



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

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Effect of cap on offset value

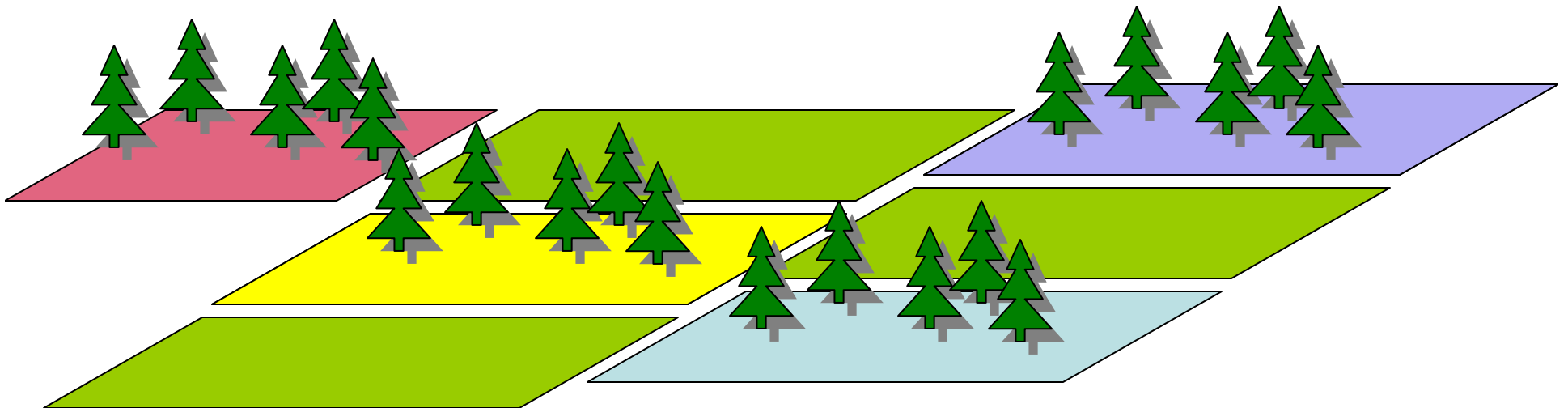
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Additionality Discount

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Leakage Discount

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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