

---

# More Milk from Less Farms!

---

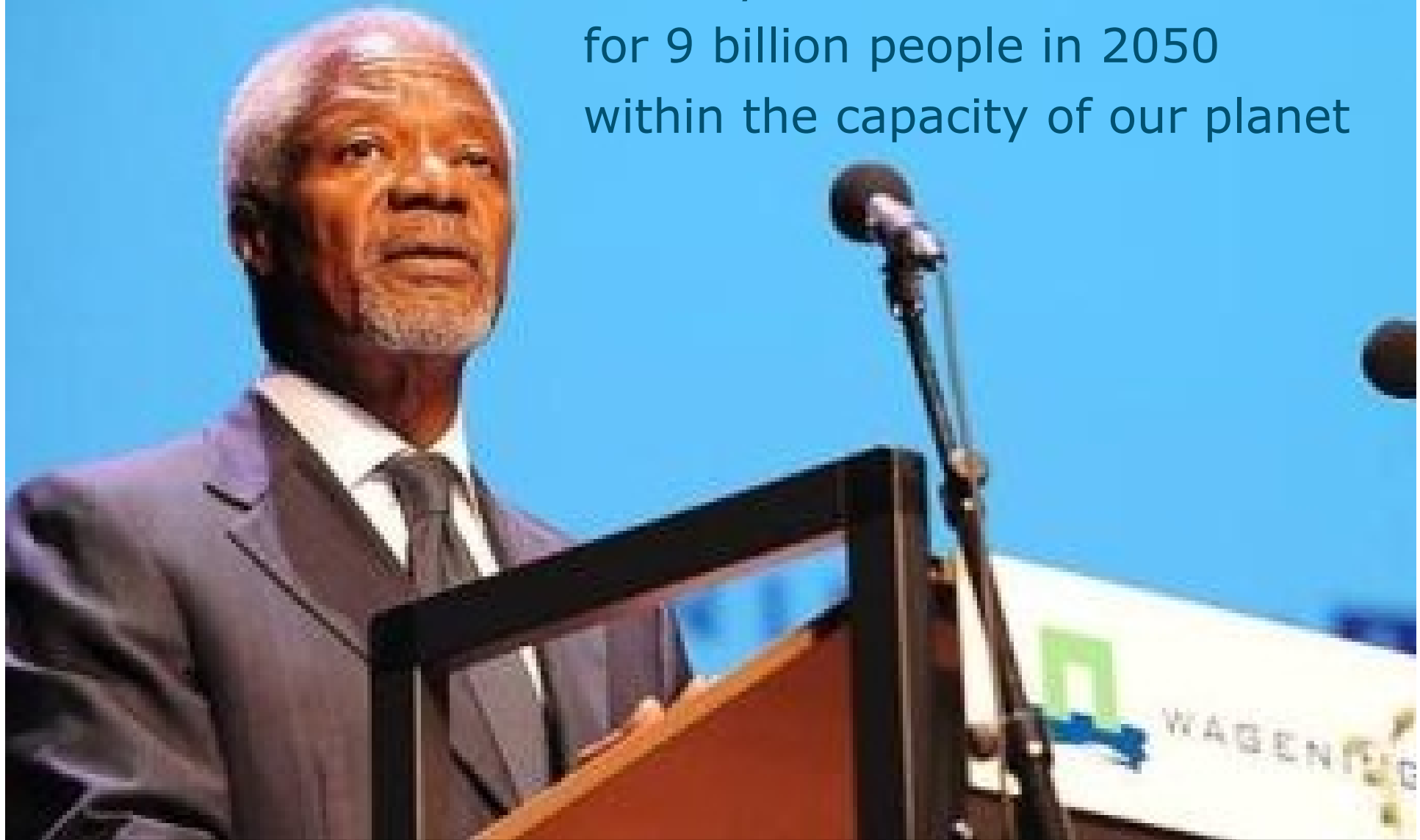
Dairy Farming Perspectives in Europe

Dr. Martin C.Th. Scholten



# A Major Challenge

Healthy food and nutrition  
for 9 billion people in 2050  
within the capacity of our planet



---

# Yesterday more Crops, Tomorrow more Milk

---

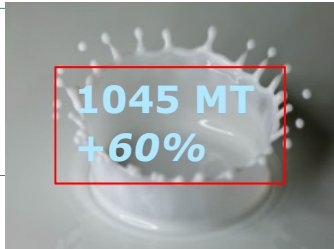
## 20<sup>th</sup> century **Green Revolution**



## 21<sup>st</sup> century **White Revolution**



# Perspectives for Dairy

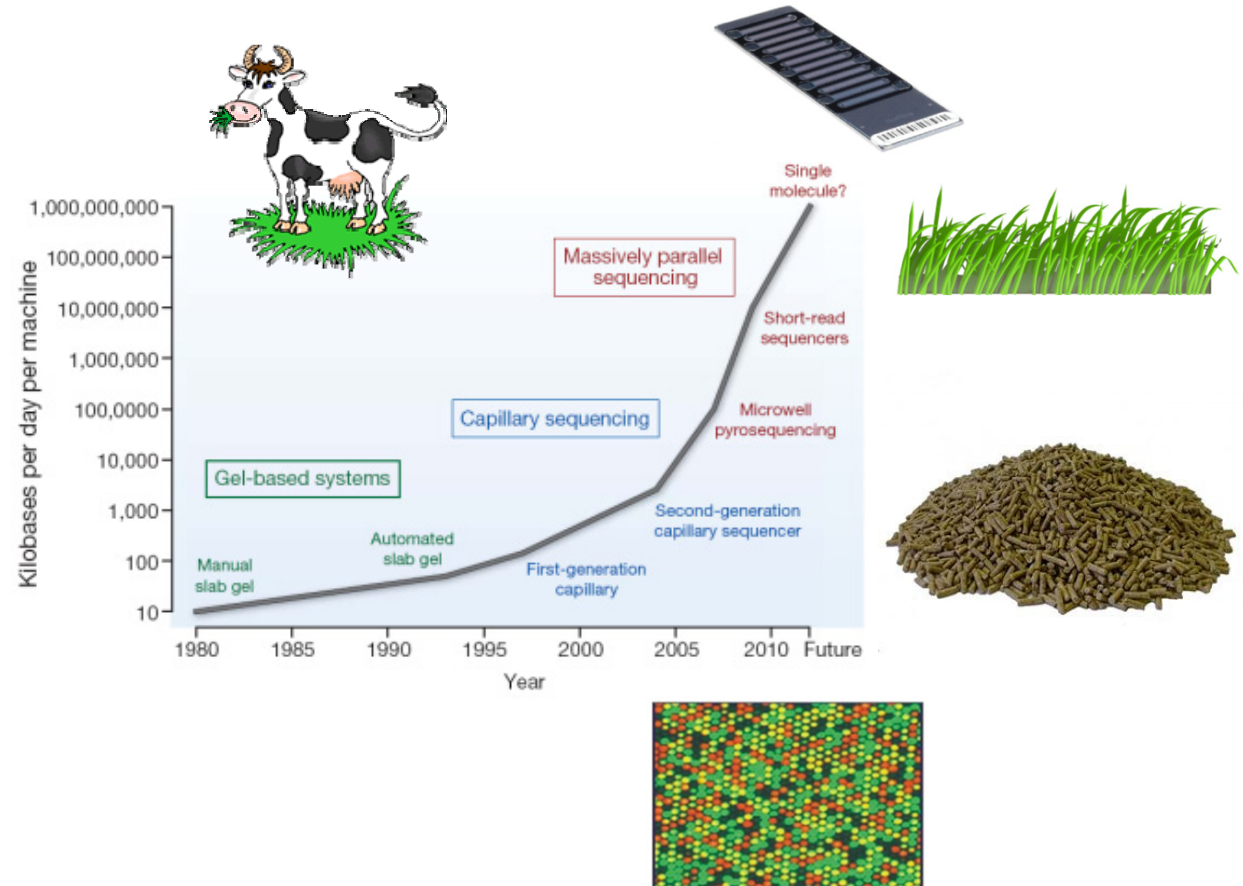


1045 MT  
+60%

- Milk contributes to food security and livelihood
- Demand for milk will increase
- Milk is harvested daily (60% smallholders)
- Ruminants value feed (crops, grass, by-products) to food
- Grazing contributes to biodiversity and landscape
- Environmental impact is criticized
- Health and welfare care is critical



# Making of the Milk: New Challenges



# Milk Production in NL - 2104



- Animal productivity: 8.000 kg/cow/yr
- High milk density: 14.000 kg/ha
- High grass and forage productivity
- High input of fertilizers and concentrates
- Housing: 30% complete indoor
- Covenant /Incentives to sustain outdoor grazing



# Milk Production in NL - trend



- Since 1960 production doubled, with same number of cows
- Average 80 cows per farm (8 in 1960)
- Labour production: 150 kg/h labour (5 in 1960)
- Methane emission: 15 g/kg (17.5 in 1990)
- N-efficiency milk/feed: 28 % ( 17% in 1990)
- Trade-offs: reproduction, mastitis, productive life



---

# Abolition of EU milk quota system

---





---

# What makes the difference?

---



# Integrated Approach: Livestock Farming with Care



**M.C.Th. Scholten**, I.J.M. de Boer, B. Gremmen, C. Lokhorst;  
Livestock Farming with Care: towards sustainable production  
of animal-source food  
*NJAS - Wageningen Journal of Life Sciences, Volume 66, November  
2013, Pages 3-5*

---

# Topics to be addressed

---

- Optimizing land use for feed production
- Manure treatment: recycling and refinery
- Precision Farming to support integrated management on individual animal level in herds
- Production Life Time
- C and H2O Footprint

# Thanks!

