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FREEWALK

Develop economic sound free walk farming systems elevating animal welfare, health and manure quality, while being appreciated by society

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EUROPEAN RESEARCH AREA ON SUSTAINABLE ANIMAL PRODUCTION

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Challenges

- Development of cubicle housing increased labour efficiency of cattle farming, but animal welfare is a critical factor
- Productivity of grasslands and crop management systems increased over the years – however soil structure, soil life and biodiversity of grasslands are becoming poorer
- Good integration of housing and farming facilities in the landscape positively contributes to societal acceptance

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Goal

- The **aim of this project** is to research and further develop economic sound free walk cattle farming systems that improve animal welfare

- **Innovations:**
  - housing like in meadow - animal welfare and health, society perception
  - composted material as bedding – re-using and as soil improver
  - combination of housing and grazing
  - diversification / eco-farming: utilization housing facility and bedding material in summer for plant growing?
  - Experimenting with artificial high welfare / cow garden floor system

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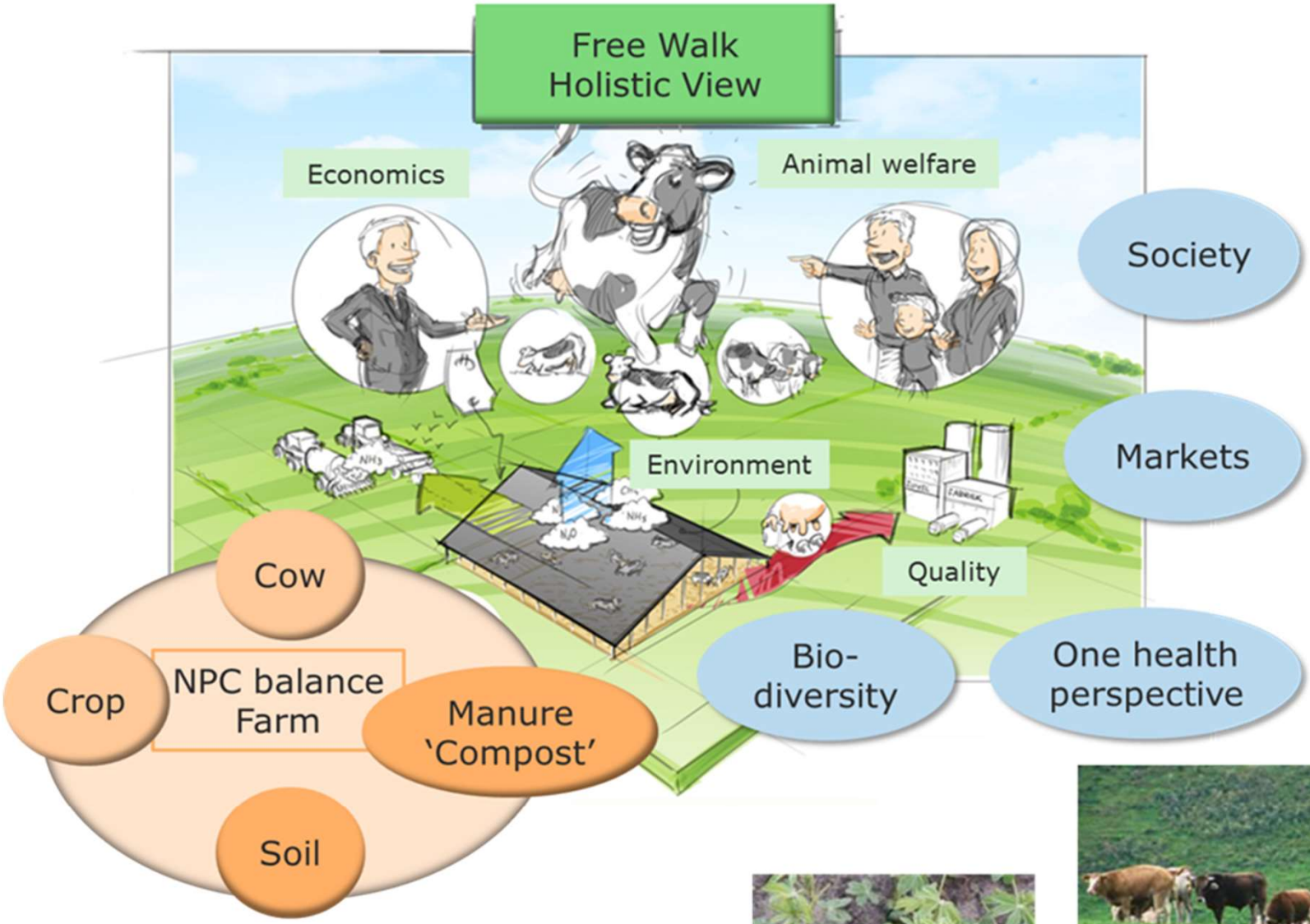
Free Walk
Holistic View
Economics
Animal welfare
Society
Markets
Environment
Quality
Bio-
diversity
One health
perspective
Cow
Crop
NPC balance
Farm
Manure
'Compost'
Soil

“Cow-garden”


...artificial floor...

Consortium

P	Partner	Funded by	Experts
1	University of Ljubljana, SI	MKGP	Marija Klopčič, Marko Čepon, Silvester Žgur, Janez Benedičič
2	WageningenUR, NL	NWO	Abele Kuipers, Paul Galama, Wijbrand Ouweltjes, Jantine van Middelkoop
3	University of Giessen, DE	BMEL	Sven König, Kerstin Brügemann
4	Università degli Studi di Firenze, IT	MIPAAF	Matteo Barbari, Lorenzo Leso
5	Technical University of Munich, DE	BMEL	Jutta Roosen
6	Norwegian Institute of Bioeconomy Research, NO	RCN	Knut Anders Hovstad
7	Swedish University of Agricultural Sciences, SE	Formas	Ulf Emanuelson, Isabel Blanco Penedo
8	Slovakian National Agricultural and Food Centre, SK	MPRV-SR	Jan Tomka
9	Agricultural Research Organization Israel	other	Ilan Halachmi
10	University of Kentucky, USA	other	Jeffrey Bewley, Joseph Taraba
11	HBLFA Raumberg-Gumpenstein Austria	other	Elfriede Ofner-Schroeck, Andreas Zentner

WP's

- WP1: **Description and organization of case and reference farms**
  2 x (15 dairy + 5 suckler cow farms)
- WP 2: **Inventory and characteristics of waste materials**
- WP 3: **Effect of housing system on animal welfare, health and product quality**
  - ***Study 1*: *Animal health, longevity and welfare***
  - ***Study 2:* Detailed research on *animal welfare***
  - ***Study 3:* *Antibiotic use***
  - ***Study 4:* *Milk quality***
- WP 4: **Effect of composted bedding on NPC-balances and soil structure**
- WP 5: **Socio-economic aspects**
- WP 6: **Systems approach and economic evaluation**
- WP 7: **Communication and dissemination**

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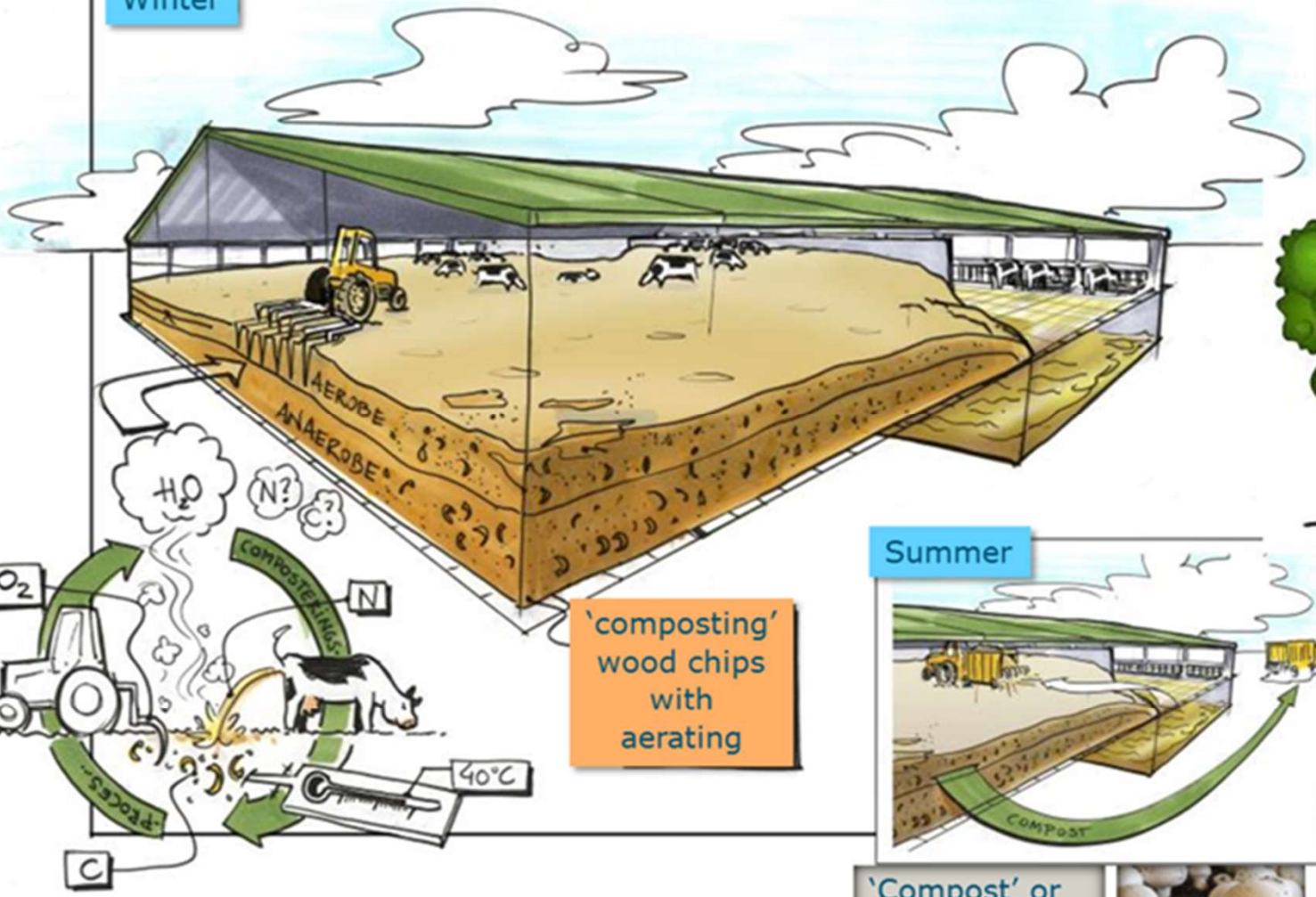
Hypotheses to be tested

FreeWalk will be a breakthrough in friendly cattle farming, while improving the sustainability and future perspective of the sector; differences will be found between climatic regions

- Sub 1. FreeWalk results in improved welfare and longevity of cattle
- Sub 2. Composted bedding material used as soil improver leads to a better manure quality and to storage of C in the soil
- Sub 3: An artificial permeable floor leads to two fertilizers, offering flexibility in fertilizing practice
- Sub 4. N-losses of FreeWalk are comparable or lower than for cubicle housing
- Sub 5. FreeWalk yields a positive economic benefit and elevates society appreciation
- Sub 6. FreeWalk systems affect animal welfare and organic farming regulations (Skal) at EU level

Management bedding

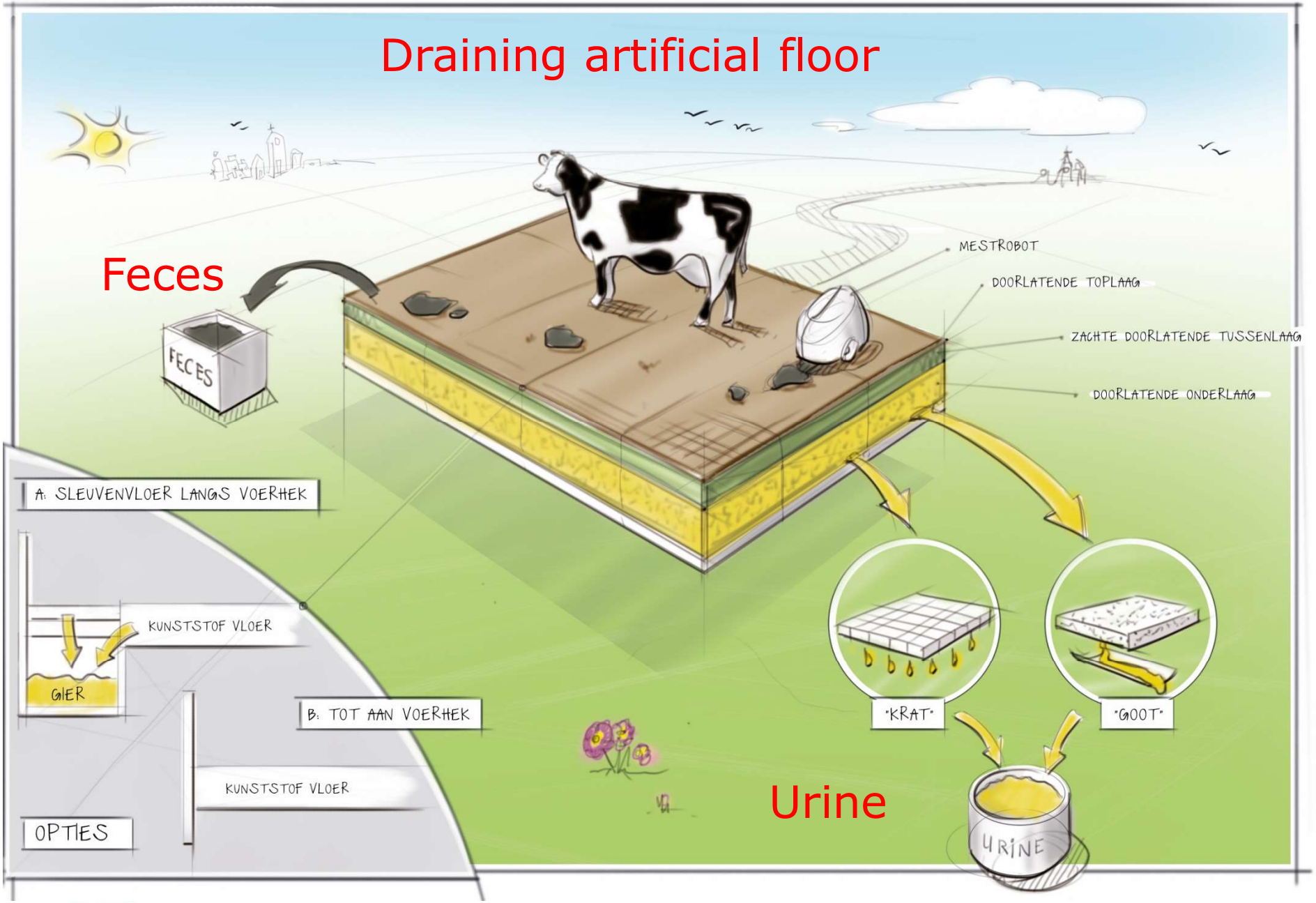
Winter



'composting' wood chips with aerating

Summer

'Compost' or other animals or horticulture


Draining artificial floor
Feces
FECES
MESTROBOT
DOORLATENDE TOPLAAG
ZACHTE DOORLATENDE TUSSENLAAG
DOORLATENDE ONDERLAAG
A: SLEUVENVLOER LANGS VOERHEK
KUNSTSTOF VLOER
GIER
B: TOT AAN VOERHEK
KUNSTSTOF VLOER
OPTIES
"KRAT"
"GOOT"
Urine
URINE

Potential impact

- ***Expected positive effect on:***
  animal welfare and health; longevity; manure quality; soil structure
  society appreciation; overall economics

- ***Expected effect uncertain:***
  handling and composting process of bedding
  NPC-balances

- ***Challenges for bedded pack barn:***
  manure quality - available nitrogen
  milk quality - thermophile bacteria
  costs of stable and bedding
  acceptation housing construction by society

- ***Challenges for cow garden:***
  cleaning and functioning of artificial floor

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Preliminary results?

- **Just started with Kick-Off :**
- Lot of interest in perspective of these systems
- Requires new skills to switch to compost management
- Experimental cow garden seems easier to handle

Detailed research on Experimental farms and comparison		
FreeWalk farms	with	traditional Cubicle farms

- **FreeWalk** project intends to realize a breakthrough in economically sustainable and animal friendly farming

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Stakeholders

- Multi-actor approach: wide spectrum of partners
- 5 industrial partners sub-contracted
- International oriented: already seminar planned in Kentucky in 2019
- Socio-economic research with freewalk and cubicles farms provides public and stakeholders with picture of alternative ways of farming

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