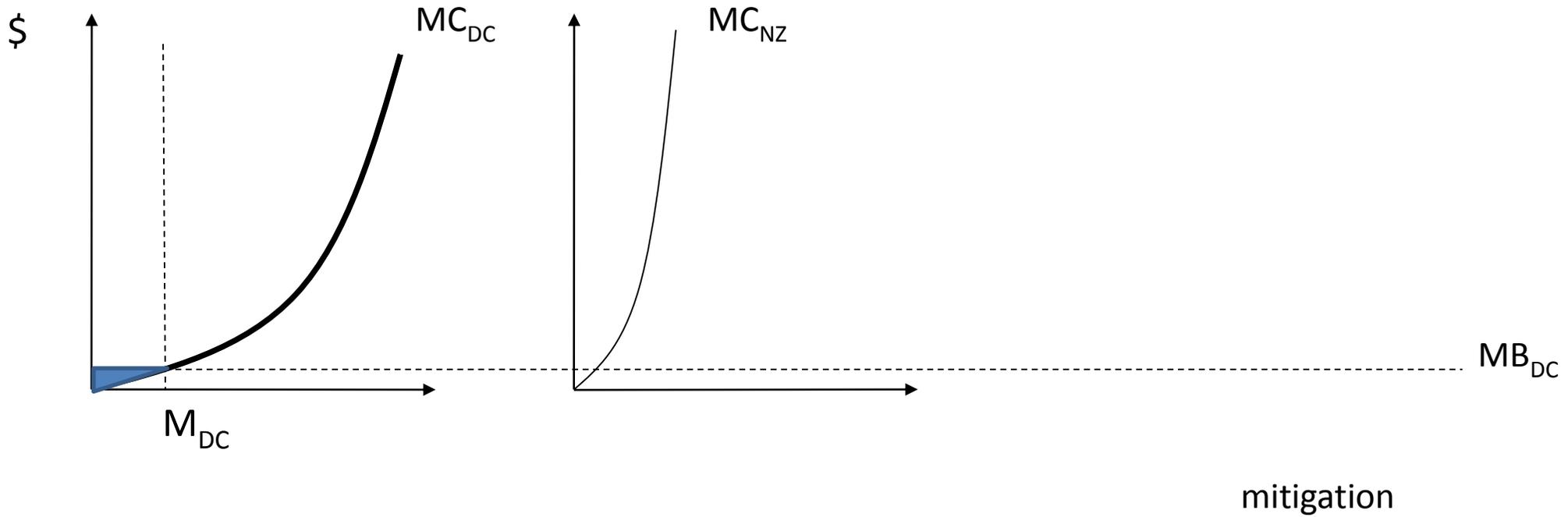


Gains from cooperation

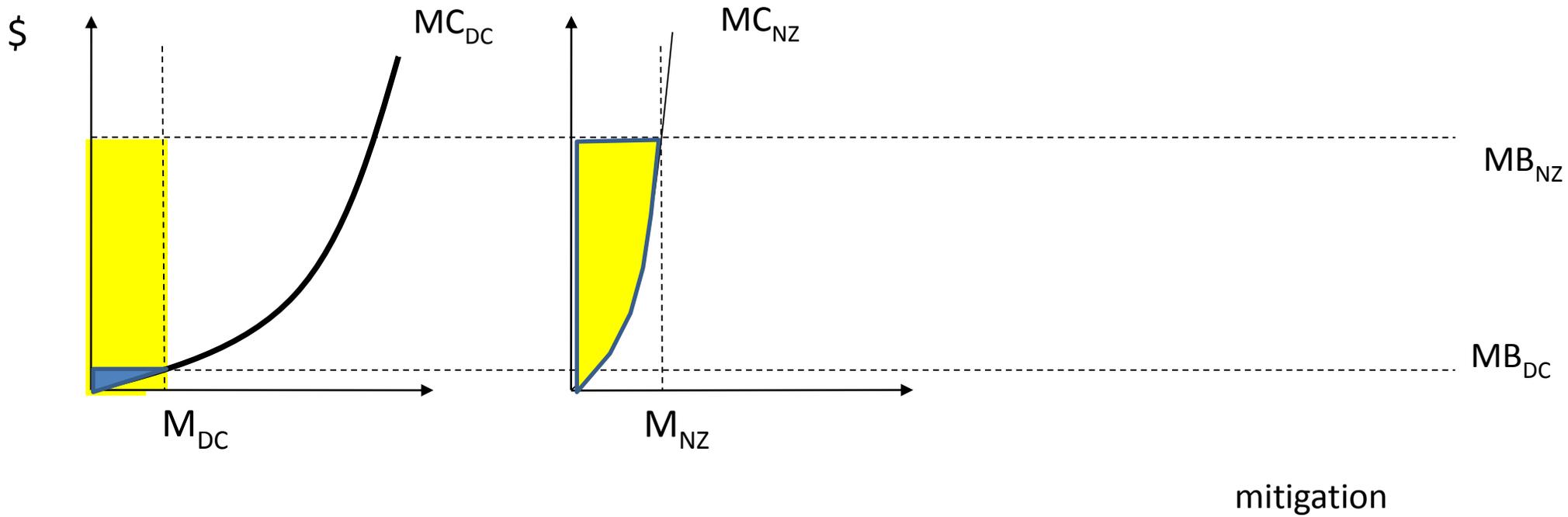


DC = developing country

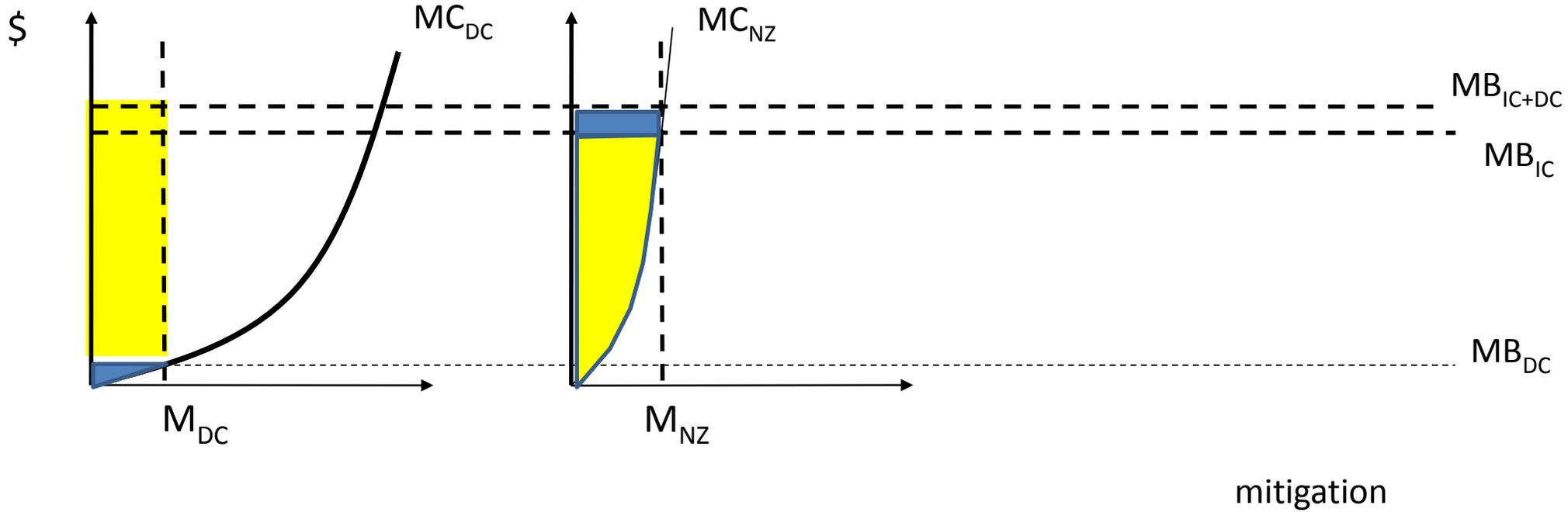
Gains from cooperation



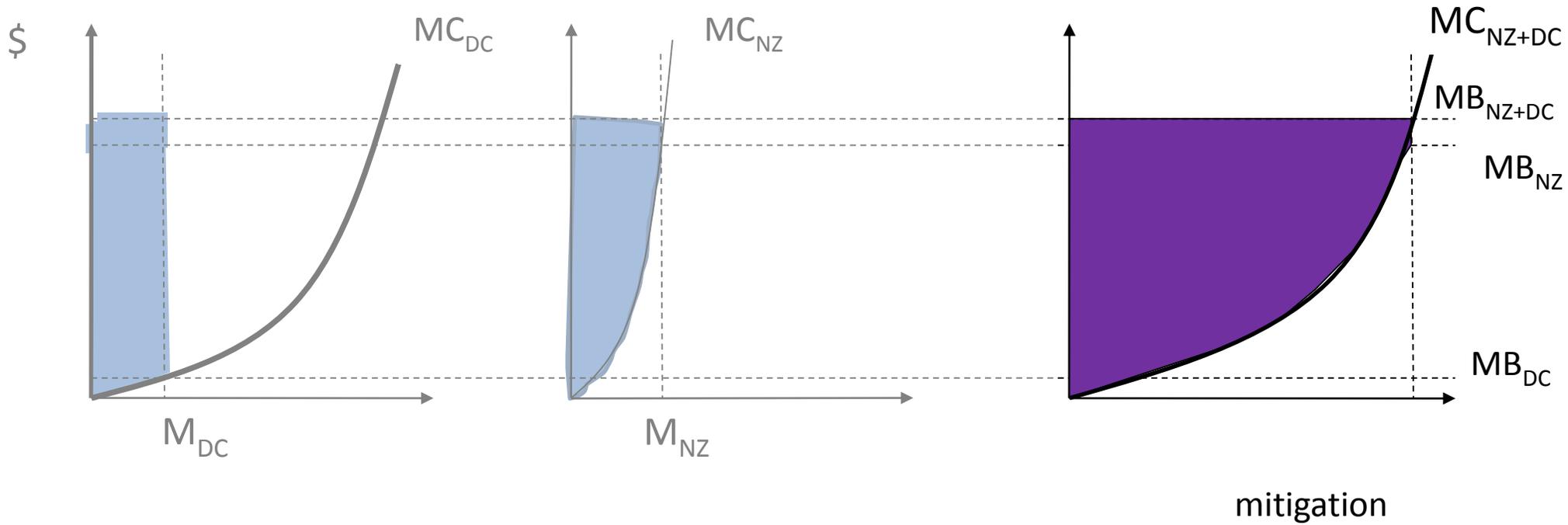
Gains from cooperation



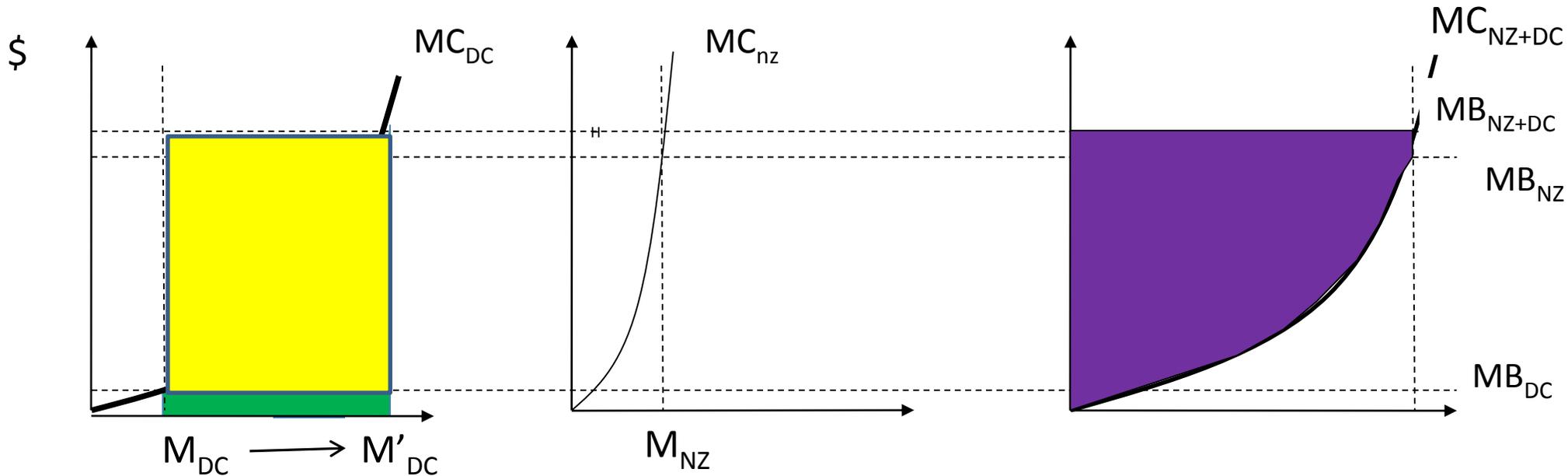
Gains from cooperation



Gains from cooperation



Gains from cooperation



Most gains to New Zealand

Most cost to developing country

Therefore need to transfer resources

How?

Kyoto –Clean Development Mechanism (CDM)

- Firms in developing countries make clean investments and are paid for carbon reductions relative to the alternative

Why not use CDM?

- transaction costs
- domestic 'leakage'
- no contribution by developing countries
- 'adverse selection'



Adverse Selection – paying for stuff that would have happened anyway

Considerable evidence that adverse selection is a major problem in the CDM

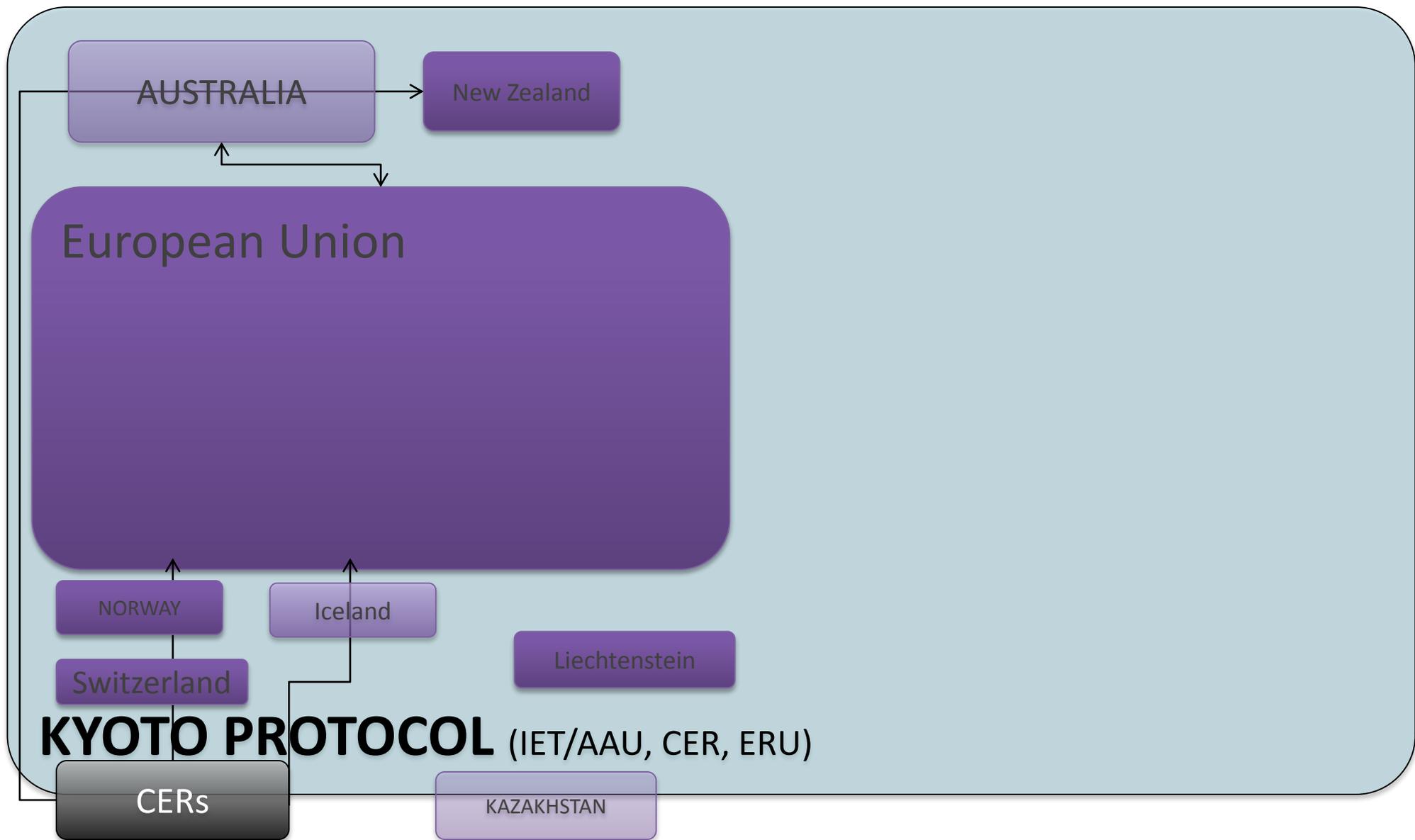
- Admissions by project developers
- Manipulation of Internal Rate of Return
- Non-credible claims about barriers
- Implausibility of aggregate claims
- Simulation / econometric models
- Technology diffusion models



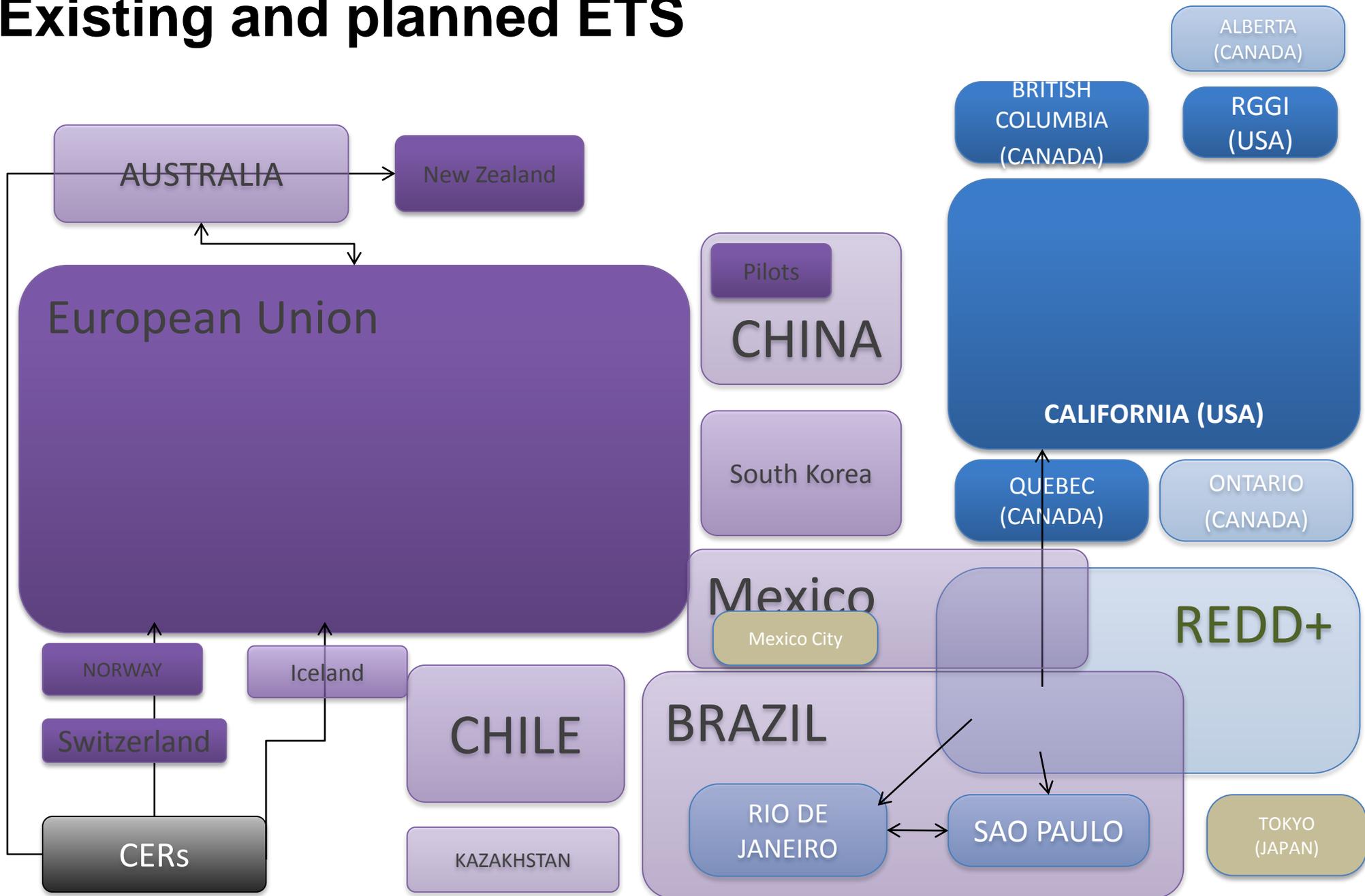


But we are now out of Kyoto – can
we do better?

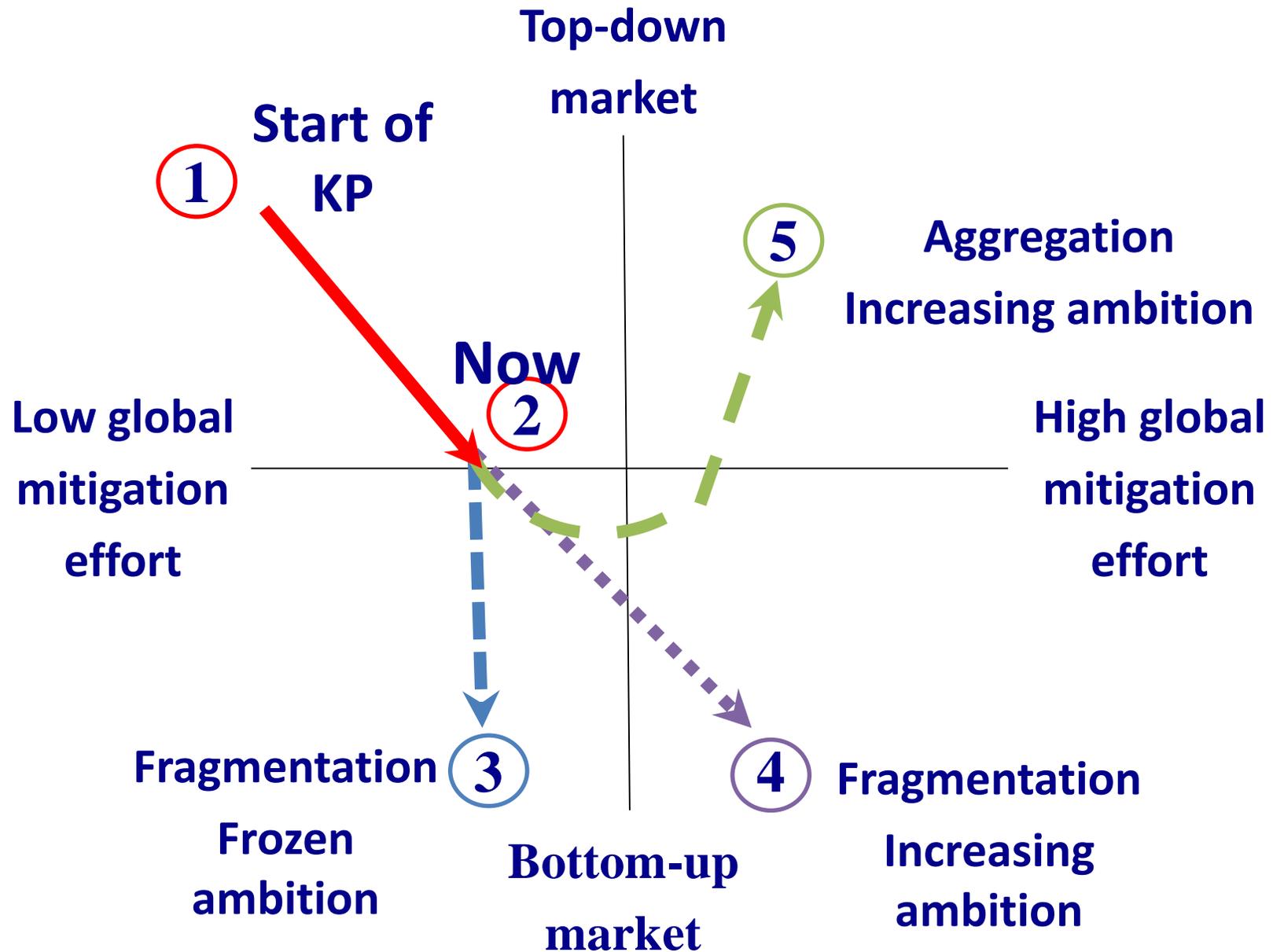
Existing and planned ETS



Existing and planned ETS

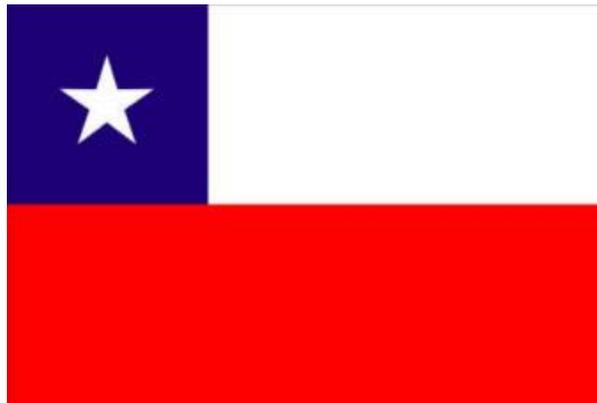
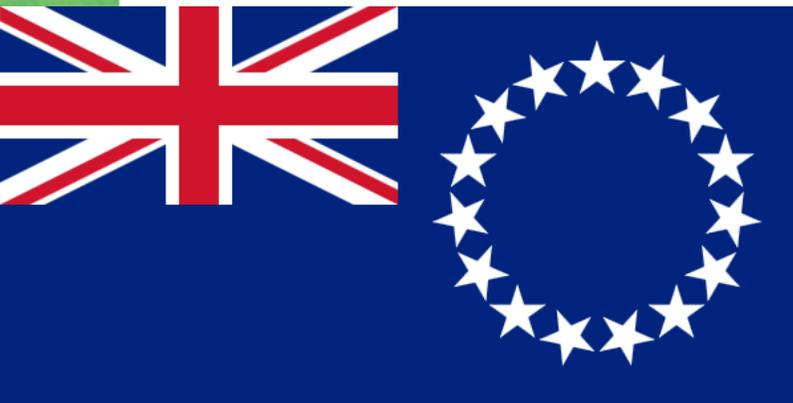
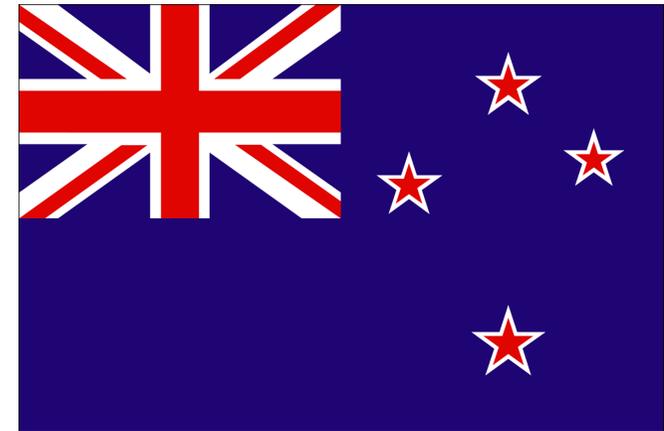


International market scenarios



Solution must be robust to different possible scenarios

- for New Zealand
- for the developing countries we work with

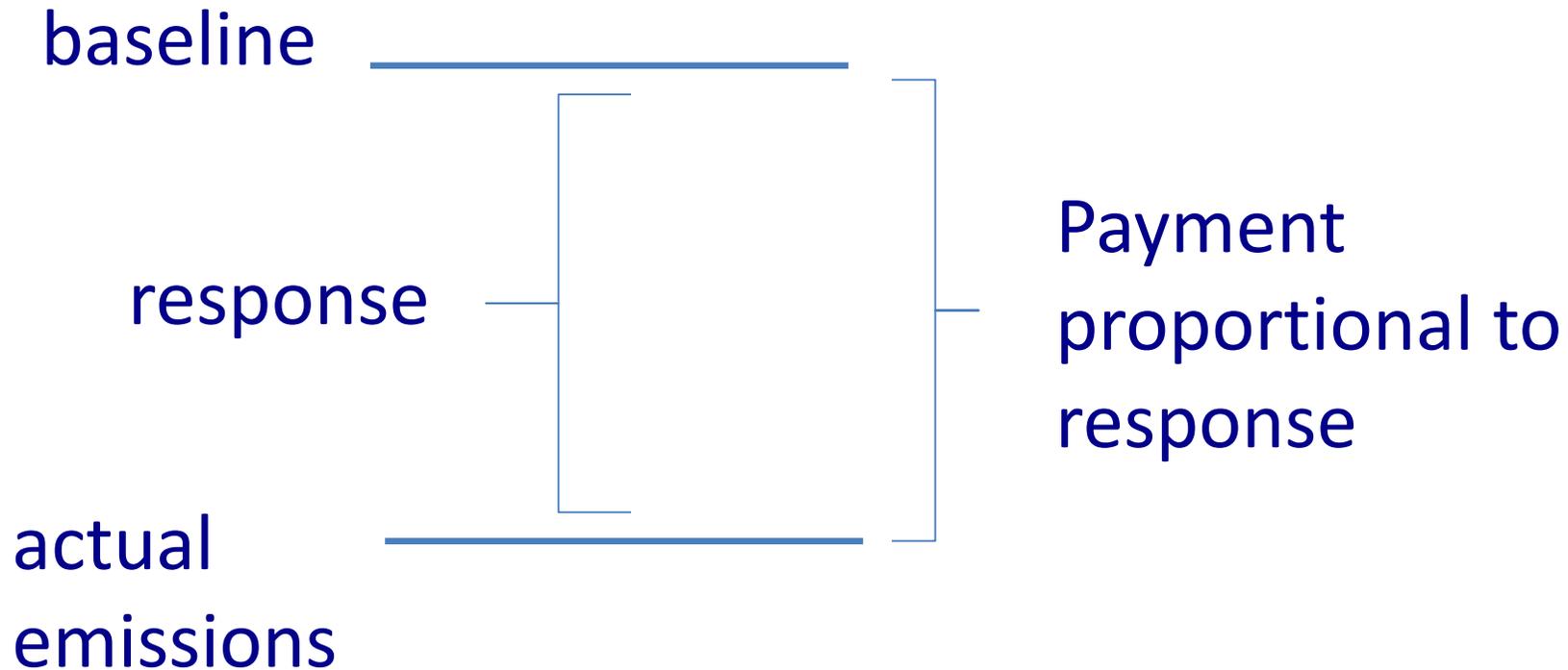


Why sellers might not exist

- Creating the policy infrastructure to create real mitigation is costly and politically contentious
 - Most developing countries are not creating strong domestic policies for purely domestic reasons
- Unless payments are received in advance, producing credits is risky – especially when buyers have incentives to default

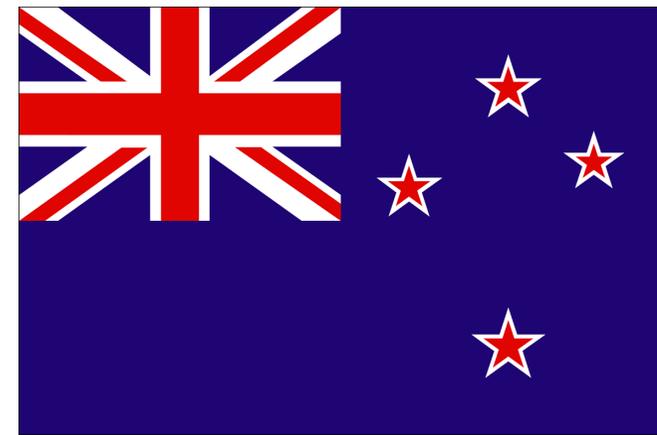


Basic contract



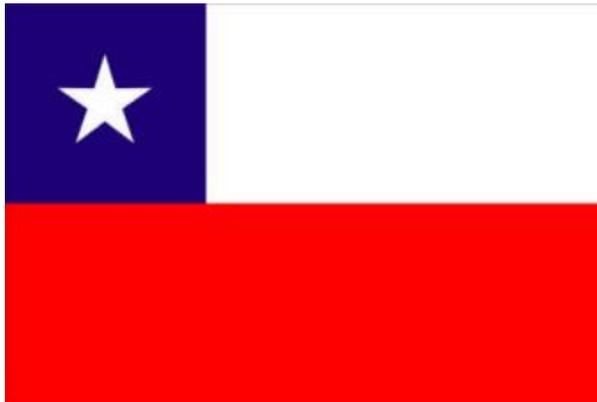
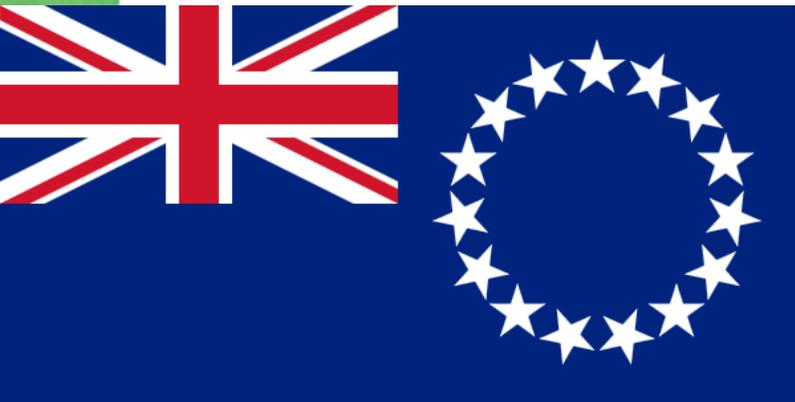
From NZ's point of view

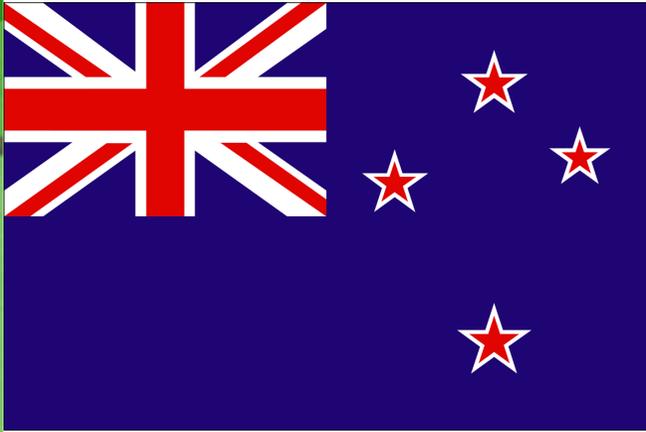
- Efforts must lead to real mitigation
- Cost must be lower than it would be if we reduced emissions within New Zealand
- Value for money
 - Low cost
 - Open up opportunities for NZers
 - Situations where NZ has a comparative advantage
- Don't want to invest if country won't supply



From the developing country point of view

- Don't want risk of bearing large net cost
 - They must be confident that they will receive payment
 - They must be confident that the payment will exceed the costs they incur
- Key issues are price and longevity of agreement





Will you supply reductions?

Will you pay us fairly if we do?



Common Challenges for mechanisms to transfer resources for mitigation

- Leakage
- Adverse selection
- Risk and moral hazard
- Hold up and underinvestment
- Negotiation
- Integration with cap and trade

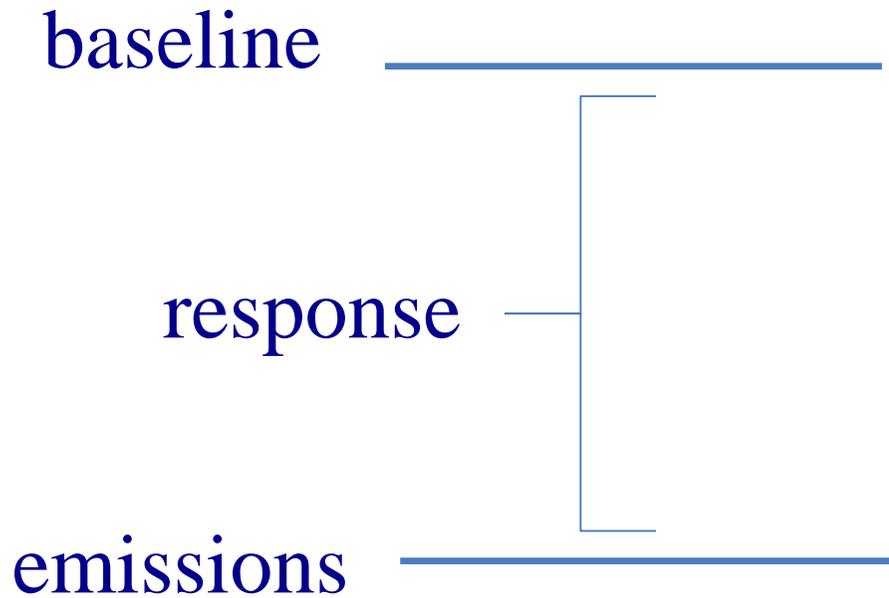


Create national scale agreements not 'projects'

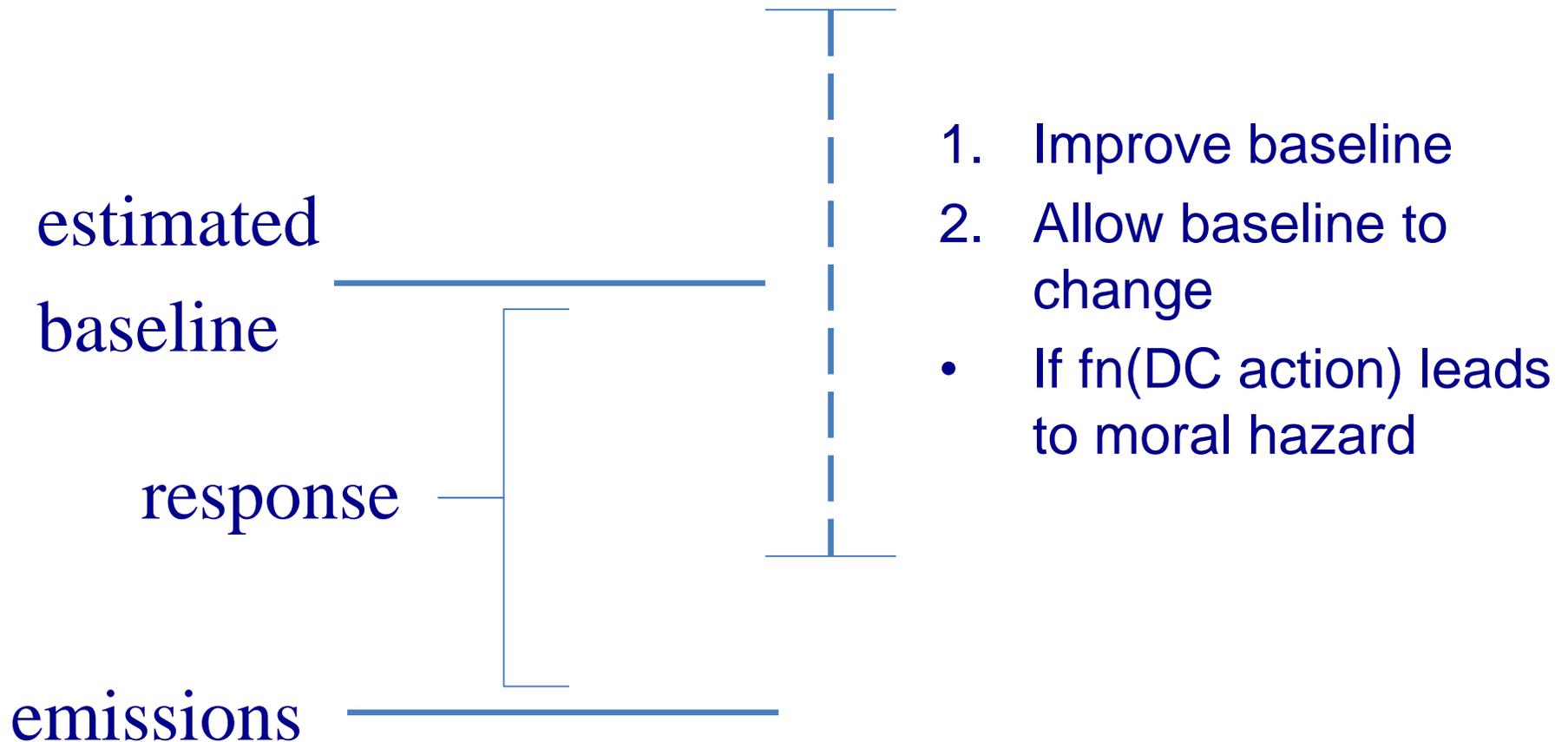
- Avoids leakage within countries
- Minimises adverse selection
- Reduces transaction costs
- Protects sovereignty for DC
- Reduces costs of negotiation – but makes it all or nothing



Risk and 'moral hazard'

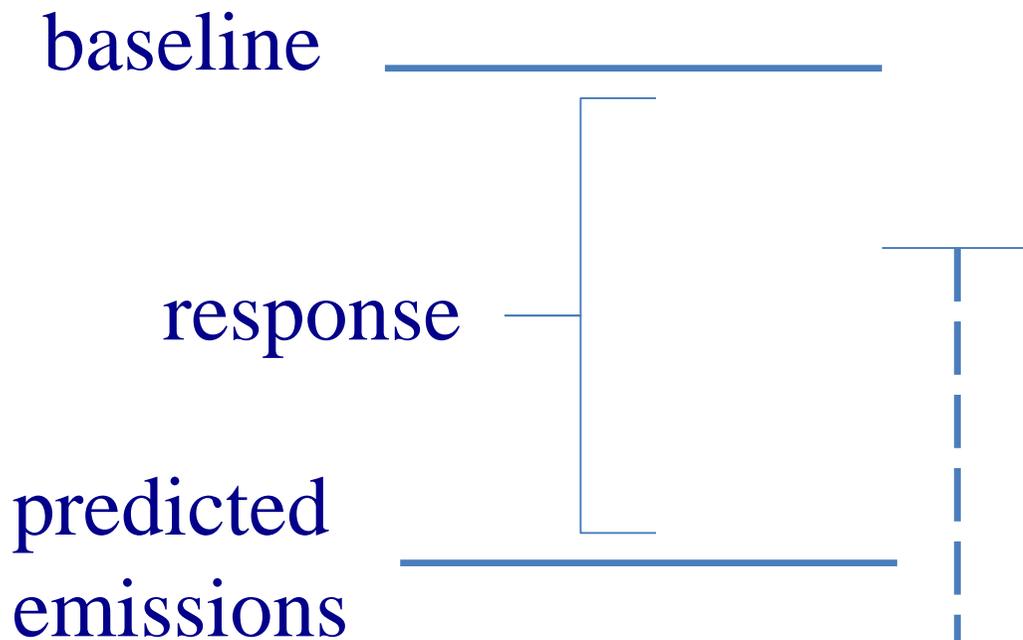


Baseline risk solutions



Moral hazard: when contract is insufficiently precise (possibly because of unobservable effort) so that what the parties explicitly agree to do in the contract is not exactly the intention of both parties.

Response risk solutions



3. Improve responses
4. Reward actions rather than emissions
 - Offset cost of actions
 - No incentive for 'invisible' actions

Moral hazard: when contract is insufficiently precise (possibly because of unobservable effort) so that what the parties explicitly agree to do in the contract is not exactly the intention of both parties.

Hold-up and underinvestment

- Effective mitigation requires:
- long-term investment,
- innovation,
- policy change and
- structural change
- Once investments are made, the DC has little bargaining power during renegotiation



they will be unwilling to invest.

(Partial) Solutions to hold-up

1. NZ makes direct equity investments in mitigation

- Directly addresses under-investment
- Bargaining becomes more balanced
- Commitment is visible so less under-investment
- Has benefits for risk sharing also

2. Build NZ reputation for cooperation



Integrate developing country credits in Emissions Trading?

- Can introduce price risk (for both parties) because level of supply is uncertain
- Devolves responsibility and interests to NZ firms – could be more ‘time consistent’ because firms will fight to keep price high.
- If DC has ETS it makes firms responsible for compliance not only the DC government



Conclusions: Creating sellers

Why: It is valuable

How?

- Bigger is better – national targets not projects
- Need for up-front investment / credible commitment to purchase to reduce risk to DC
- Devolved liability through a DC ETS can reduce compliance issues – i.e. not just funds to government



New Zealand role

1. Help design and negotiate emissions target / investment / credit-purchasing agreements that induce developing countries to supply meaningful reductions
2. Help design domestic ETS for developing countries
3. Demonstrate mitigation potential and commitment to cooperation





www.motu.org.nz

