Prospects regional feed centre

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Research Dairy farm systems

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Regional feed centre, topics

1. What is it and why?
2. First pilot Netherlands
3. Calculations
   - economics
   - transport
   - energy use
4. Coöperation dairy farmer and arable farmer
5. Alternatives

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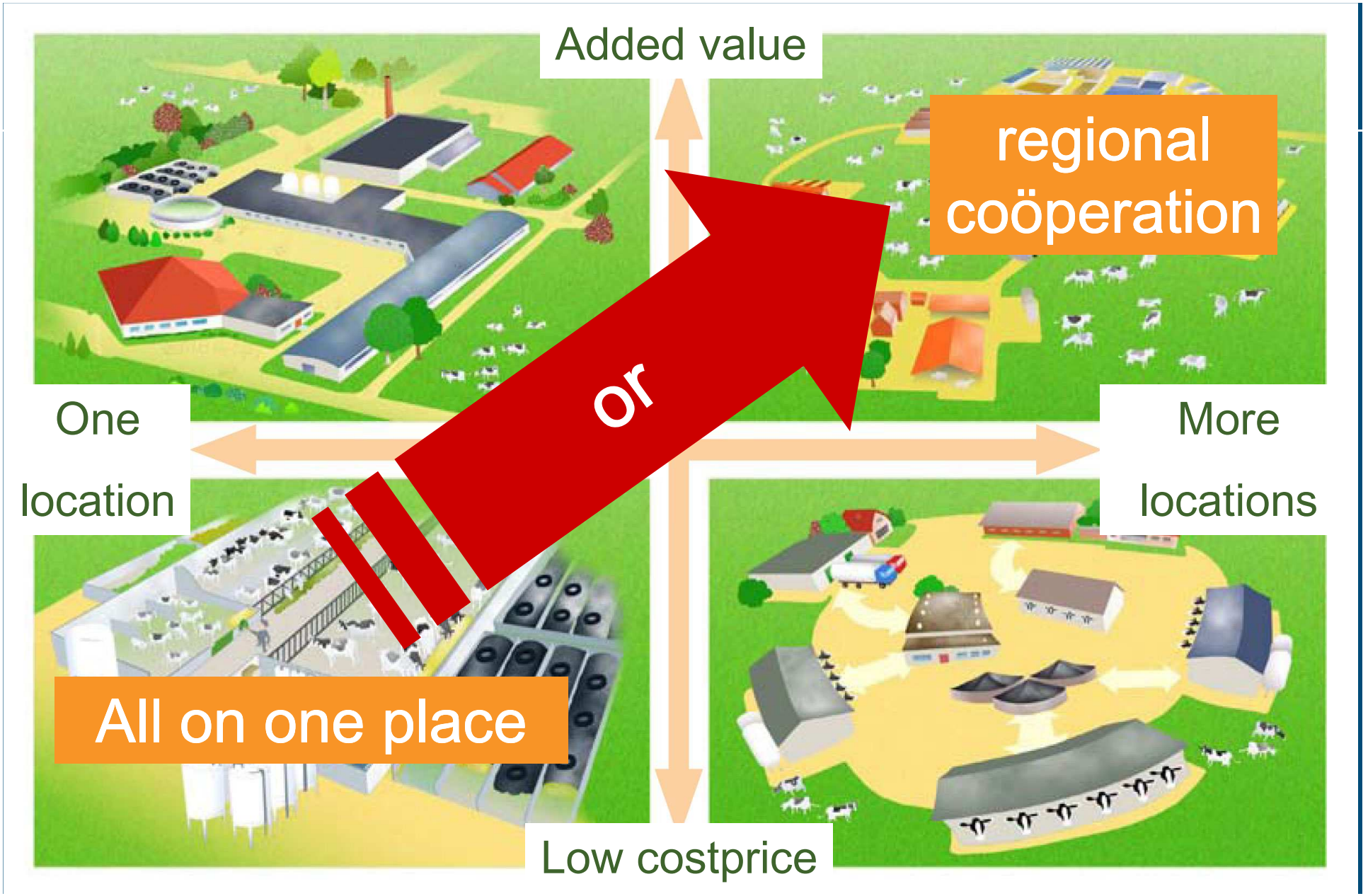
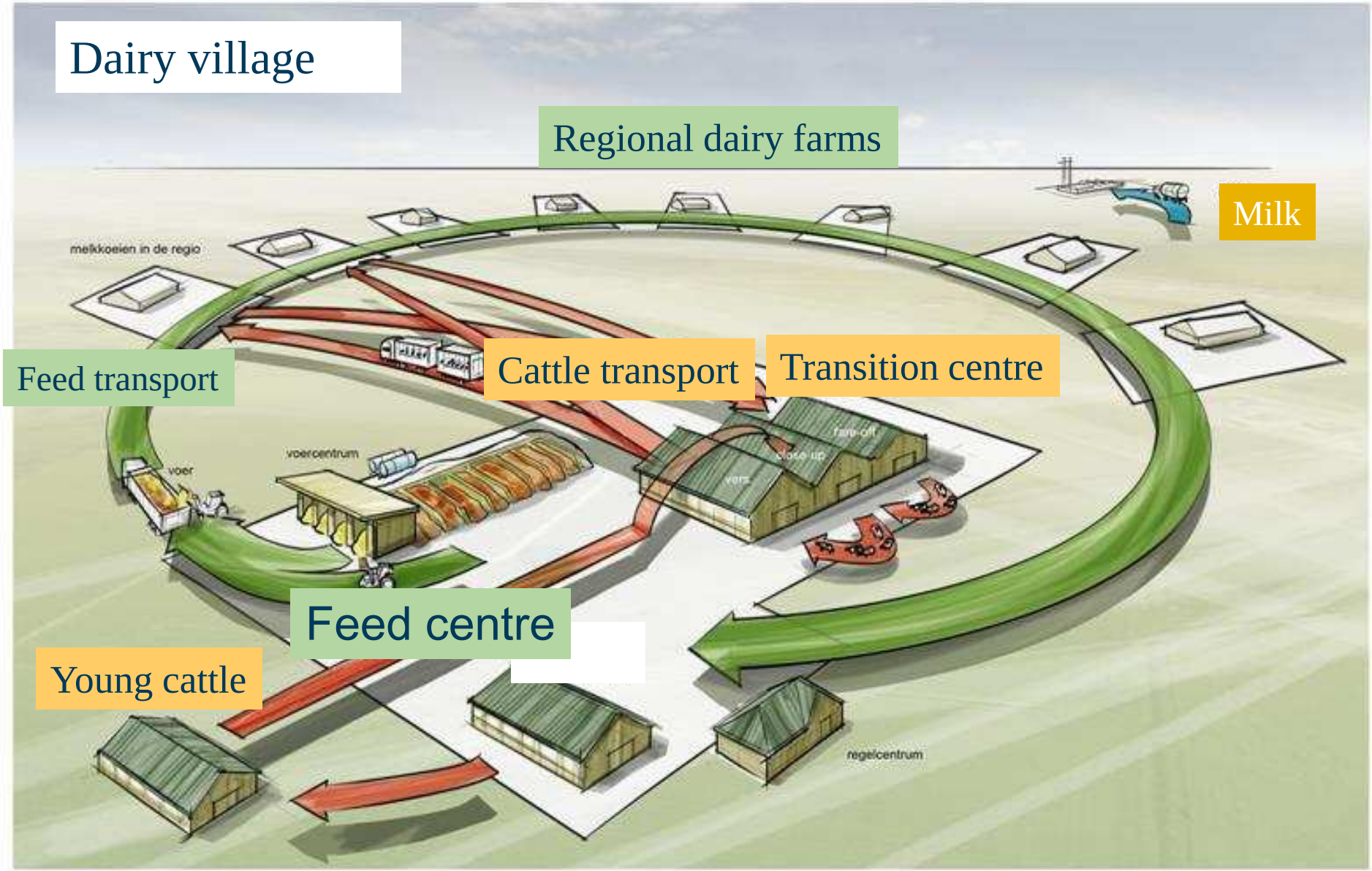
Example feed centre Israel


Added value
regional coöperation
or
One location
More locations
All on one place
Low costprice

Combination Dairy village and specialised centre



Feed storage is messy

Why regional feed centre?

- Dairy farmers can focus on herd management
- From optimizing on farm level towards level of area
- Less problems with lay-out (fields around) farm
- Better landscape
- Better silage and total mixed ration (TMR)

Pilot regional feed centre Fryslân

Grass into container

Central feed storage at industry area

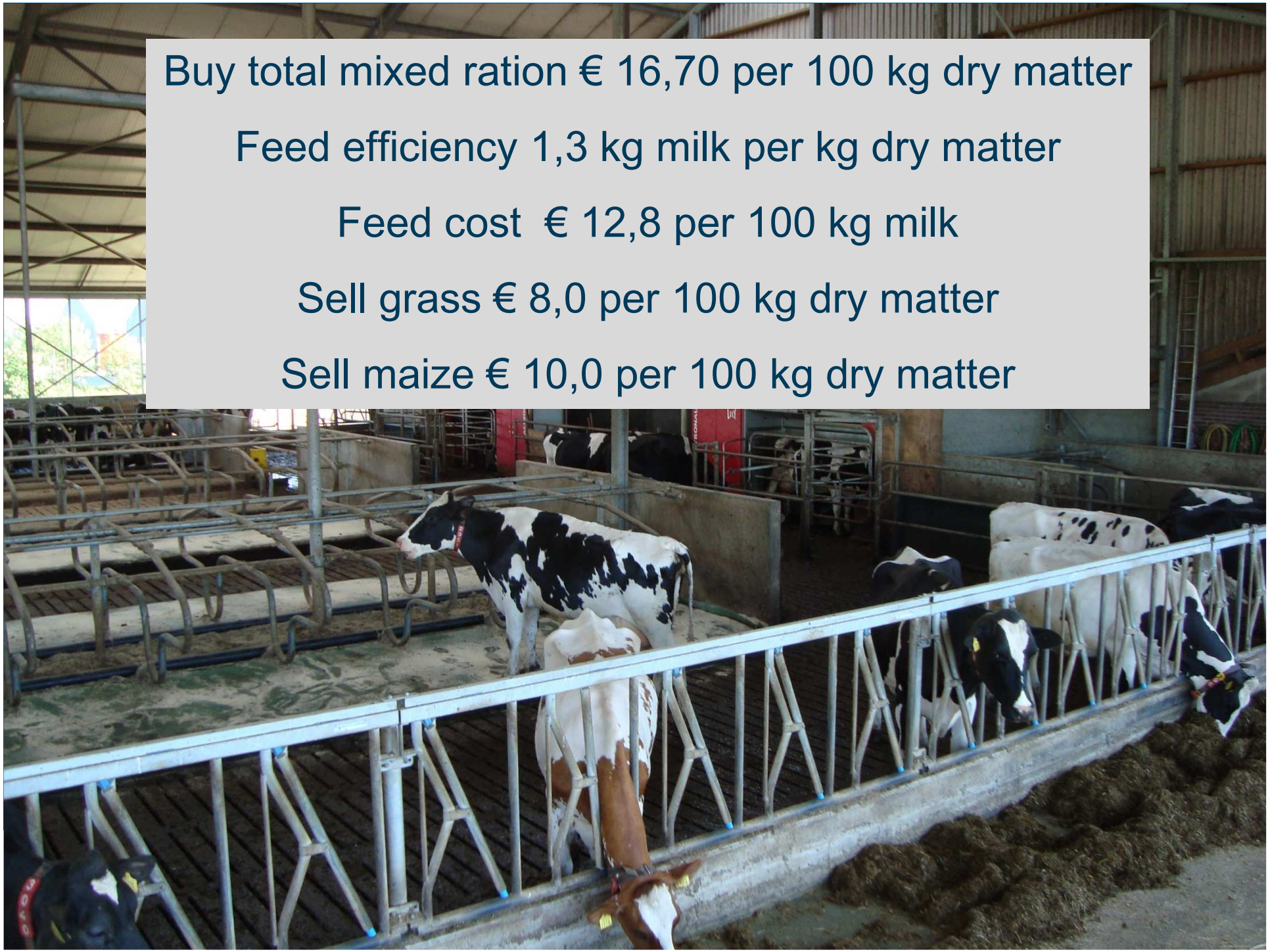
Central storage of feed components

grain, etc...

Making total mixed ration


Feeding 3000 cows on 30 farms:
1. Milking cows
2. “robot” cows
3. Dry cows
4. Young cattle older than one year


Example


Buy total mixed ration € 16,70 per 100 kg dry matter
Feed efficiency 1,3 kg milk per kg dry matter
Feed cost € 12,8 per 100 kg milk
Sell grass € 8,0 per 100 kg dry matter
Sell maize € 10,0 per 100 kg dry matter

Advantage feed centre:

Feed cost components (concentrates) € 20 per 100 kg

Concentrates from feed company € 25 per 100 kg

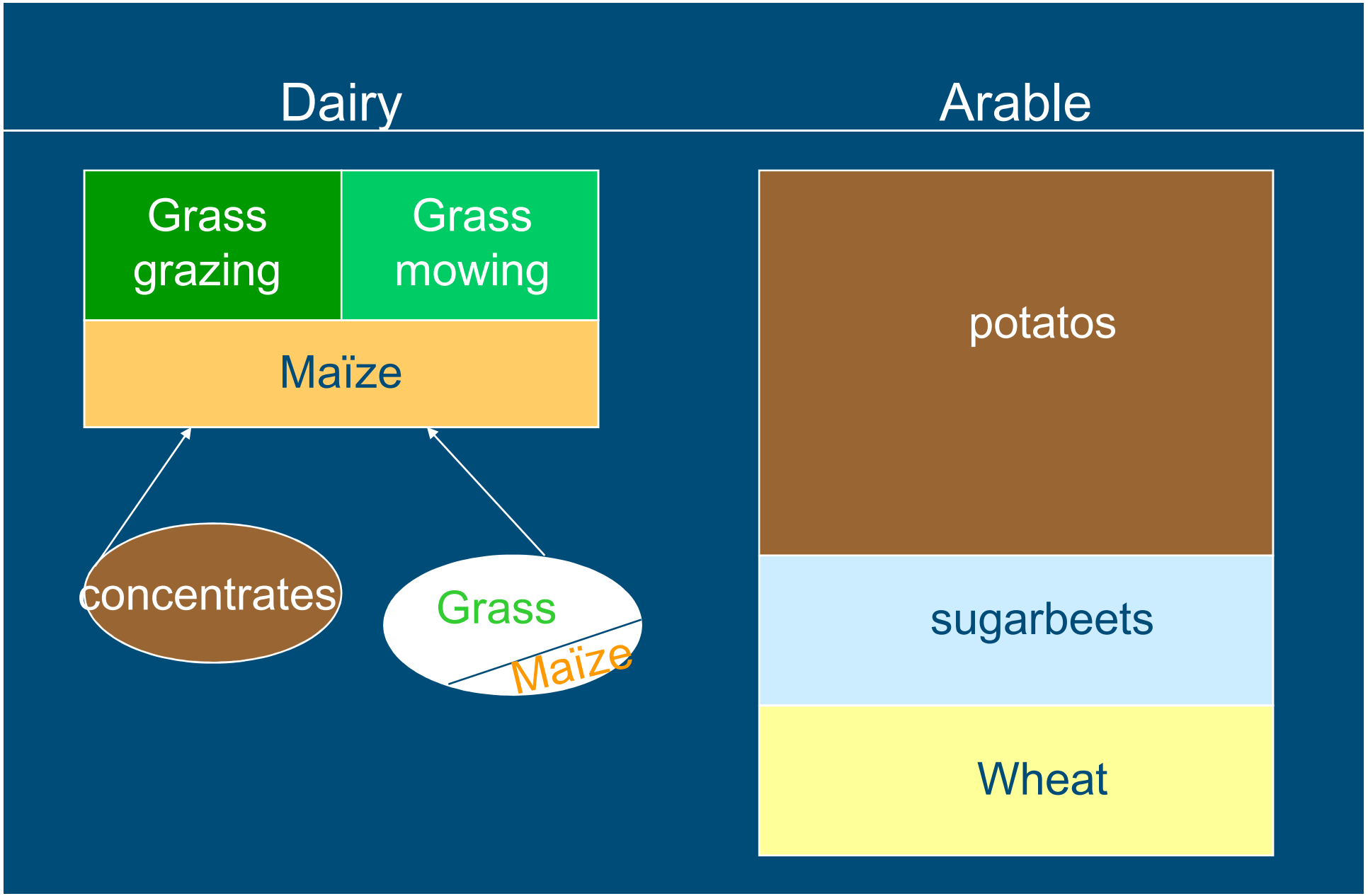
(cost of feed centre € 3,50 per 100 kg dry matter)

Advantages dairy farmer

- Lower costprice: € 1,8 to 3,3 per 100 kg milk
  - Less feed storage
  - Less machinary
  - Less labour
- Insight in:
  - Land productivity
  - Feed efficiency

Table 4 Change in cost price due to a feed centre for five types of dairy farms (€ per 100 kg milk)

Farm type	Landless Sumf 1	Intensive Sumf 2	Intensive grazing 3	Extensive Sumf 4	Extensive grazing 5
Number of cows	500	150	150	150	150
Area in ha	0	75	75	150	150
Grazing system	n.a	none	limited	none	ad lib
Change in total costs	-2.9	3.9	2.3	5.6	2.7
Feed + transport	1.3	9.0	5.5	10.1	5.6
Cattle, crops, energy and other	-0.3	-0.4	-0.2	0.7	0.2
Labour	-0.6	-0.9	-0.5	-0.9	-0.5
Contract work	-1.1	-1.3	-0.8	-2.1	-1.1
Feed storage	-1.5	-1.6	-1.1	-1.4	-0.8
Mechanisation of feeding	-0.3	-0.8	-0.7	-0.8	-0.7
Manure removal	-0.3	-0.2			
Changes in other yields	0.0	7,2	4.5	7.7	4.5
Additional sale of feed	0.0	7,2	4.5	7.7	4.5
Change in cost price per 100 kg milk	-2.9	-3.3	-2.1	-2.1	-1.8



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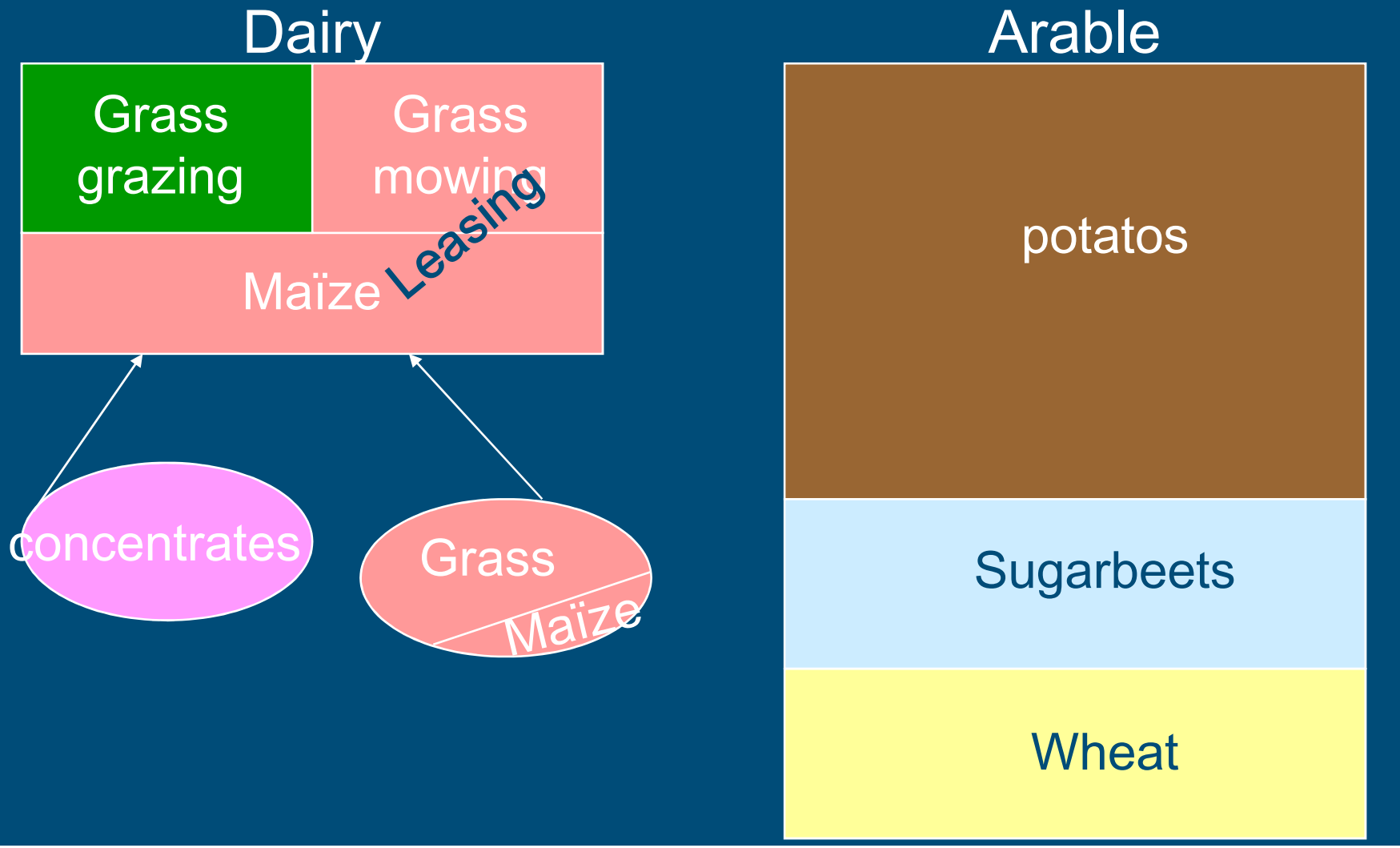
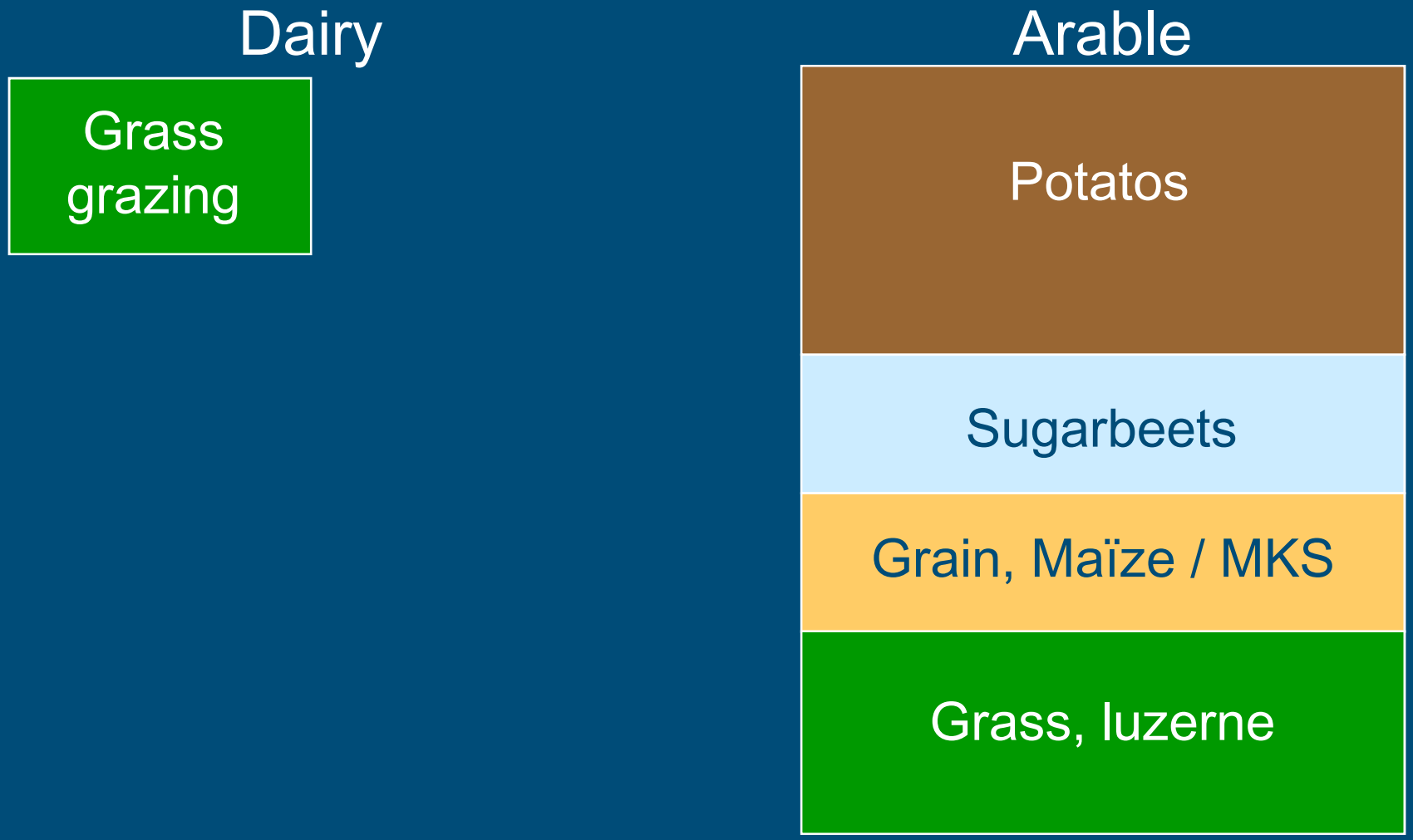
Extra land for arable farmer



Coöperation between dairy and arable farmers

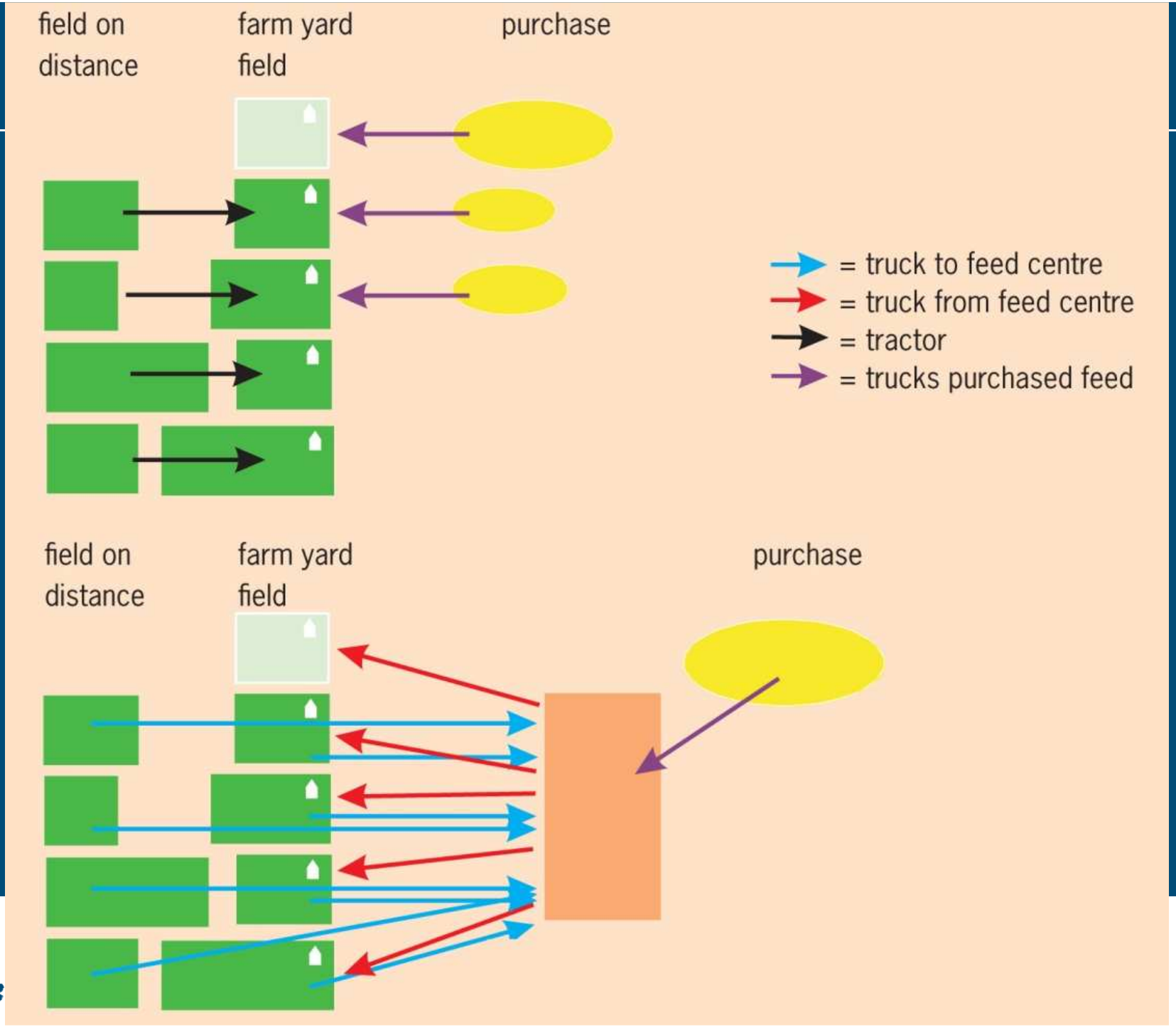


Advantages arable farmer

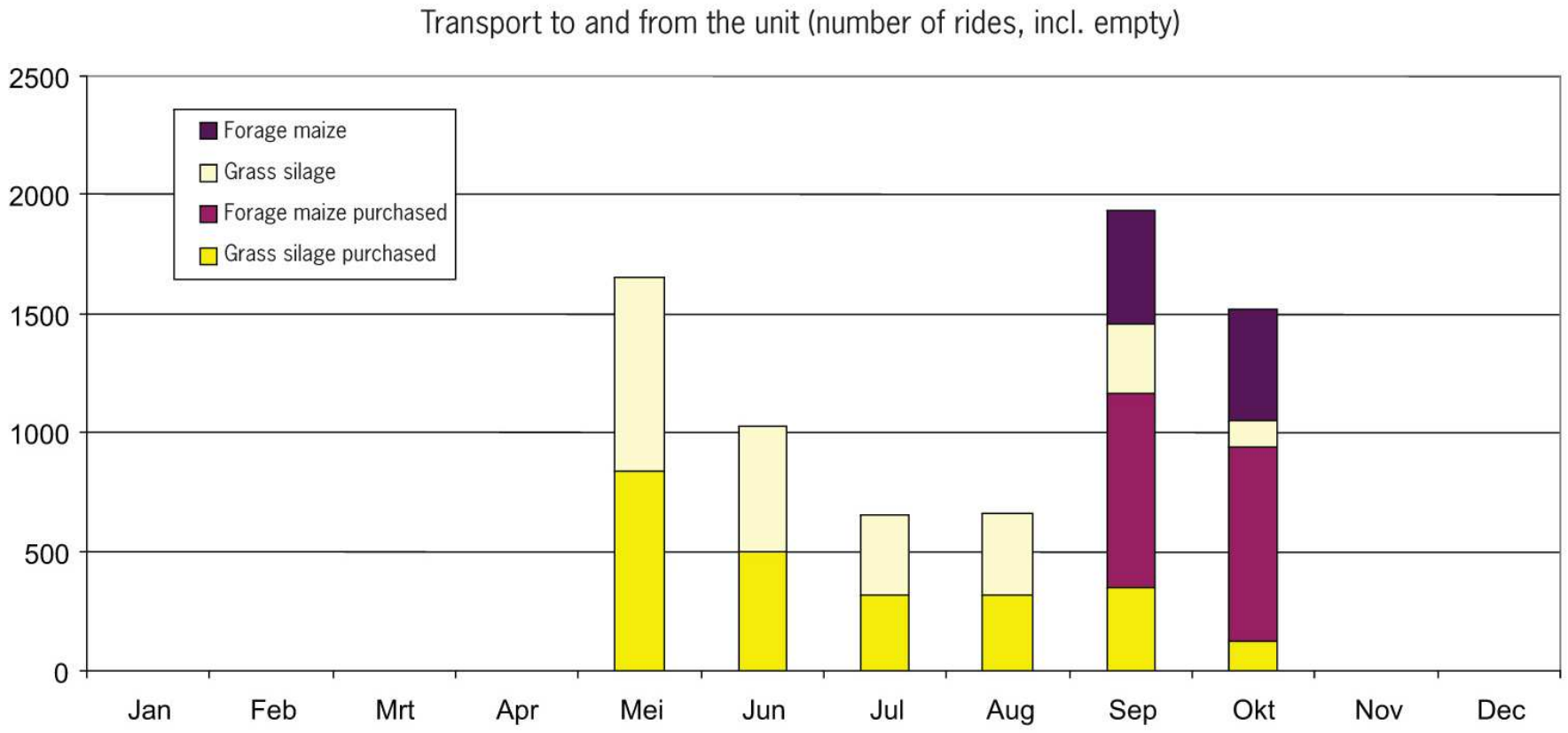
- More land and more crops
- Better soil fertility due to crop rotation
- Advantages depends on appointments about:
  - Land rents
  - Price manure
  - Price feed

Disadvantages

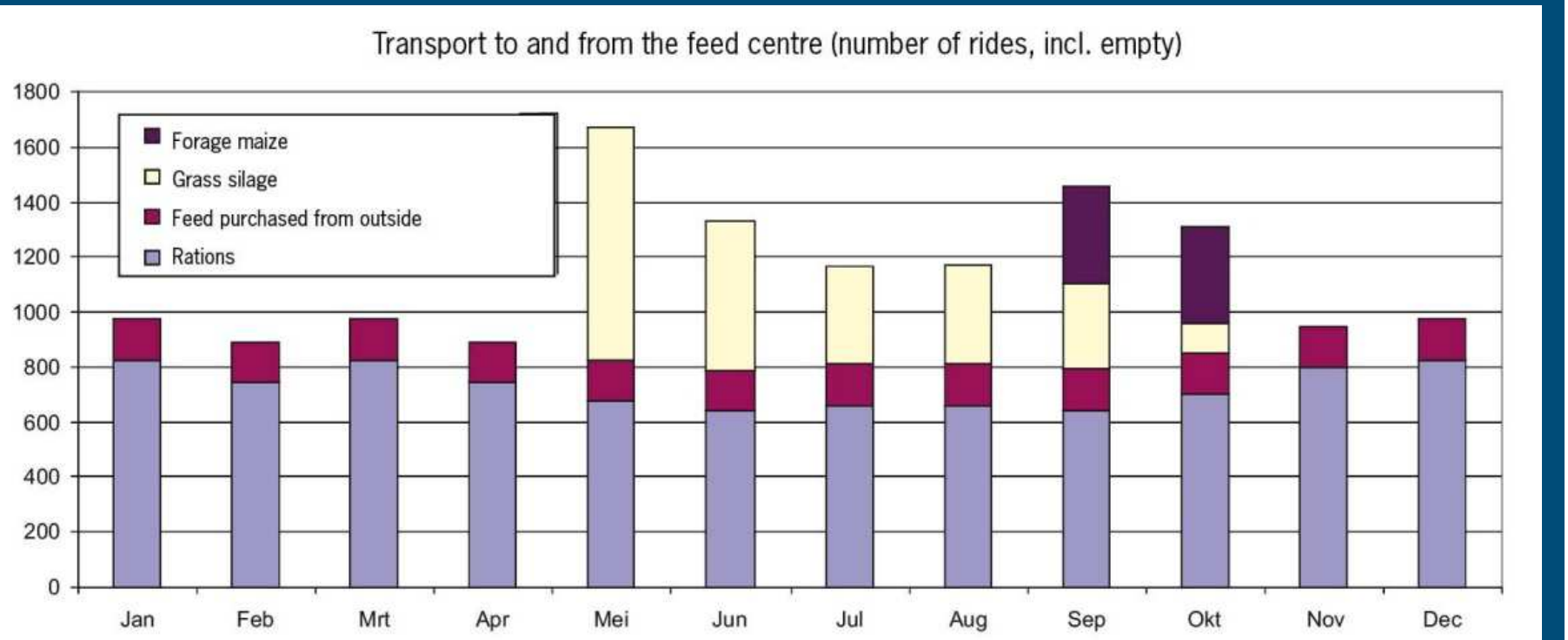
- Outsourcing feeding cows
- All the cows and farms get the same feed
- More traffic


field on distance
farm yard field
purchase
= truck to feed centre
= truck from feed centre
= tractor
= trucks purchased feed
field on distance
farm yard field
purchase

Transport tractor rides, no feed centre



Transport truck rides, with feed centre



Energy use (MJ per 100 kg milk)

Table 6 Energy consumption of dairy farms and purchase of feed with and without a feed centre (MJ per 100 kg milk)

	Dairy cattle total	Purchase of concentrate	Purchase of conc. repl.	Purchase of forage	Feed-centre	Total
Basic situation (reference)						
Direct[1]	64					64
Indirect[2]	116	183		90		389
Total	180	183	0	90	0	452
With feed centre						
Direct[1]	53				14	67
Indirect[2]	101	72	94	72	4	343
Total	154	72	94	72	19	410

[1] Direct energy consumption: use of fuels for transport and machinery and electricity.

[2] Indirect energy consumption: purchase of feed, fertiliser, crop protection agents and on the basis of depreciation costs for feed storage, manure storage and machinery.

is 9% lower with feed centre

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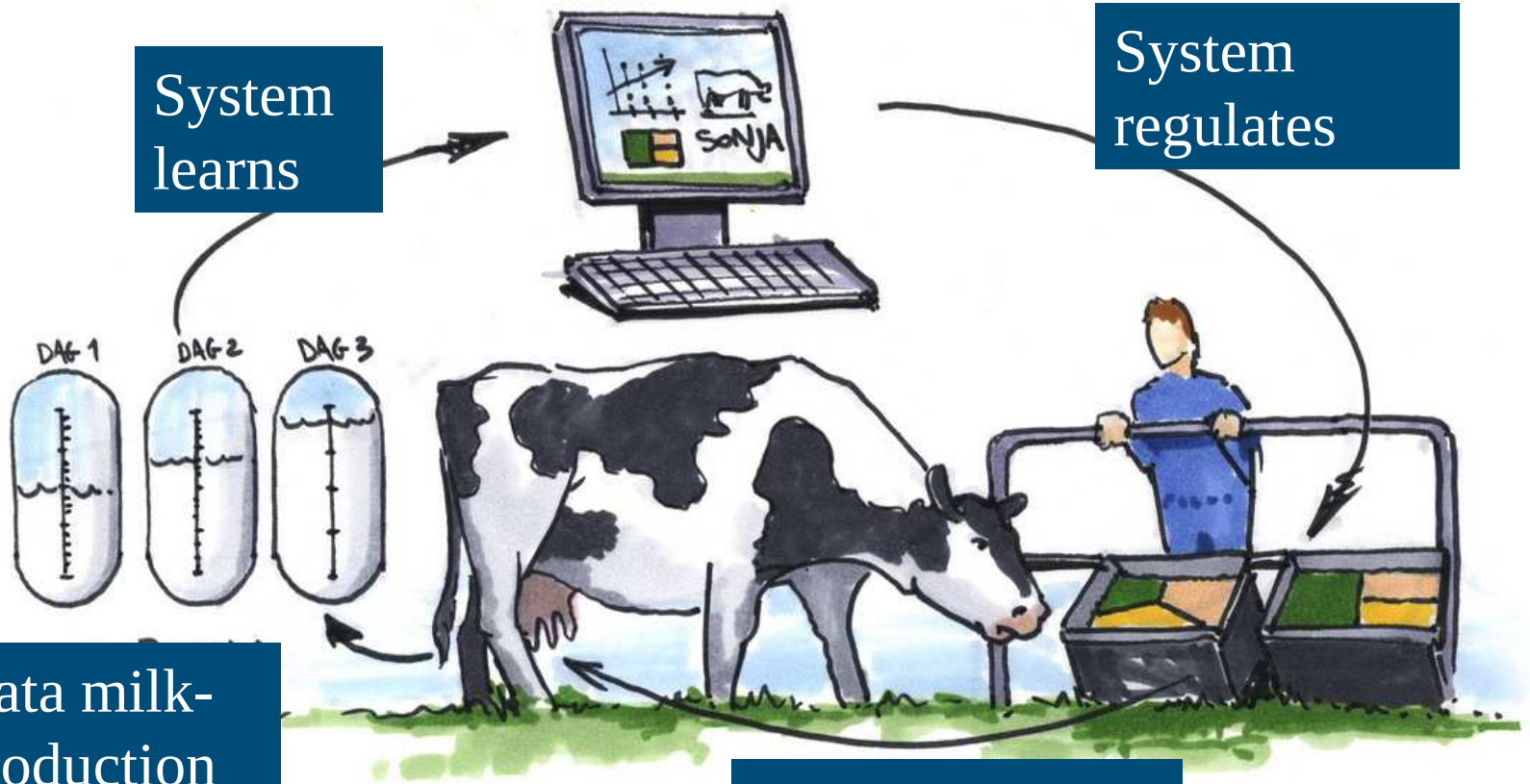
Alternative feeding systems

Dynamic feeding of dairy cows



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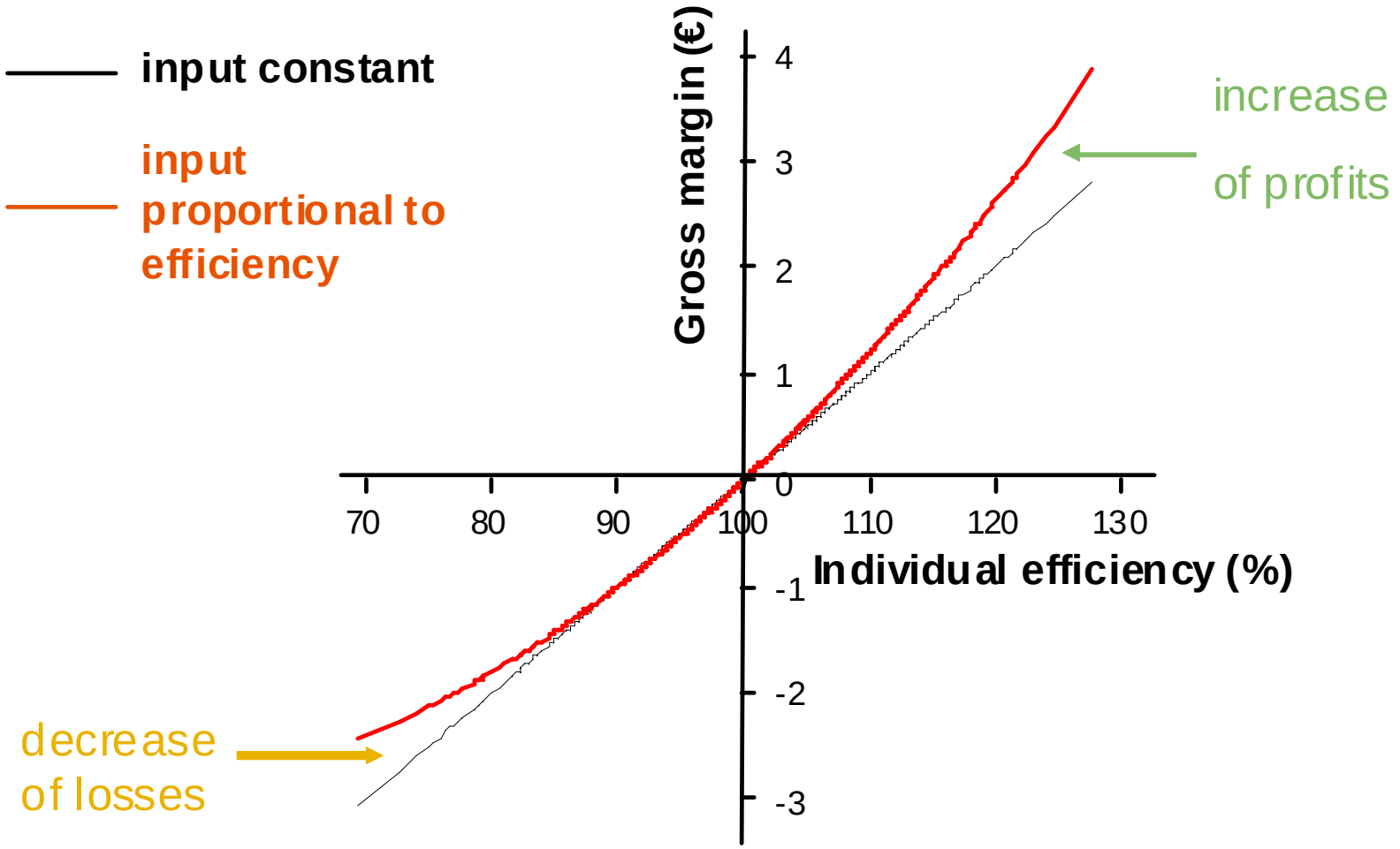
Variation in efficiency: using it works both ways



Individual feeding roughage and concentrates

Options feed centre

1. TMR central for 30 farmers
2. Concentrate replacers for 100 farmers central
   Roughage decentralized for 5 farmers
   TMR decentralized
3. TMR on farm level

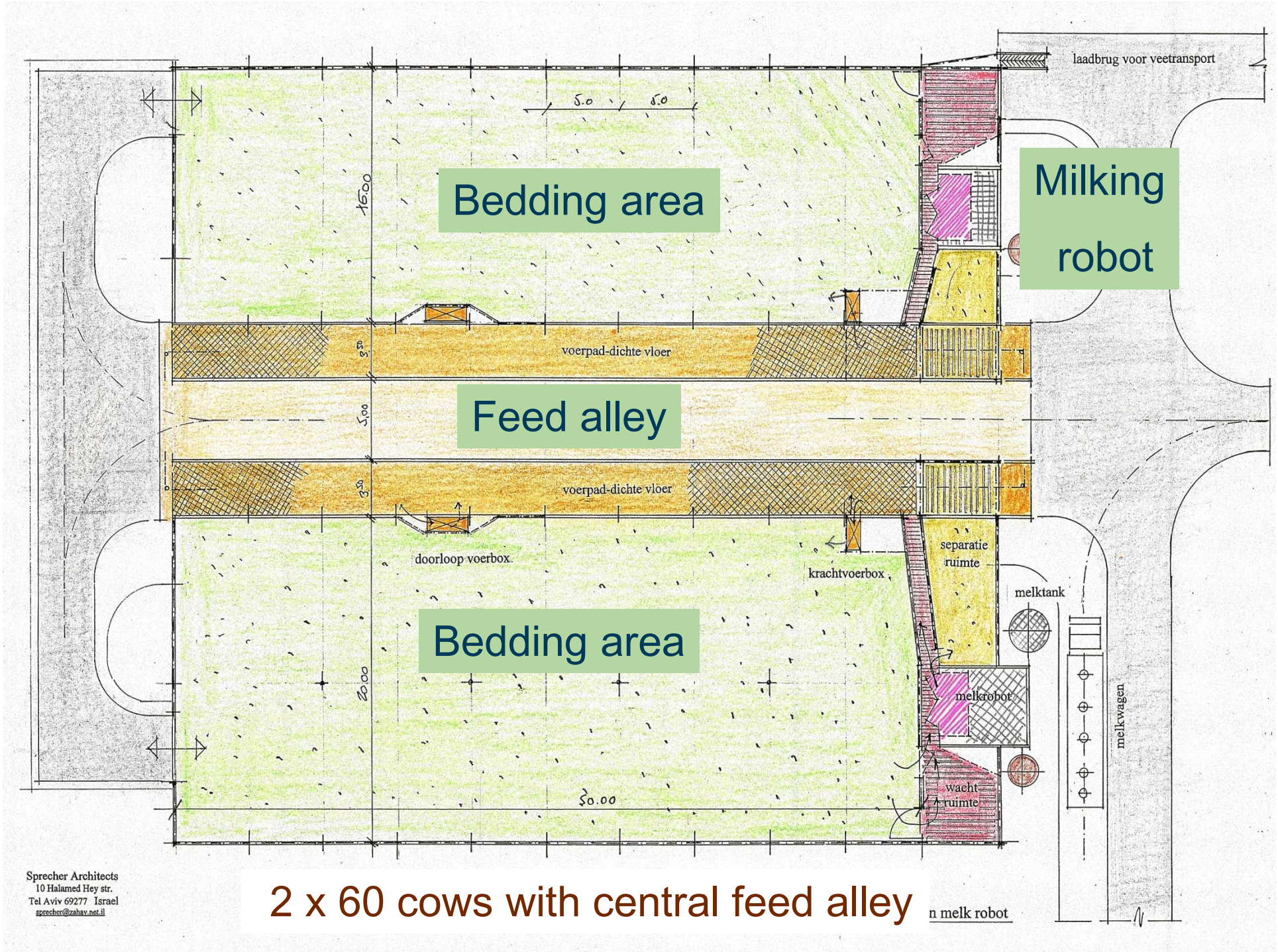
Options feeding system farm

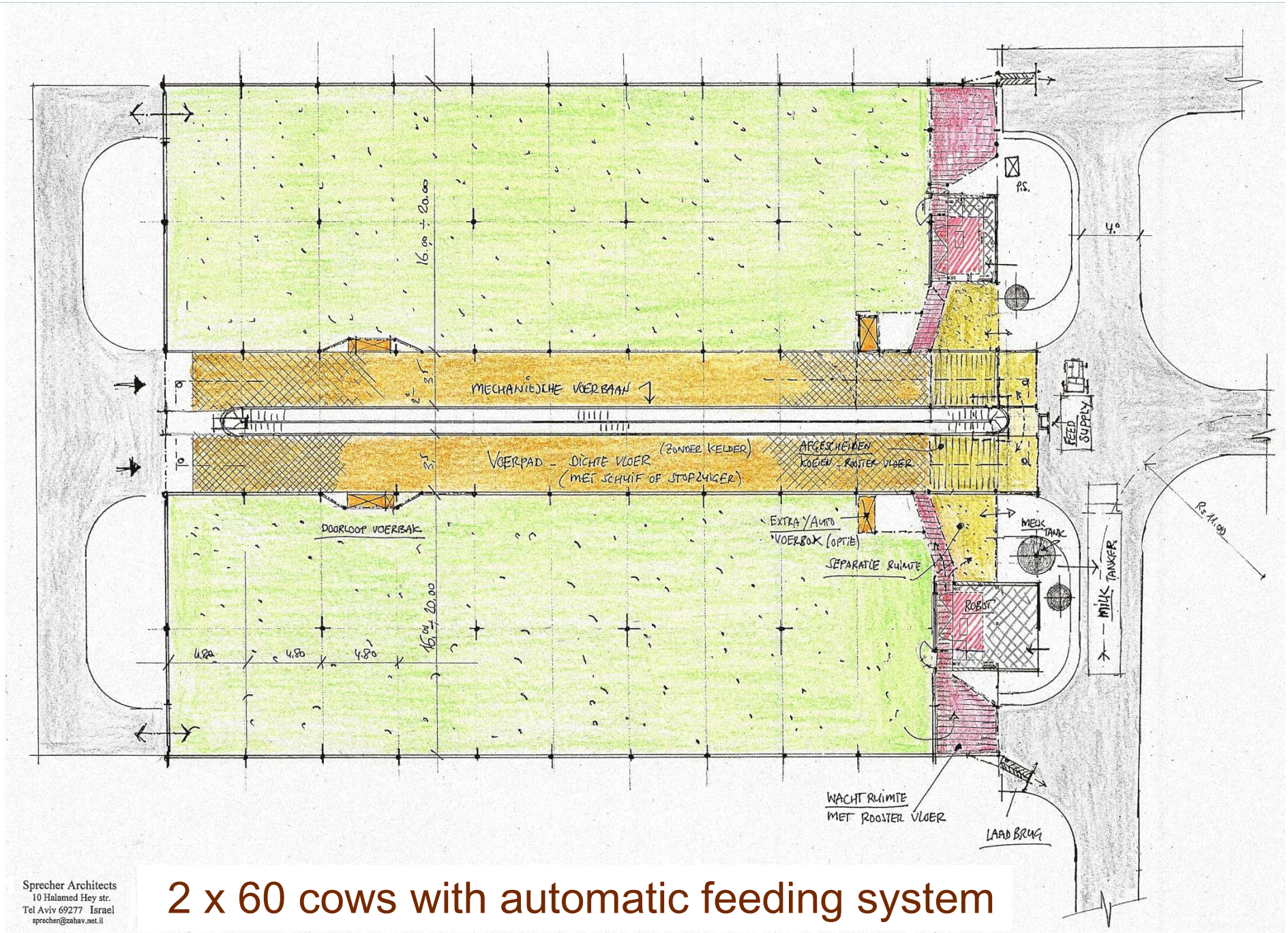
- TMR along feed fence
- TMR with automatic feeding system
- Feeding with mobile fee mangels

Pilot Netherlands

Denmark

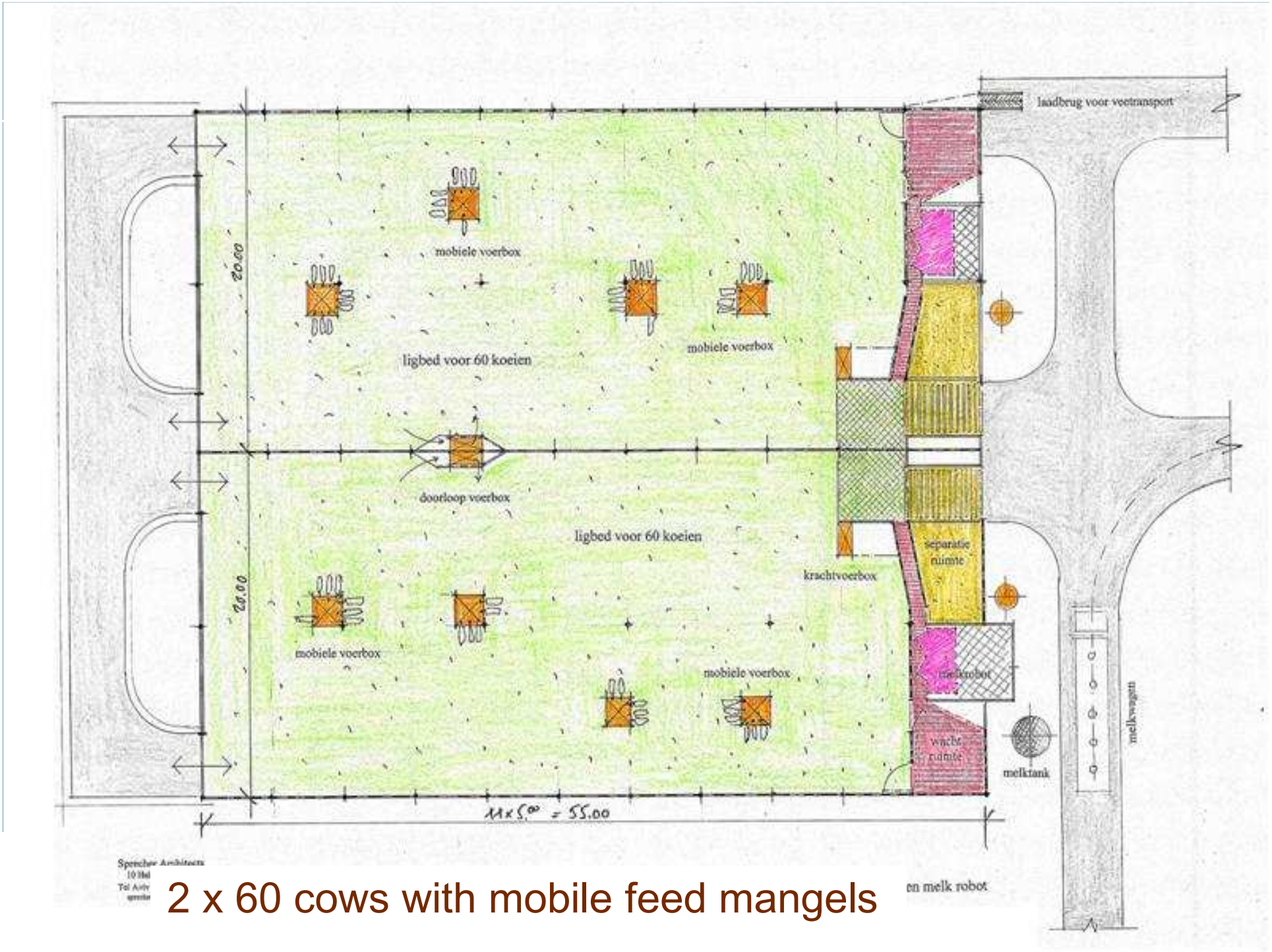
Automatic feeding system


Bedding area
Milking robot
Feed alley
Bedding area
laadbrug voor veetransport
voerpad-dichte vloer
voerpad-dichte vloer
doorloop voerbox
krachtvoerbox
separatie ruimte
melktank
melkrobot
melkwagen
wacht ruimte
Sprecher Architects
10 Halamed Hey str.
Tel Aviv 69277 Israel
sprecher@zahav.net.il
2 x 60 cows with central feed alley
n melk robot



Sprecher Architects
10 Halamed Hey str.
Tel Aviv 69277 Israel
sprecher@zahav.net.il

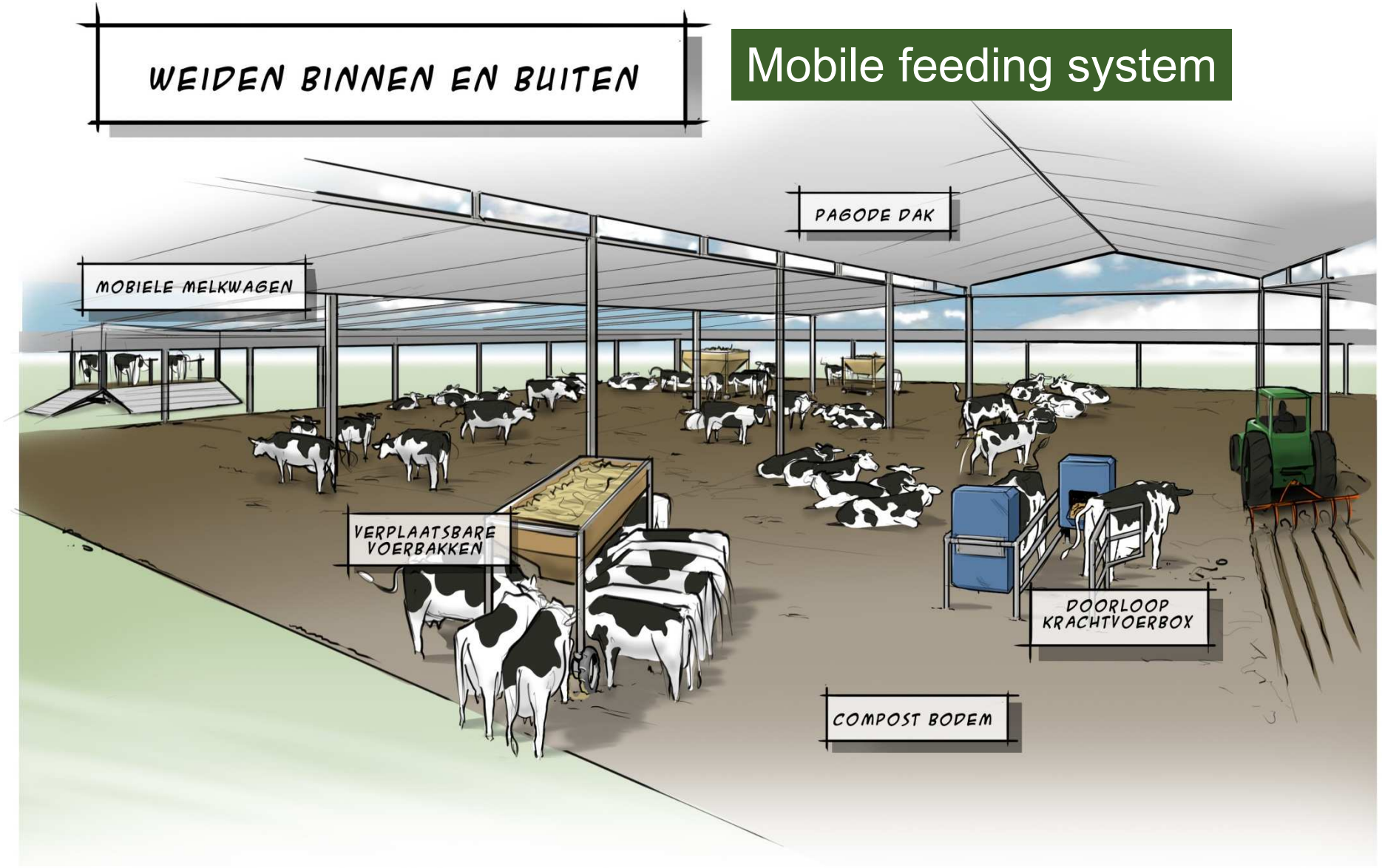
2 x 60 cows with automatic feeding system



2 x 60 cows with mobile feed mangels

en melk robot

Mobile feeding system



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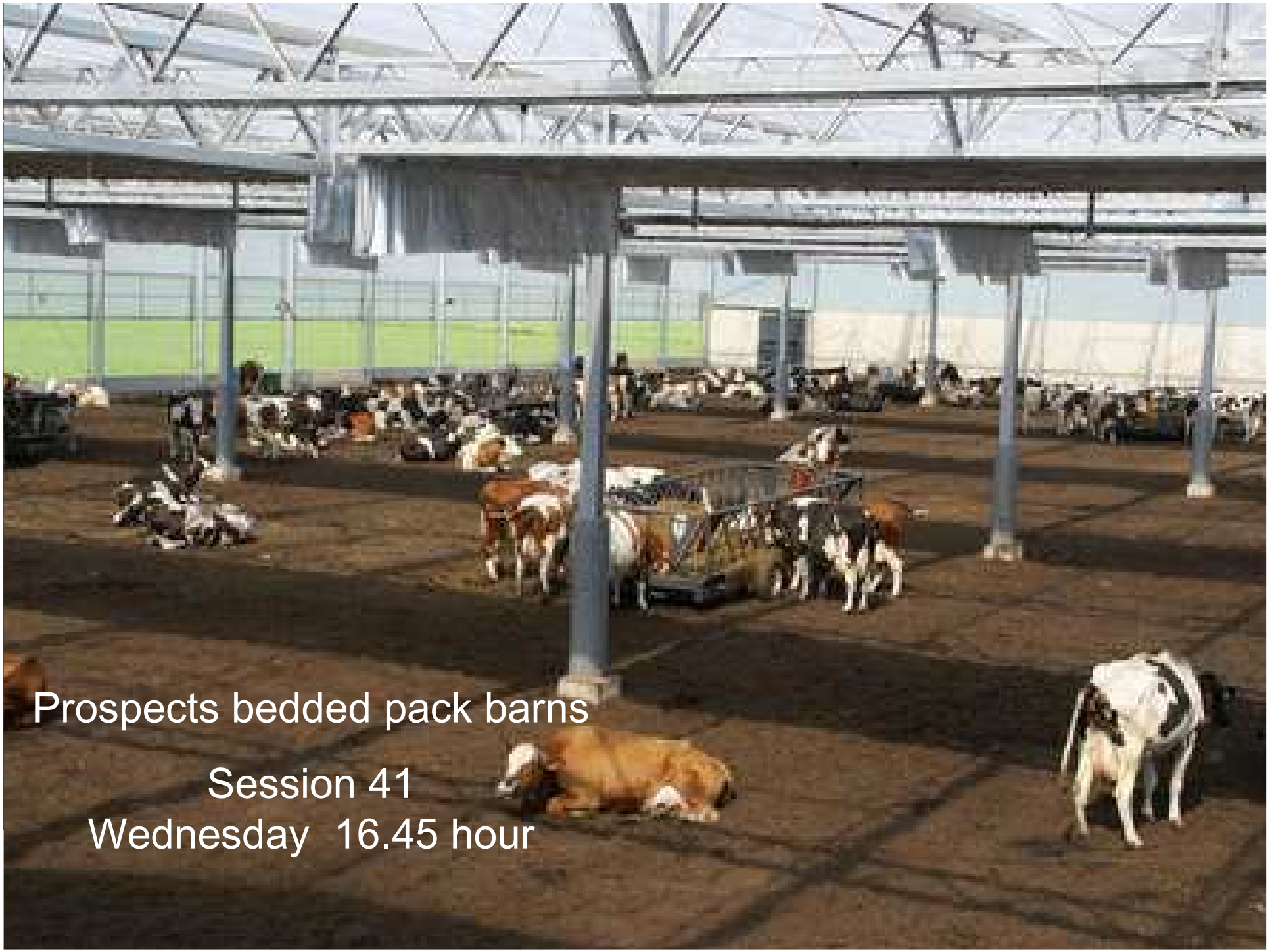
Havermans
Green house, mobile feed mangels
25 m2 per cow
no feed alley

mobile feeding


Prospects bedded pack barns
Session 41
Wednesday 16.45 hour

Critical succes factors for regional feed centre

- Location
- Scale
- Cows per km2
- Willing to coöperate
- Willing to outsource work
- Finance structure
- Control what van go wrong (contracts, protocols)

Thanks for your attention

Paul Galama

Regional coöperation