

# **EXECUTIVE SUMMARY**

# **State of the Carbon Market**

Prepared by PCF *plus* Research  
based on material provided by  
*Natsource LLC, CO2e.com LLC and PointCarbon*

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# Overview



- This presentation highlights key messages from PCF*plus* Research's 2002 "State and Trends of the Carbon Market" .
- Full analysis can be found in the PCF*plus* Research section of PCF website ([www.prototypecarbonfund.org](http://www.prototypecarbonfund.org))



# Overview

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1. What is the carbon market?
2. Highlights of market activity
3. Who's investing in developing countries?
4. Outlook for the Future
5. Methodology used for the study



# What is the carbon market?

- There is **no single carbon market**, defined by a single commodity, single contract type or single set of buyers and sellers.
- What we call “carbon market” is a **loose collection of diverse transactions** in fragmented market segments where quantities of greenhouse gas (GHG) emission reductions are exchanged.
- Identifiable **market segments** driving demand include: **pre-Kyoto Compliance** (Japan, EU, soon Canada), voluntary (US, Canada), Immediate Compliance (UK, Sub-National), Retail (Sustainable Development, Retirement, Climate-Neutral)
- Information is limited, **especially on prices**, since there is no central clearinghouse for carbon transactions. As such, it is **difficult to compare prices/quantities over whole market**

# Summary of carbon markets currently in operation



**Project-based  
Emission Reduction  
purchases**

**Allowance  
Trading**

“Pre-Compliance”

From voluntary

Within National trading systems

● UK

● DK

Retail



Intra-Firm trading

● BP

● Shell

To Kyoto Pre-Compliance



# Major Market Findings

- **2002** has been the most active year in the GHG market to date.

Contracts with volumes of **60-67 MtCo<sub>2</sub>e** will be signed by year-end. If that is realized, transaction volume in 2002 would be nearly **1/3** of all estimated market volume estimated at **193-200 MtCo<sub>2</sub>e** since the first transaction in 1996.

- Market data suggests that **private sector companies acting alone or through brokers** are making most of their **independent acquisitions** of greenhouse gas reductions from projects **within OECD countries**.

The data suggests that when private companies buy emission reductions from projects in **developing countries**, they appear more likely to act through **public-private**

# Market Findings #1: Carbon Market is firming up



- **Market Volumes Are Up Sharply in 2002**
    - Total Volume contracted in first half of 2002 was **24 MtCo2e** transacted in 103 transactions. Prices ranged from **\$1 (project-based)** to **\$17 (UK allowance)**
      - 2002 projected volume based on closed and pending contracts estimated to be **60-67 MtCo2e**. This at least 4 times 2001 volume of 12 MtCo2e
  - **Overall Volume in Market since 1996**
    - Volume is estimated at **157 MtCo2e** for all contracts since 1996 until the middle of 2002 for delivery of emission reductions before 2012 (Includes 24 MtCo2e for 2002)\*\*\*\*
    - Volume estimate rises to **193-200 MtCo2e** if 2002 projections are accurate
- \*\*\*\* (If vintages beyond 2012 are included, the volume is estimated at 200 MtCo2e including long-term forward transactions)
- **Types of Transactions**
    - Project-based contracts are 85% of 2002 volume. Prices range between **\$1-\$5/tCo2e**
    - The first-ever trades in GHG allowances (UK and Denmark) occurred. Volumes in the UK spot market in 2002 are projected to be almost 1 MtCo2e (since April).  
Currently, transactions are reported at **£12/ton (US\$18)**

# Market Findings #1: Carbon Market is firming up

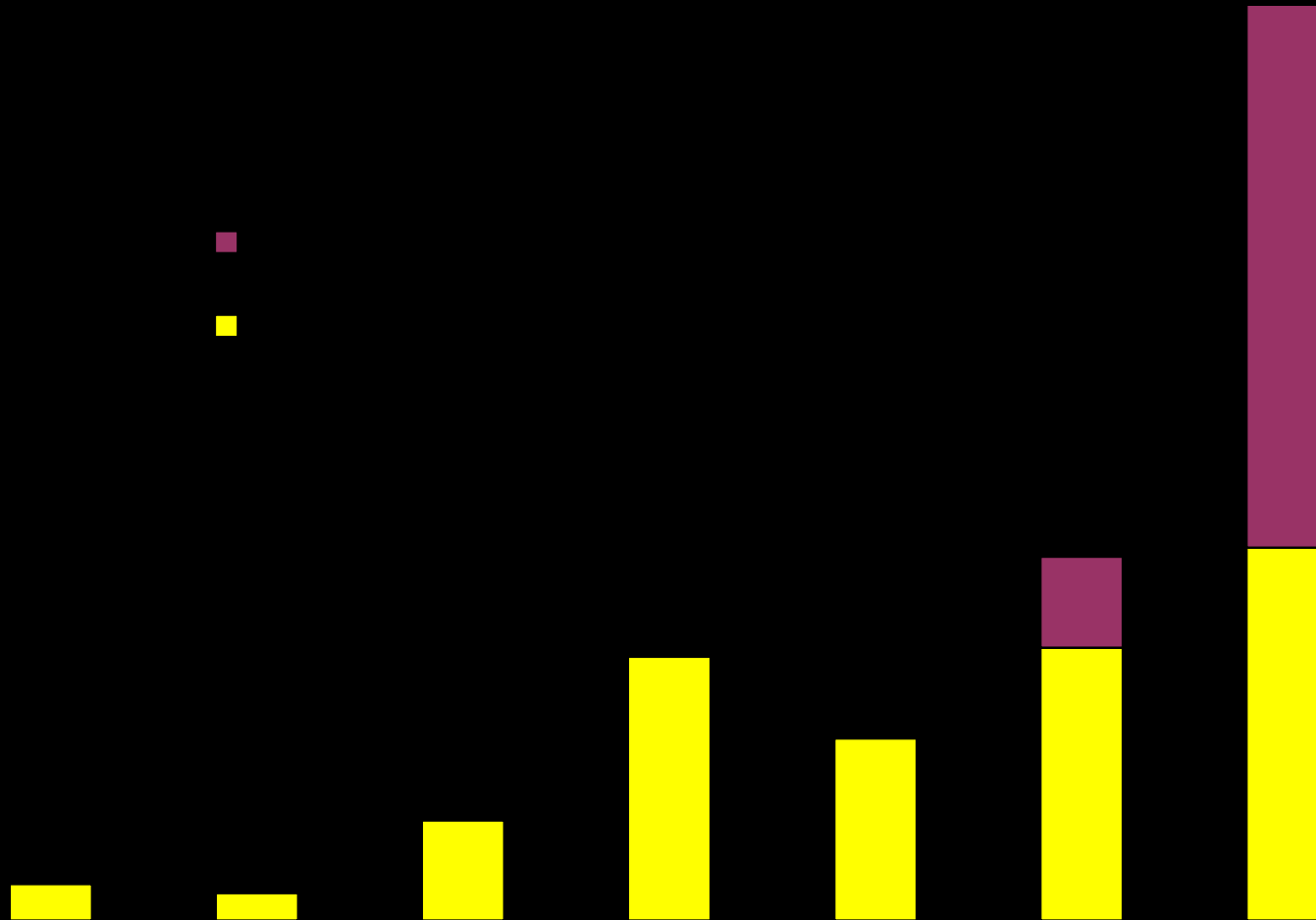


- **Diversity of Buyers**
  - European and Japanese buyers join in 2002 what has been a predominantly North American buyers market
  - Public buyers including sub-national entities and national governments emerge, especially for CDM/JI transactions
- **Diversity of Contract Types**
  - Transition from predominantly call option market of previous years to more balanced option, spot and forward market in 2002. Swaps and collars also utilized.
- **Emergence of Small Secondary Market Transaction Volume**
  - Some companies experiment with liquidating small quantities of reductions from their portfolio; demonstrate possible emergence of secondary market
- **Emergence of Small Retail Market for High Quality Tons**



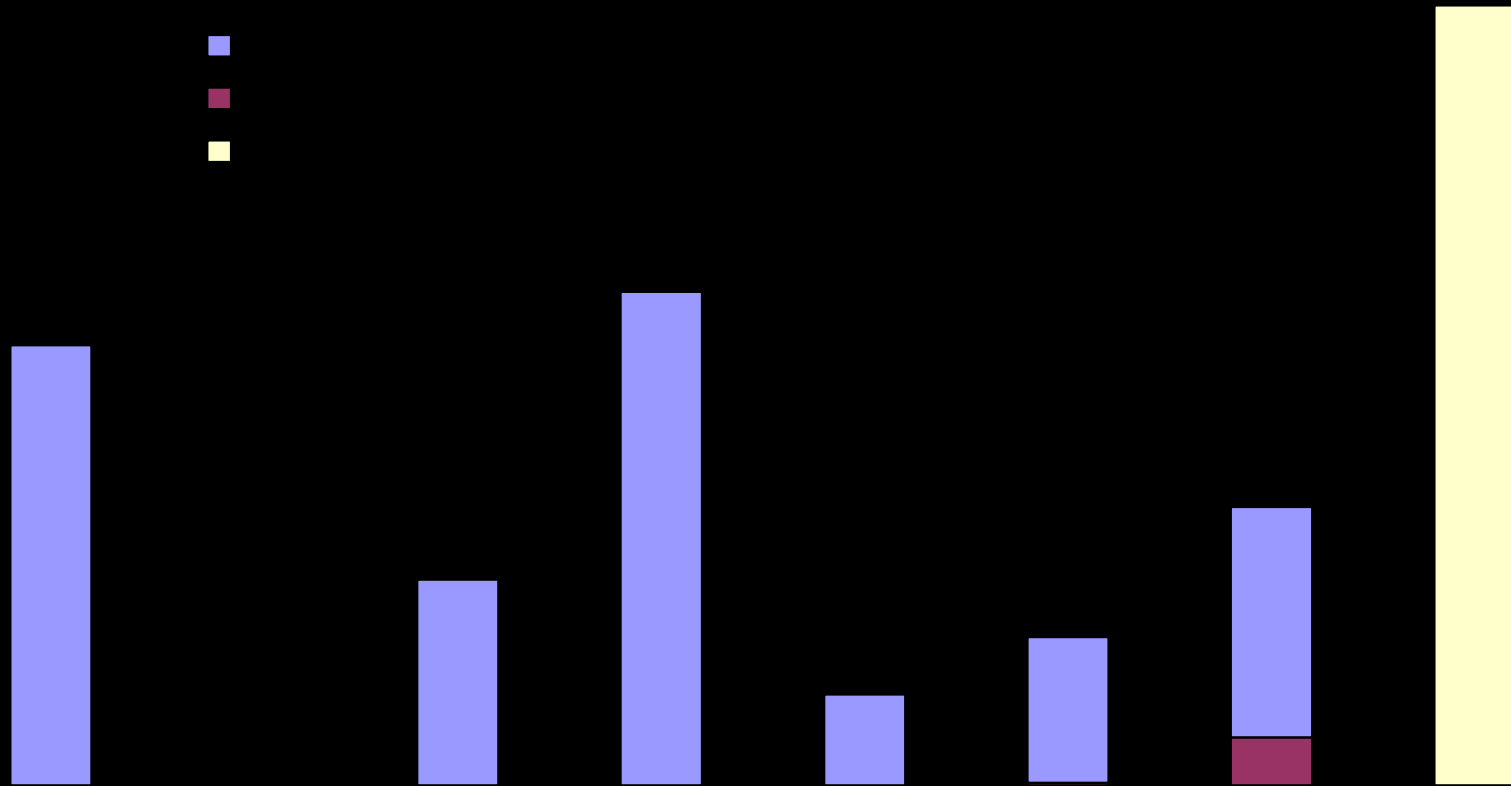


# Number of trades has increased



*Source: Authors' own calculation, based on transaction database assembled with Natsource, Co2e.com and PointCarbon*

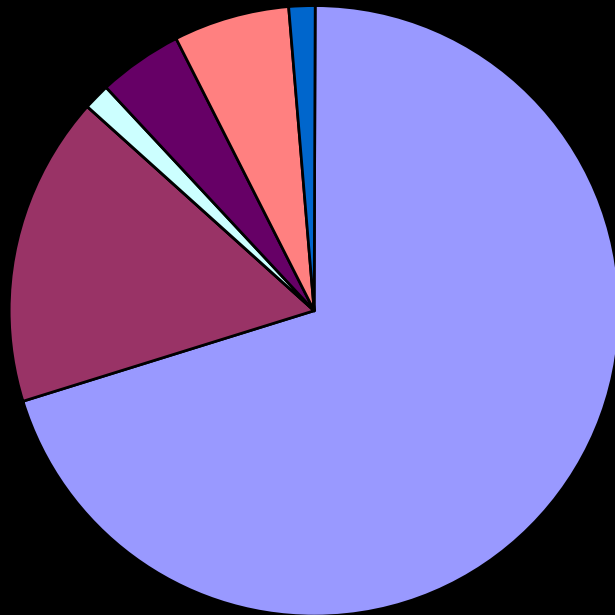
# Market Volume has increased



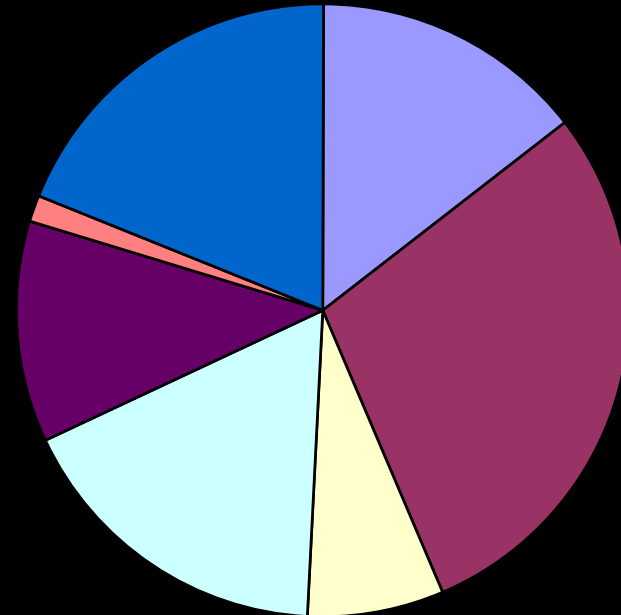
*Source: Authors' own calculation, as above, volume projection by PointCarbon*

# Buyers are more diverse

1996-2000



2001-2002



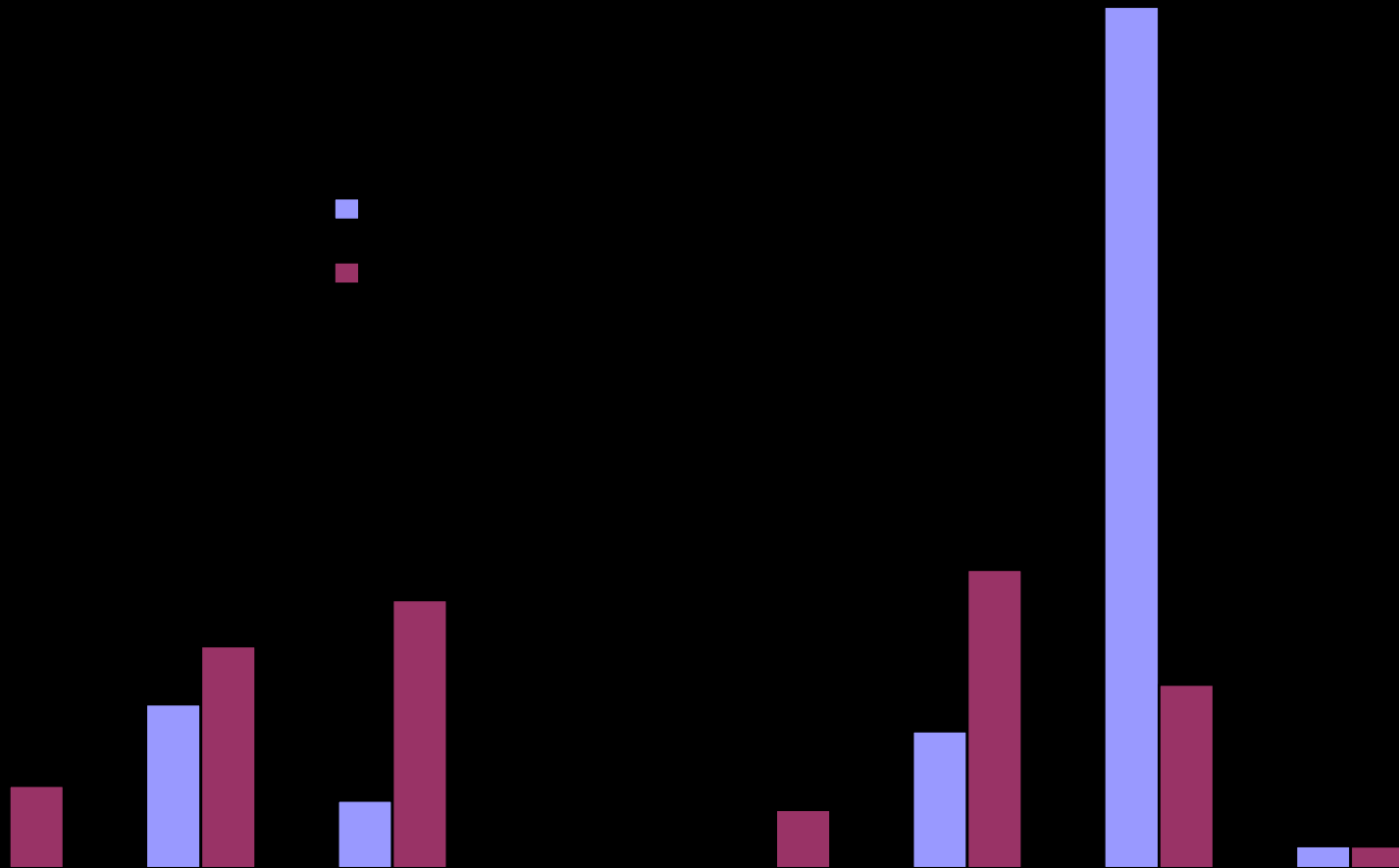


## Contract types have evolved

- Call options represented between a third and a half of project-based volume transacted in 1999-2001, but **less than 20% of 2002 volume.**
- Forward contracts now dominate project-based transactions, with a **growing share of payment on delivery**



# Balance in Asset Classes Emerging



*Source: Authors' own calculation, based on transaction database assembled with Natsource, Co2e.com and PointCarbon*



# Market Outlook

- **Kyoto Protocol Entry into force likely** to drive further **increases in carbon transactions, including from U.S. multinationals** operating in Europe, Canada and Japan.
  - EU, Japan, China, India and Brazil have ratified. Canada says it will submit KP to parliament by end of 2002. Russia says it will ratify. **If Russia ratifies, the KP enters into force.**
- GHG programs emerging at state and sub-national levels and on a voluntary basis outside of Kyoto (**e.g. Alberta, Massachusetts, possibly California, New South Wales**)
- Kyoto Protocol Entry into Force driving regional and national system development (**Netherlands, EU**)

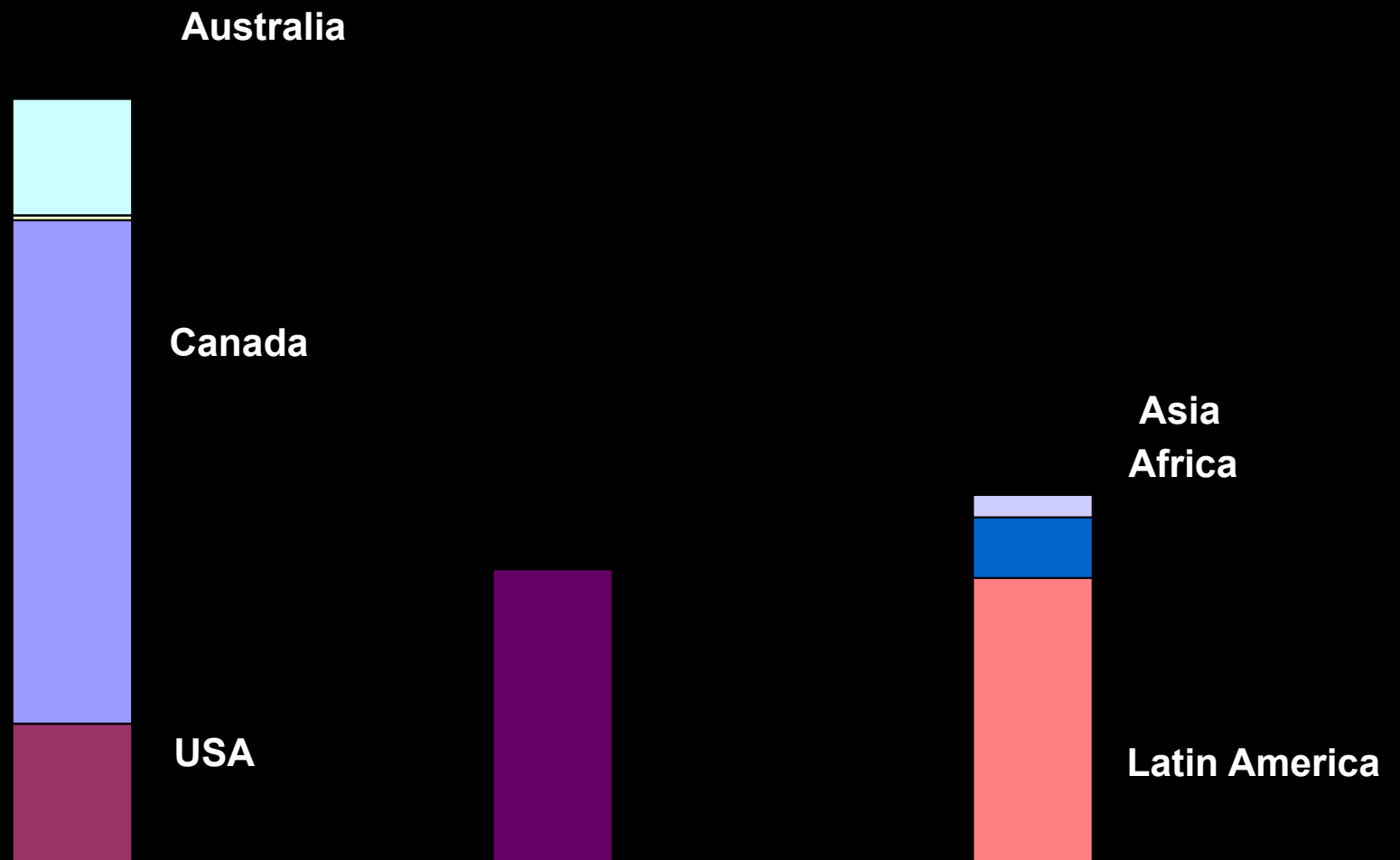
# Market Finding #2: Limited Number of JI/CDM Transactions



- Less than half (43%) of all completed carbon transactions in the past 2 years have been made in projects in developing countries and transition economies
- **Only 13%** of the private sector's purchases in 2001-2002 came from projects in **developing countries**, the rest coming from OECD countries (In **2002** alone, the number was **16%**)
- In 2002, the bulk of transactions in developing countries came from **public-private partnerships** such as the World Bank's Prototype Carbon Fund and from public resources committed by governments such as The Netherlands, states and provinces
- **African countries**, smaller countries and small-scale projects were **largely bypassed** by carbon finance in 2002, as in the past



# Carbon Finance flows 2001-2002

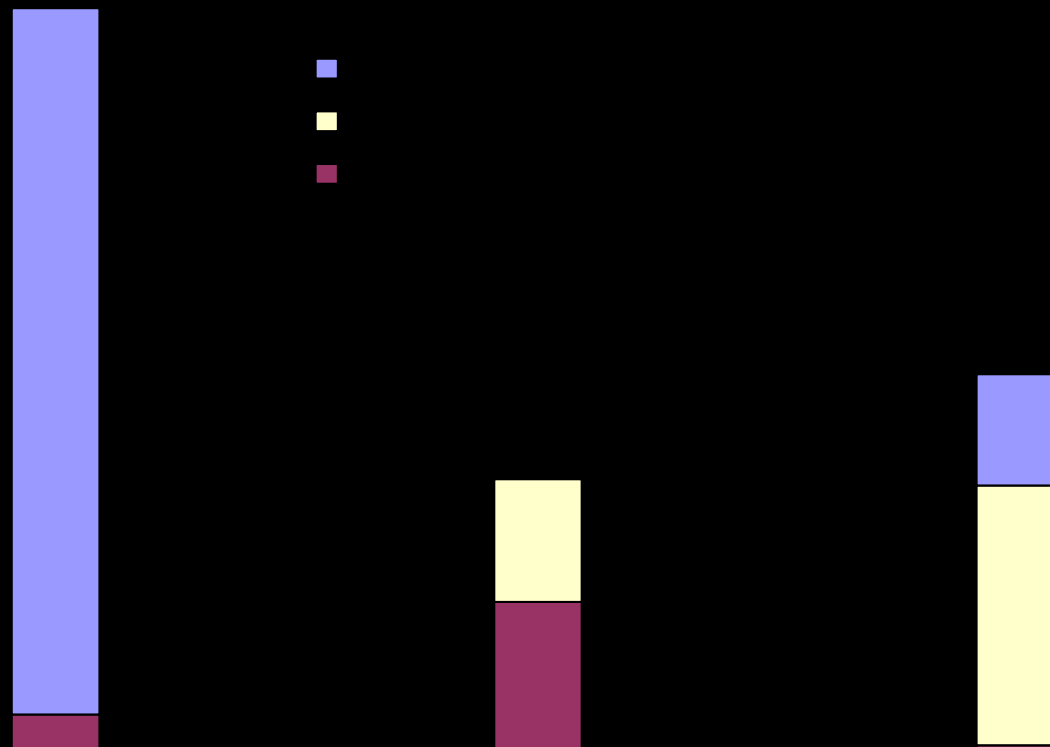


*Source: Authors' own calculation, based on transaction database assembled with Natsource, Co2e.com and PointCarbon*





# Who's buying where? (2001-2002)



**In 2001-2002, private companies acting alone have purchased only 13% of their reductions in developing countries.**

*Source: Authors' own calculation, based on transaction database assembled with Natsource, Co2e.com and PointCarbon*

# Factors constraining private capital flows to JI/CDM



- Linked to overall decline in foreign direct investment
- Higher risks perceived in macro-economic climate in many developing countries
- Long lead-time to prepare projects
- Transaction Costs perceived to be higher

# Public-Private Initiatives: Example of the World Bank



- Focused on its role to help alleviate poverty and encourage sustainable development in its client countries. Sees potential opportunity to help **mobilize and direct private capital** to key sectors and projects that promote sustainable development and benefit communities in client countries
- Strategy to **“crowd in” private sector**
  - Mobilization of **new public-private funds** that help to reduce risks of operating in developing countries and transition economies, e.g. **Prototype Carbon Fund, Community Development Carbon Fund** (See <http://www.carbonfinance.org>)
  - **Partnerships** to reduce transaction costs of doing projects benefiting its client countries, e.g. **Infrastructure Development Finance Corporation (India), Development Bank of Southern Africa**



# Annex: Study Methodology

- Overcoming Data Limitations
  - Our study is based on public and generic confidential transaction data provided to the PCF*plus* Research program by **Natsource LLC, CO2e.com LLC and Point Carbon**. We also interviewed international companies active in this market and obtained data that has been aggregated for this study.
  - We merged data obtained from various sources and corrected for double-counting. The data has been standardized and analyzed to reflect **transacted vintages until 2012**.
  - Our coverage, although extensive, is likely still incomplete. Some transactions, for example, are likely confidential, and others difficult to verify. As a result, **we may have underestimated the size of the market**.