agri benchmark
Global livestock data and information

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Agenda

1. Network and branches
2. Analysis and projects
3. Data
4. Conferences and capacity building
What *agri benchmark* has to offer

- Network
- Product branches
- Data
- Conferences
- Capacity building
- Know-how
- Analysis and projects
Network and product branches

- Network
- Product branches
- Analysis and projects
- Know-how
- Data
- Capacity building
- Conferences
1. Global dairy network  
   (International Farm Comparison Network)

2. Was founded in Thünen (former FAL), now independent

3. Same method

4. Approximately 90 countries

5. Can be made available for the Agenda
## Countries by branches

<table>
<thead>
<tr>
<th></th>
<th>Cash Crop</th>
<th>Beef and Sheep</th>
<th>Pig</th>
<th>Horticulture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>27</td>
<td>26</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>**Of which developing and emerging *</td>
<td>16</td>
<td>14</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

* Algeria, Argentina, Brazil, Colombia, Chile, China, Indonesia, Kazakhstan, Malaysia, Mexico, Morocco, Namibia, Nigeria, Peru, Russia, South Africa, Thailand, Tunisia, Vietnam
Countries in the agri benchmark Network (as of 12/2012)

New countries 2013
- Ireland (beef/sheep)
- Uruguay (beef/sheep)
- China (sheep)
- Nigeria, Laos, Myanmar (crops)

Participating countries 2012
Contacts for further growth
Institutions and people in the Beef and Sheep Network
Analysis and projects

Network
Product branches
Data
Conferences
Capacity building
Know-how
Analysis and projects

Supported by:
Federal Ministry of Food, Agriculture and Consumer Protection
based on a decision of the Parliament of the Federal Republic of Germany

Bonanza
ACIAR
UFOP
John Deere
Deblitz
Analysis and projects

Comparative global analysis of
• Productions systems
• Economics
  (cost of production, prices, profitability)

Policy analysis (what-if)
Farm strategy analysis (what-if)
Emission analysis
(environmental indicators)

Close cooperation with producers and advisors
# Production system analysis

<table>
<thead>
<tr>
<th>Feed % in dry matter</th>
<th>Management/Housing</th>
<th>Extent of purchase feed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pasture</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 30% pasture</td>
<td>Outdoor</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Silage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 30% silage and other forages</td>
<td>Closed or semi-open barns with slatted floors and/or straw bedding</td>
<td>Medium</td>
</tr>
<tr>
<td><strong>Feedlot</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 50% grains and other energy feed</td>
<td>Confined, large, open pens, partially with sun-covers</td>
<td>High</td>
</tr>
<tr>
<td><strong>Cut &amp; Carry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 30% freshly cut grass &amp; other vegetation</td>
<td>Mix of pens and grazing of paths and paddies</td>
<td>Low</td>
</tr>
</tbody>
</table>
Proportion of total costs by production system

- **Cut & Carry**
  - Animal purchase: ~25%
  - Feed related costs: ~25%
  - Labour: 40-50%
  - Other: 10%

- **Pasture**
  - Animal purchase: ~25%
  - Feed related costs: ~25%
  - Labour: 40-50%
  - Other: 10%

- **Feedlot**
  - Animal purchase: ~25%
  - Feed related costs: ~25%
  - Labour: 40-50%
  - Other: 10%

- **Silage, weaner**
  - Animal purchase: ~25%
  - Feed related costs: ~25%
  - Labour: 40-50%
  - Other: 10%

- **Silage, dairy calf (Fleckvieh)**
  - Animal purchase: ~25%
  - Feed related costs: ~25%
  - Labour: 40-50%
  - Other: 10%

- **Silage, dairy calf (Holstein)**
  - Animal purchase: ~25%
  - Feed related costs: ~25%
  - Labour: 40-50%
  - Other: 10%

**Feed related costs**
- Purchase feed
- Seed, fertiliser, pesticides
- Machinery depreciation & maintenance
- Fuel and energy
- Land
Margin over cash costs (USD per 100 kg carcass weight)
Emission analysis – birth to slaughter

CO$_2$ equivalents (kg per 100 kg carcass weight sold)
Sheep production – very mixed profitability

USD per 100 kg live weight

- Opportunity cost
- Depreciation
- Cash cost
- Total returns

AU-1250s
AU-2000s
AU-3000s
ZA-850s
ZA-1500s
DE-600s
ES-800s
ES-930s
ES-1500s
FR-470s
FR-860s
UK-500s
DZ-300s
TN-40s
Farm strategy analysis – an example

Introduction of rotational grazing

Production factors

Labour
- Own hours, wage
- Hired hours, wage
- Contractor price

Land
- Purchase price
- Rent price

Capital
- Fences price
- Machines price
- Corrals price

Inputs
- Seeds kg, price
- Fertiliser kg, price
- Fuel liters, price

Animal performance
- Higher sales
  Price * quantity
- Daily weight gain
- Stocking rates
- Number of cycles
## Data

### Comparison of finishing farms 2011 in US$ (AT 290, DE 280, DE 285, DE 626T)

<table>
<thead>
<tr>
<th>5.1.5</th>
<th>Cost figures</th>
<th>AT</th>
<th>DE 290</th>
<th>DE 280</th>
<th>DE 285</th>
<th>DE 626T</th>
</tr>
</thead>
<tbody>
<tr>
<td>307</td>
<td>Total cost of the beef enterprise (1,064)</td>
<td></td>
<td></td>
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<tr>
<td>308</td>
<td>Non-factor costs incl. depreciation (775)</td>
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<tr>
<td>309</td>
<td>Total labour cost (181)</td>
<td></td>
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</tr>
<tr>
<td>310</td>
<td>Total land cost (92)</td>
<td></td>
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<tr>
<td>311</td>
<td>Total capital cost (15)</td>
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<tr>
<td>312</td>
<td>Total cost of the beef enterprise by factor</td>
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<tr>
<td>313</td>
<td>Non-factor costs incl. depreciation (73%)</td>
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<tr>
<td>314</td>
<td>Total labour cost (17%)</td>
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<tr>
<td>315</td>
<td>Total land cost (9%)</td>
<td></td>
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<tr>
<td>316</td>
<td>Total capital cost (1%)</td>
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<tr>
<td>317</td>
<td>Non-factor costs by animal type and other</td>
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<tr>
<td>318</td>
<td>Animal purchases (77)</td>
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<tr>
<td>319</td>
<td>Other (462)</td>
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<tr>
<td>320</td>
<td>Non-factor costs by animal type and other</td>
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<tr>
<td>321</td>
<td>Animal purchases (42%)</td>
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<tr>
<td>322</td>
<td>Other (58%)</td>
<td></td>
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<tr>
<td>323</td>
<td>Non-factor costs excl. animal type and absolute values</td>
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<tr>
<td>324</td>
<td>Animal purchases (223)</td>
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<td></td>
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<tr>
<td>325</td>
<td>Feed (purchase feed, fertiliser, seed, pesticides) (59)</td>
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<td></td>
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<tr>
<td>326</td>
<td>Machinery (maintenance, depreciation, contracts) (72)</td>
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<tr>
<td>327</td>
<td>Fuel, energy, lubricants, water (19)</td>
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<tr>
<td>328</td>
<td>Buildings (maintenance, depreciation) (45)</td>
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<tr>
<td>329</td>
<td>Vet &amp; medicine (13)</td>
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<tr>
<td>330</td>
<td>Insurance, taxes (8)</td>
<td></td>
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<tr>
<td>331</td>
<td>Other inputs beef enterprise (35)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>332</td>
<td>Other inputs (3)</td>
<td></td>
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</tbody>
</table>

### Analysis and projects

- Network
- Product branches
- Know-how
- Capacity building
- Conferences

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*agri benchmark*  
*THÜNEN*
Typical farms – the principle

Imagine you have a guest from a foreign country who is interested to see how sheep farming is done in your country.

You would want to show your guest a farm that is
- ... located in an important sheep producing region,
- ... using the common technology for sheep production,
- ... running the prevailing production system,
- ... having a not too small and not too big size,
- ... using the prevailing combination of labour, land and capital.

In other words, you want to show your guest a typical farm!
Typical farms – reasons to choose the concept

... results can be generalised (contrary to individual farm data)
... data sets are consistent and reflecting reality of production systems (contrary to surveys and averages)
... existing farms and producers can find themselves in the data of a typical farm
... it has proven to be applicable on a global scale
... it is comparably low-cost
... it is applicable in countries without or limited statistics and accounting figures
Typical farms – three sources of data

• **Statistics** available to determine
  > important regions
  > farm sizes and distribution

• **Focus groups** of producers and advisors to
  > define prevailing production systems
  > collect data in a standardised way

• **Expertise** of researchers + advisors + farmers
  > Production system knowledge
  > Explore adjustments to changes in frame work conditions (forward looking results)
Focus groups & farm visits
**Architecture and functionality**

**Typical** (Beef, Sheep, [Pig])

**Technology Impact and Policy Impact Calculations**

Excel-based 10 years simulation

Enterprises: Cow-calf, beef finishing, dairy, sheep, crop and forage, [sows, fattening]

Separate tools for:

- Data collection (questionnaire)
- Whole-farm accounting tool 10 years
- Cost calculations (Macro-driven)
- Result Data Base incl. farm extraction, ranking, farm overview, top / bottom
- Additional analysis tools
  (time series, sensitivity, benchmarking, production systems)

Deterministic w/o algorithms

Stochastic version available
Allocation for enterprise analysis

Total cost per unit of product (kg meat, kg wheat)

Enterprise direct costs

- Directly allocated

Whole farm variable and fixed costs
- Hired labour
- Rented land
- Buildings and machinery depreciation
- Paid interest
- Overhead cost

Opportunity cost (labour, land, capital)

Allocated manually or according to the share of the enterprises in:
- Land use / production
- Machinery / building use
  - Detailed operations in cash crop
- Labour use
- Returns
- Other criteria
Variables describing the production system

Animals

Breeds

Categories
- Suckler-cows
- Breeding bulls
- Female calves
- Male calves
- Heifers < 1 year
- Heifers 1-2 years
- Heifers > 2 years
- Fattening bulls
- Fattening steers
- Fattening heifers
- Fattening cows
- Fattening calves

Performance

2 cow mobs
- Cull %
- Mortality
- Age at first calving
- % artificial insemination
- Weights

5 finishing groups
- Age at start
- Age at end
- Weight at start
- Weight at end
- Daily weight gain
- Dressing percentage
- Mortality

Feeding

- tons per category and year
- Home-grown feed
- Purchase feed

- 5 feeding periods per group
- Kg per animal and day
- Home grown feed
- Purchase feed
Key output variables – returns and revenues

**Market returns ($/head; $/kg)**

- Beef returns
- Other returns (e.g. manure sales)

**Government payments**

- Allocated whole farm payments (for ex. LFA, Diesel subsidy)
- Decoupled single farm and acreage payments not reflected in enterprise
- Coupled animal payments (cow-calf, slaughter etc.)
- Allocated Coupled acreage payments (organic, environmental)
Deblitz

Key output figures – costs, productivity, profitability

Labor input / costs – paid wages and opportunity costs ($/head; $/kg)
Land input / costs – paid rents and oc ($/head; $/kg)
Interest costs – paid interest and oc ($/head; $/kg)
Non-factor costs ($/head; $/kg)
   Animal purchase
   Purchase feed
   Seed, fertiliser, pesticides
   Machines + buildings
       (depreciation, maintenance, contractor)
   Fuel, energy, lubricants, water
   Vet & Medicine
   Insurance, taxes
   Other inputs beef enterprise
   Other inputs
   A breakdown into 50 subgroups

Productivity figures (production systems, labour, land, capital)
Profitability (whole-farm, enterprise, short-, mid-, long-term)
Conferences, trainings and know-how generation

- Network
- Analysis and projects
- Product branches
- Data
- Know-how
- Capacity building
- Conferences
Annual conferences

Internal part
(ab partners and invited guests)
- Country presentations
- Farm stories
- International comparisons
- Topical workshops
- Field trips (farms, processors, retail ...)
- National expert presentations

Global Forum (public)
- Audience: Decision makers, ab partners + invited speakers
- Motto: 'Show the country to ab and present ab to the locals'
Trainings, know-how generation

- 2 trainings per year for partners
- Common projects
- Project-related workshops

- Planned: summer schools for economics and production system analysis
What is the usefulness of *agri benchmark*?

- Put your country in and get the world back – **low input, high output**
- See where your farms are in **international comparison**
- **Data** and **reports** >>> Beef and Sheep Report, Result Data Bases ...
- **Production systems information**
- **Cost** of production, **returns** and **profits** of beef production
- **Policy** analysis >>> EU-COM, OECD, German Ministry, EBLEX ...
- Farm **strategy** analysis >>> what can producers do under changing conditions?
- **National networks** for domestic analysis
- **Capacity** building and training
- **Exchange** with other experts and meet at annual Conferences
Thank you for your interest in *agri benchmark*

**agri benchmark**
- passionate about facts

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