# Task Force to Review and Identify Standards for $CO_2$ Storage Capacity Measurement

Update at the Meeting of the Technical Group

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*Stefan Bachu, Canada, Chair*

# Team Members

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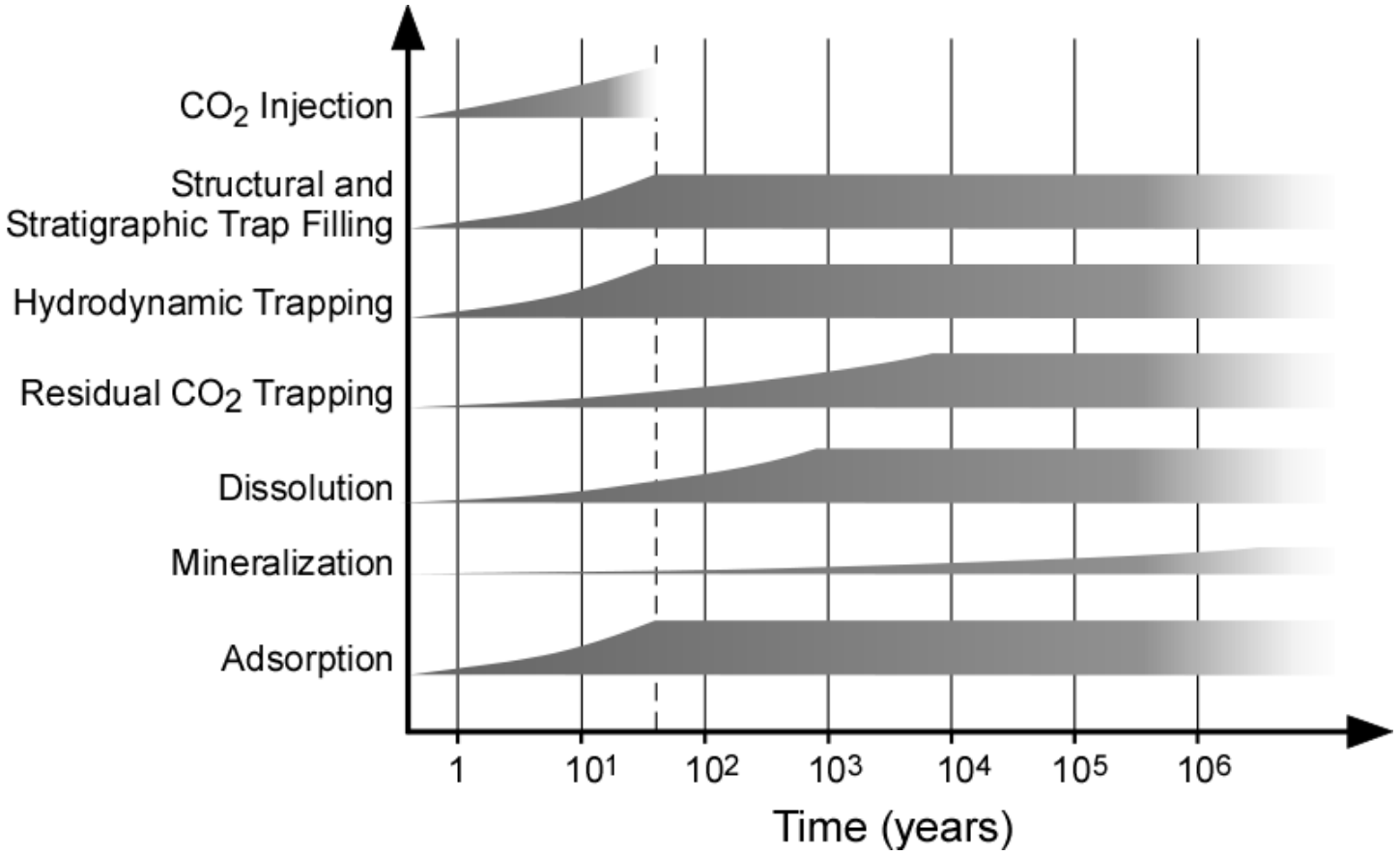
# Key Concepts

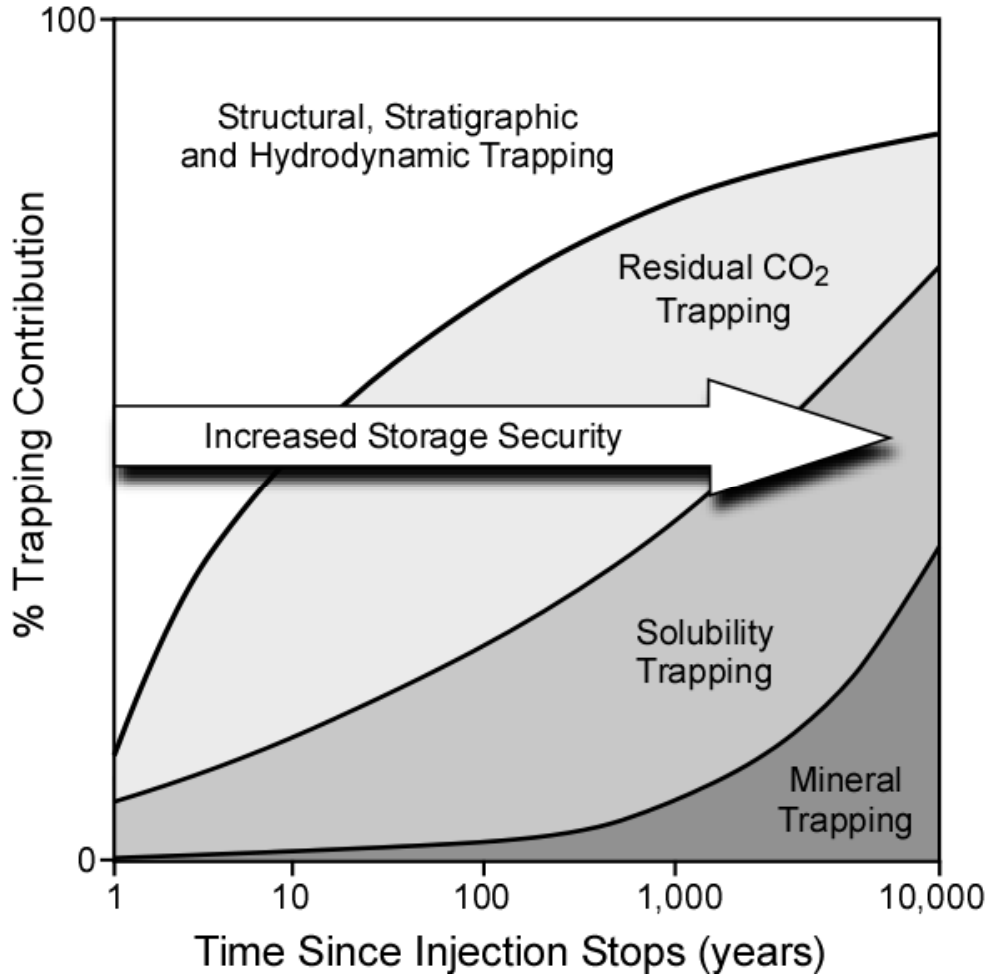
- Various process time scales
- Different assessment spatial scales
- Different assessment types
- Geological media considered:
  - uneconomic coal beds,
  - oil & gas reservoirs, and
  - deep saline aquifers

# Process Time Scales




(from IPCC SRCCS, 2005)

# Contribution and Storage Security of Various Trapping Mechanisms



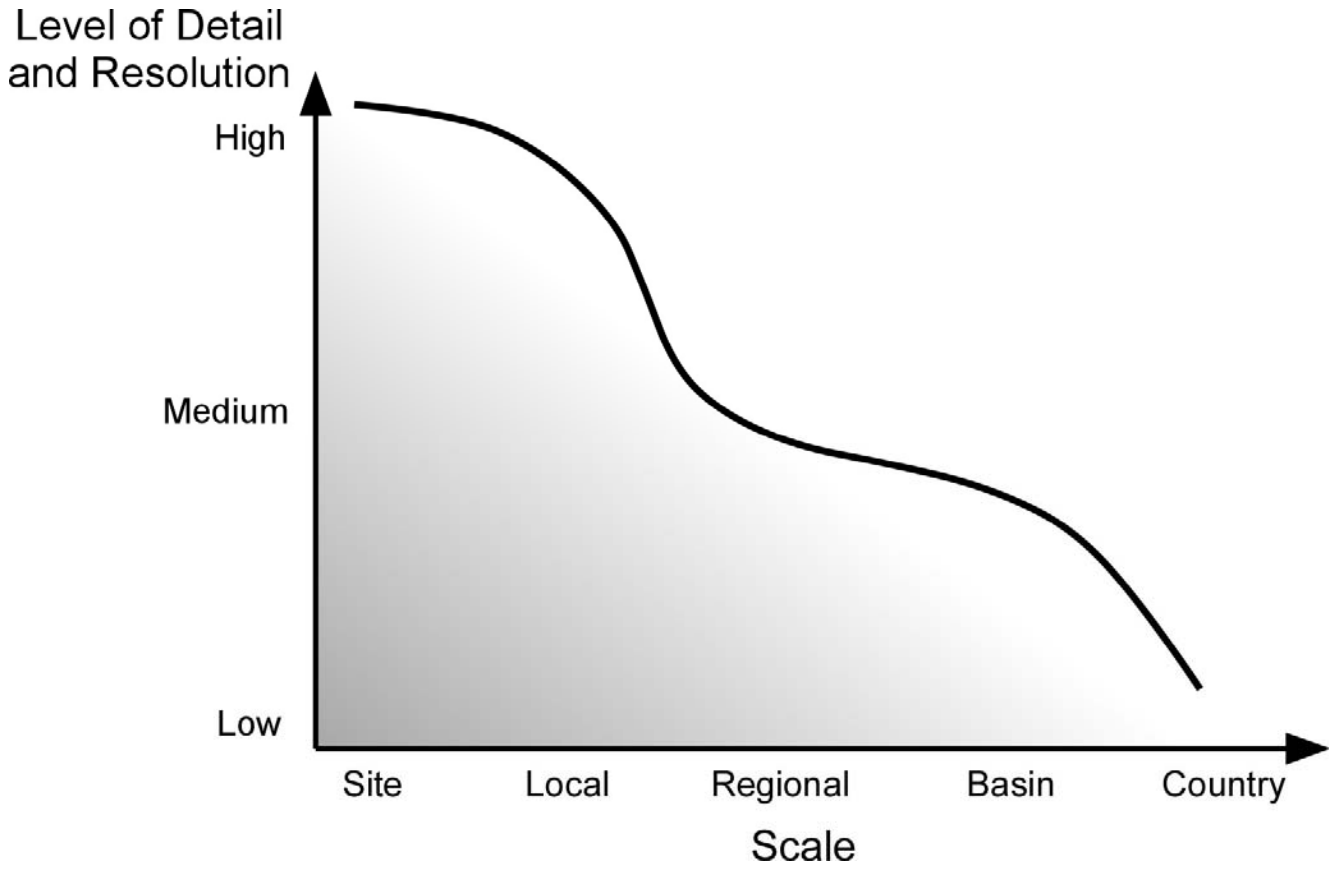

(from IPCC SRCCS, 2005)

# Assessment Scales and Resolution

- **Country**: high level, minimal data
- **Basin**: identify and quantify storage potential
- **Regional**: increased level of detail, identify prospects
- **Local**: very detailed, pre-engineering site selection
- **Site**: engineering level for permitting, design and implementation

Note: Depending on the size of a country in relation to its sedimentary basin(s), the order of the top two or three may interchange

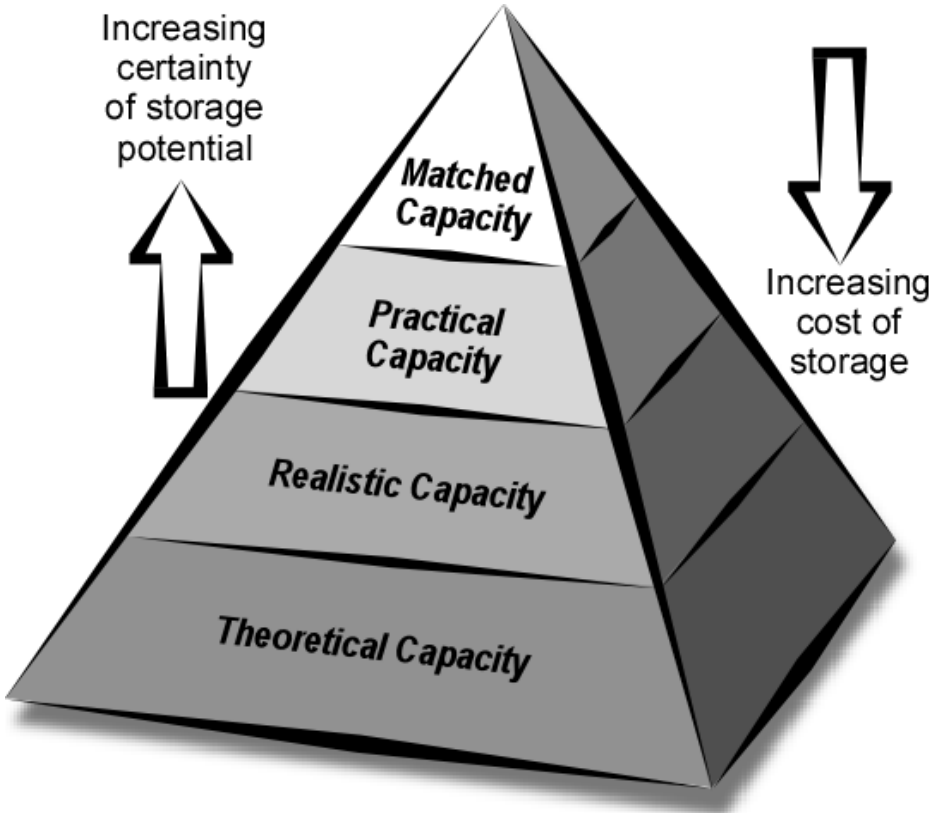
# Relationship Between Assessment Scale and Level of Detail and Resolution



# Assessment Types

- **Theoretical**: physical limit of the system
- **Effective**: accounts for geological and engineering cut-offs
- **Practical**: accounts for technical, legal and regulatory, infrastructure and economic barriers
- **Matched**: obtained by source-sink matching (SSM)

# Techno-Economic Resource-Reserves Pyramid for $CO_2$ Storage Capacity



# Sources of Inconsistency and Confusion of Previous $CO_2$ Storage Capacity Estimates

- Lack of clear and accepted definitions
- Failure to account for and specify different time and spatial scales
- Failure to recognize and identify assessment types
- Lack of consistent and accepted methodologies
- Lack of proper documentation of used methods and data
- Lack of recognition that, as new data become available and methods improve, estimates become more accurate and change

# Phase 2 Report Structure

(tentative)

1. Introduction
2. Summary of Phase 1 Findings
3. Estimation of $CO_2$ Storage Capacity in Coal Beds
4. Estimation of $CO_2$ Storage Capacity in Oil & Gas Reservoirs
5. Estimation of $CO_2$ Storage Capacity in Deep Saline Aquifers
6. Summary and Recommendations

# Status of Phase 2 Report

1. Introduction - *Completed*
2. Summary of Phase 1 Findings - *Completed*
3. Estimation of $CO_2$ Storage Capacity in Coal Beds - *Completed*
4. Estimation of $CO_2$ Storage Capacity in Oil & Gas Reservoirs - *Completed*
5. Estimation of $CO_2$ Storage Capacity in Deep Saline Aquifers - *In progress*
6. Summary and Recommendations

**Completion target**: April 2007 Paris Meeting