

Economic and Institutional Drivers of Soil Carbon Valuation

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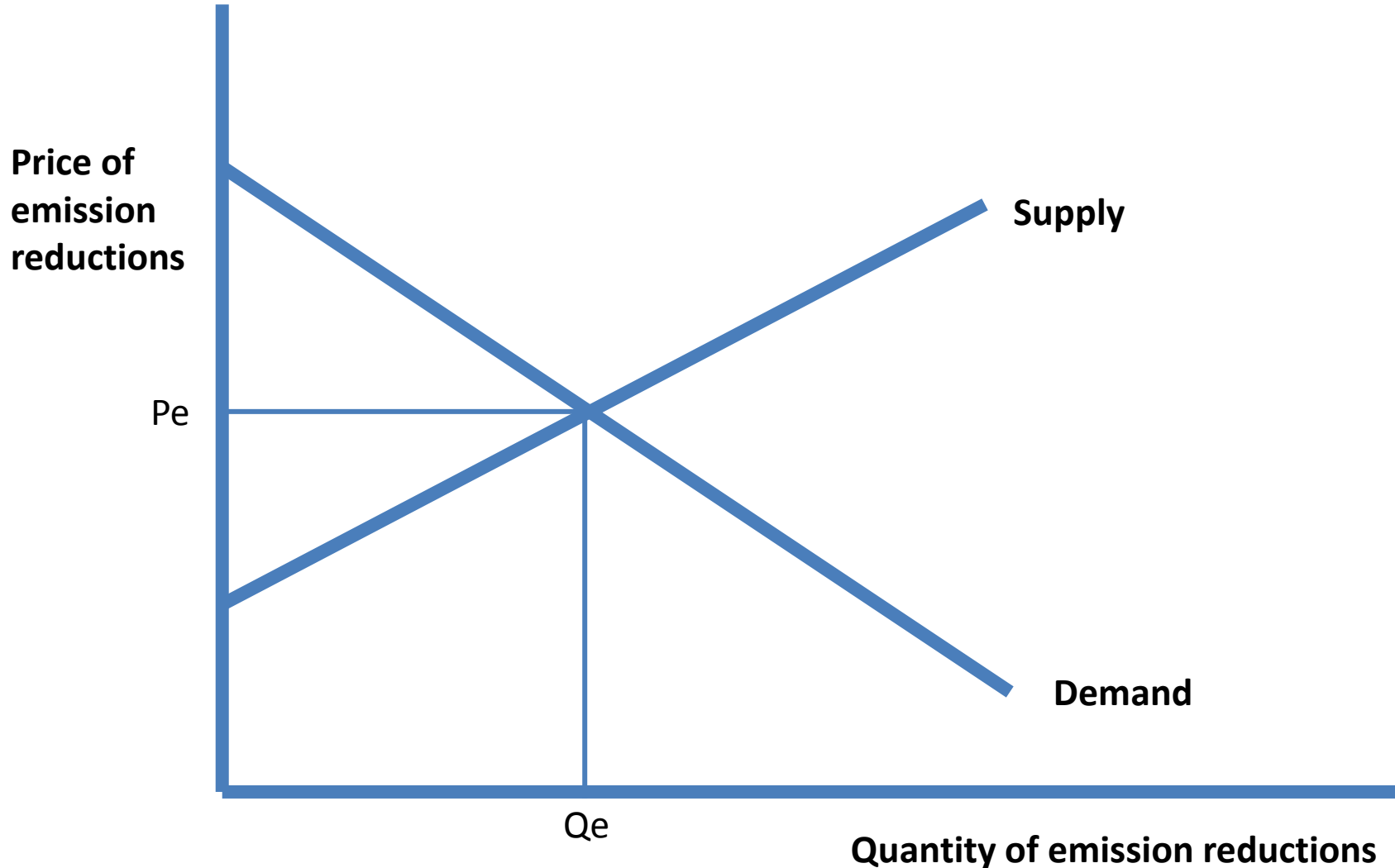
Grassland Carbon Workshop, April 14, 2015, Boardroom A, JG O Donoghue Building, Edmonton, Alberta

Outline:

- 1. Market fundamentals of Payments for Ecosystem Services**
- 2. Overview of behavioral and institutional issues**
- 3. REDD+ and Lessons for rangeland carbon**



Hypothetical market for certified emission reductions



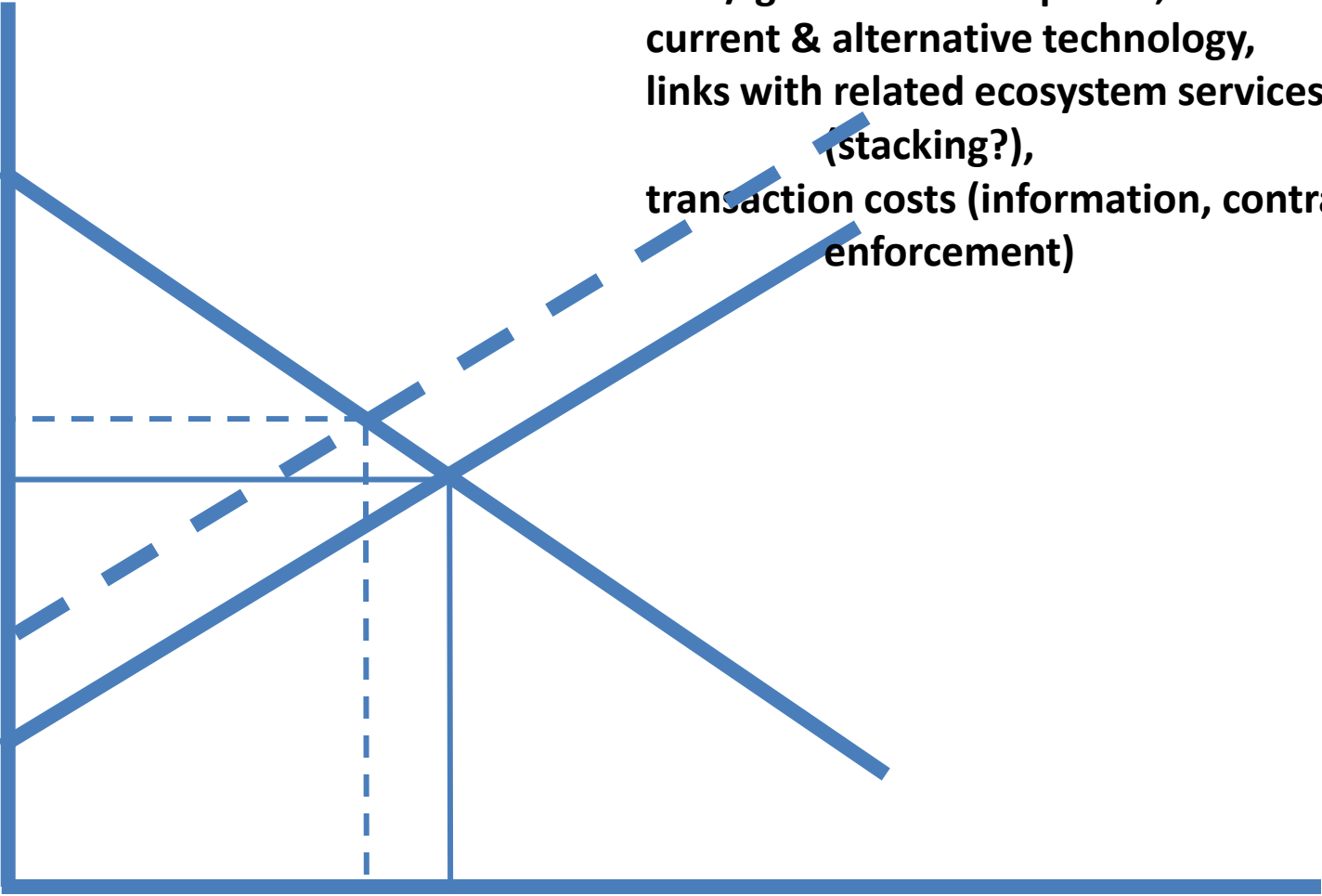
**Supply = f (direct costs,
opportunity costs (foregone profit),
loss / gain of future options,
current & alternative technology,
links with related ecosystem services
(stacking?),
transaction costs (information, contracting
enforcement))**

**Price of
emission
reductions
from grazing
lands**

Pe

Qe

Quantity of emission reductions



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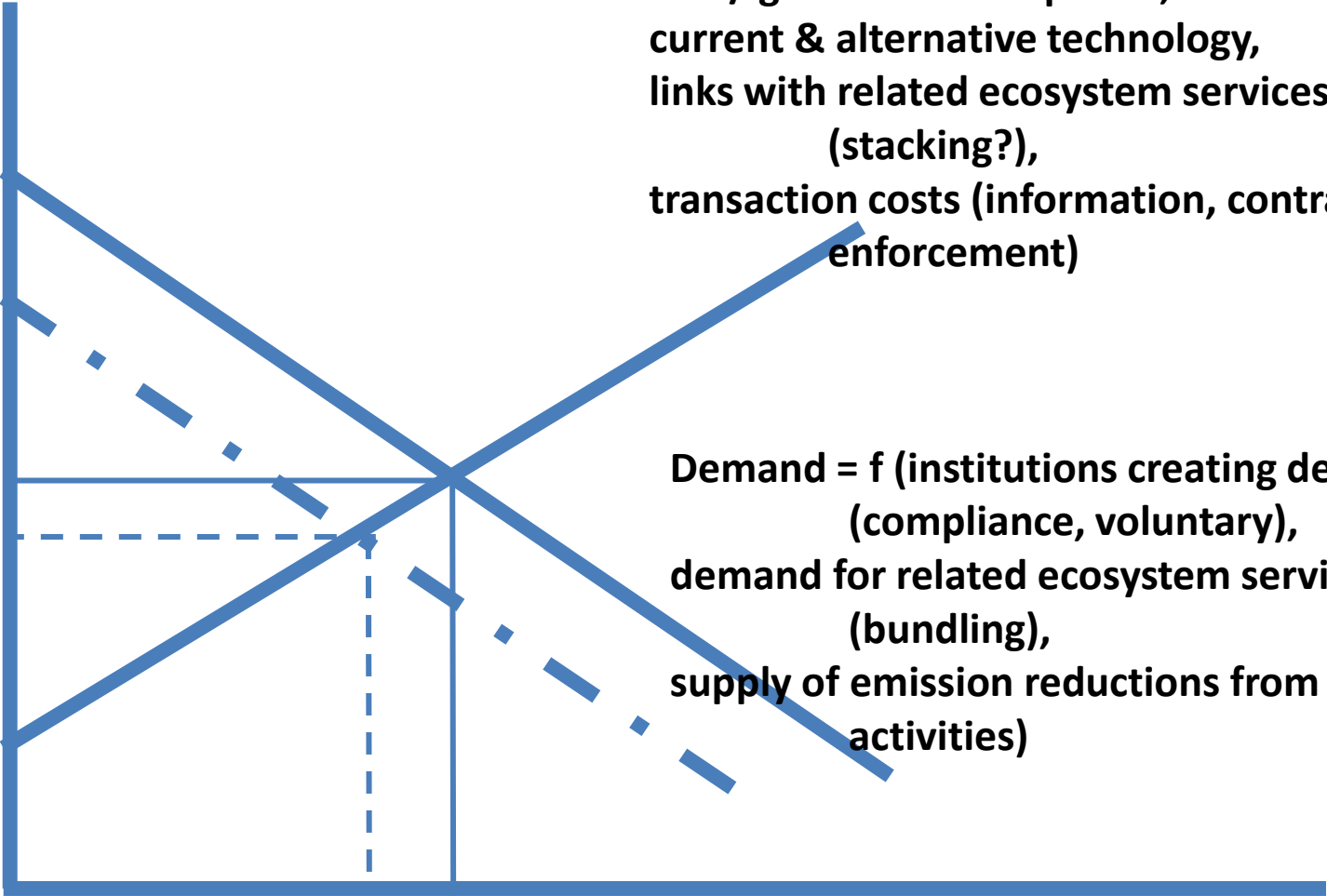
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P_e

**Demand = f (institutions creating demand
(compliance, voluntary),
demand for related ecosystem services
(bundling),
supply of emission reductions from other
activities)**

Q_e

Quantity of emission reductions



CDM and REDD+

- **Clean Development Mechanism (CDM) was a market mechanism under the Kyoto Protocol that facilitated GHG emitters to purchase certified emission reductions from projects located in developing countries**
- **LULUCF (Land use, land use change, forestry) had lots of approved CDM protocols, but very few credits due to challenges with permanence, additionality, leakage, MRV (monitoring, reporting and verification), and transaction costs**

REDD+ under UNFCCC:

reducing emissions from deforestation *and forest degradation* in developing countries, **(compensation to stop doing something)** and the role of *conservation, sustainable management of forests, and enhancement of forest carbon stocks* in developing countries **(reward to start doing something)**

- Originally pushed as REDD (compensation to reduce emissions) and as a national-level mechanism to reduce problems of permanence, additionality, and MRV with Clean Development Mechanism
- REDD+ decision in Bali on REDD+ has meant need to consider compensations & rewards, and encouraged demonstration projects that increased MRV concerns
- Most REDD+ demonstrations have focused more on biodiversity than C
- Monitoring, Reporting and Verification (MRV) (and safeguards) has become major stumbling block, with implications for burden of proof


Lessons from REDD+ for rangeland C

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Reward for action vs compensation for giving up potential action	Reward for action easier to understand and measure	Reward for converting annuals to perennials easier than maintenance of perennials


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Boundaries between reward / right / sanction		Social choices about where to set boundaries
Loss aversion	Most people value a loss 2 x an equivalent gain	Compensation required by law inadequate to leave people feeling whole for loss of property rights
Motivational crowding	Financial incentives cause mix of crowding out & crowding in intrinsic motives	Need to better understand motives & responses to different instruments
Risk aversion	People averse to extreme price fluctuations of CER	Benefits of the CCEMA system that sets a stable price
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