



Experiences & lessons learnt in Dutch dairy farming



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Personal intro



Dutch veterinarian
with dairy experience
world wide

Director Dutch Farm
Experience



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Farming (NLF)



Special experience in the Netherlands, South America, India, Ethiopia, Uganda



General info Dutch dairy farming

- Cold climate 6 months/year
- Around 17.500 dairy farmers
- Average 85 cows per farm
- Total milk production per year = 14.000.000.000 kg milk
- Average production 33 kg milk per cow per day
- 80% farmers are cooperative members
- Export of 80% of the dairy products (mainly cheese)
- Agriculture provides around 10% of GDP (dairy 1%)
- Abundant food available at low prices (10% of income)

Only 70 years ago ...agriculture in the Netherlands was low input and labor intensive



Manure from livestock was used for crops on the same farm

In the 1960's – EU policies changed



Milk tank obliged
in every farm

Specialization in
crops or livestock

Construction of free
roaming stables



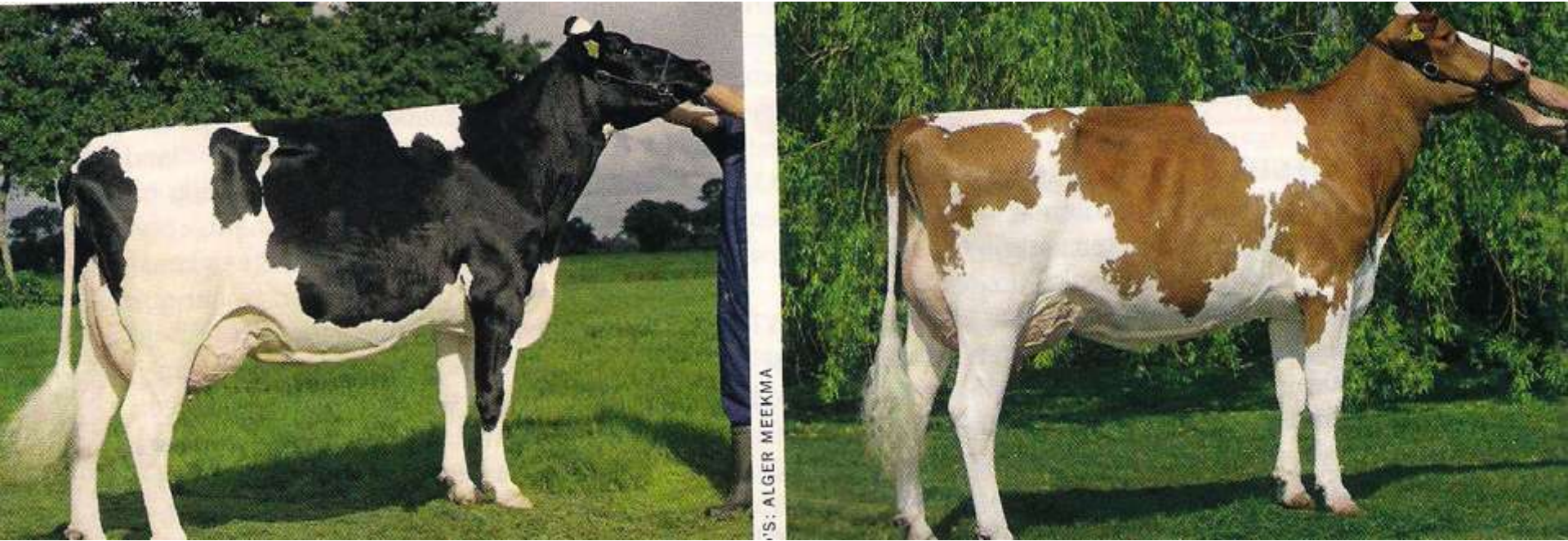
Conducive policies in agriculture 1950-1960's to support this system change

- Market protection - fixed prices
- Easy access to credit for farmers
- Support to education-extension-research
- Rigorous disease control programs
- Subsidies for chemicals/artificial fertilizer
- Farmers organization in co-operatives

Gaining land by making more 'polders' & enlarging existing plots for mechanization



Artificial insemination & breeding policies



Replacement of Dutch Friesian dual purpose cow (meat and milk)
by Holstein-Friesian cow bred in the US
Specialized in milk production only

Resulting in:

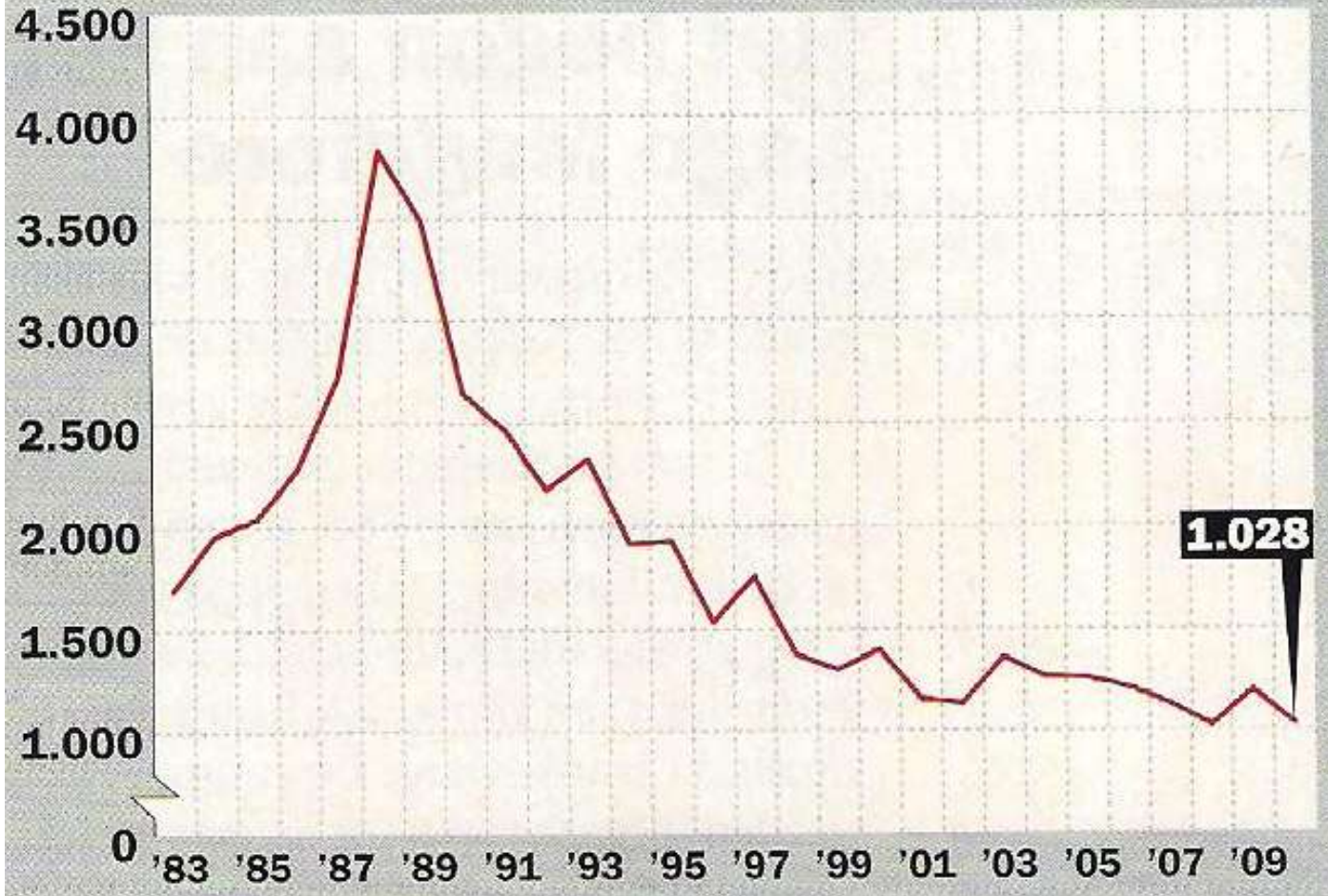
Impressive increase in milk and labour productivity
and... loss of 90% of family dairy farms in 50 years

	1960	1975	1985	1995	2005	2007	2017
Dairy farms	180.000	91.500	58.000	37.500	23.500	21.300	17.500
Total milkproduction (x1000)	6.721	10.286	12.525	11.280	10.827	11.134	14.100
Dairy cows (x1000)	1.628	2.218	2.367	1.708	1.433	1.413	1.690
# of dairy cows per farm	9	24	41	45.5	61	66	97
Milkproduction/farm (x1000)	37	112.5	216	301	460	522	806
Milkproduction (kg/cow/year)	4.200	4.650	5.300	6.610	7.550	7.880	8.706
Milkproduction (kg/ha/year)	5.500	8.864	12.512	12.018	12.560	12.980	17.000
Labor productivity (kg/milk/hour)	8	37	72	89	128	141	280

(Info: WUR-LEI, 2010
info 2017: RABO, NZO, ALFA)

2019: 17.000 dairy farms
a future loss of another 70% is predicted

GLB income Netherlands – rural development excluded – x € million.
(nominal amounts, not corrected for inflation) Source: LEI



EU
subsidies
to Dutch
agriculture

(in millions
of Euros
per year)

High subsidies in 1980's due to over-production of milk
Even today one billion per year – for around 40.000 farmers

Dependence on subsidies

Farm income, add on subsidies and % subsidies – average 2010-2015
(in Euros)

	Farm income	Income added	% subsidies
Dairy farms	49.533	29.517	60
Veal calves	55.000	50.700	92
Pig farms	14.800	5.533	37
Laying hens	25.800	7.733	30
Broiler chicken	66.700	11.683	18
Crops	68.917	31.250	45
Potatoes	81.650	59.650	73
Flower bulbs	135.750	5.883	4
Greenhouse production	174.850	24.083	14
Fruits	46.700	5.233	11

** contractbasis bron: Ministerie van Economische Zaken, LEI Wageningen UR*

Major changes in cattle feed:

maize-grass silage



soy beans in concentrates

- ➔ higher protein %
- ➔ lower fibre

Resulting in changes in the stomach system and in manure quality



- ➔ More liquid
- ➔ Rotting process in manure tanks
- ➔ More ammonia (NH_3) release
- ➔ Undigested parts



Change of fertilizer:
change in quality of organic manure
+ large amounts of artificial fertilizer

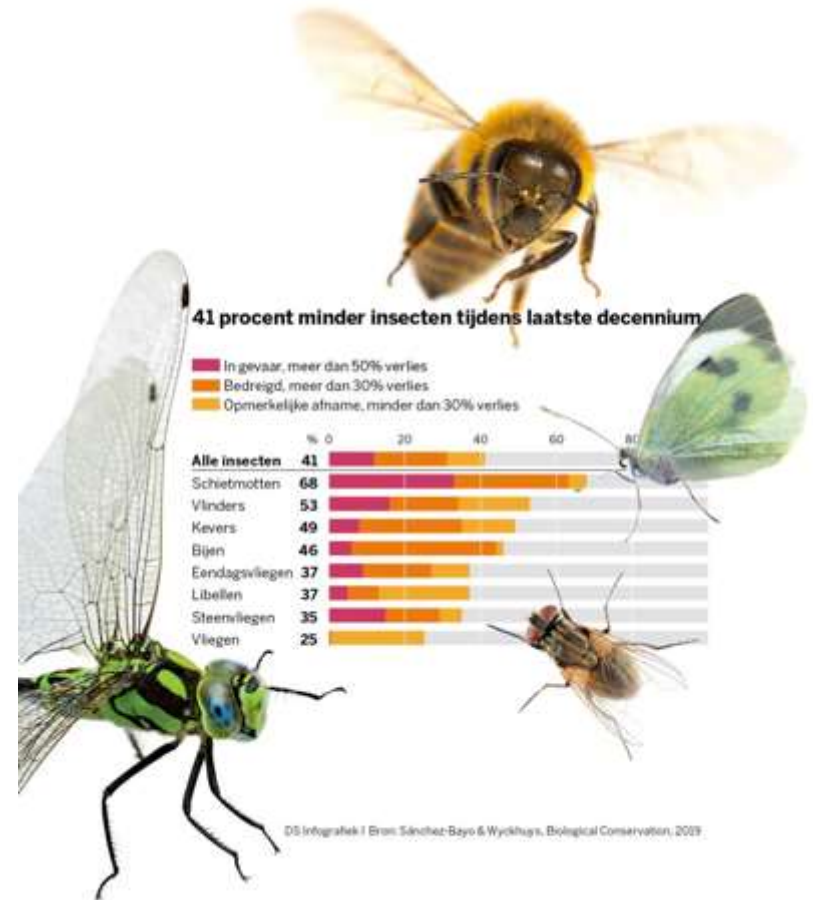


Excess nitrogen (N) resulting in environmental problems

reduced soil fertility + water quality



Loss of biodiversity in farmland



Studies indicate: since 1989 75% of insects has been lost
Between 40-60% of meadow birds lost

Leading to higher productivity/year -
but also animal disease and short life span



Average life span of milking cows
is 2,5 lactations (5.3 years of age)

High loss and mortality during 1st lactation

Use of antibiotics and other chemicals to control disease



Successful AB reduction policy:
in 2012 the livestock sector was obliged to reduce antibiotic use
by 70% by 2016 compared to 2009
to reduce risk of multi-resistant microbes for human health

Dutch (and EU) farmers are in trouble: their income is low and insecure



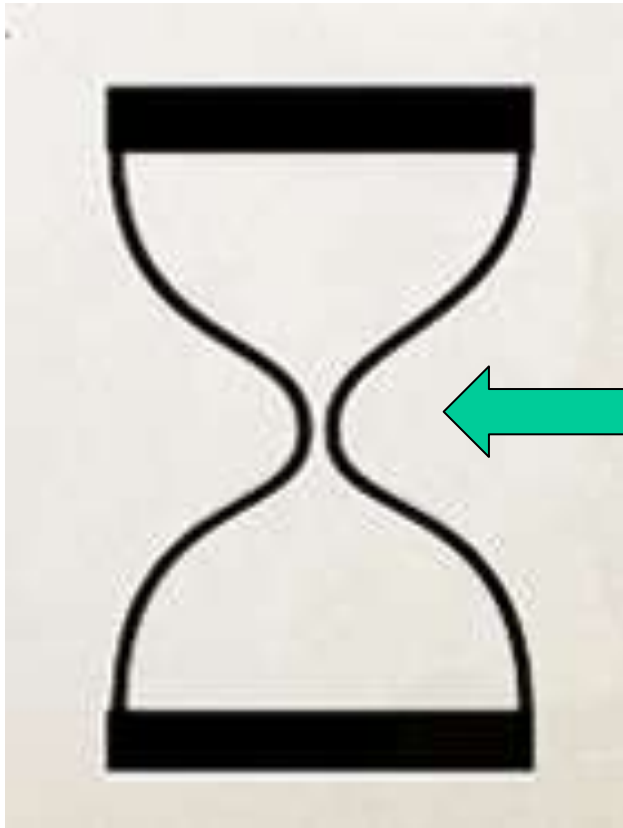
Production
increases
(in blue)

but...
income
decreases
(in red)

High production costs + dependence on world market prices

Income insecurity due to dependence on:

- EU subsidies
- Fluctuating world market prices
- Supermarkets



Producers (17.500)

Supermarket chains (4)

Consumers (17.5 million)

Young people reluctant to take over

68% of farmers over 50 has no successor...



and 20% of farmers is over 65 years of age

International effect of Dutch livestock production



Soy from South America to feed animals in the Netherlands – cheap animal products are then being exported again

So we have very efficient farms, green fields,
big stables, high producing animals
+
abundant safe and cheap food for consumers...



...but there is also another side of the coin!

- Loss of farm employment - over 90% of dairy farms has stopped since 1960's
- Farmers uncertain about income
- Dependency on EU subsidies & world market prices
- Problems with manure, soil and water quality
- Problems with animal health – short life span
- Problems with high use of chemicals
- Loss of biodiversity
- Effects on other countries
- Criticism of general public – especially related to animal wellbeing and climate change

Option for farmers #1

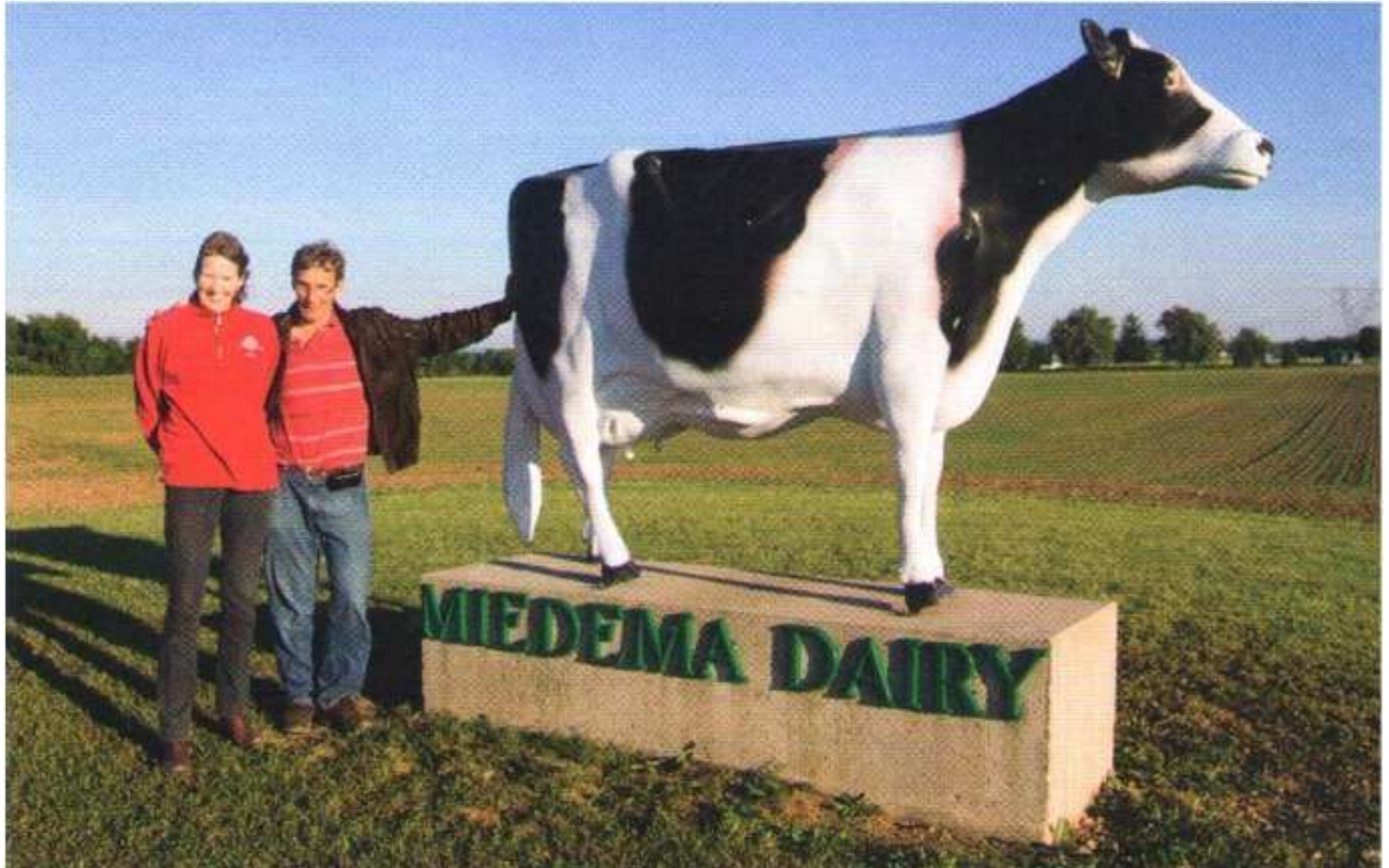
Stop farming



5 farms stop
every day

Option for farmers #2

Start farming abroad



Option for farmers #3
further scale enlargement:





Latest technologies
require higher levels
of investment

Milkrobot

XXL milking parlours





Option for farmers #4 diversification of income

Tourist activities

Care on the farm



Farm shop selling local
produce



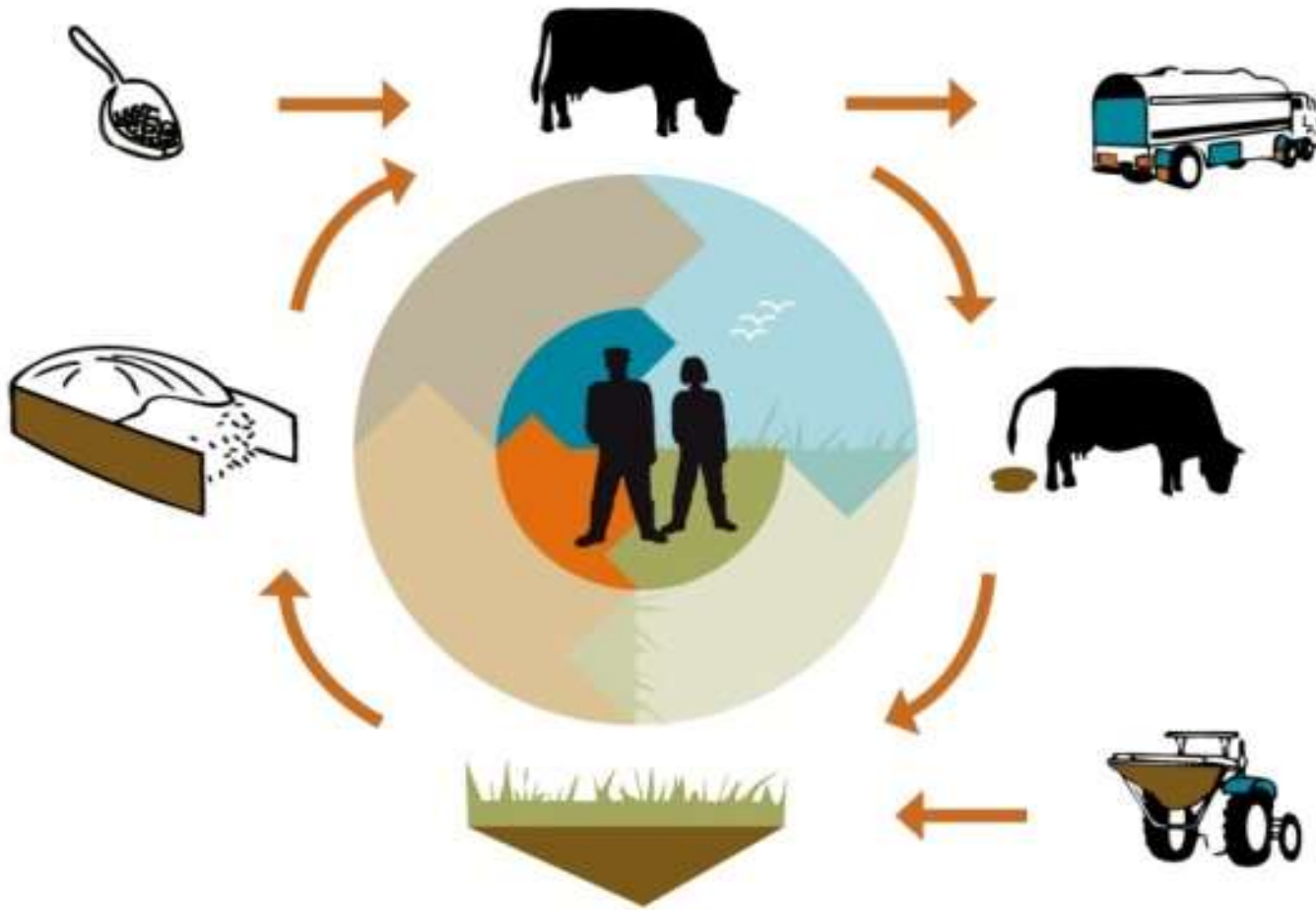


Option for farmers #5

**Cycle farming:
increasing soil fertility
& reducing costs**

Farmer study groups learning from each other how to improve soil fertility and to reduce costs

Cycle farming: re-establishing the natural cycle



Less
artificial
fertilizer and
concentrates

producing
more milk
on basis
of fodder



Lessons learnt (1):

**Build on farmers'
knowledge and
experience
+
supported
by research**



Lessons learnt (2): Restoring soil fertility and soil organic matter is highest priority for efficient farming



Lessons learnt (3): Optimize rather than maximize productivity



Focus on cattle health and high **total** animal life-production rather than on maximum milk production/animal/**day**

Reducing mortality and prevention of disease as the main ways to improve productivity



Lessons learnt (4):

**Diversifying farmer's work
and income reduces economic
vulnerability**



Lessons learnt (5):

Stronger links between farm and natural environment

Protecting wild birds and
natural biodiversity



Lessons learnt (6):

Growing trend of direct marketing (10% of farmers)



Making efficient use of internet

Lessons learnt (7)

Re-value local and dual-purpose breeds



Lakenvelder
cow



Blaarkop cow
(Blisterhead)



Friesian-Dutch cow

and strategic crossbreeding!



Lessons learnt (8)

‘Traditional’ animal management practices re-valued



- Cows in field
- Keep horns
- Calf with cow



Lessons learnt (9): Re-establishing interaction livestock & crop farming



Lessons learnt (10)

Revalue herbs and medicinal plants



Stablebooks on herbal products
training of veterinarians on herbal products and herbs in grassland

Lessons learnt (11)

Importance of farmers' organization for joint learning

Farmer study
groups and
marketing
cooperatives
+
representation
at political
level



Lessons learnt (12)

High investments and big farms do not necessarily lead to high incomes



**Future of
Dutch dairy
farming?**



**Scale enlargement
& high inputs
for world market**



**Closing nutrient
cycles & lower
inputs for direct
marketing**

2018 - interviews amongst 2000 Dutch farmers indicates:

57 % of farmers:
Export model with
scale enlargement is
not sustainable on
the long term

80% of farmers:
motivated to change
to nature-inclusive
farming methods – if
supermarkets and
consumers pay more



Direct farmer-consumer
sales



Since September 2018:

New strategy of minister of agriculture:

Radical change towards closing nutrient cycles and shortened marketing chains



Massive farmers protests:
situation is extremely
complex and farmers feel
unrecognized...





**Copy the
lessons
learnt in
Dutch dairy
—
not the
problems!**



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