Global beef production

Why production systems are relevant for perspective analysis

Dr. Claus Deblitz
agri benchmark, Thünen Institute of Farm Economics
Enhance the value of prospective exercises

For perspective analysis and projections, information on the farm-level situation, producer’s reactions to changes in framework conditions and future decision-making should be taken into account.
Dynamics of practice change

Introduction of an intensive silvopastoral system in Colombia

Million COP p.a.

Baseline

Increasing profits in years 5 ff.

Losses in years 1-4 (!)

Total costs

Total returns

Source: agri benchmark Beef and Sheep Result Data Base 2015
agri benchmark

a global analysis network

• 6 branches (crop, **beef and sheep, pig**, horticulture, **aquaculture**, organic)
• 34 countries in the Beef and Sheep Network
• Annual update of farm and sector data bases
• Production systems, economics, drivers, and perspectives
• Harmonised methods and comparable results
• „Put your country in and get the world back“
• Moving towards inclusion of environmental, animal welfare and social indicators (comprehensive sustainability analysis)
"Beef" and "dairy" countries

- **Dairy** country: < 33 % of cows are beef cows
- **Mix** country: > 33 % and < 66 % of cows are beef cows
- **Beef** country: > 66 % of cows are beef cows

Sources:
- PSD/FAS/USDA Online
- Eurostat
- National statistics
- Own estimations
Production systems
beef finishing

Cow-calf is basically pasture system (plus silage) around the world

> 30 % pasture incl. grazed shrubs in silvo-pastoral systems

Pasture

> 50 % grains and other energy feed

Feedlot

> 30 % silage and other forages

Silage

> 30 % freshly cut grass & other vegetation

Cut & Carry

Source: agri benchmark Beef and Sheep Result Data Base 2015
Global beef finishing system map

More than 2/3 of global cattle classified

Source: agri benchmark Beef and Sheep Result Data Base 2015
Production systems and cost structures 2015

Source: agri benchmark Beef and Sheep Result Data Base 2015
Is technology the answer?

To achieve productivity improvements and practice change, management know-how is more important than technology.

- The wheel does not have to be reinvented to narrow the gap between the Top 25 and the Bottom 25
- Problem is that in most countries public extension and advisory systems are on the decline.
- Certainly governments and international organisations and funding agencies can play a role.
Think big

Many drivers for agricultural development are not within the sector or linked to new technologies, but rather macro-economic and political framework conditions.

→ functioning or non-functioning institutions
→ type of governance systems
→ access to capital
→ infrastructure and logistics
→ regulations – and sometimes too many of them?
Productivity/efficiency potentials?

Potential for cow-calf is basically the same as for pasture finishing

**Pasture**
- Main potential

**Feedlot**
- Very limited except for producing higher weights

**Silage**
- Feed improvements

**Cut & Carry**
- Use of concentrates and grains
## Increasing productivity in pasture systems

1. **Fencing and subdivision**
2. **Fertilizer application**
3. **Introduction of more productive pasture varieties**
4. **Improvement of animal genetics**

<table>
<thead>
<tr>
<th>Finish period (days)</th>
<th>Start weight kg LW</th>
<th>End weight kg LW</th>
<th>Weight gained kg LW</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>150</td>
<td>516</td>
<td>366</td>
</tr>
</tbody>
</table>

- **% change in finishing period**: 25% increase of DWG = 20% decrease in finishing period ≈ 20% more cattle produced
- **% increase in daily gain**:

Source: Own calculations based on agri benchmark Beef and Sheep Result Data Base 2015
The need for policy

But: governments must also protect the world against great ideas and technologies!

- High productivity production systems create incentives to expand them further
- Example: the clear advantages of silvopastoral systems could create undesired land use changes by converting rainforest and other native land into silvo-pastures for cattle
- Thus governments must enforce legislation to prevent this – a more complex world probably requires more regulation