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Comparison of Regional Energy Turnover with Global Food

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Background, Aims and Scope

Objective

Methods

Results and Discussion

Conclusions

Recommendation and Outlook

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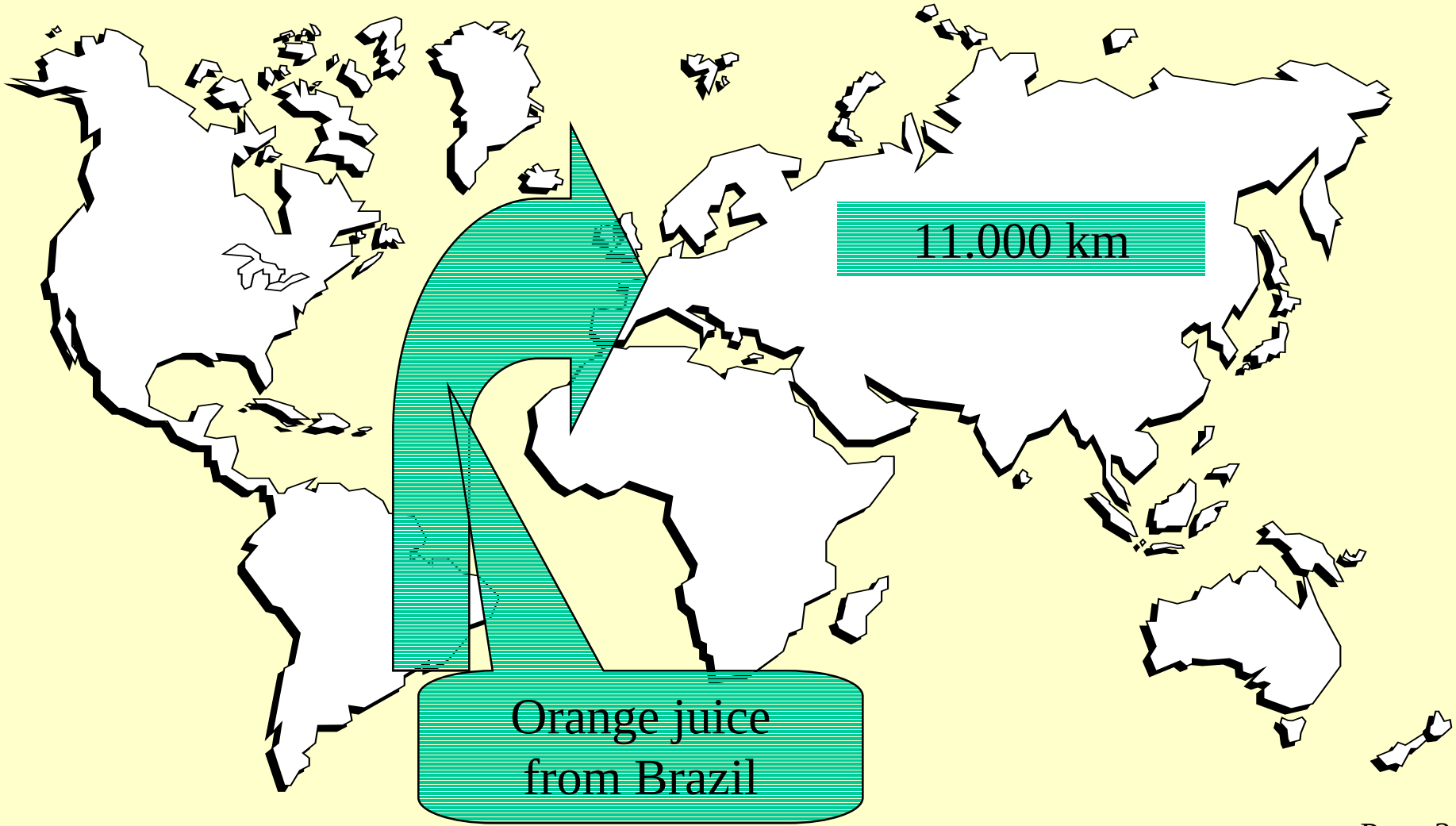

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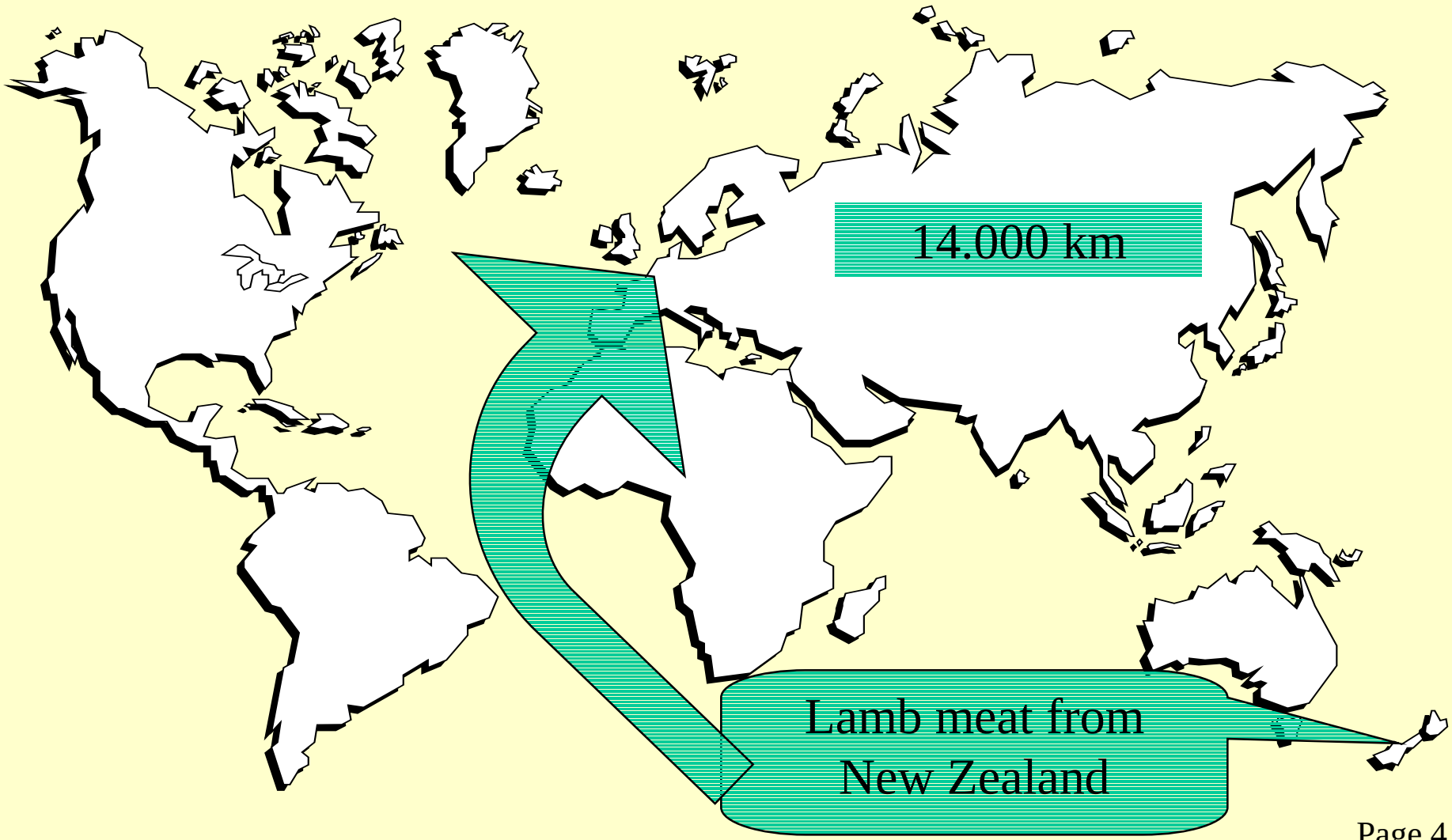

Background, Aims and Scope

Claiming of „regionality“ for food is most popular, because:

- Global food is said to waste so much energy...
- Global food is said to cause so much pollution...

→ But: there is a lack of empirical data!

And: Regionality is required for food items only,

not for non-food such as bikes, dishwashers, furniture, clothes

Objectives

To research the specific energy turnover in kWh per food unit

To look after the complete process chain, consisting of:

- Farming, crop and breed
- All local and global transports
- Packaging and distribution up to the point of sale

To compare regional with global food, in terms of energy

Methods

Researching the energy intake of food items as a part of LCA and reviewing all additional features of the business units by personal investigation worldwide

Allocation of the primary data to the functional units

Examples: Fruit juices and lamb meat

Fruit juices: Results

Places of origin:	**Marketing distance:**
Local German farmers	50 – 100 km
Poland, Italy, Great Britain and Germany	500 – 1000 km
Global juices from Brazil	11.000 km

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Fig. 1: Energy turnover in kWh per l versus fruit tonnage in tons per year - **Production only**

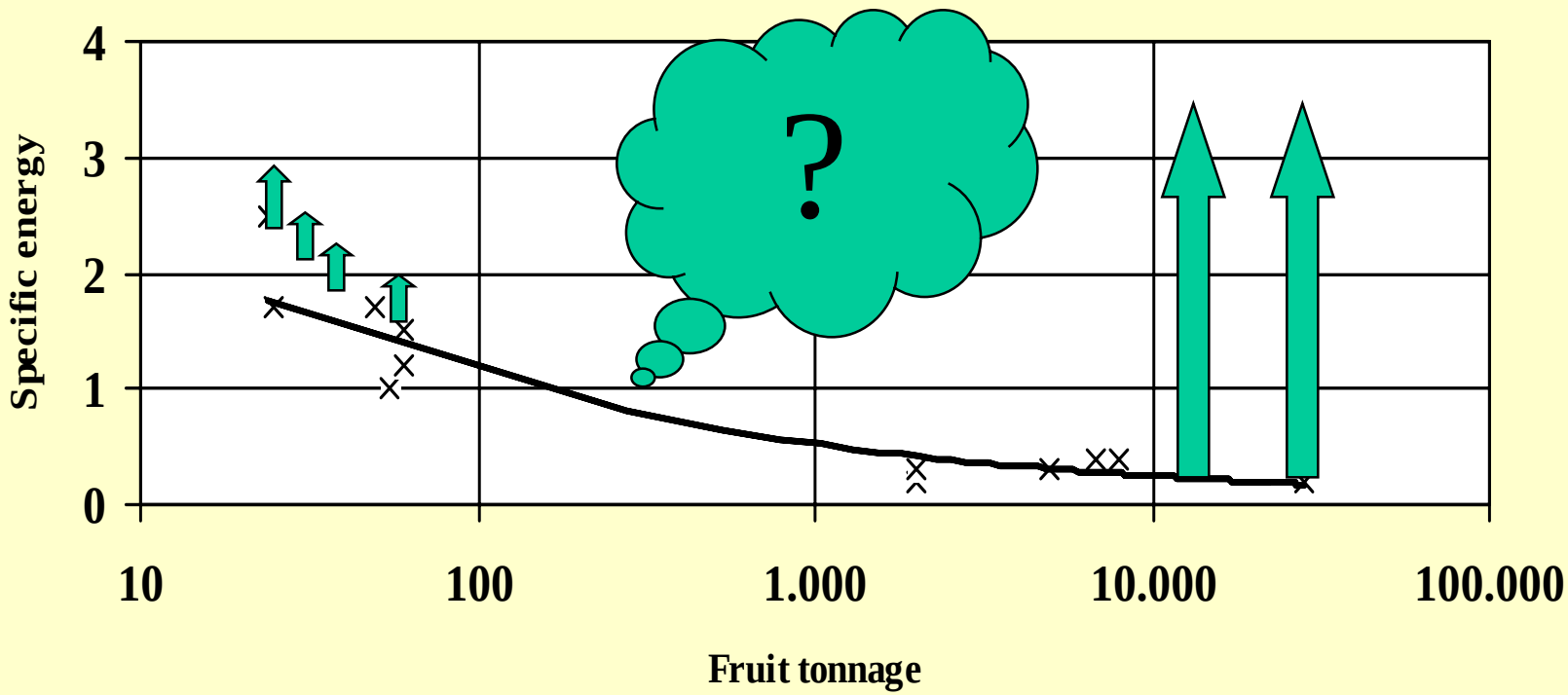

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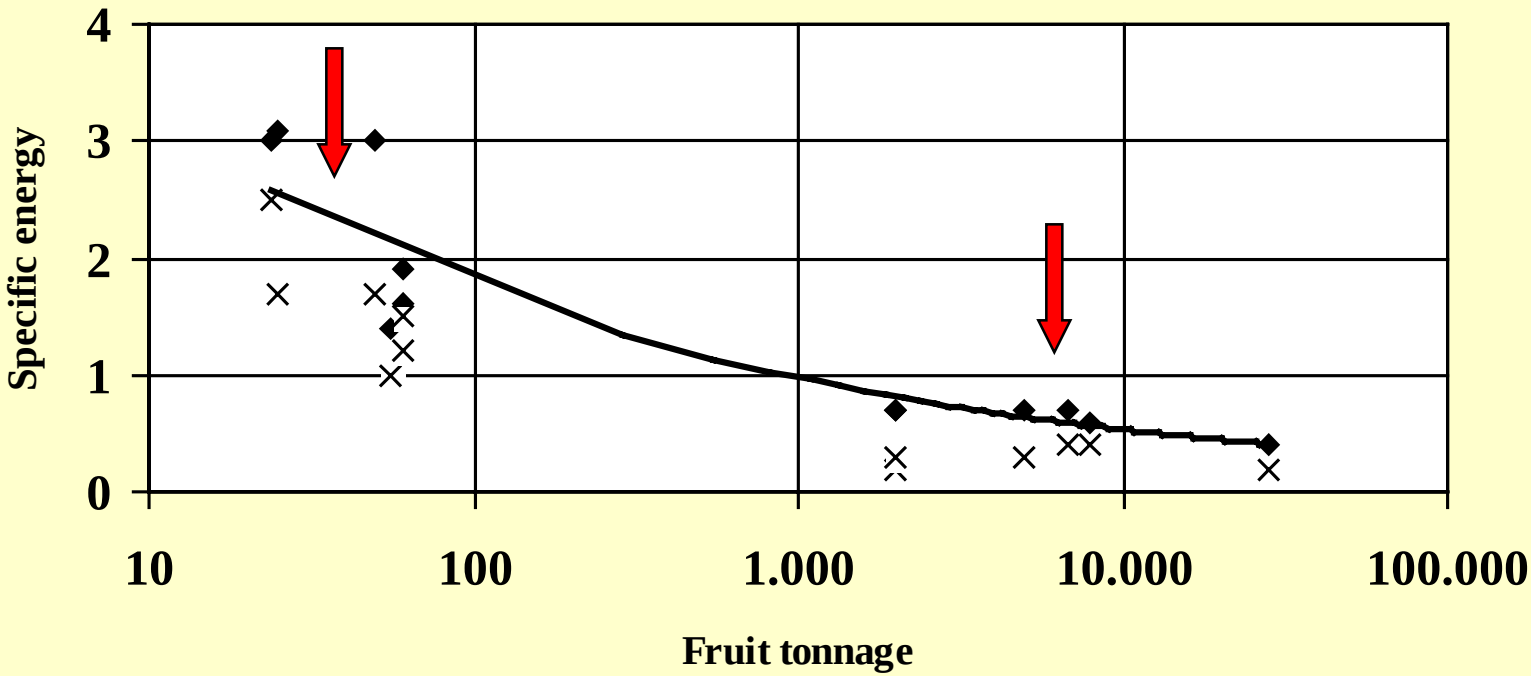
Fig. 2: Energy turnover in kWh per l versus fruit tonnage in tons per year - **Production, transports and distribution**



Lamb meat: Results

Places of origin:	Marketing distance:
local German farmers	50 – 100 km
New Zealand farmers	14.000 km

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Fig. 3: Energy turnover in kWh per kg versus lamb meat production in kg per year - **Production only**

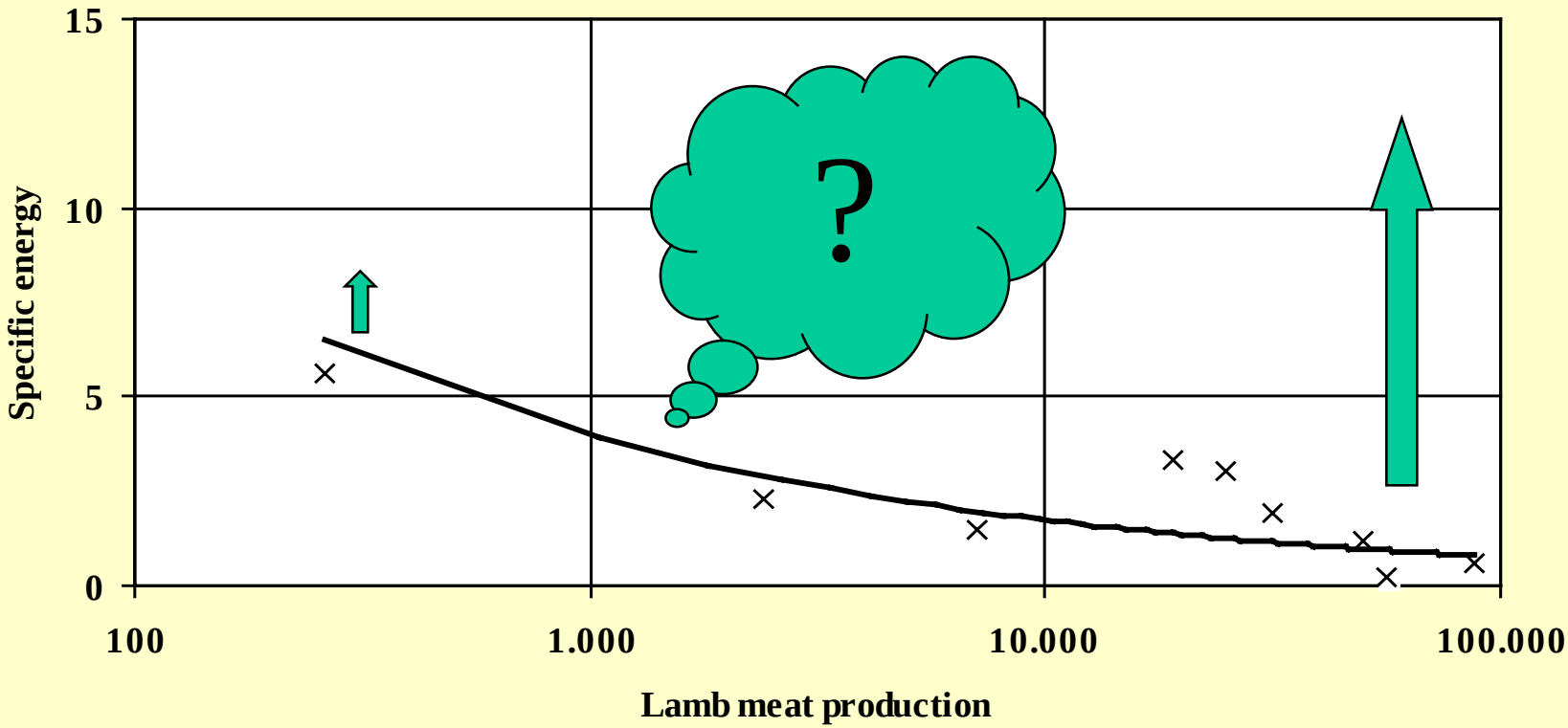

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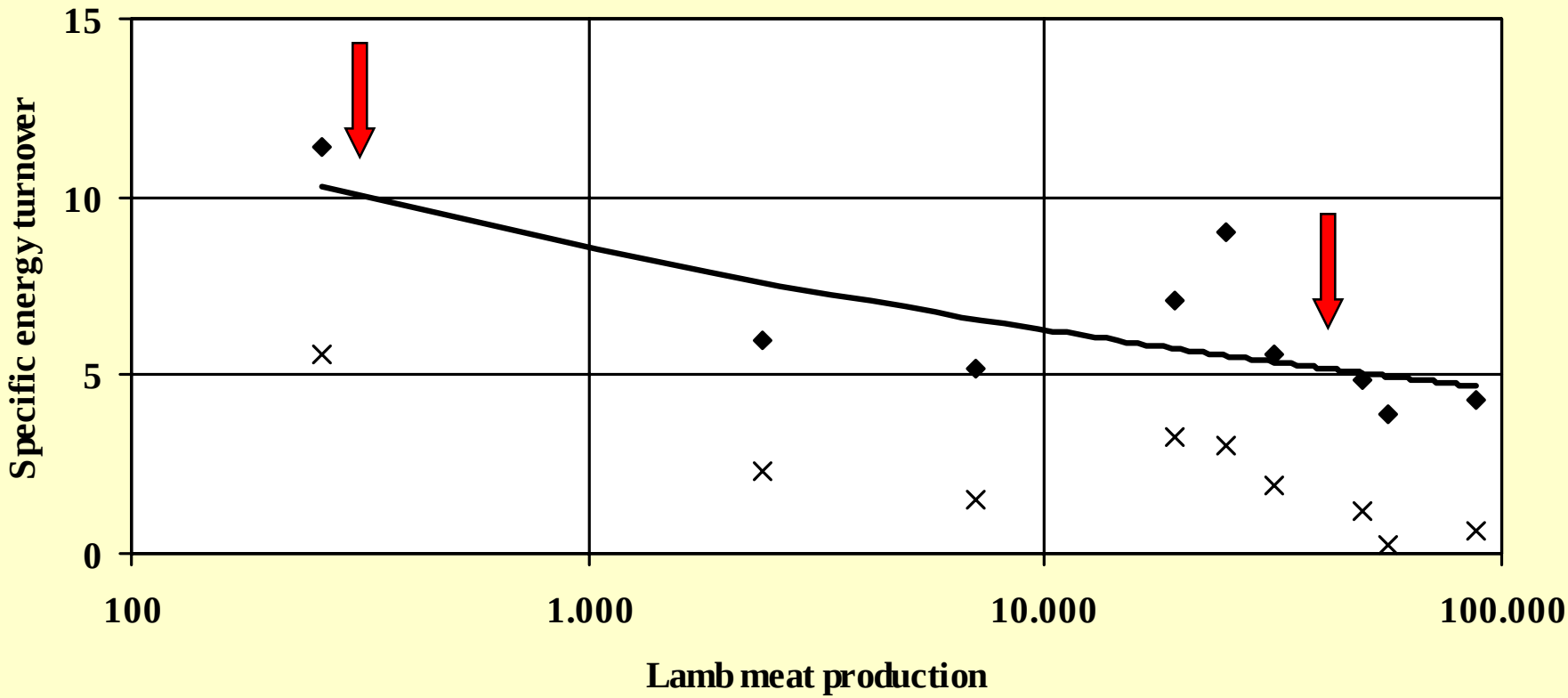
Fig. 4: Energy turnover in kWh per kg versus lamb meat production in kg per year – **Production, transports and distribution**



Conclusions, Recommendation and Outlook

- Strong degressive relation between specific energy intake and the business size!
- No relation between specific energy intake and marketing distance!
- Small local farmers in Germany are facing severe disadvantages because of missing logistics and bad operational efficiency!
- The ecological quality depends mainly on the operational efficiency and not on the marketing distance!

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Ecology of Scale

But:

The conclusions are valid for the researched examples, only!

Next example: Wine from local, European and global origin!

However:

The most popular claims for „food regionality“ are not generally valid!

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Many thanks:

- to the Deutsche Forschungsgesellschaft (German Research Association)
- to the Deutscher Akademischer Austauschdienst (German Academic Exchange Service)
- to all local companies and farmers, supporting our research worldwide!
- and to you for your attention!

In case of interest, for much more details just have a look at:

Int J LCA, Gate to EHS/Global Food/ LCA Case Studies, June 2003, p 1- 6