

**Effectiveness of carbon accounting
methodologies for LULUCF and
harvested wood products in
supporting climate-conscious
policy measures**

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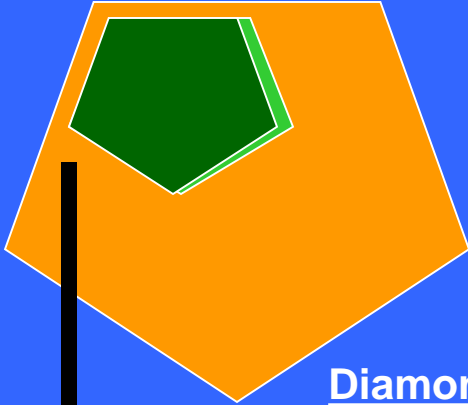
OBJECTIVES OF THE STUDY

- To evaluate the impact of different LULUCF and HWP accounting methods on the reduction estimates reported by participating countries.
- Explore gross-net, net-net and article 3.7.
- Examine the baseline on which to compare reductions.

HYPOTHETICAL COUNTRIES OF BERNHARD-WORLD

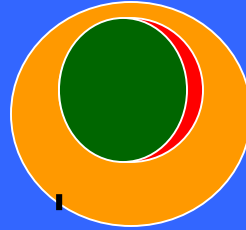
Pentagon

Land area; 900000000
Forest area; 180000000
Fossil emissions; 1500



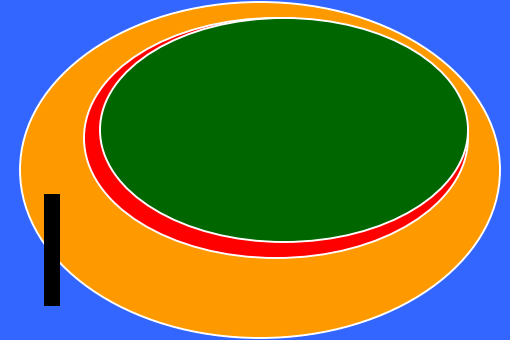
Circle

Land area; 90000000
Forest area; 36000000
Fossil emissions; 1



Oval

Land area; 900000000
Forest area; 540000000
Fossil emissions; 100



Diamond

Land area; 30000000
Forest area; 9000000
Fossil emissions; 10



Triangle

Land area; 20000000
Forest area; 2000000
Fossil emissions; 150



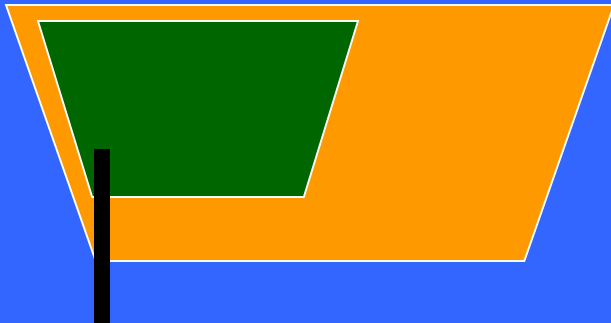
Oblong

Land area; 30000000
Forest area; 21000000
Fossil emissions; 15



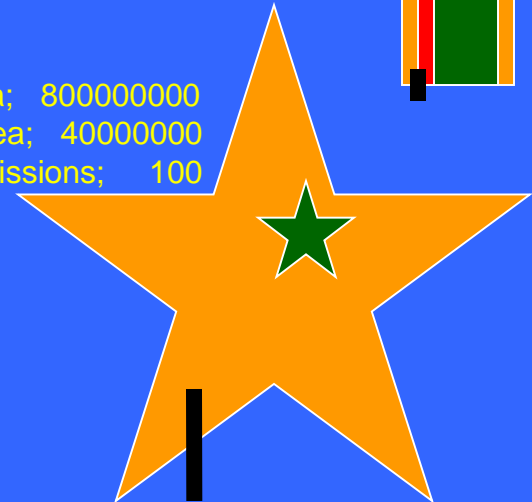
Trapezium

Land area; 900000000
Forest area; 270000000
Fossil emissions; 150

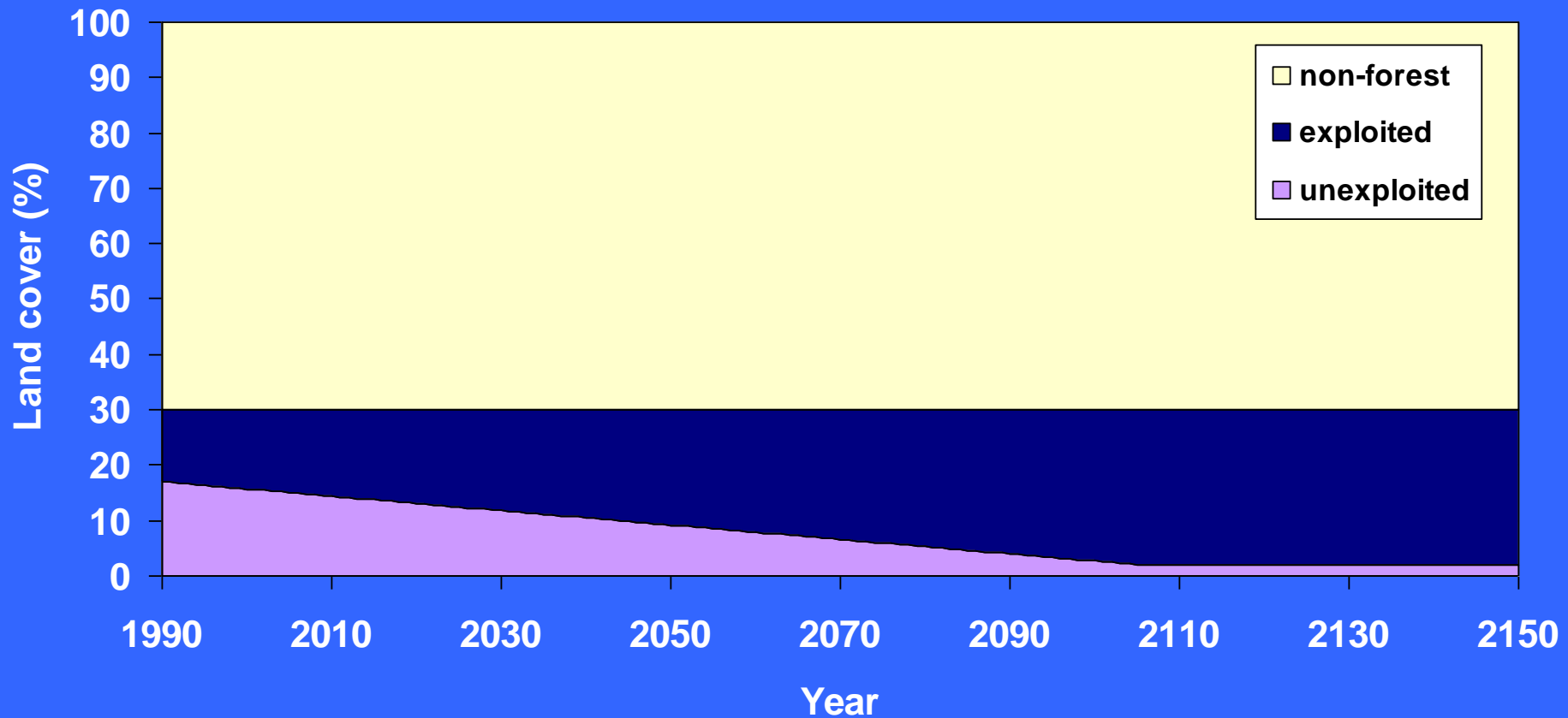


Star

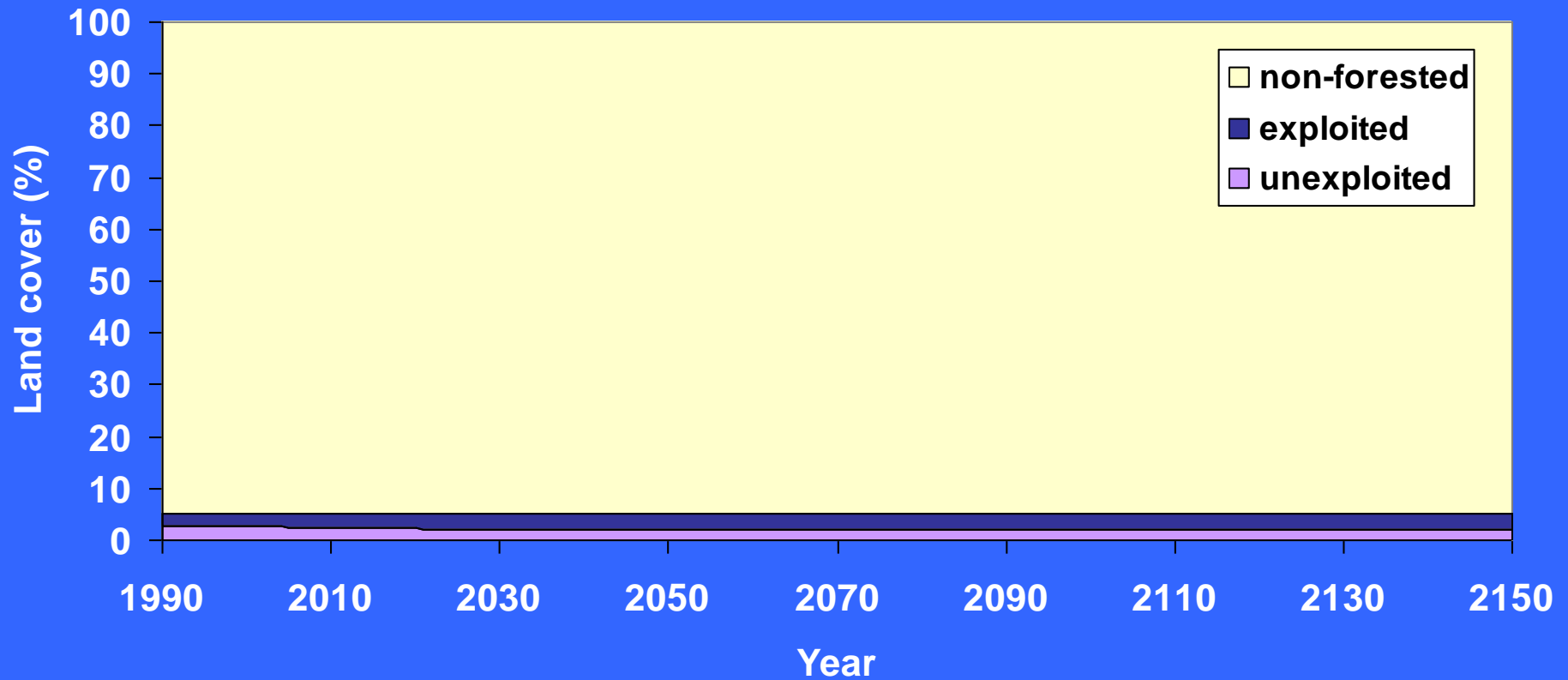
Land area; 800000000
Forest area; 40000000
Fossil emissions; 100



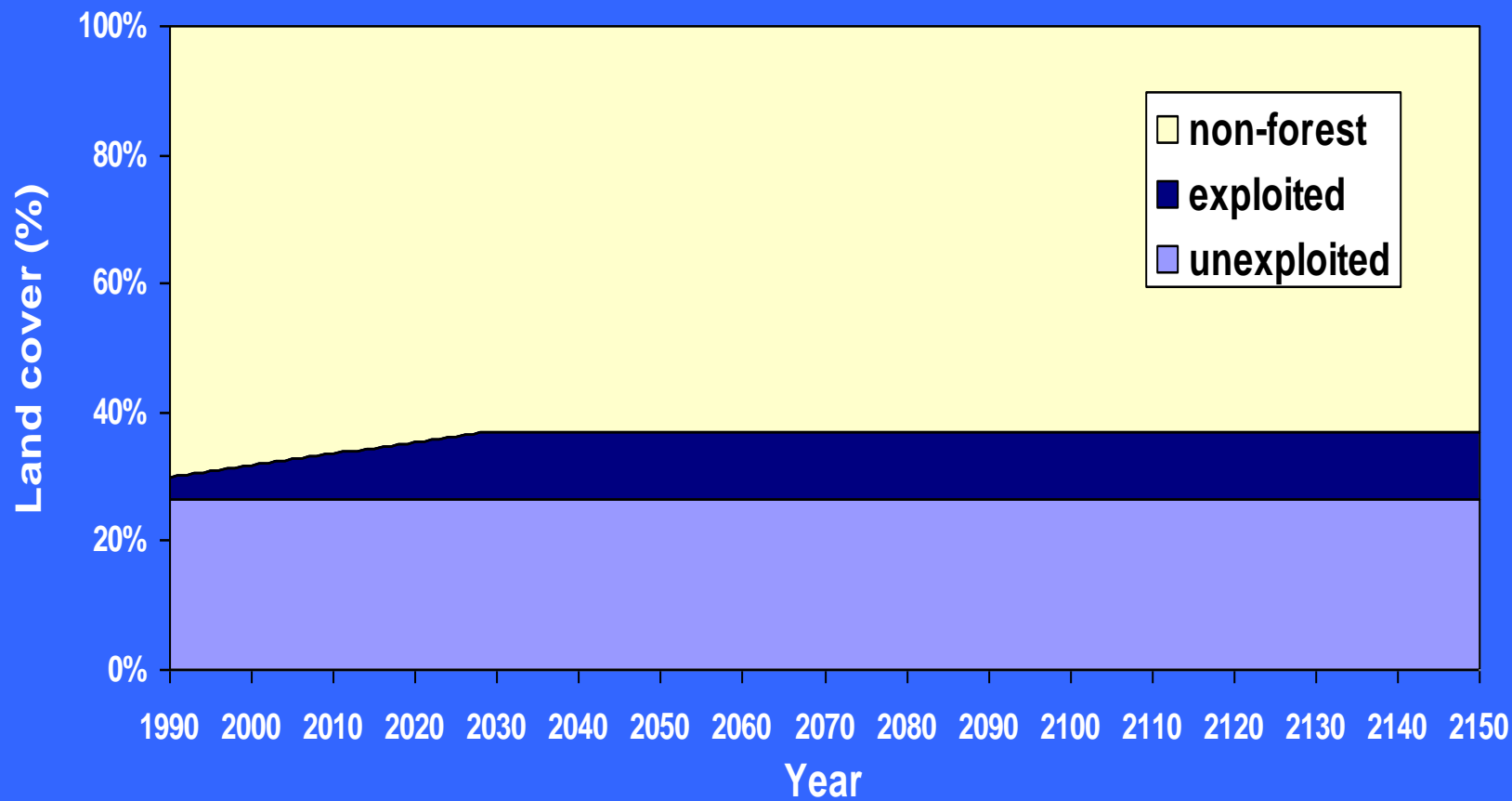
Projected land cover in country Trapezium BUSINESS AS USUAL



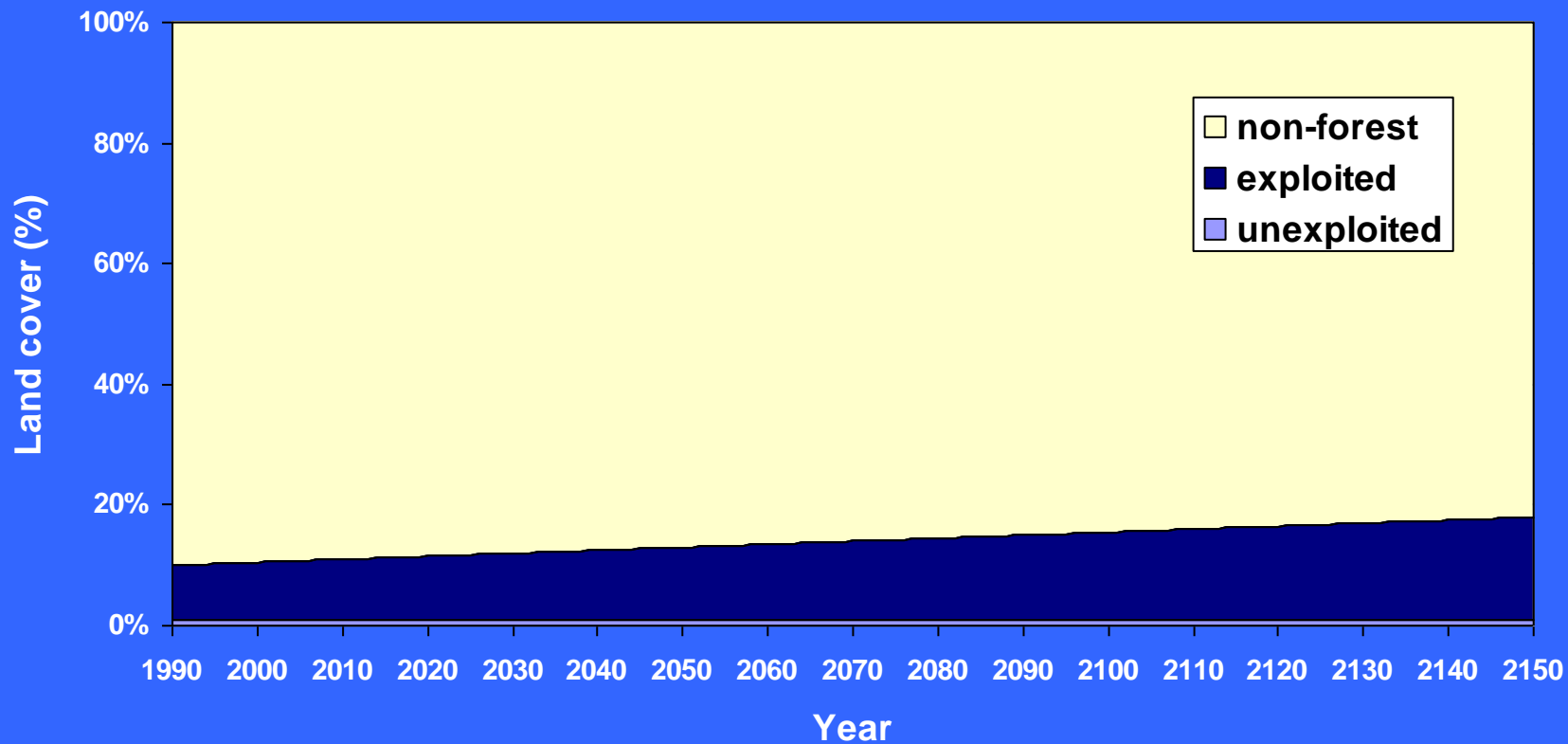
Projected land cover in country Star BUSINESS AS USUAL



Projected land cover in country Diamond, BUSINESS AS USUAL

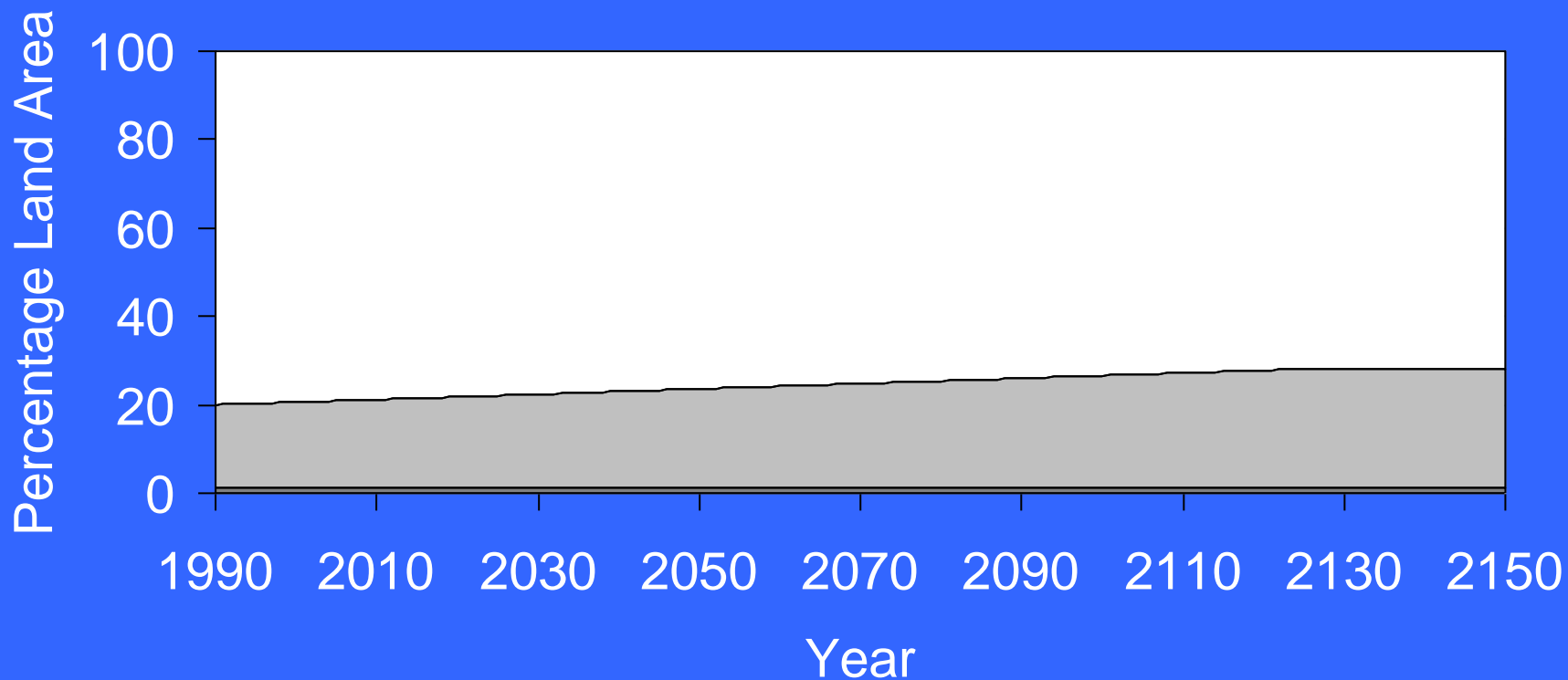


Projected land cover in country Triangle, BUSINESS AS USUAL



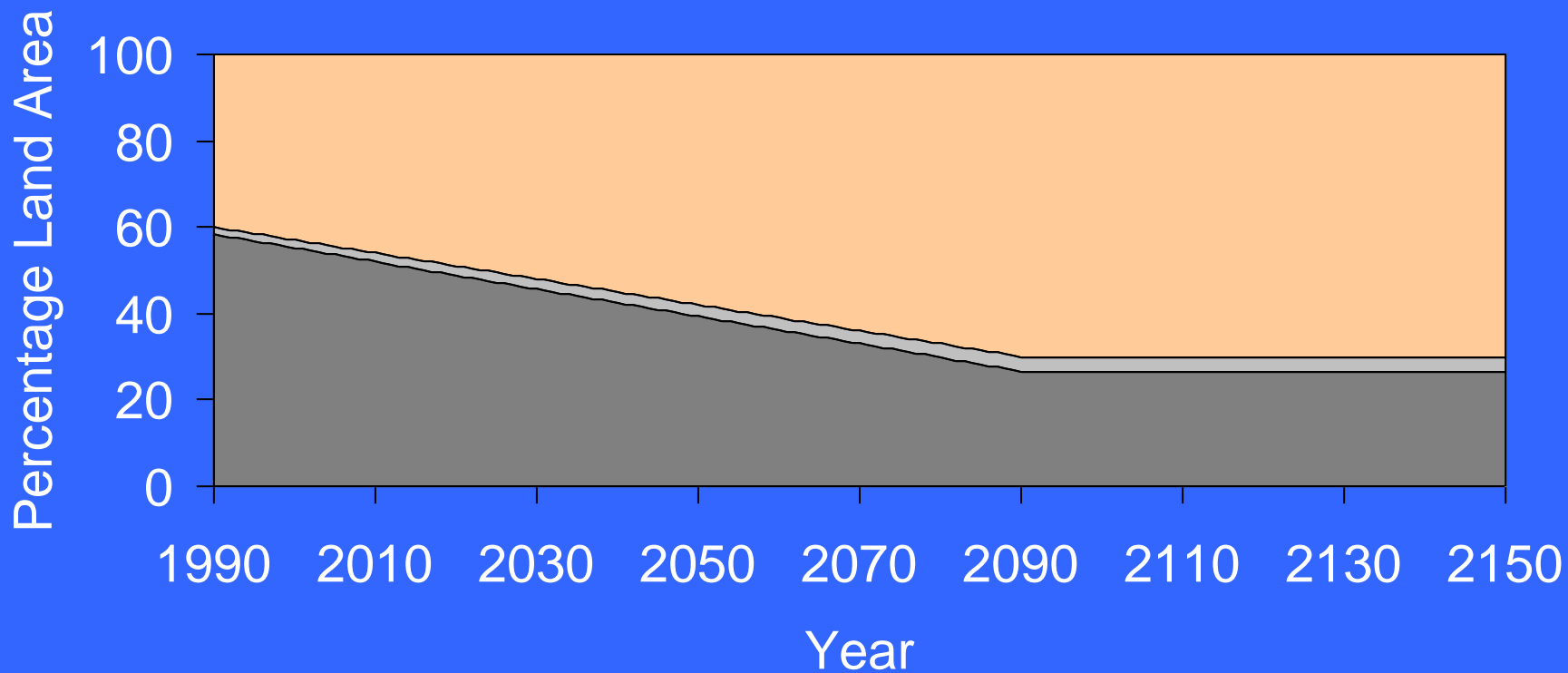
Projected land cover in country Pentagon, BUSINESS AS USUAL

Country Pentagon

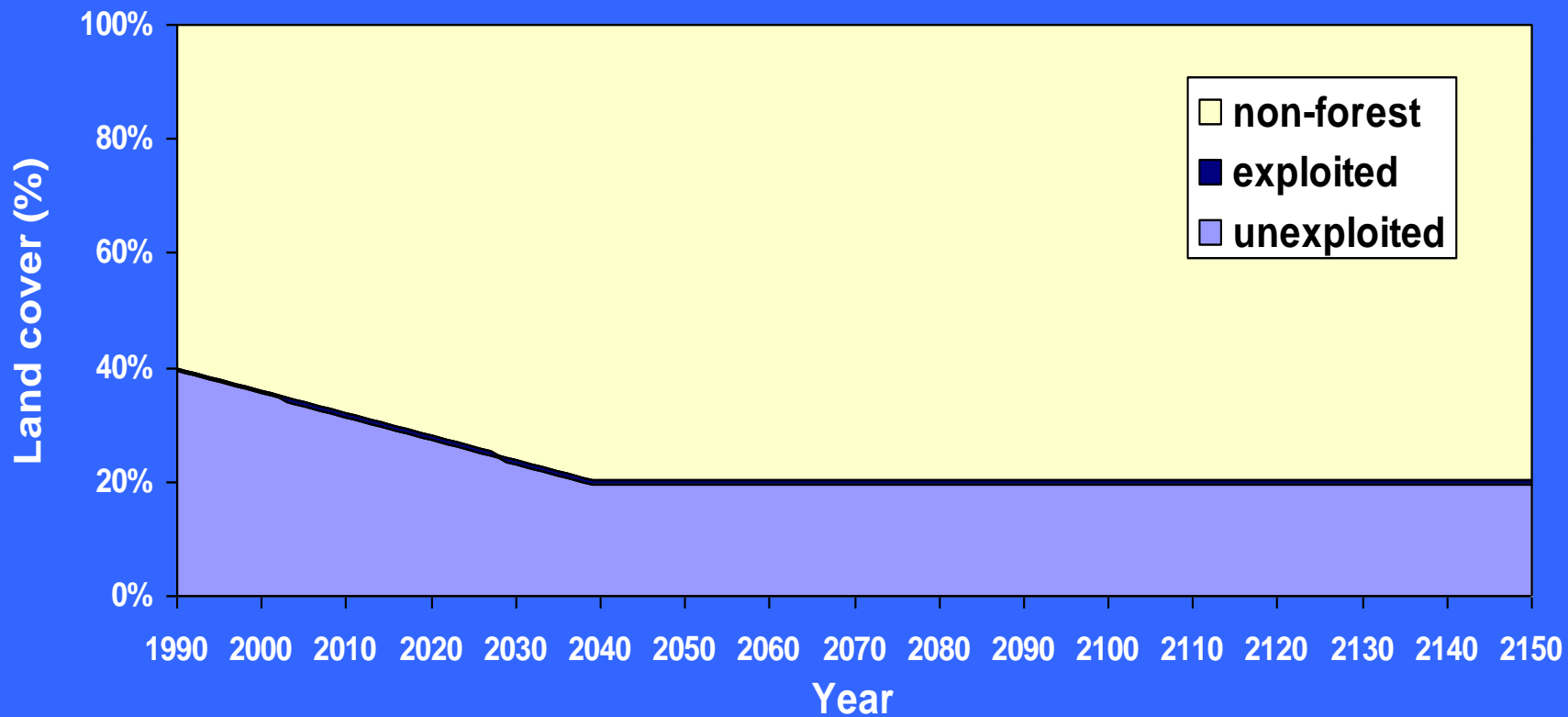


Projected land cover in country Oval, BUSINESS AS USUAL

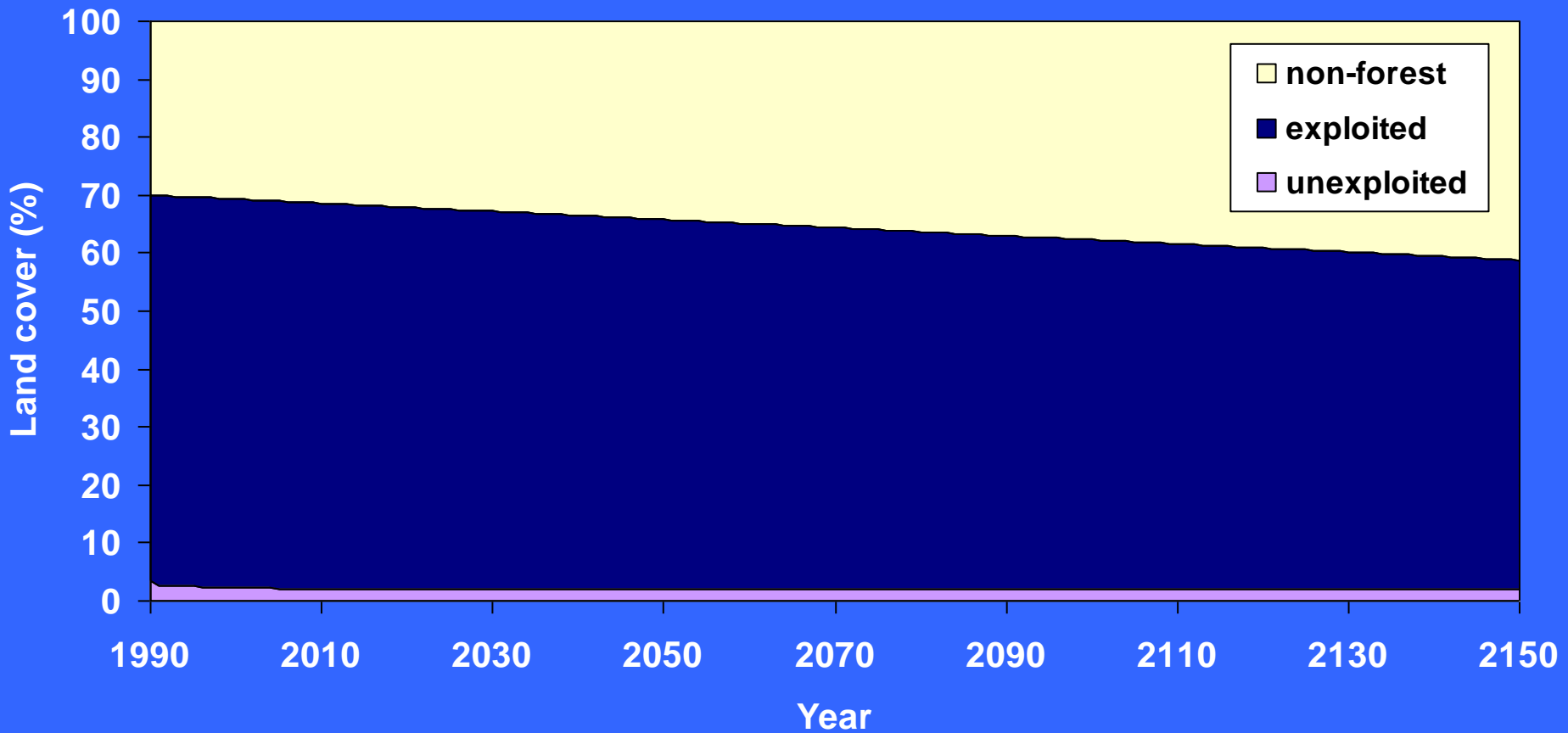
Country Oval



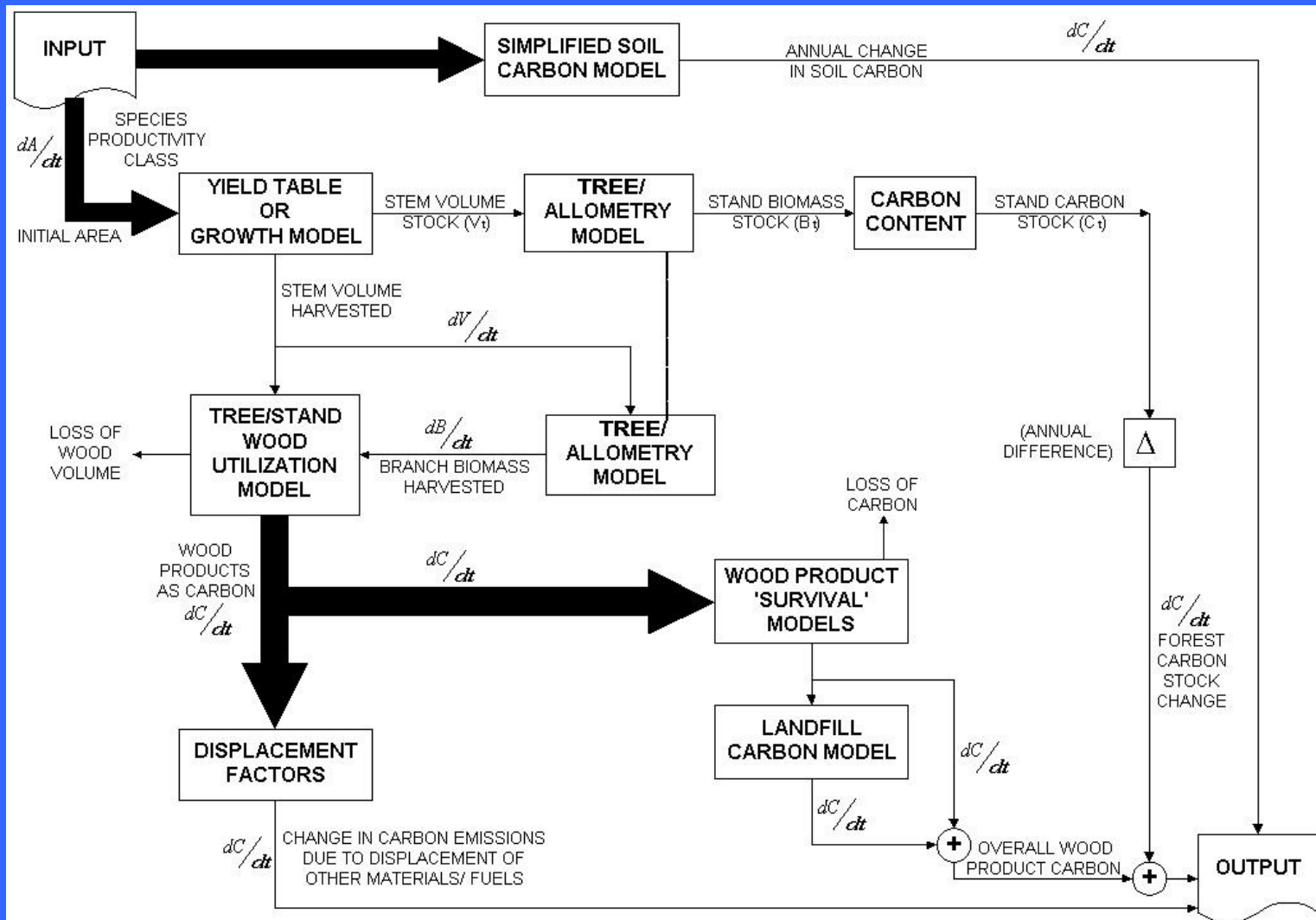
Projected land cover in country Circle, BUSINESS AS USUAL



Projected land cover in country Oblong BUSINESS AS USUAL



METHODS



METHODS

LULUCF Accounting:

Real-time, One-off, Benchmark, Simplified benchmark.

Tonne-year, Advanced tonne-year, Rental

HWP Accounting:

IPCC, Stock Change, Production, Atmospheric Flow

METHODS

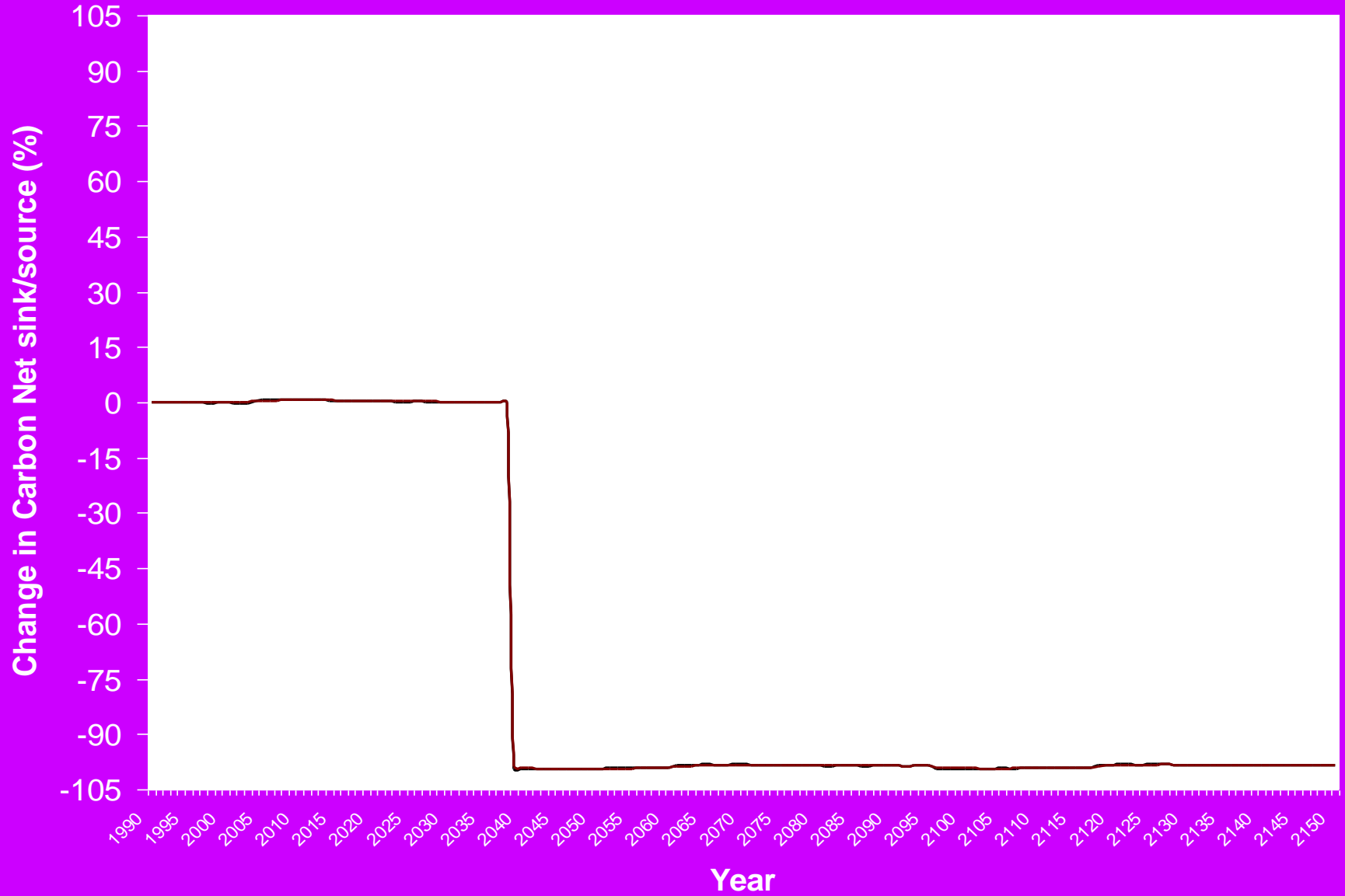
Article 3.7:

Strict interpretation, gross-net, net-net

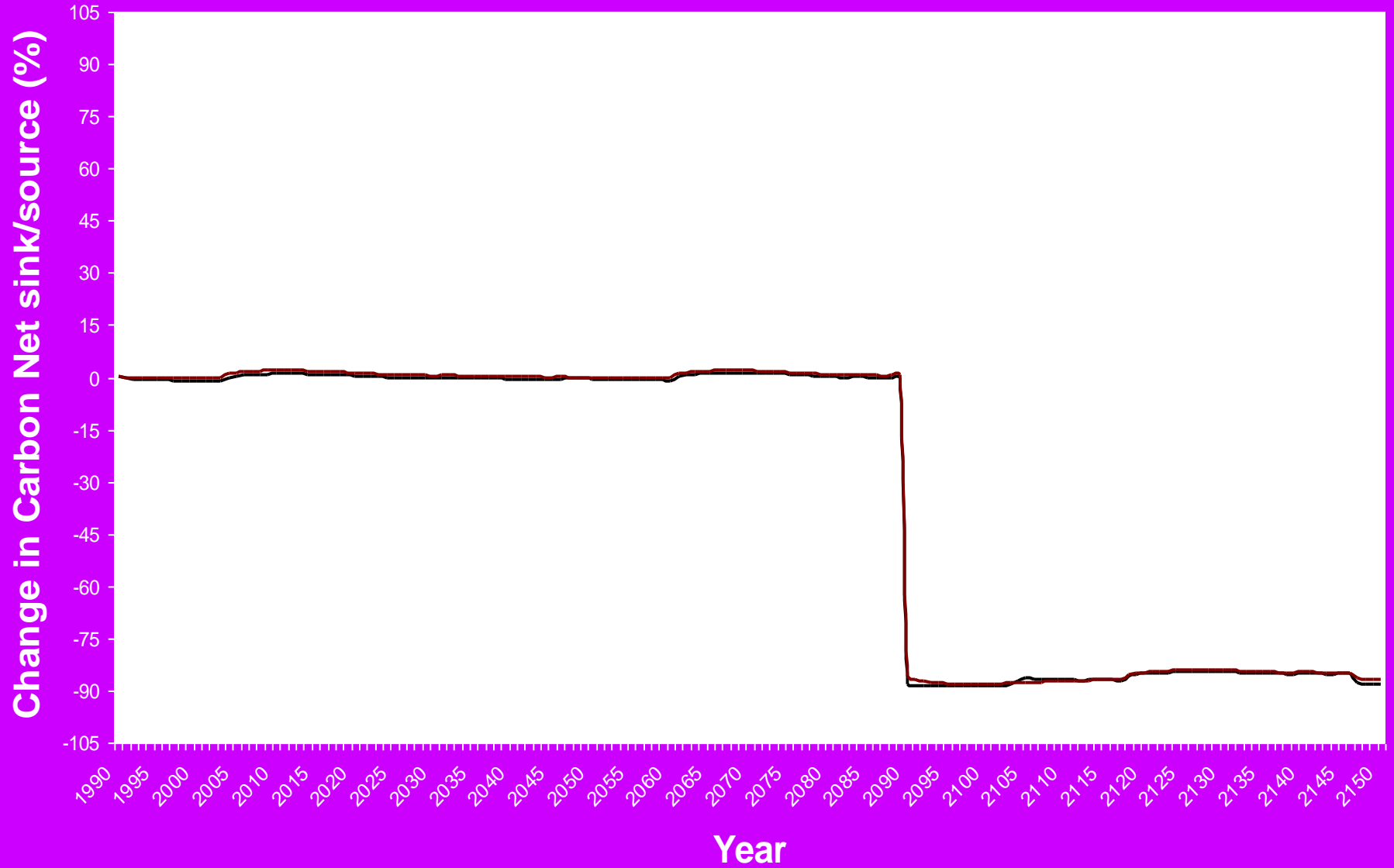
Baselines:

Zero, 1990 value, 1990 projection, BAU projection

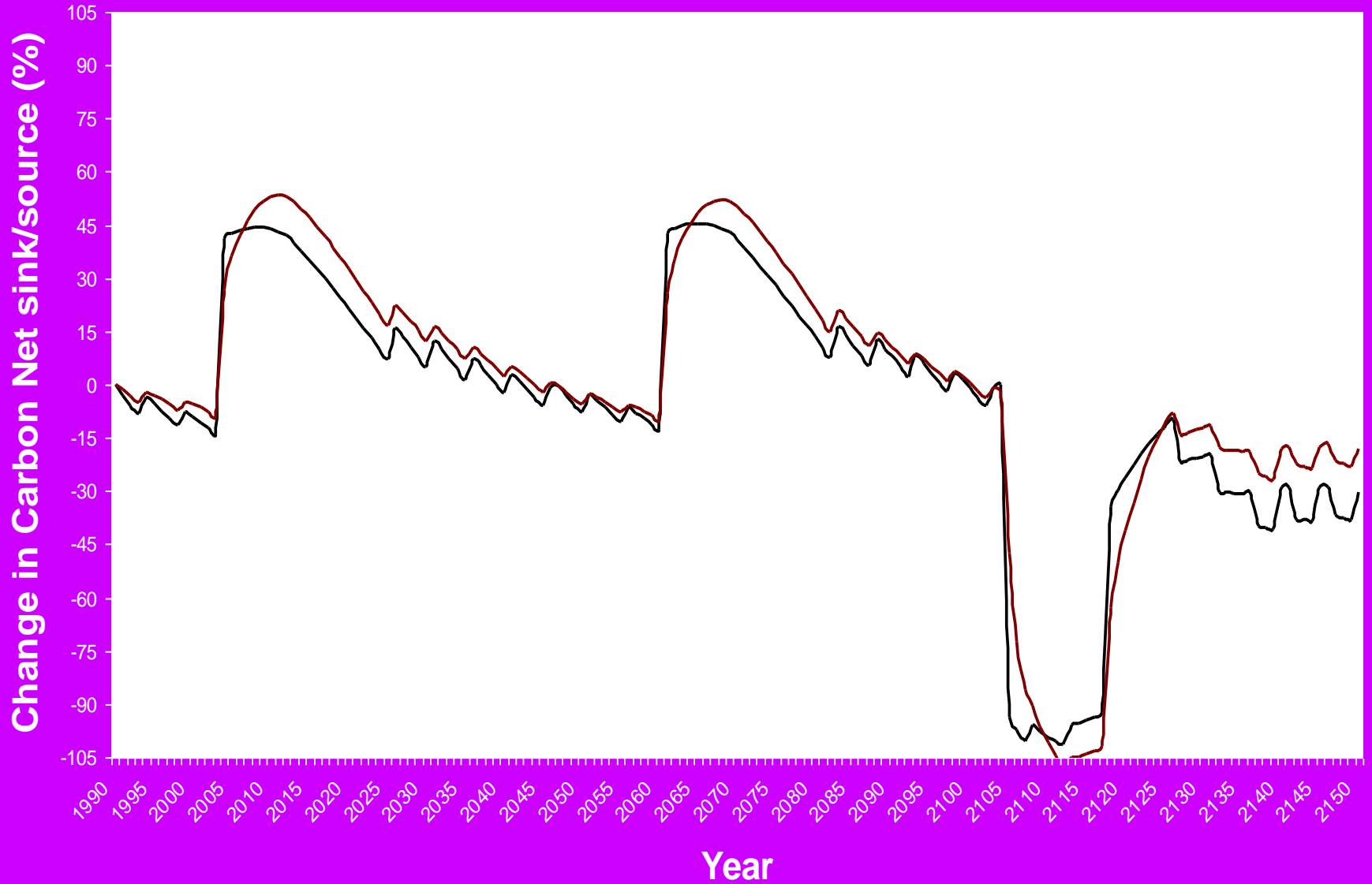
Default BAU Projection : Country Circle



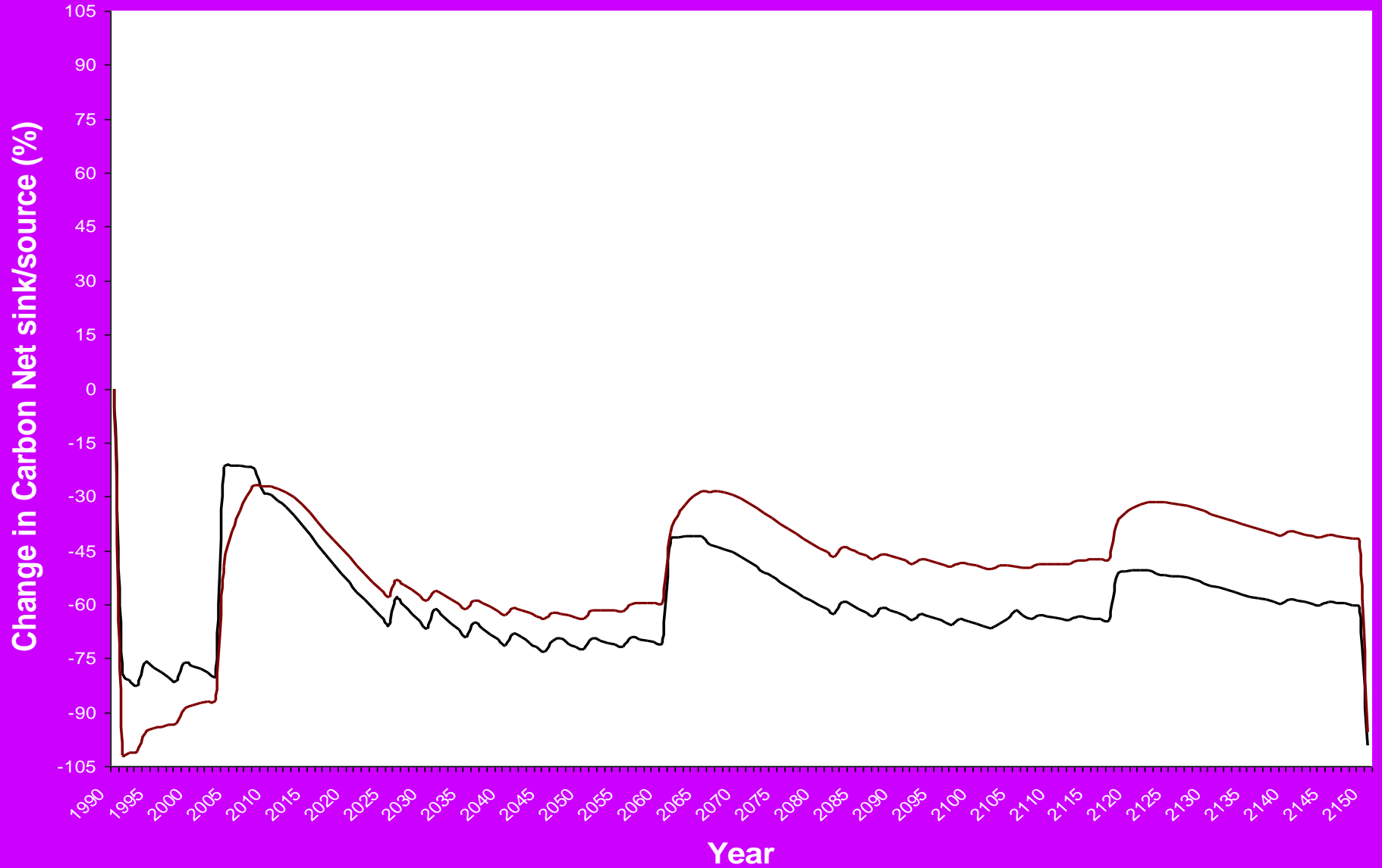
Default BAU Projection : Country Oval



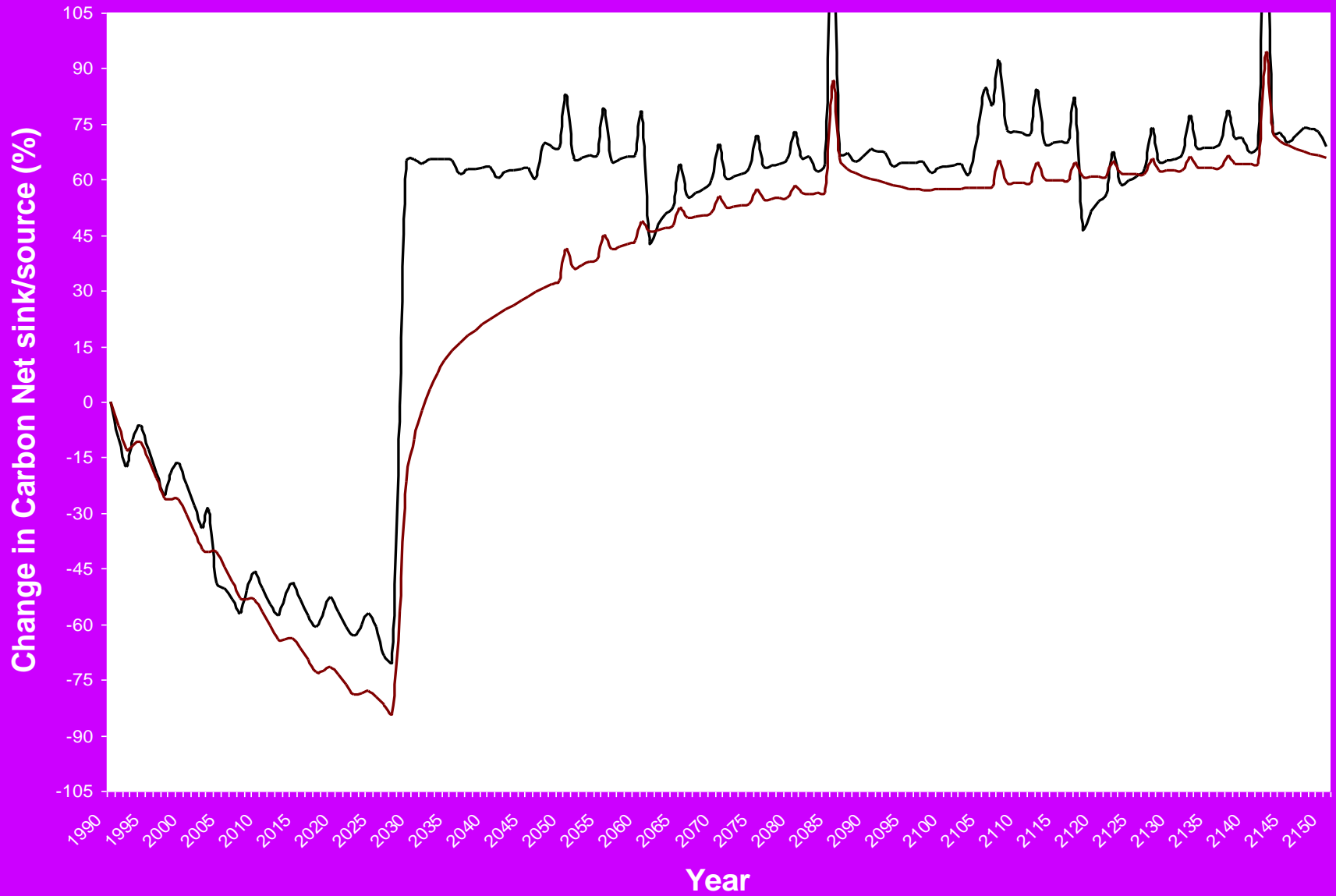
Default BAU Projection : Country Trapezium



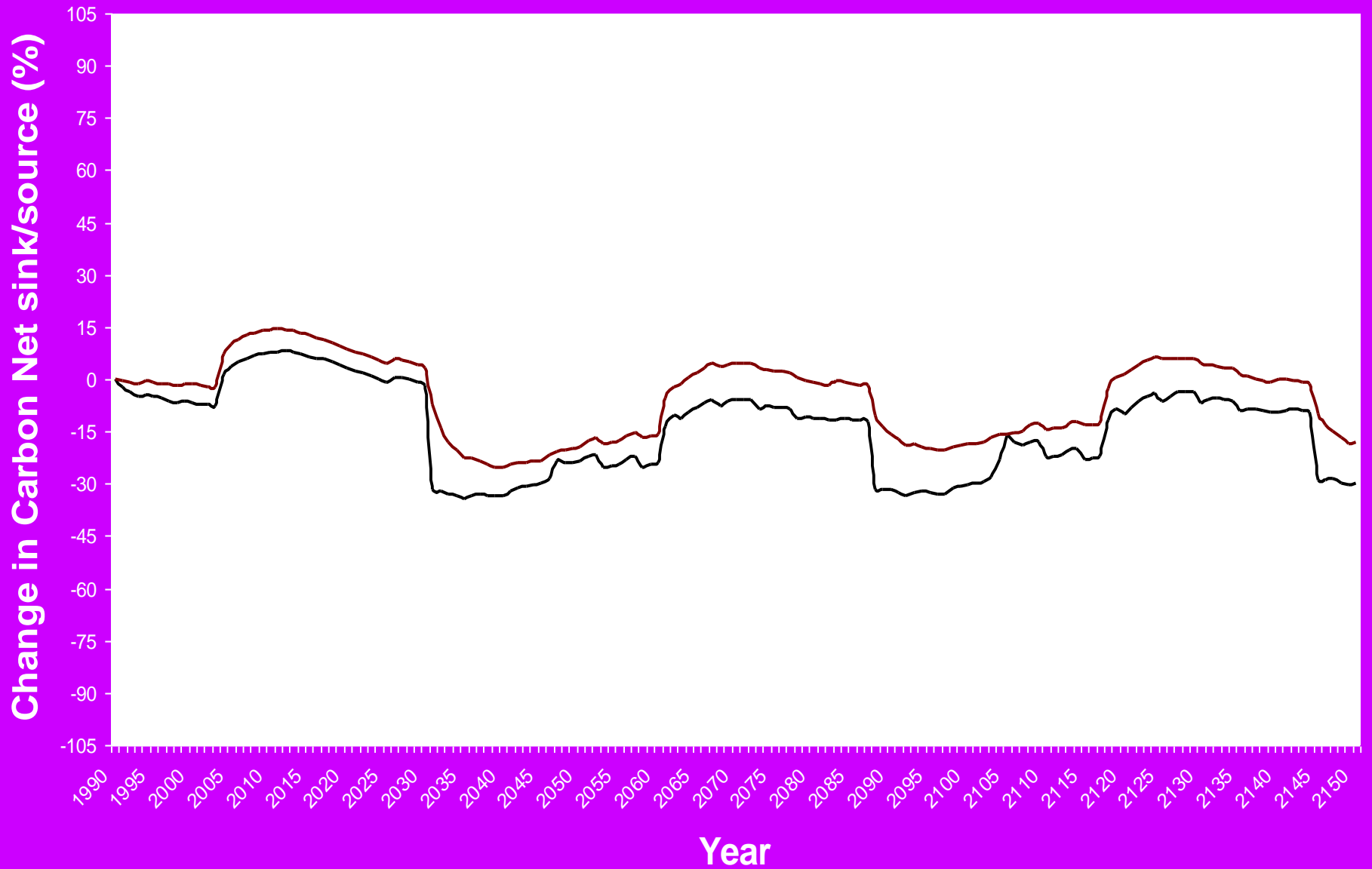
Default BAU Projection : Country Oblong



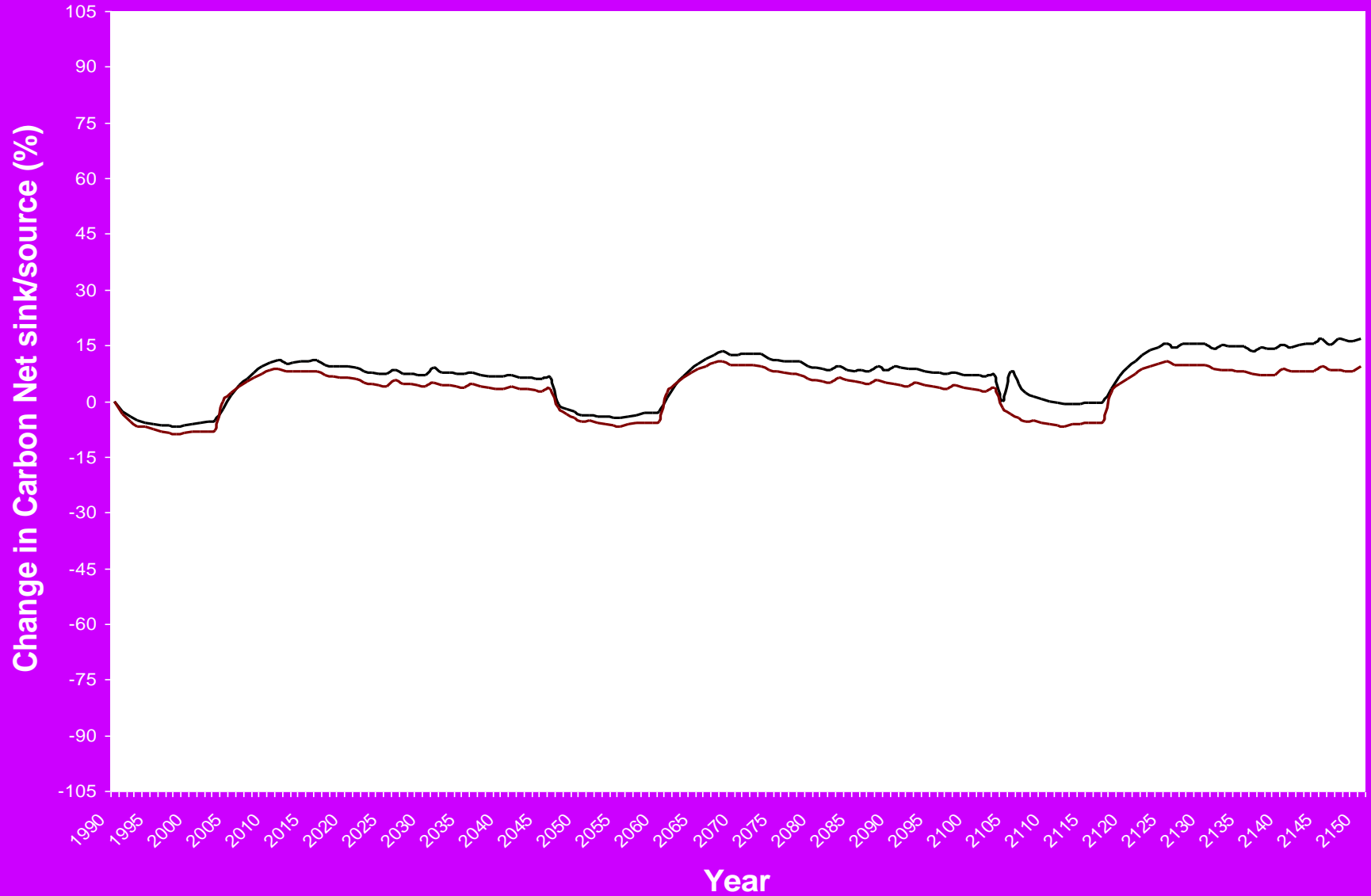
Default BAU Projection : Country Diamond



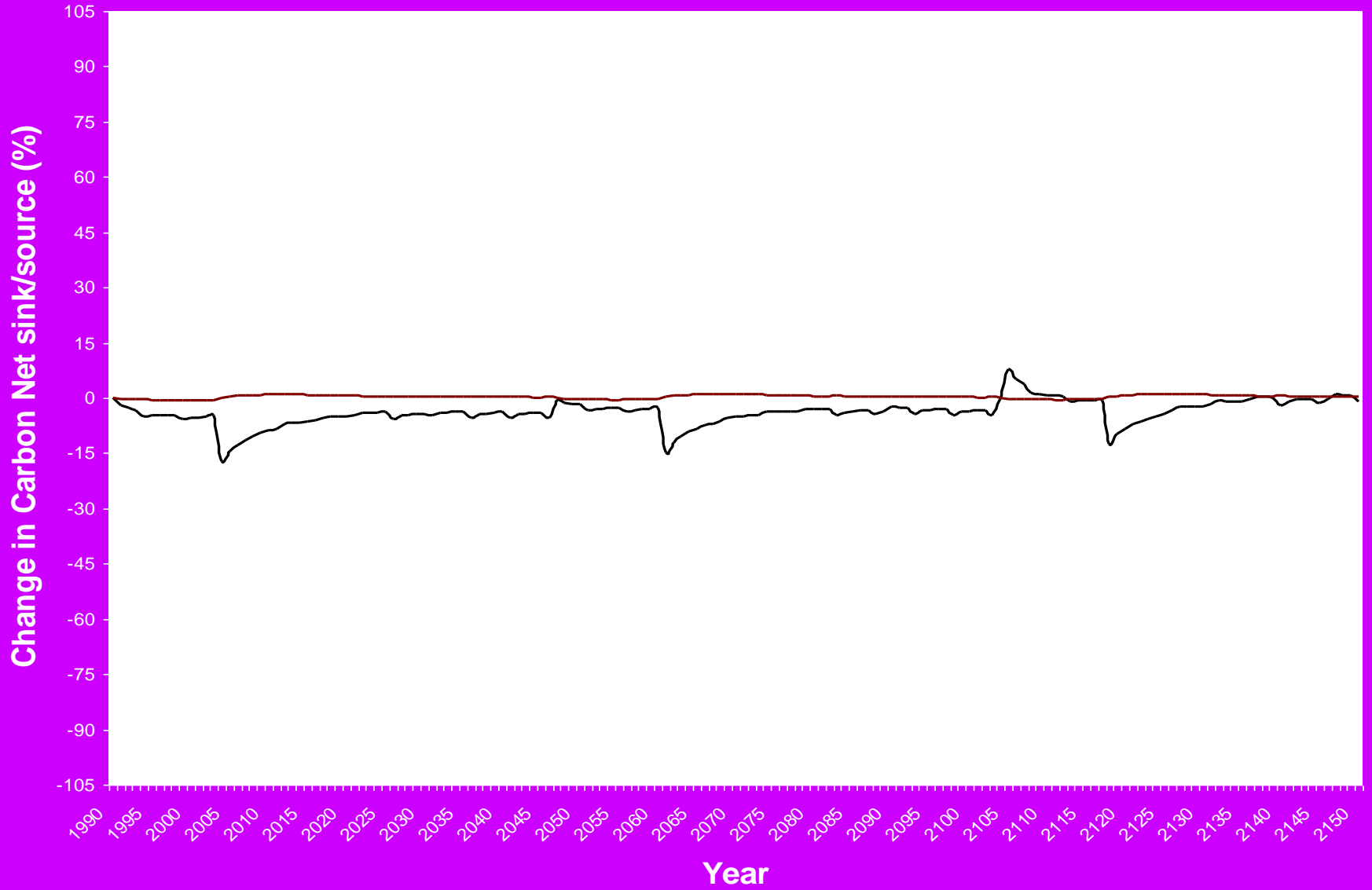
Default BAU Projection : Country Star



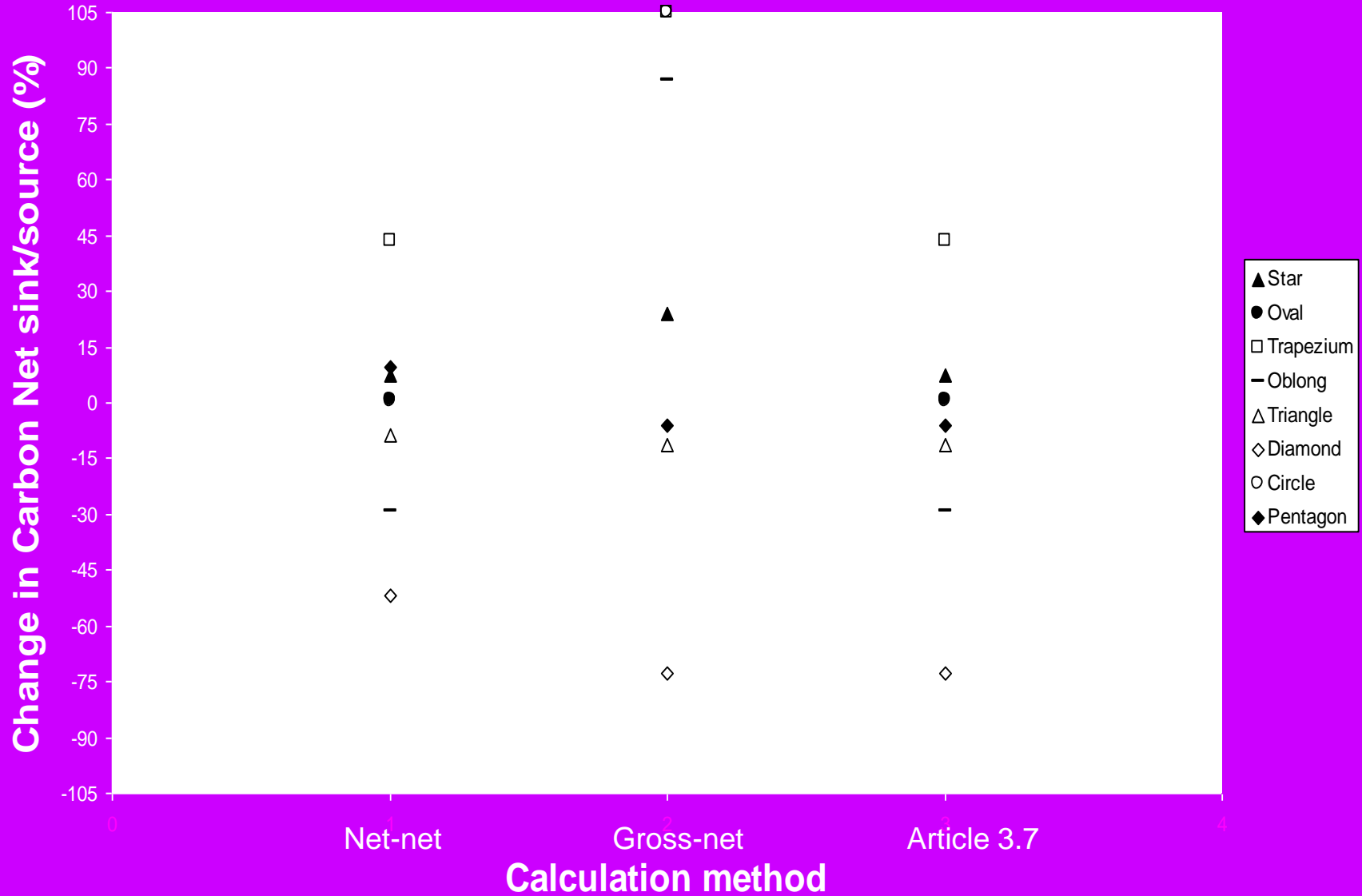
Default BAU Projection : Country Pentagon



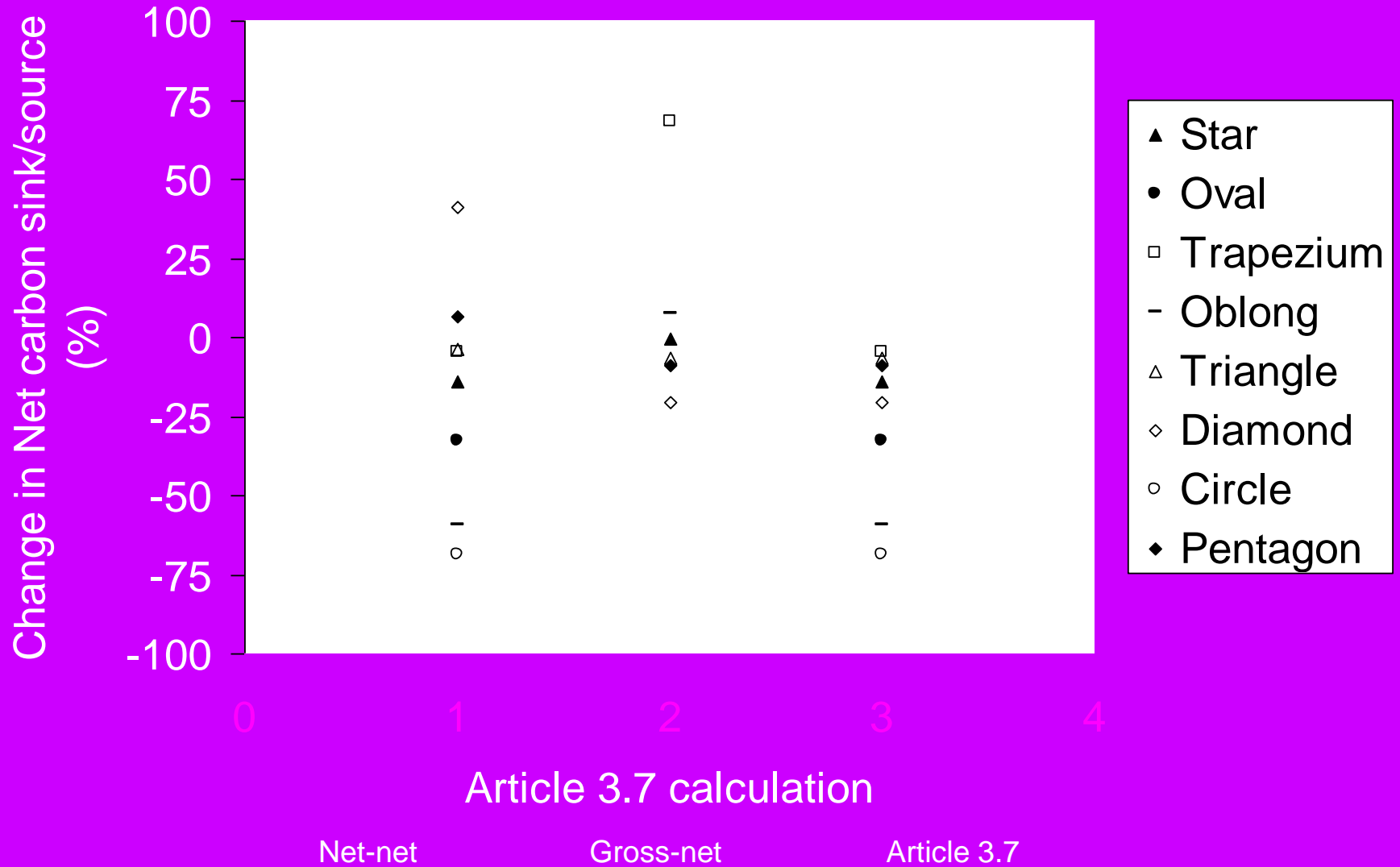
Default BAU Projection : Country Triangle



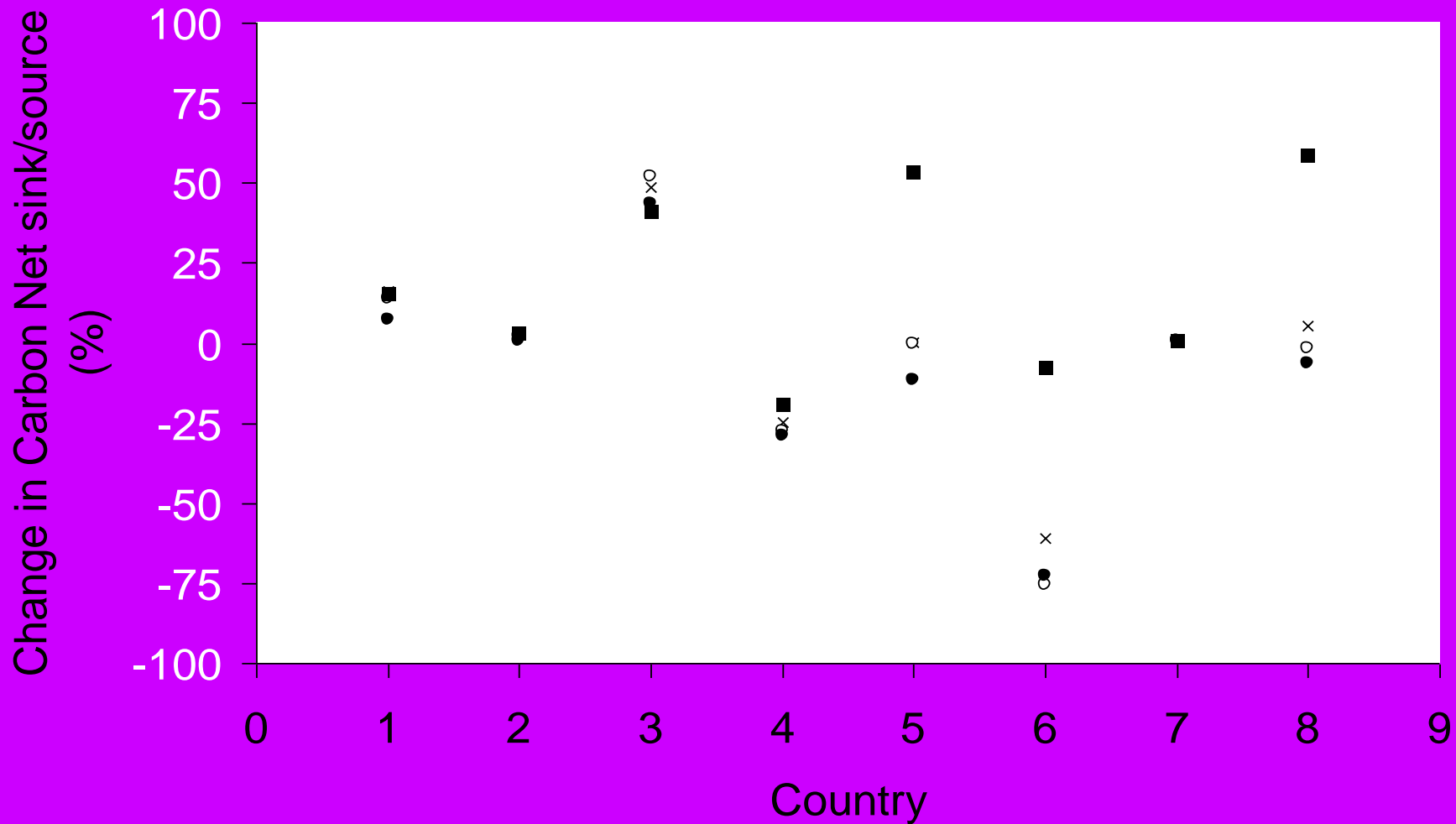
Influence of percentage calculation method 2008 - 2012



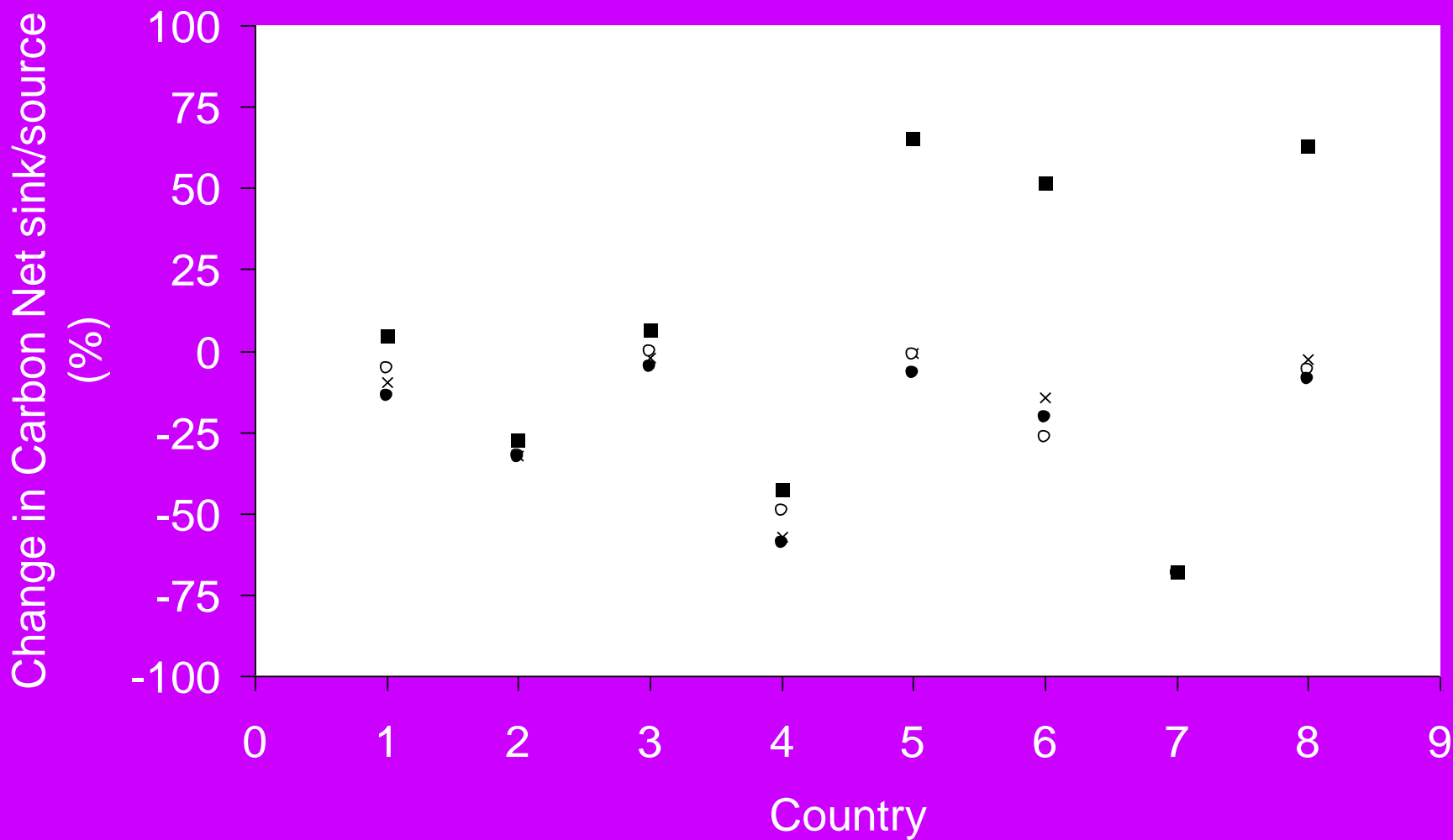
Influence of percentage calculation method 1990-2150



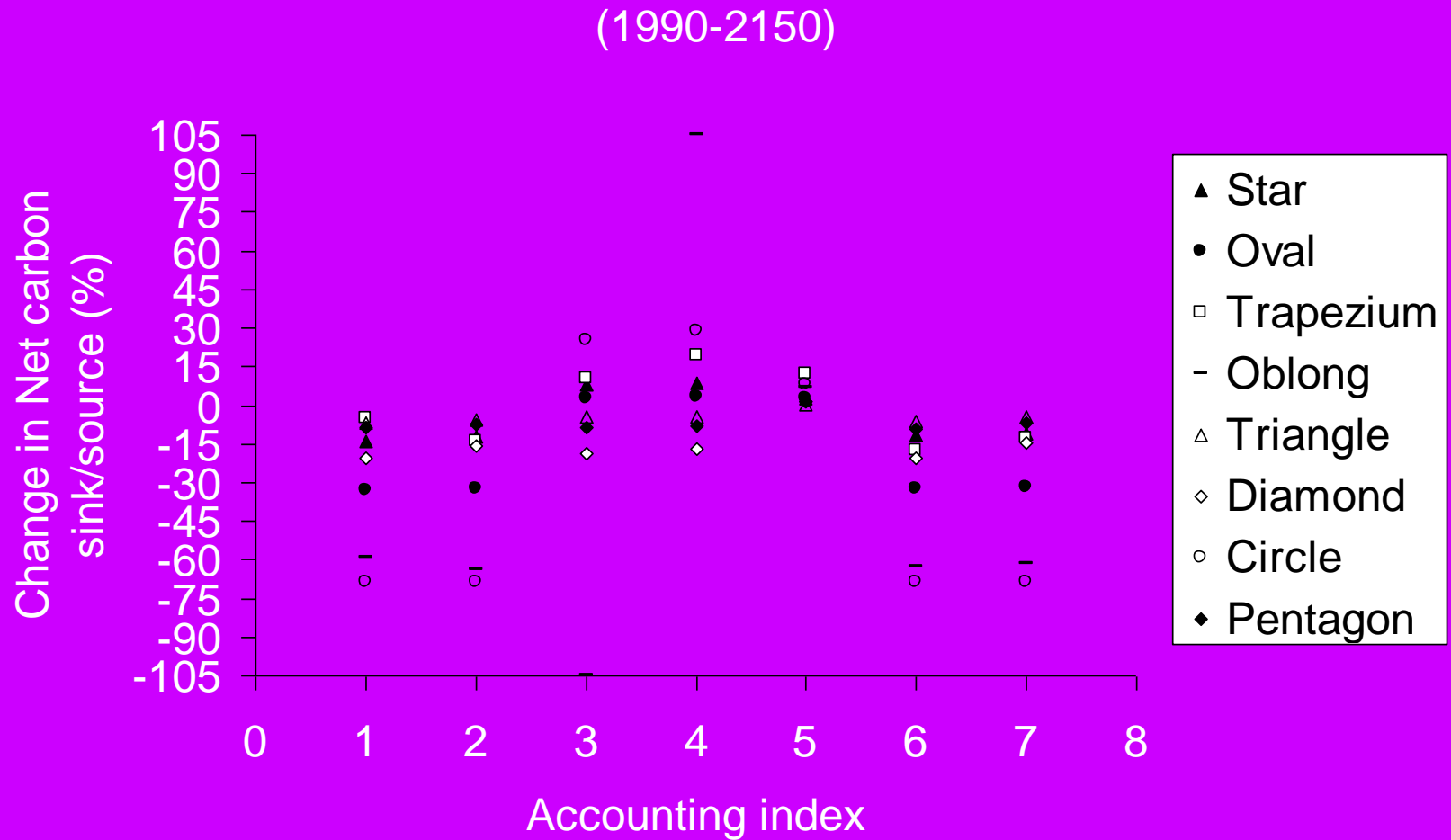
The impact of accounting for HWP, 2008-2012



The impact of accounting for HWP, 1990-2150

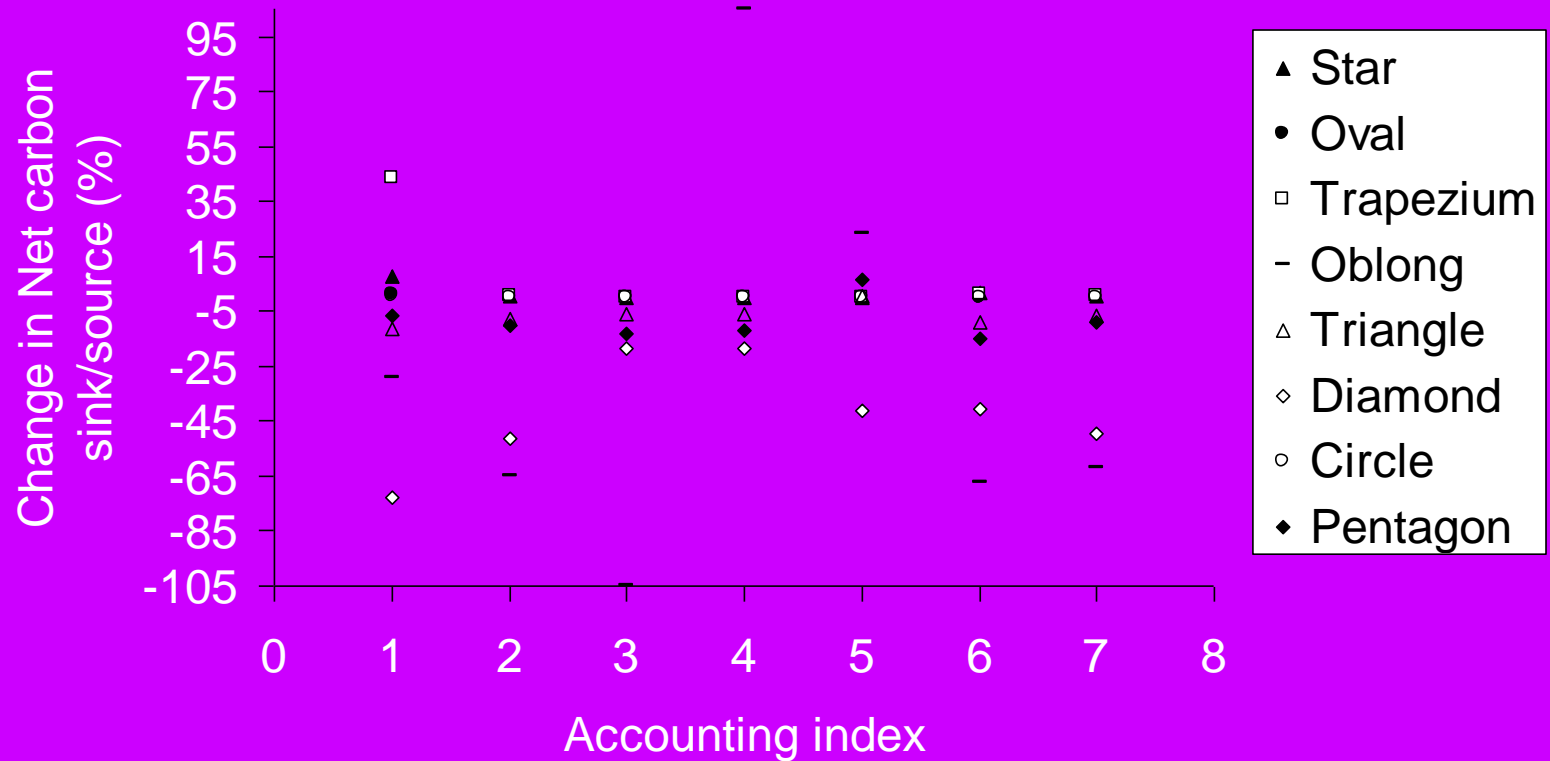


Impact of accounting indices, zero baseline



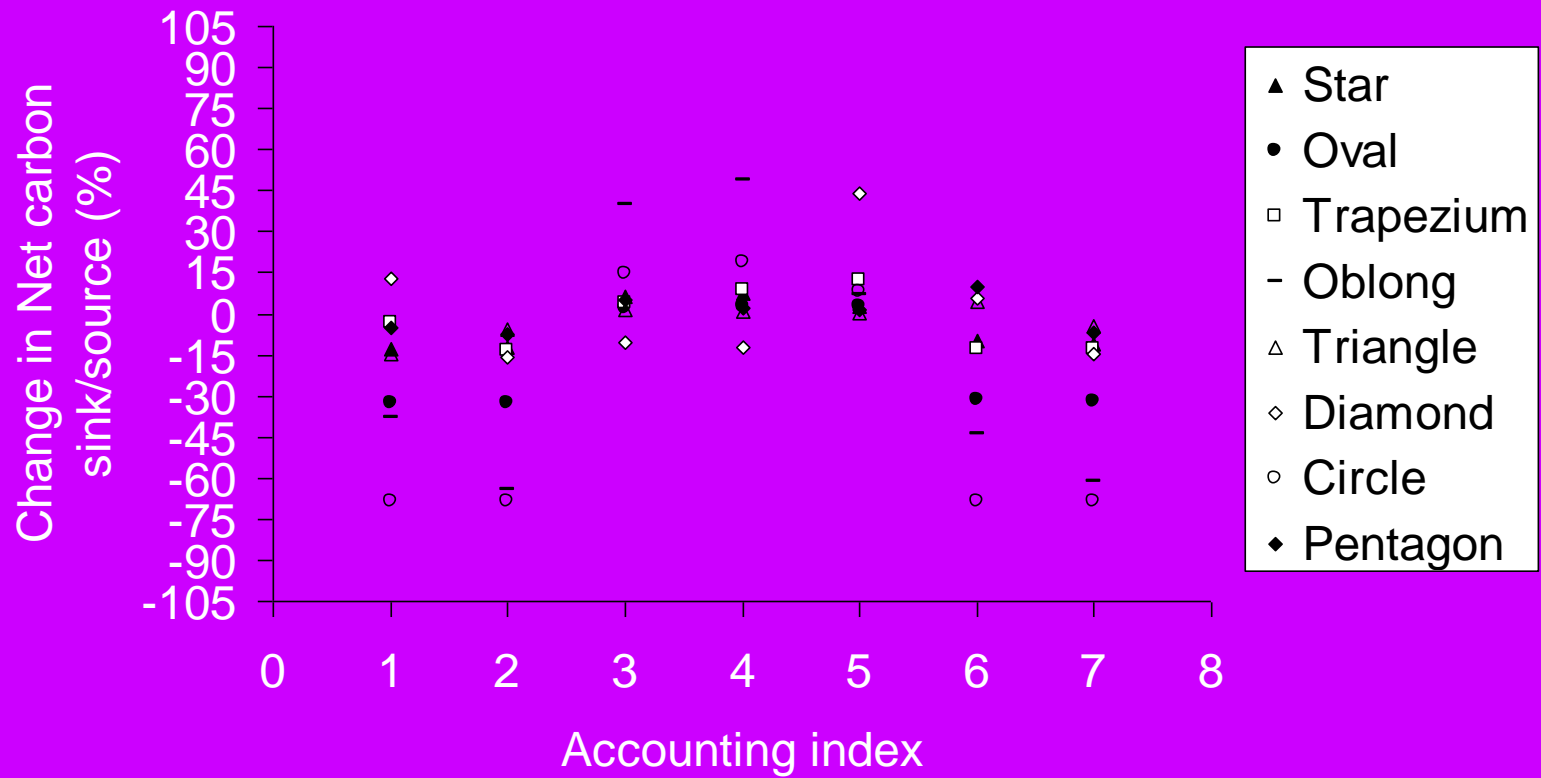
Impact of accounting indices, zero baseline

(2008-2012)



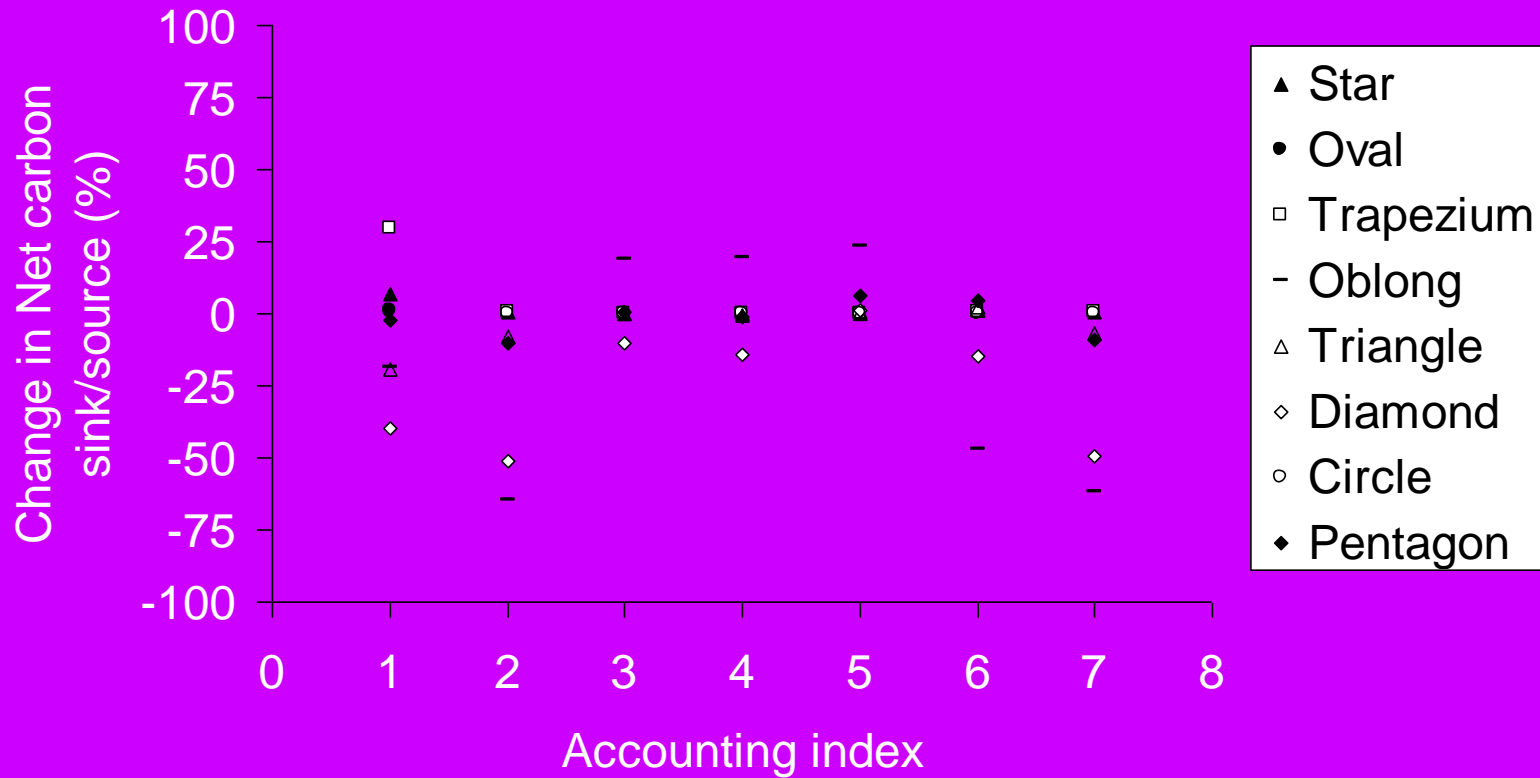
Impact of accounting indices, 1990 value

Graph 7 (1990-2150)



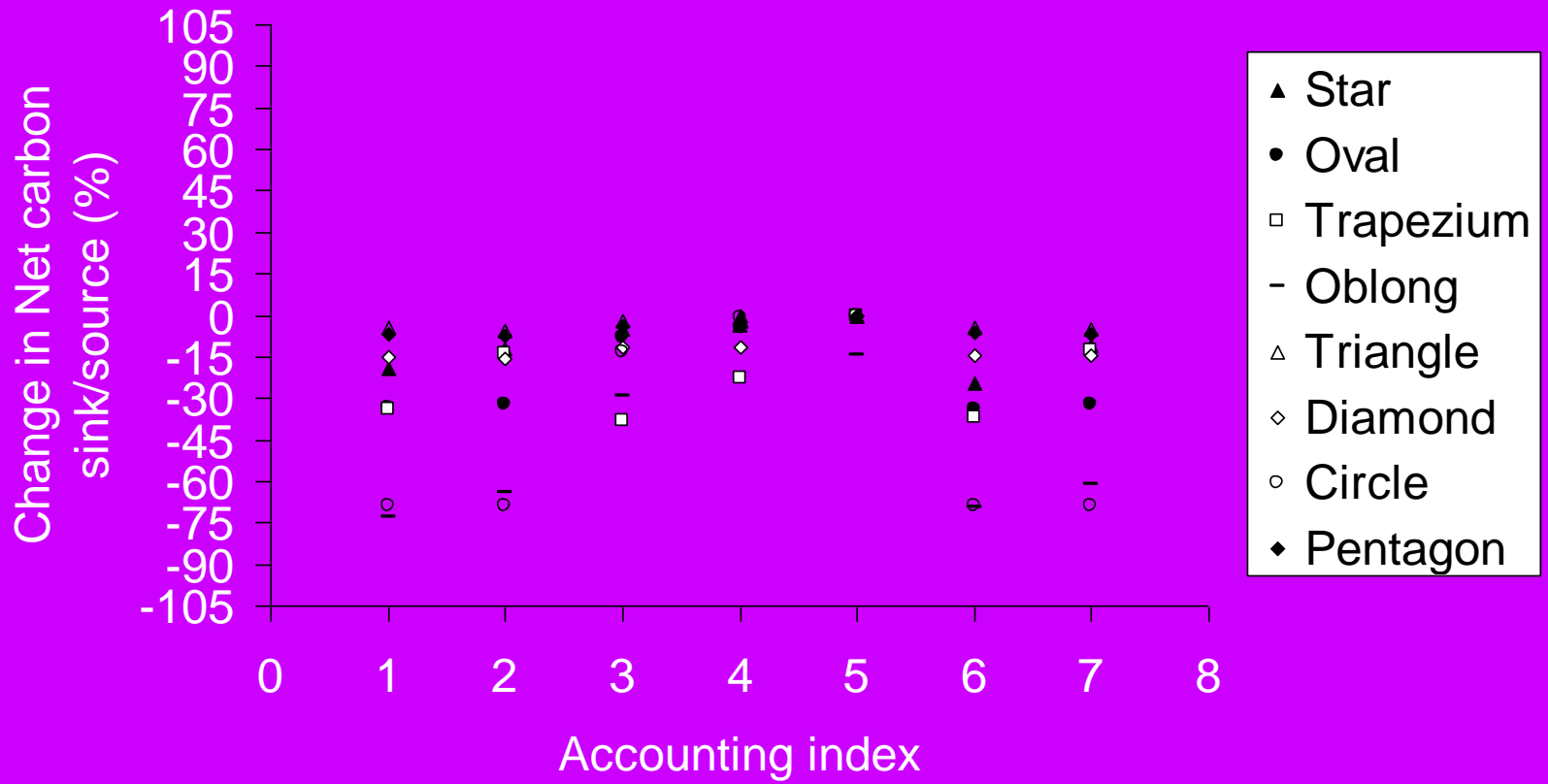
Impact of accounting indices, 1990 value

(2008-2012)



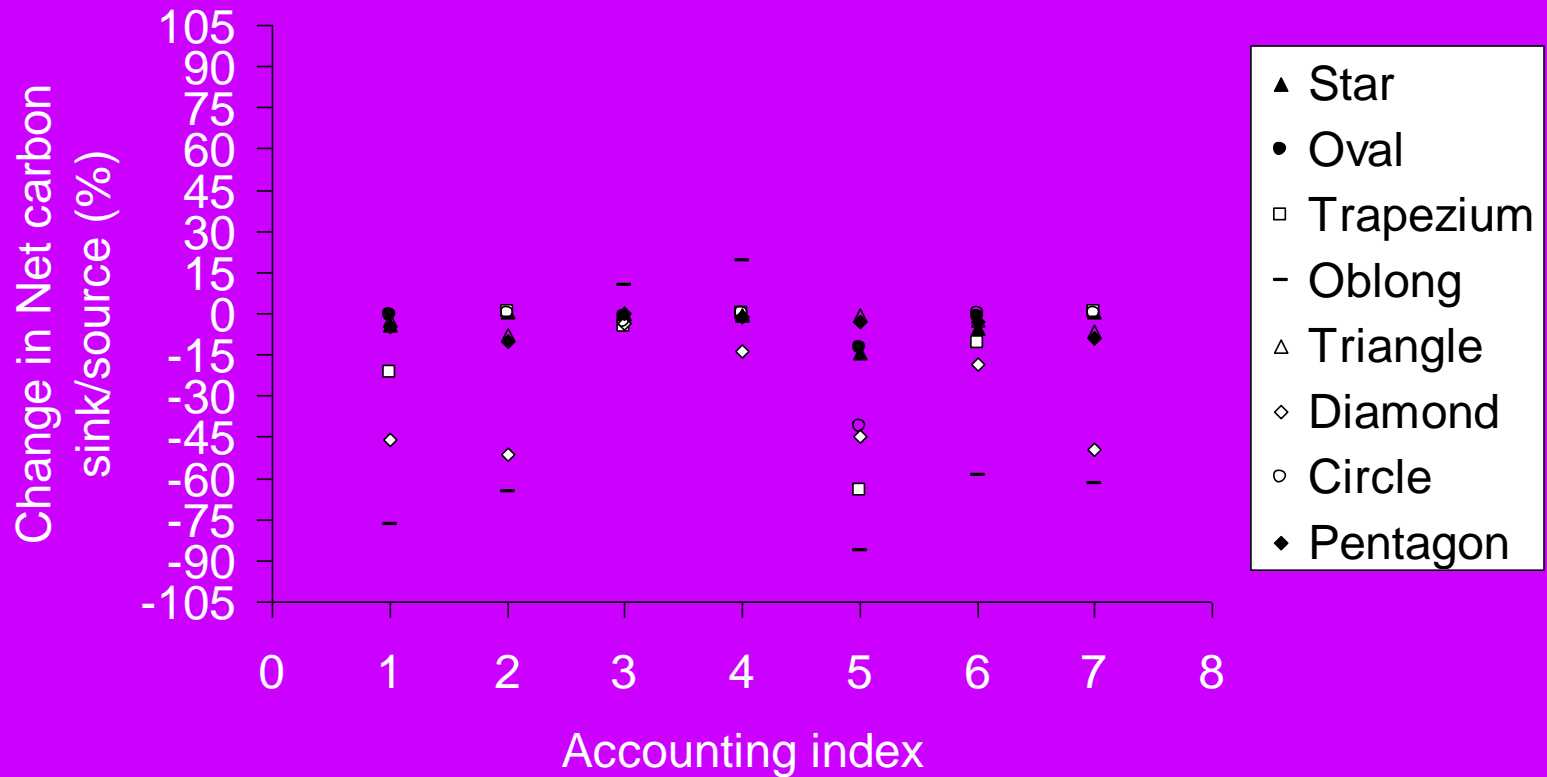
Impact of accounting indices, 1990 projection

(1990-2150)



Impact of accounting indices, 1990 projection

(2008-2012)



CONCLUSIONS

- If LULUCF is to be included in the Kyoto Protocol, the accounting procedures can, indeed must, be kept as simple as possible, otherwise anomalous results and perverse incentives will arise.
- Tonne year understates the role of LULUCF.
- Article 3.7 appears to be acceptable.

CONCLUSIONS

- Carbon sequestration in wood products is not as important at global level, as had been thought.
- The differences in calculation methods for HWP is small, apart from Atmospheric Flow which is pessimistic.
- Need to look at the longer term impacts, rather than the first accounting period only.

FUTURE WORK

- Explore the forest area constraints.
- Periodically re-set the year for the assigned amount.
- Examine the impact of changes in land use policy.
- Include the CDM.