

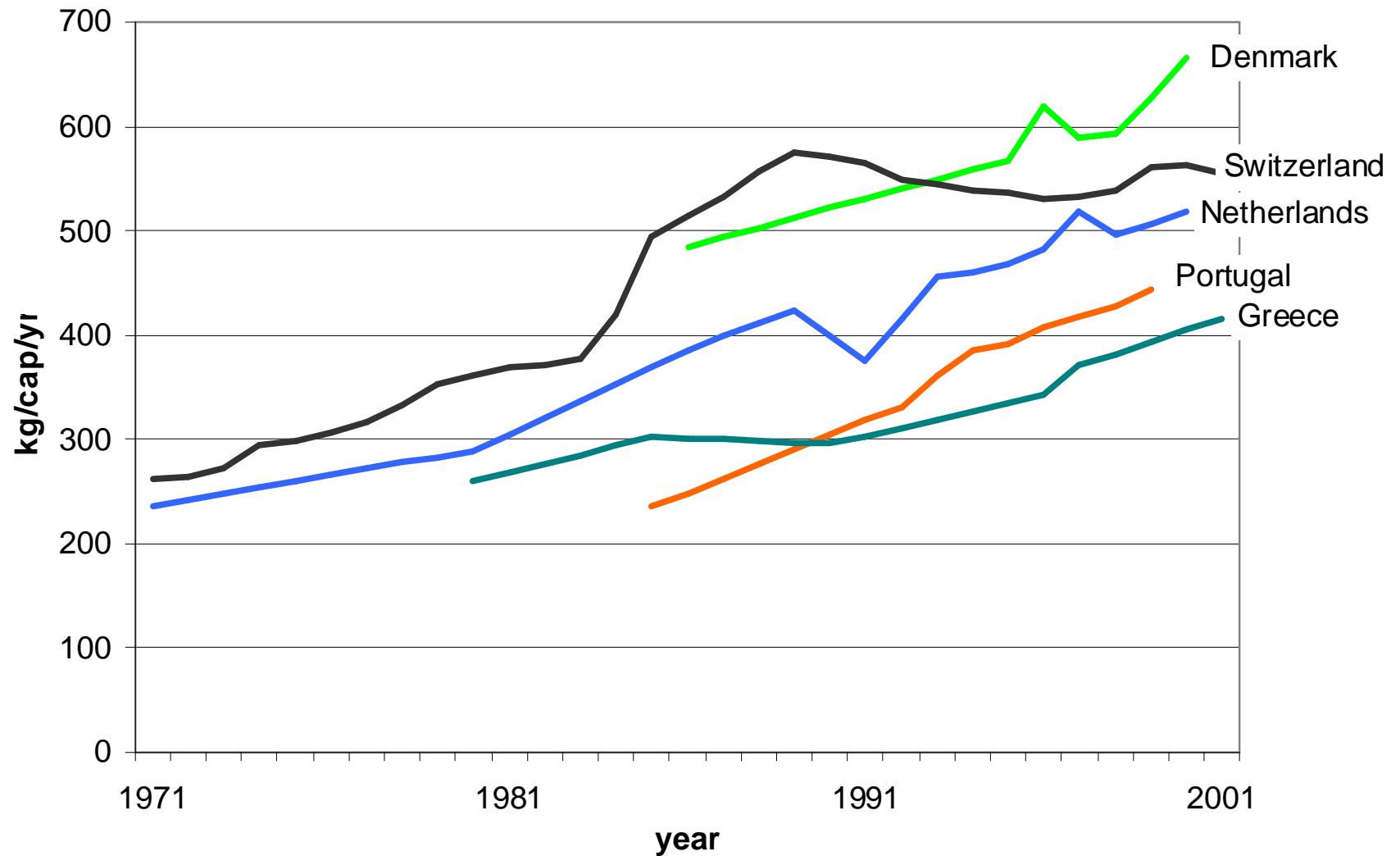
The impact of beverage packaging on waste quantities



Stefan Salhofer

BOKU-University of Natural Resources and Applied Life Sciences, Vienna
Department of Waste Management - Head of Department: Peter Lechner

Waste generation trends



Municipal waste prognosis

Within each prosperity group, a set of parameters has been identified by means of backward regression.

These significant parameters are components of log-linear regression equations.

Model parameters

(Black: Urban indicators; Red: National indicators)

Low or medium prosperity

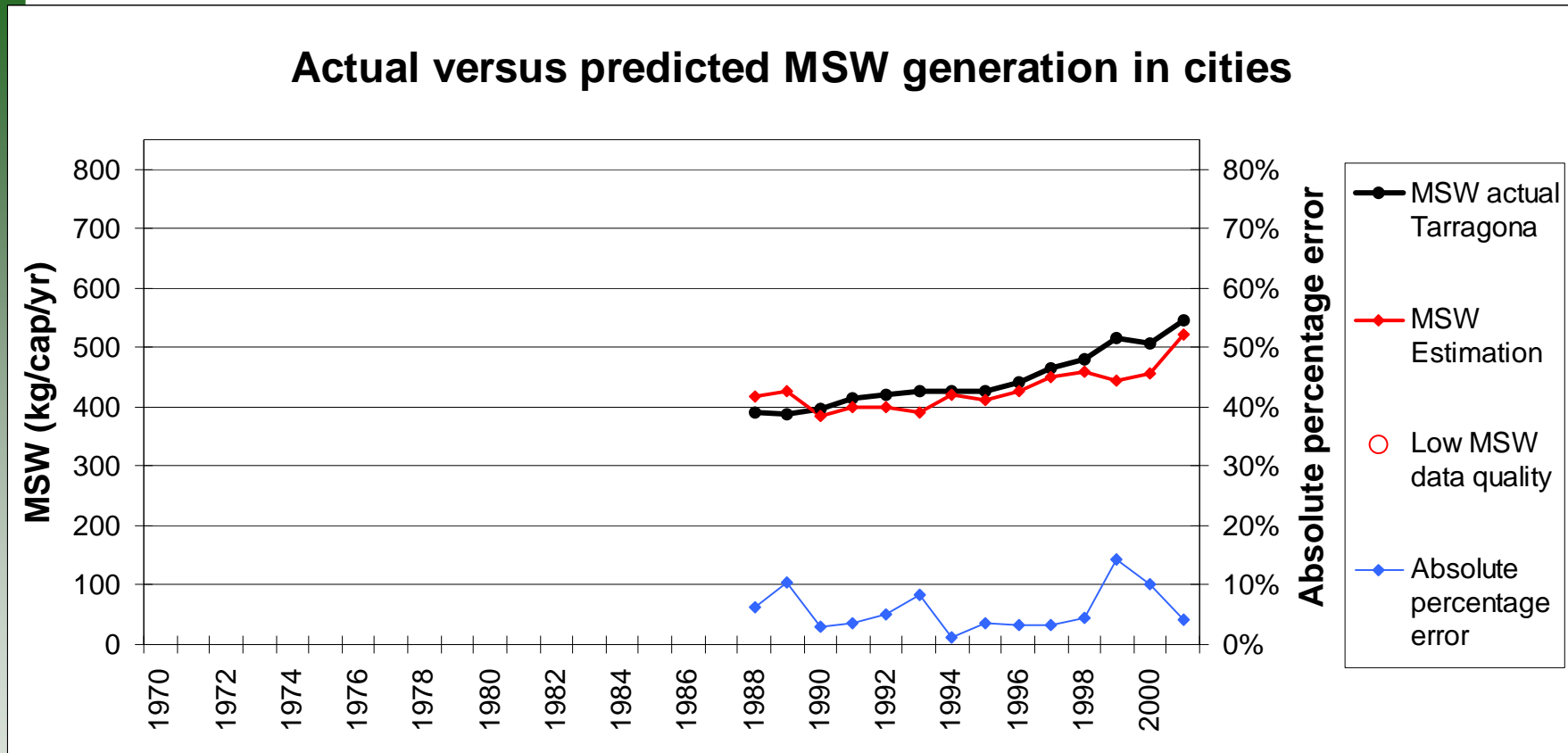
- Population aged 15-59 (%)
- Household size
- Life expectancy at birth
- National infant mortality rate

High or very high prosperity

- Urban infant mortality rate
- National gross domestic product per capita

ref: Beigl et al., 2003

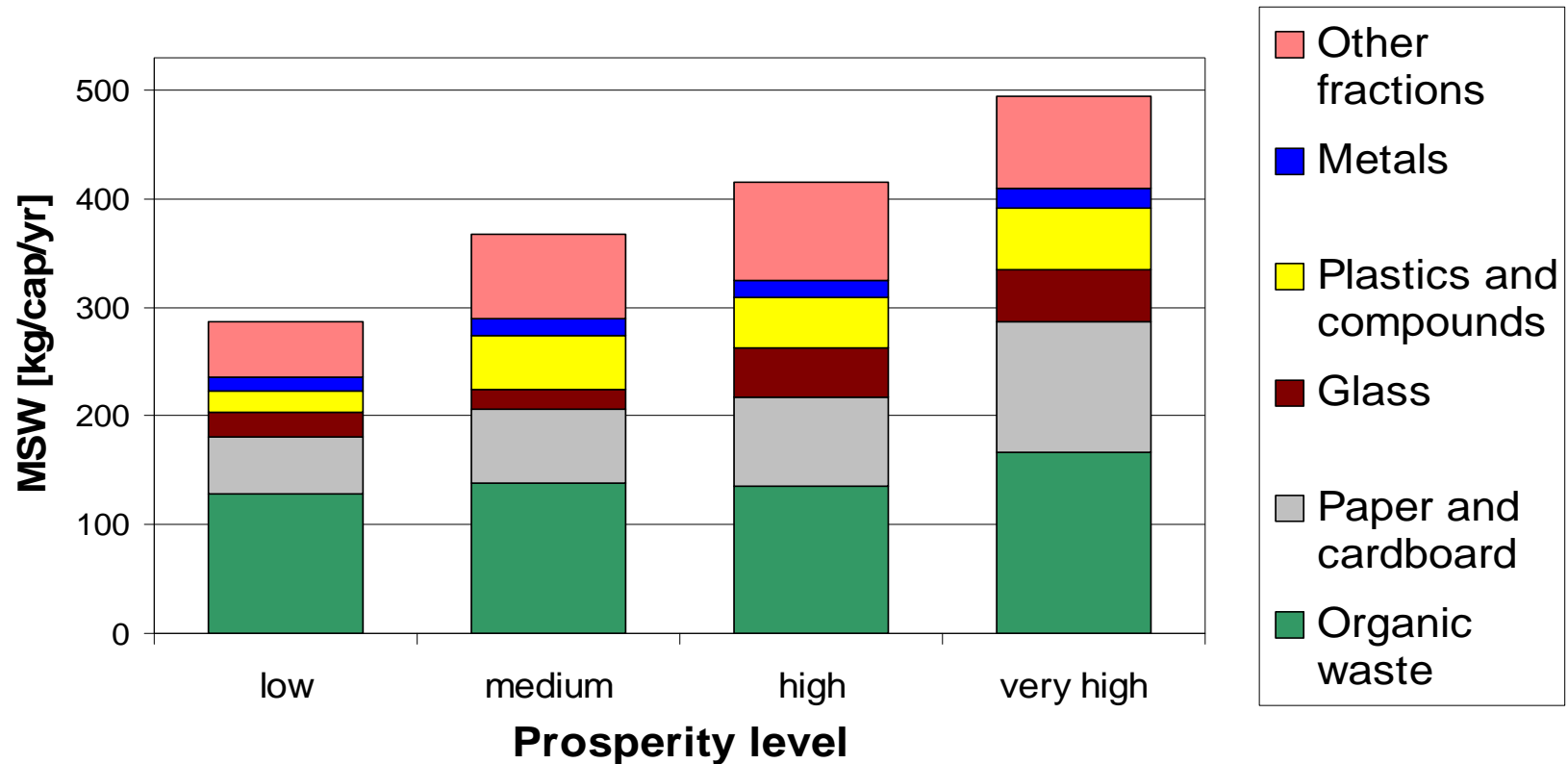
Municipal waste prognosis - modelling



ref: Beigl et al., 2003

Prosperity and Waste Generation

(set of factors)



source: Beigl et al. (2003)

Introduction

- In waste legislation, we find a priority of waste prevention
- Numerous activities for implementation
 - At country level ... Austrian WM Plan
 - At City level (Vermeidung Wien)
 - A regional/municipal level .. NÖ, Sbg
- Monitoring effects and efficiency?

Approaches to analyse effects

- **Quantity based:** comparison of material / waste streams (quantity in kg/cap/yr) before and after setting a waste prevention measure

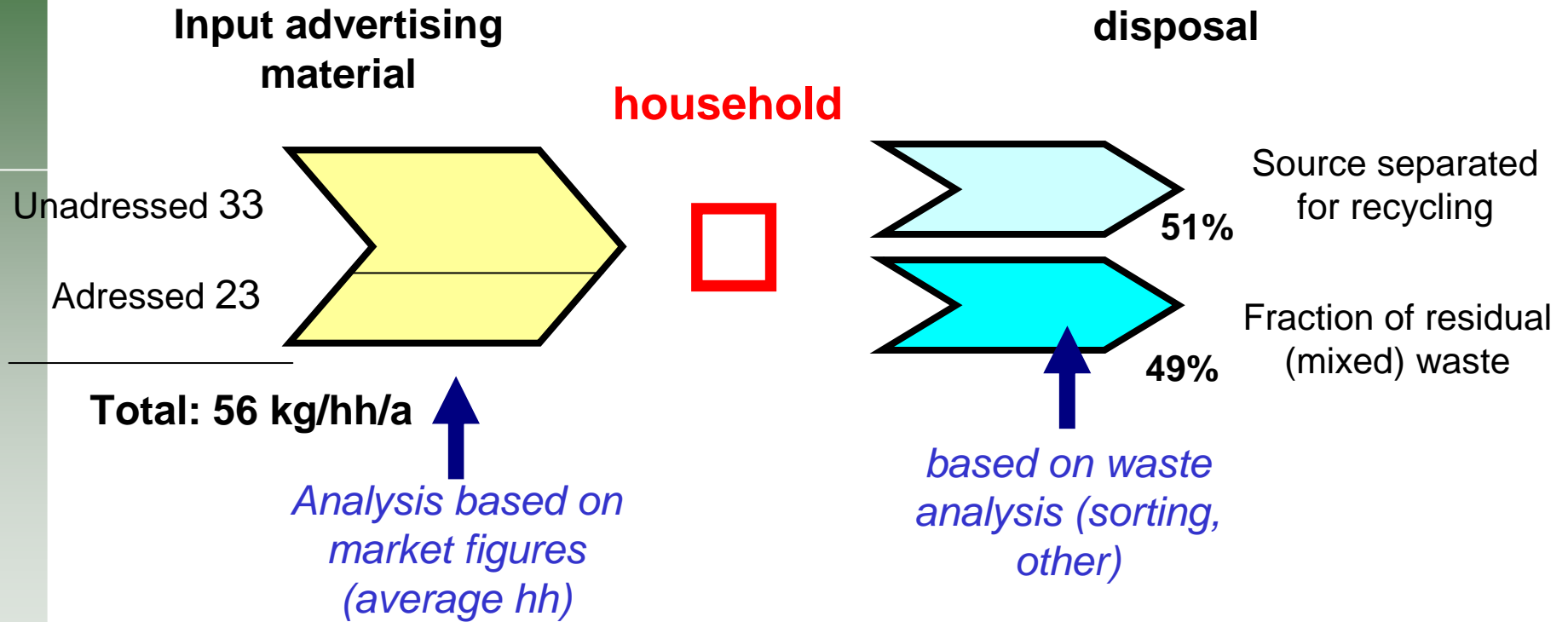
One-dimensional result

- **LCA results:** material / waste streams before and after setting a measure is compared considering major environmental impacts (GWP, AP, EP ...)

Multi-dimensional result

Quantity effects (1)

Case study: Advertising Vienna 2003



source: Wassermann and Schneider, 2003

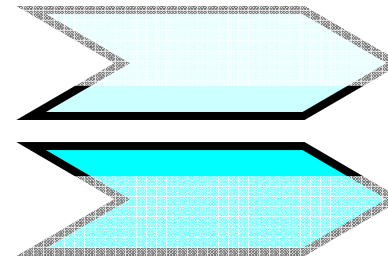
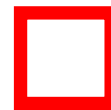
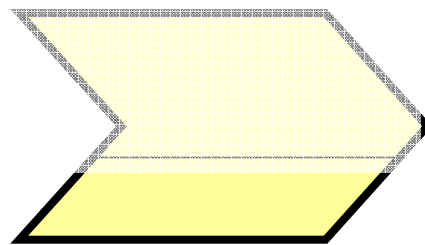
Quantity effects (2)

Case study: Advertising Vienna 2003

Input advertising material

disposal

household



Source separated
for recycling

Fraction of residual
(mixed) waste

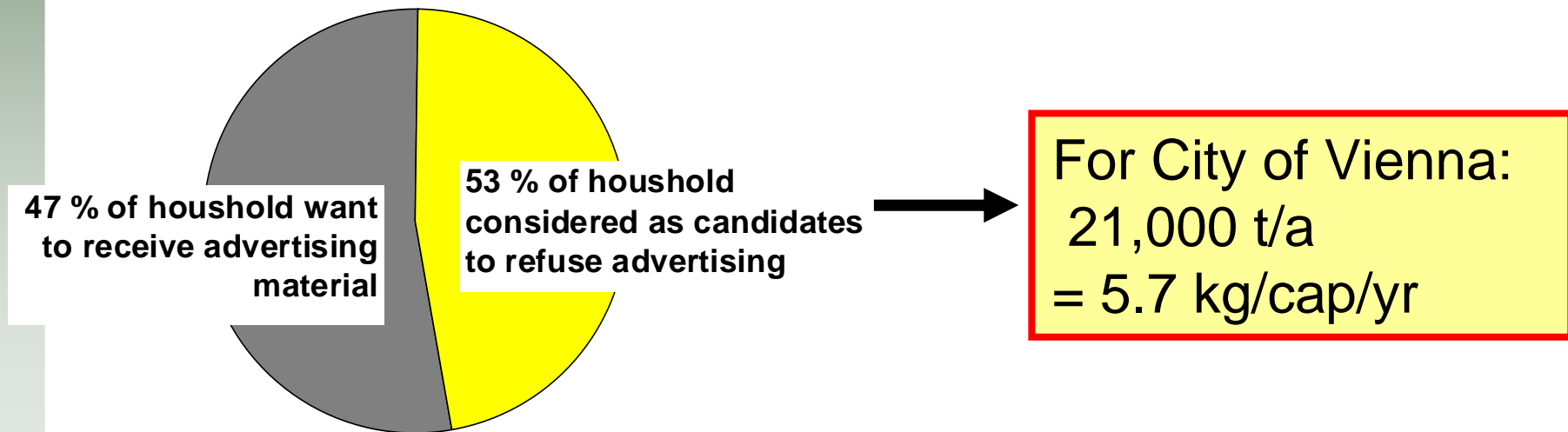
Only unaddressed
advertising can be refused,
i.e. 33 kg/hh/a

source: Wassermann and Schneider, 2003

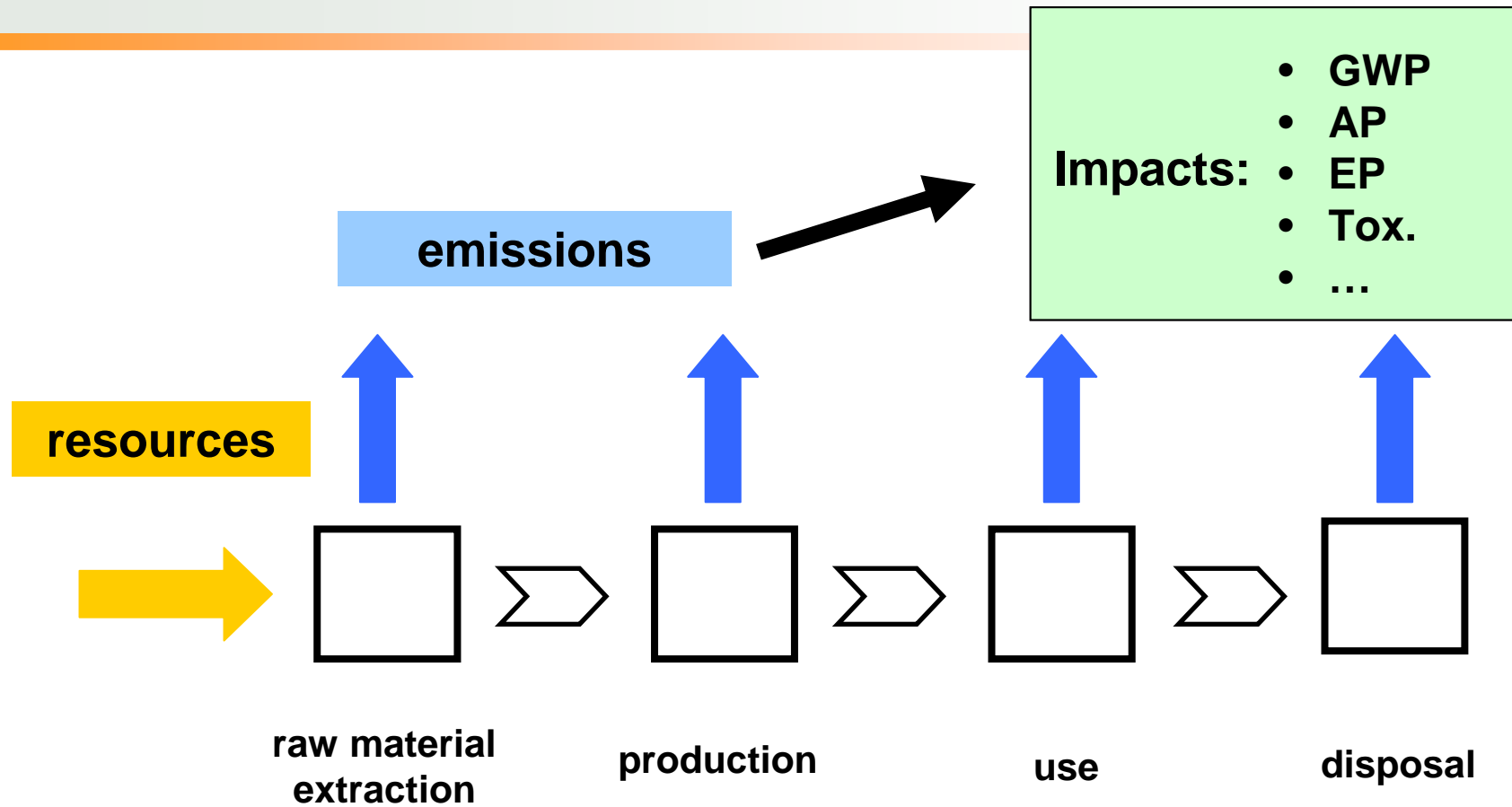
Quantity effects (3)

- Participation: ex ante only an estimation is possible
- In this case: results from an inquiry among households

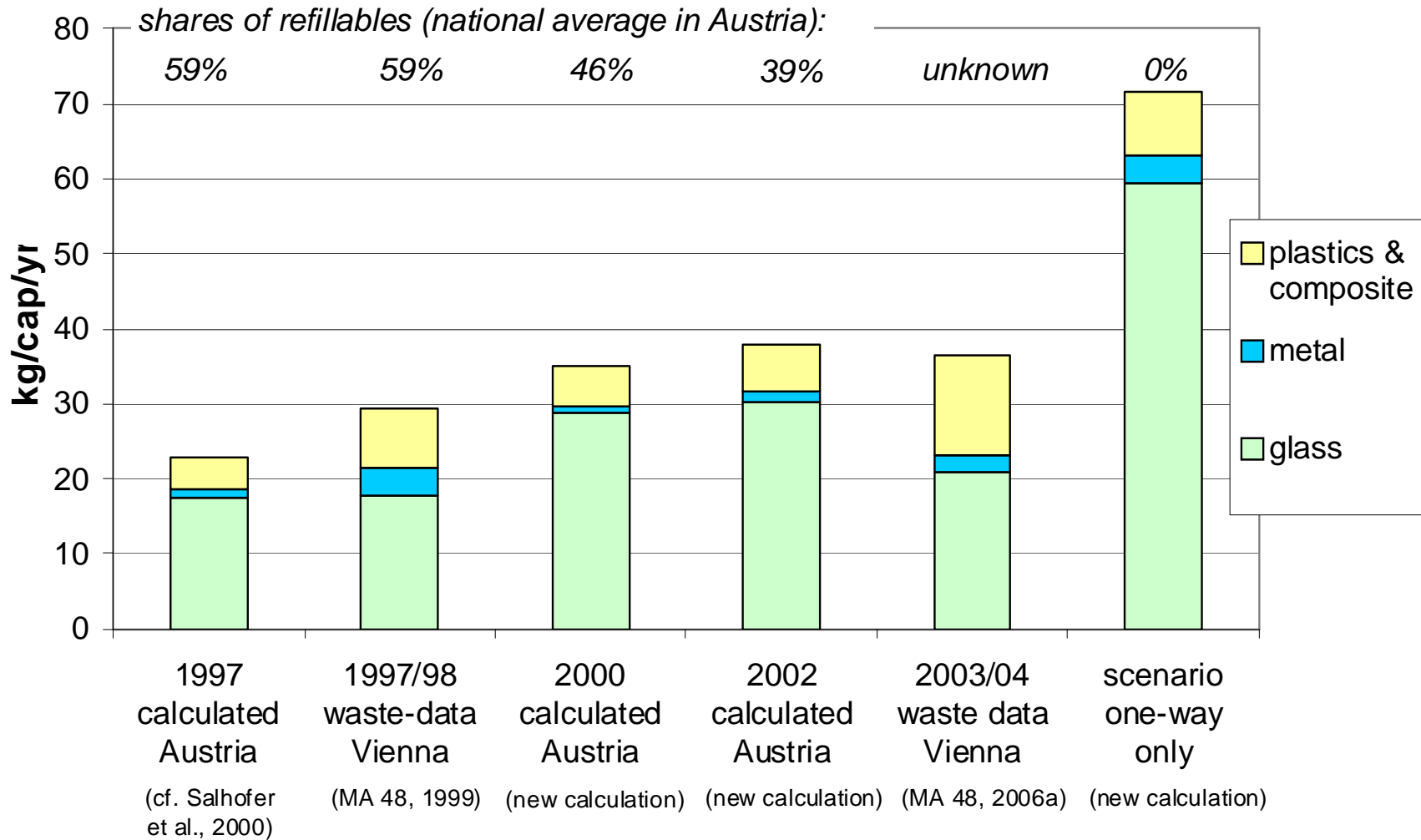
**Inquiry among household in Vienna
(n = 140)**



LCA based results



Beverage packaging Austria



Conclusions

- For most of the measures same ranking from
 - quantity effects and
 - LCA indicators
- LCA is useful, to consider specific impacts, *(like EP in this case)*
- Quantity based effects less elaborate

**Thank you
for your attention!**



BOKU – University of Natural Resources
and Applied Life Sciences, Vienna

Institute of Waste Management

stefan.salhofer@boku.ac.at