



# **Potential Options to Address Permanence and Leakage (and additionality)**

William Hohenstein  
Director  
USDA Global Change Program Office

# Concerns with Offsets

Offsets are produced by entities that are not regulated:

- Would the action have happened anyway? (Additionality)
- What are we measuring benefits against? (Baselines/benchmarks)
- Will other firms/entities fill gaps if the action results in a drop in production? (Leakage)

Carbon sequestration is unique:

- Will the carbon that is sequestered and stored be kept out of the atmosphere? (Permanence)

Most agriculture and forestry sources and sinks are not well defined “point” sources:

- Can we truly assess the benefits? (Measurement uncertainties)

# Leakage – Will the emissions move elsewhere?

Internal Leakage: e.g. Swapping fields within an operation.

- Potential solution:
  - Require entity-wide reporting
  - Limit offsets to actions that don't affect production

Market Leakage: Others respond to reduction in supply of goods.

- Potential solutions:
  - Limit offsets to actions that don't affect production
  - Create disincentives for “bad” behavior
    - Swamp-buster, sod-buster, conservation compliance
  - Get others to take on commitments
  - Cap and/or Discount credits,
  - Accept it (adjust national goals)

# Permanence -- Will the carbon stay out of the atmosphere?

- Potential solutions:
  - Assign liability, continuous reporting by producer of offset
  - temporary credits, renting credits,
  - Discounting
  - Insurance pools
- Who is liable?
  - Buyer/Seller? (Producer/Consumer?)
  - Regulations can establish liability
  - Contracts can re-assign liability
  - Contracts can also specify terms of performance
    - Duration
    - Need for insurance
    - Treatment of intentional vs. accidental losses
  - If each contract is unique – how can we bundle?
- Verifying the existence of carbon stocks is easier over time
  - Cumulative aggregation of carbon is easier to detect than year-to-year fluctuations

Additionality – Would the action happen anyway?

– Potential solutions:

- Do we care?

# Additionality – Would the action happen anyway?


## – Potential solutions:

- Limit entry (categorical exclusions)
  - Exclude forests and agriculture (EU)
  - Exclude deforestation (CDM)
  - Exclude forest management (several US registries)
- Exclude ongoing actions (exclude early adopters – Yikes)
  - Set a start date (e.g. 2007 or 2010)
- Exclude actions that are likely to occur in the future
  - Require the use of baseline projections
  - Measure benefits against the average (FIA mean growth, etc.)
  - Phase out actions if they become common
- Document justification,
  - Reporting requirements (CCAR)
  - Barrier tests
- Cap and/or Discount credits,
  - Proportional additionality
- Accept it (adjust national goals)

# Problems with Discounting and Caps on Offsets

Farmer 1 

Farmer 2 

Farmer 3 

Farmer 4 

**Carbon Payment**

0 \$ \$ \$

**Effect of cap on offset value**

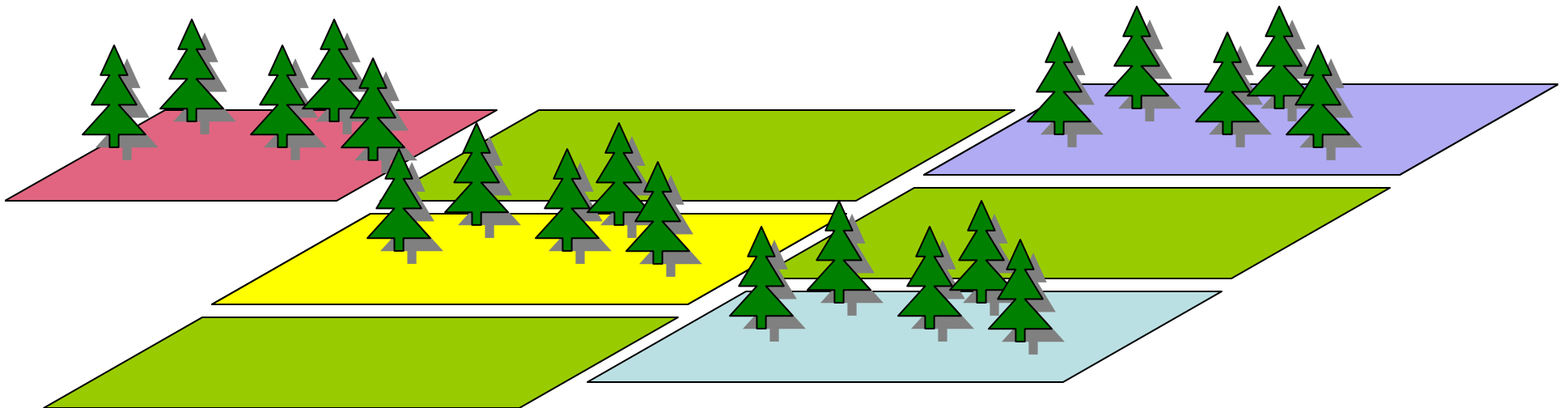
-\$

**Additionality Discount**

-\$

**Leakage Discount**

-\$



# Lots of remaining questions

- What practices/actions should receive offsets?
  - Afforestation
  - Forest management (what do we mean? Longer rotations? thinning? Fire management?)
  - Changes in tillage (again ... what do we mean?)
  - Nutrient management
    - Amount
    - Timing
    - Type
    - Mechanism
    - Inhibitors
  - Manure management
    - Digesters
    - Covers
    - Others??
- Should we use whole farm/operation GHG accounting?



## Lots of remaining questions

- Current levels of the activities/practices we are trying to incentivize
- Likely adoption rates in absence of a GHG policy
- How bad will leakage be?
- Implications of efforts to address leakage, additionality, and permanence
  - Higher transaction costs.
  - Reduced value of offsets
- Other policies/actions to encourage the actions and behaviors we are trying to incentivize