



# EAAP 2018

69<sup>th</sup> Annual Meeting of the European Federation of  
Animal Science

Dubrovnik, Croatia, 27<sup>th</sup> to 31<sup>st</sup> August 2018

## **Cattle welfare across Free Walk and Cubicle housing systems in six European countries**

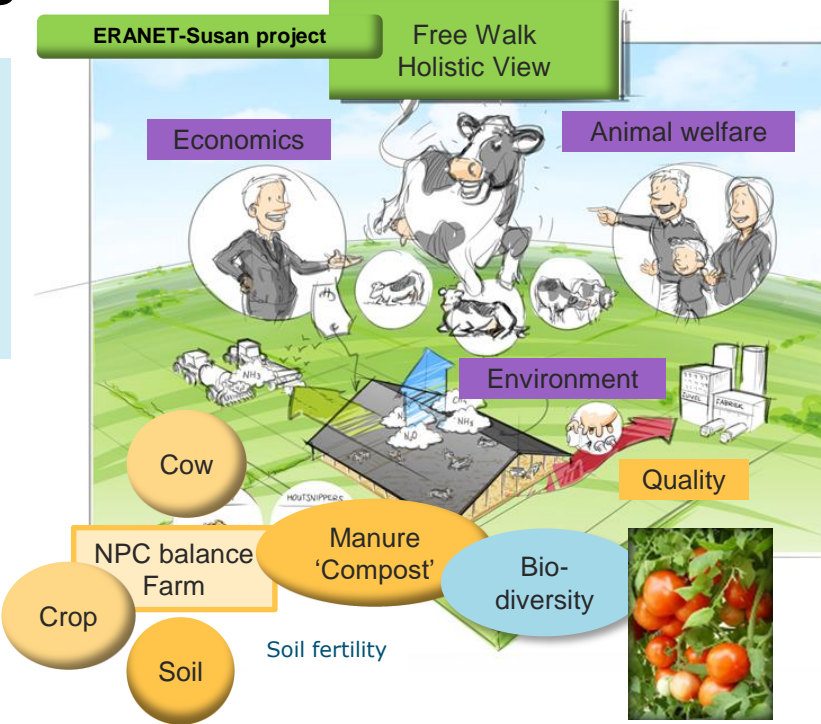
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# Acknowledgements



**2017-2020**  
**11 Countries**

**Develop economic sound  
Free Walk farming  
Systems elevating animal  
welfare, health and  
manure quality, while  
being appreciated by  
society**





# Why Free Walk systems (FWS)?

Large lying area of composting “waste” material  
Animal welfare + manure quality..



**Compost barn**



**Bedded pack barn**



**Cow garden**



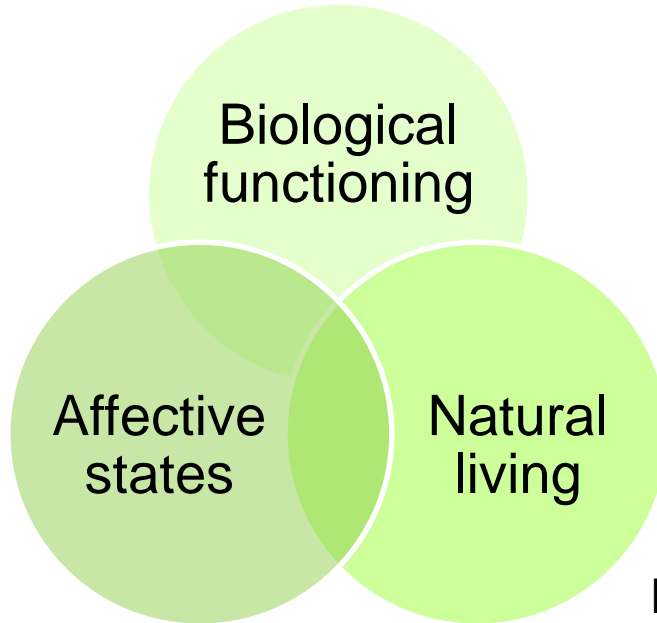
# What does the COW want?

Space (physically, socially and logistically) free movement

adequate  
exercise

natural  
behaviour

eating,  
drinking,  
defecating  
urinating

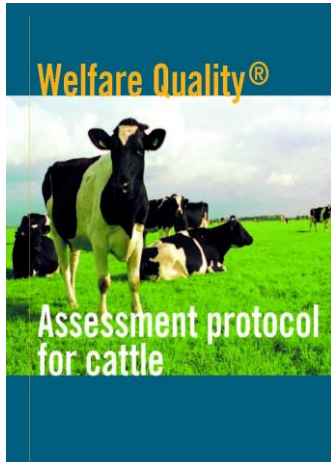


Lund, 2006

**So...FWS met the demands?**



# ADAPTATION OF WELFARE QUALITY



**Clinical scoring:** physiological & health

**Behaviour:** HAR, QBA, Social

**Resources**                      **Management  
questionnaire**

Measures taken directly from the animal (**ABM**)

Add extra **indicators:**  
*Milking & feeding robots*  
• **Key research questions for**  
*Herds (cow & calve health, comfort together)*  
• **Well managed** compost-bed  
*Grazing in summer*





# On-farm welfare assessment

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**“Mixed farms”- Fresh cows on FWS-constant factor**

- Suckler herds (cow&calve, focus on aggressive behaviour)
- Stock density (4-9 m<sup>2</sup> vs 18-35 m<sup>2</sup>)

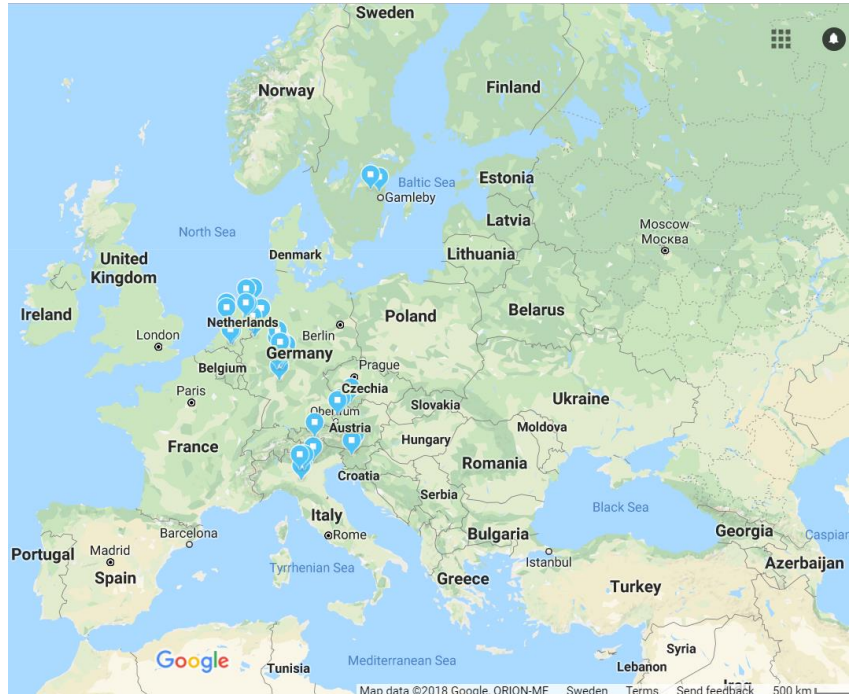




# Participant farms

40 dairy and 4 suckler farms (half FWS and half Cubicle).

Visits:  
Winter 2017-18 & Summer 2018



Measures taken directly from the animal (**ABM**)



# Overview of ABM: CLEANLINESS

% score 2:dirty assigned

FWS	Cubicle
55.6%	40.2%

FWS	Cubicle
32.2%	32.1%

FWS	Cubicle
13.1%	11.1%

FWS	Cubicle
64.1%	47.2%

≤10%

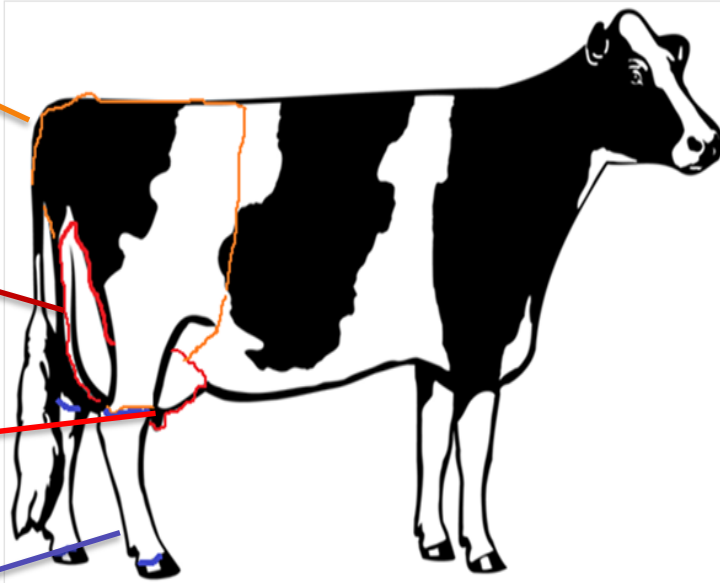
>19%

≤10%

>19%

≤20%

>50%







# Overview of ABM: Integument alterations

**Hairless\*** FWS | Cubicle



0.98 % | 1.63%

**Lesions\*** FWS | Cubicle



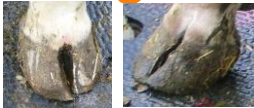
0.13% | 0.18%

**Swellings\*** FWS | Cubicle



0.01% | 0.16%

**Overgrown** FWS | Cubicle



6.79% | 8.7%



# Overview of ABM: Lameness

**% Not  
lame**

FWS	Cubicle
74.9%	73.2%



**% Lamé**

FWS	Cubicle
20.2%	19.1%









**% Severe  
lame**

FWS	Cubicle
5.06%	7.6 %



# Behaviour around resting

Lying	FWS (n=232)	Cubicle (n=246)	Sign.?
Median	5.29s	5.99s	*  5.20s  6.30s
Q1-Q3	4.74-6.19	5.1-7.16	
Range	2.5 -18.38	3.48 -27.8	
<b>Collisions</b>	4.7%	28.8%	*  <20%  >30%
<b>Lying_out</b>	1.5%	6.0%	*  <3%  > 5%



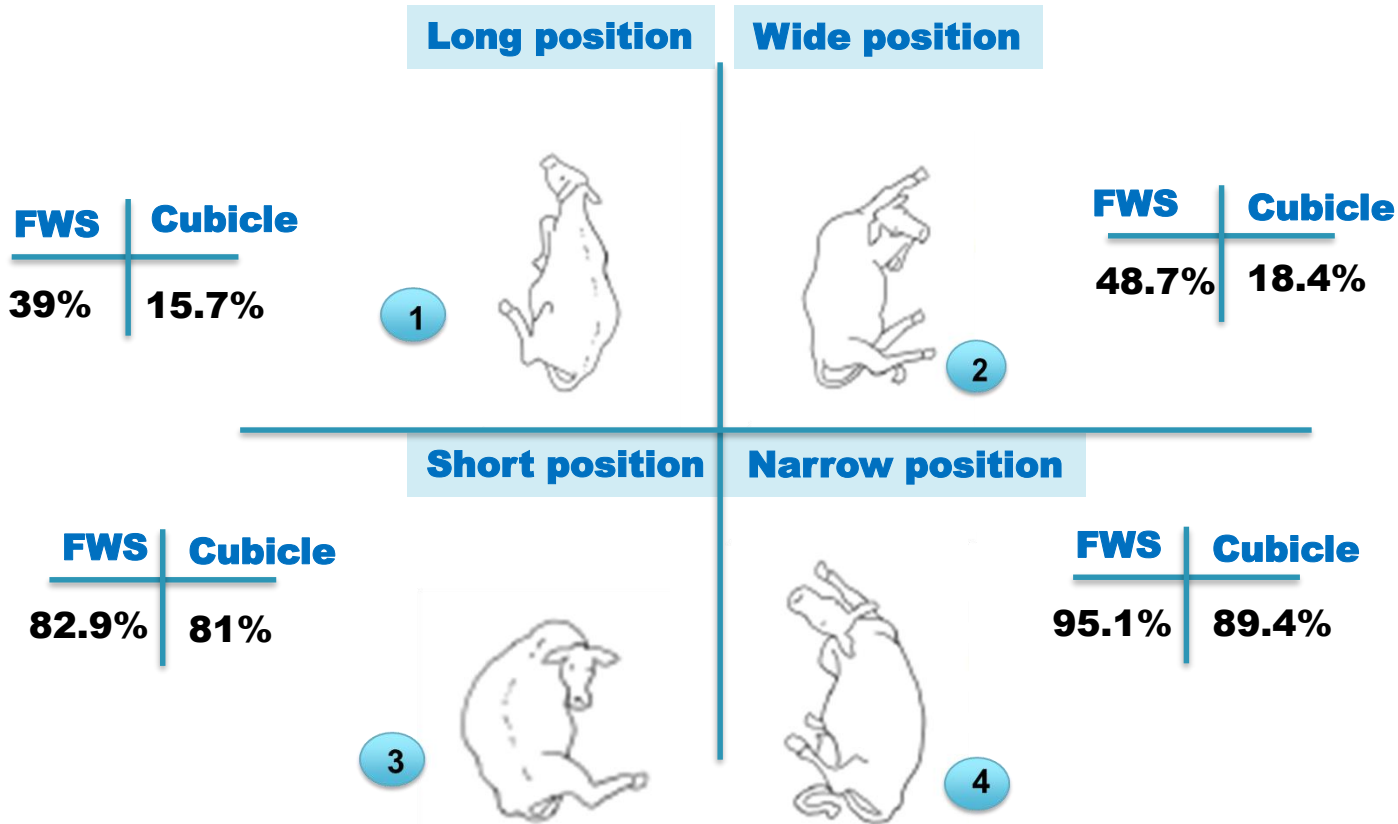


# Behaviour around resting

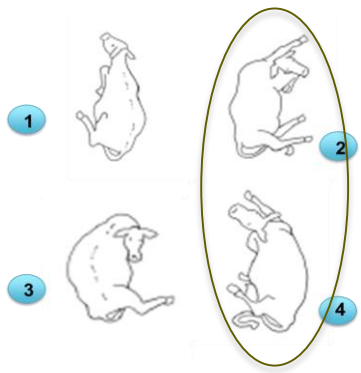
Cow activity	standing	feeding or drinking	lying
Scan-corresponding area			
<b>FWS</b>	25.2%	24.1%	71.9%
<b>Cubicle</b>	24.4%	16.5%	69.7%
Over the whole barn			
FWS	25.4%	33.7%	40.8%
Cubicle	21.8%	34.2%	43.9%



# Percentage of Resting positions observed

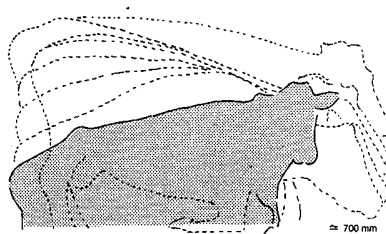


# Behaviour around resting



# Behaviour around resting

Rising score (1👍 - 5👎 )	FWS (n=144)	Cubicle (n=205)	Sign.?
Median	2	3	*
Q1-Q3	2-2	2-3	
Range	1-5	1-5	
<b>Collisions</b>	14.5%	71.2%	*



# Cow challenges in FWS-winter

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1. Integument alterations (interdigital space and above the coronary band).
2. Ocular, nasal discharge and coughing (Clinical signs described in the bibliography as missmanagement and above warning threshold)
3. Expanded Lying and Rise up time
4. Difficulties to move
5. Low/Uneven use of the resting area
6. Time bu





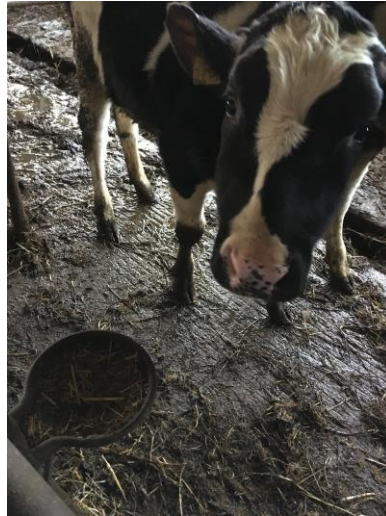


**Some Welfare problems are weather and management dependent**





# Classic problems of missmanagement



**Dry cows & young stock on "worst conditions", Severe lameness on heifers (Young stock-Proactive management is crucial!)**



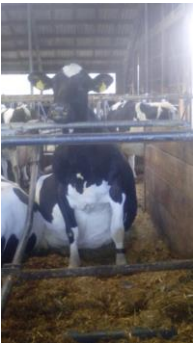
# Missmatch "the cow size of today-cubicle"

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# Anormal conducts & deviated time budget



Dog-Sitting Behaviour, Perching, Diagonal Standing and Lying, Alternate Occupancy, Bunching, Restlessness or Long Bouts of Lying, idle standing





# Some first conclusions...

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- Not one but many systems. Housing & management of such system is what will do the difference.
- Provide detailed technical knowlegde to encouraged farmers.

The **FWS** might be a breakthrough in **friendly cattle farming**, while improving the sustainability of the sector as a whole.





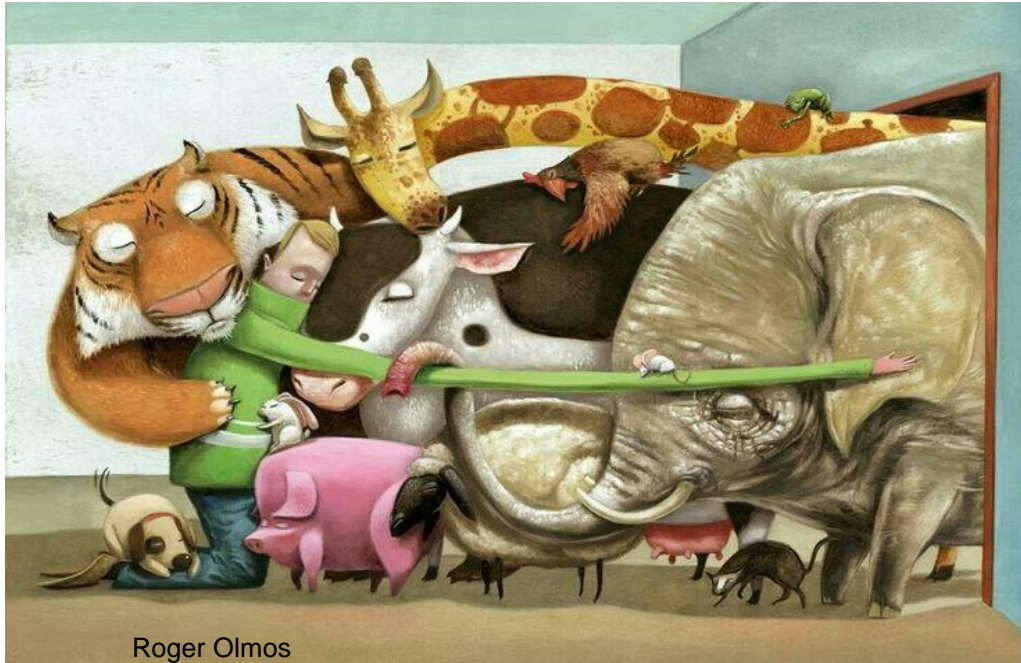
# More thoughts and open questions...

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- **Raise attention about realities on cubicle housing**
- **FWS: When bedding material is a limiting factor for welfare? Earlier signs? Alarm risks?**
- **FWS: Cow preferences- resting positions, bedding materials**
- **FWS: Impacts on welfare in all life stages (i.e. prospective studies on youngstock, longevity)**



# Many Thanks for your attention!



Roger Olmos

More info:  
<https://www.freewalk.eu>