

A photograph of two brown cows with long, curved horns standing in a field of purple flowers. The cows are facing the camera. In the background, there are large green trees and a blue sky with some clouds.

III Brazilian Conference on Bioethics and Animal Welfare

Bioethics, Sustainability and Farm Animal Welfare

John Webster,
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“Justice for all”

- *“The great fault of all ethics hitherto has been that they believed themselves to have to deal only with the relations of man to man. In reality, however, the question is what is his attitude to the world and all life that comes within his reach.”*

Albert Schweitzer

- The concept of justice must extend not only to all (human)moral agents, producers and consumers, but also to the moral patients, farm animals and the living environment.
- No party has the right to expect too much.

Good Husbandry

- Efficiency
 - in the use of resources for the production of goods
- Humanity
 - in the management of farm animals and wildlife
- Stewardship
 - sustaining the quality of the living environment

Problems of excessive production

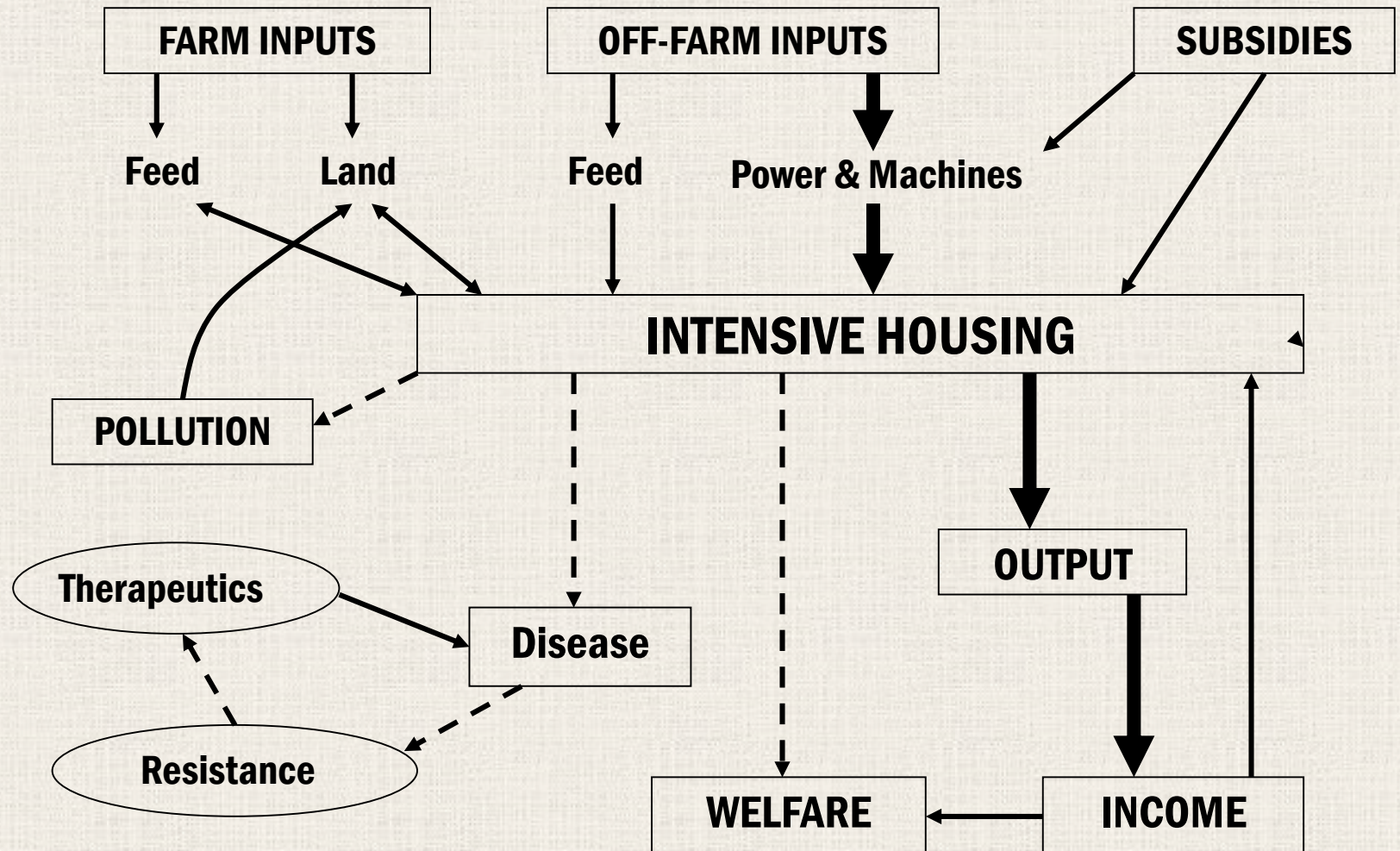
- For those that have:
 - Excess food consumption harmful to human health
 - Farm animal welfare
 - Environmental concerns
 - Energy, water, deforestation, pollution, global warming
- For those that have not:
 - Inadequate food consumption (esp. protein)
 - Environmental concerns
 - Land degradation



Peasant farming was poor but sustainable because land use was complementary

- Cows, sheep, horses gathered food that was unavailable to us , from land that we didn't own
- Pigs and poultry scavenged food we dropped or rejected

The Genealogy of the Factory Farm

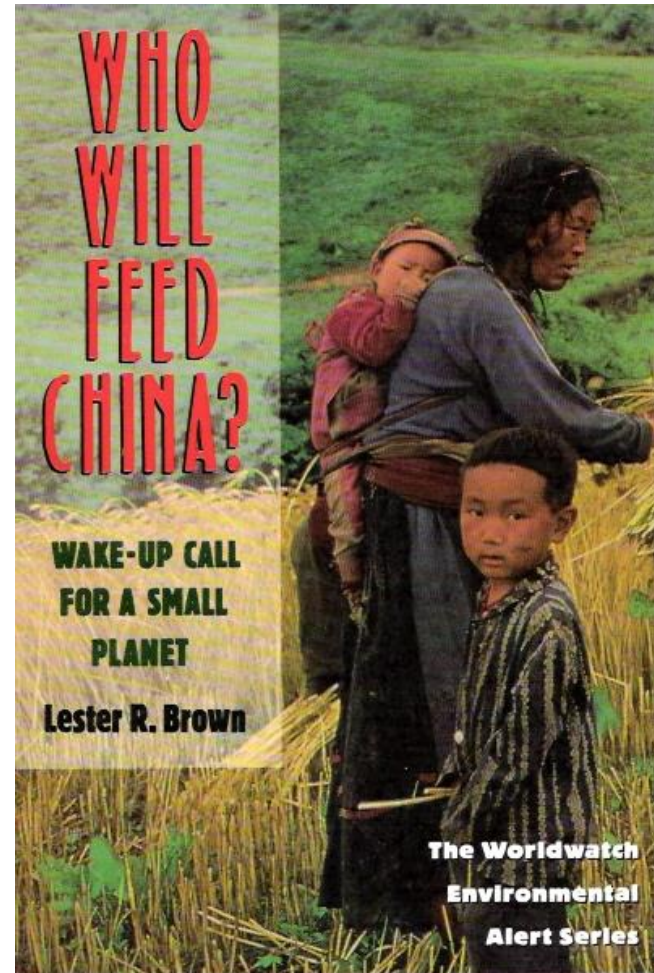


Pros and cons of intensive agriculture

- Production
 - More affordable food
 - Year-round choice
- Quality
 - More consistency
 - Improved appearance
 - Taste?
 - Safety?
- **Loss of respect**
 - value of individual farm animals
 - wildlife
 - Social structure in the rural environment
- **Unsustainability**
 - There's not enough to go round
 - *"something's gotta give"*

Premise 2: Current EC dogma, Sustainable intensification, “*more for less*”, cannot be applied to food from animals

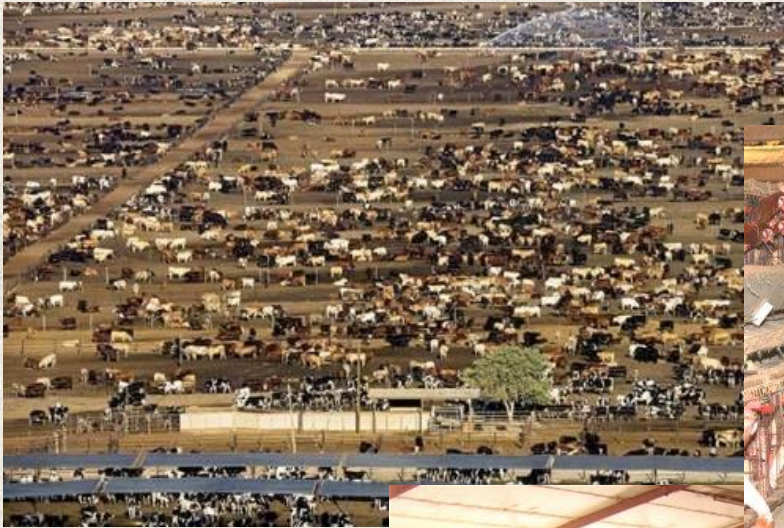
“By 2030, if China’s people are consuming at the same rate as Americans they will eat 2/3rds of the entire global harvest and burn 100M barrels of oil a day, or 125% of current world output





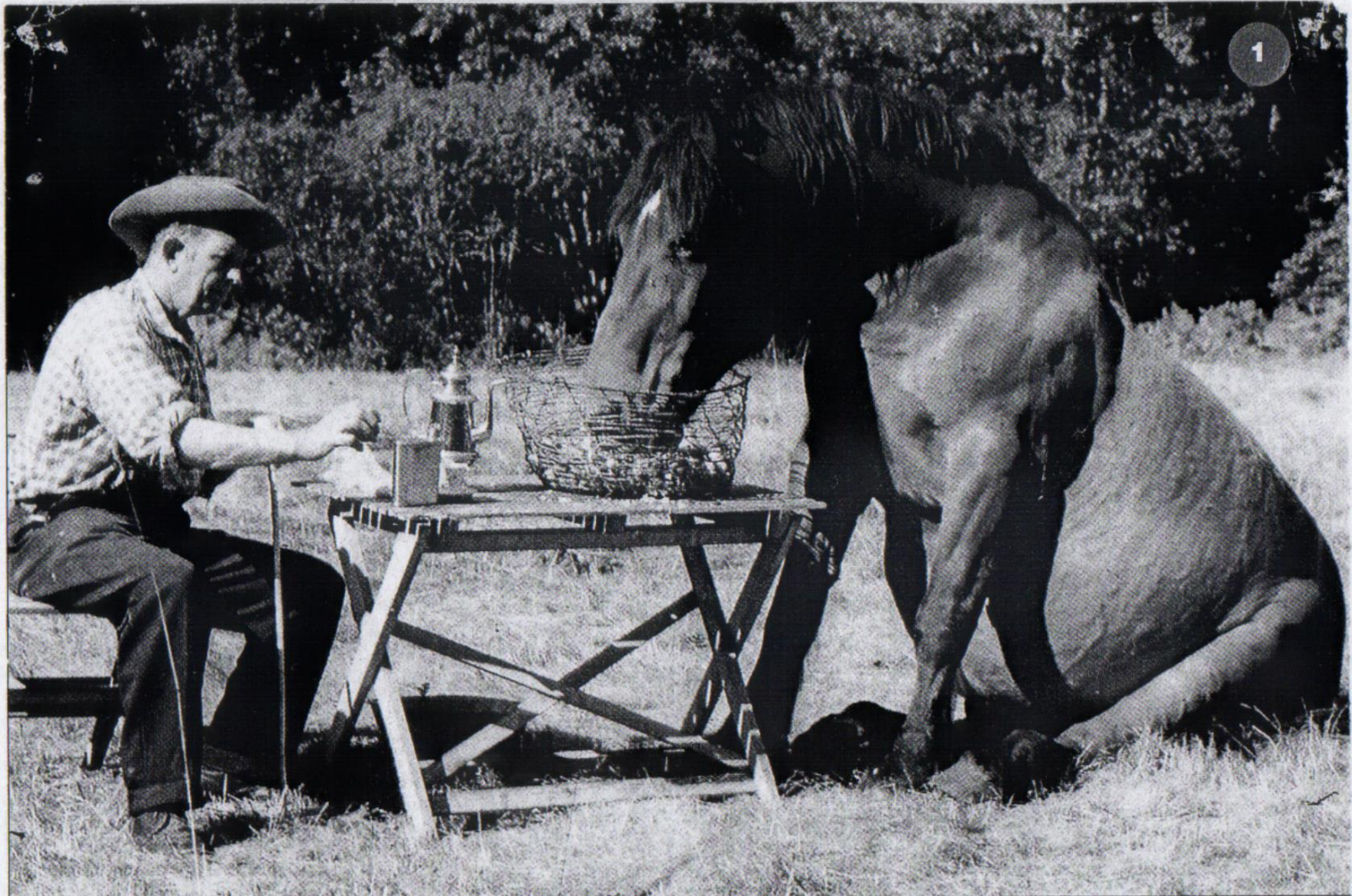
Audits of Agriculture:

All arguments are made from limited premises (even these)



Complementarity:

sharing of resources



Audits of animal production systems

1. Feed conversion efficiency

	Eggs	Pork	Milk	Beef
Production unit	1 hen	22 pigs	1 cow	1 calf
Support unit	0.05 hens	1 sow	0.33 heifers	1 cow
Output/year (kg food)	15	1300	8000	200
Food energy (MJ)	130	13000	28000	2500
Input/year: total ME (MJ)	389	67038	67089	29850
'competitive' ME (MJ)	351	53630	20127	10268
Efficiency				
Food energy/total ME	0.33	0.19	0.42	0.08
Food energy/'competitive' ME	0.35	0.24	1.39	0.24

Audits of agriculture 2. How hard do animals work?

Species	Activity	Energy exchange		
		ME intake	Work/heat	"Food"
Human	Sedentary	1.00	1.00	
	Working miner	1.25	1.25	
	Lactating woman	1.53	1.28	0.25
	Endurance cyclist	2.60	2.90	-0.30
Pig	Grower	2.10	1.30	0.80
	Lactating sow	3.20	1.73	1.47
Birds	Broiler chicken	2.10	1.18	0.92
	Laying hen	1.73	1.30	0.43
	Passerine feeding chicks	3.03	3.03	
Cow	Suckler with one calf	2.22	1.32	0.91
	Dairy cow, 50l/day	5.68	2.14	3.53

Audits of agriculture 3: Inputs and emissions

Output (1 tonne meat)	Energy use (GJ)			GHG
	ME total	ME competitive	Fuel energy	CO ₂ equiv
Broiler chickens	36	32	14.9	1.39
Pork, commercial	52	41	9.7	2.47
Pork, niche	68	49	11.4	2.52
Beef, feedlot finished	149	51	84.2	32.7
Beef, pasture finished	194	20	114.2	45.3

Audit 4: Balance of C, N and GHG in European grassland systems. (g CO₂ equivalents/m² per year)

	Beef, grazing	Dairy, grazing and barn fed	Dairy, barn fed
C sequestration			
pasture only	471	183	259
pasture + barn		269	361
CH ₄ production			
pasture only	145	159	0
pasture + barn		387	323
N ₂ O production	22	64	30
Net GHG sequestration			
pasture only	+320	-22	+230
pasture + barn		-163	+9

Water

- Water footprint = volume consumed + volume polluted
- *GREEN* – directly from rainfall
- *BLUE* – from irrigation
- *GREY* – that required to disperse pollutants

Water use: examples (Hoekstra 2010)

100g potatoes = 25l

100g feedlot beef (USA) = 1550l (mostly blue for corn and soya)

100g lamb from pasture (Scotland) *unknown but all green.*

Audits of agriculture: Summary

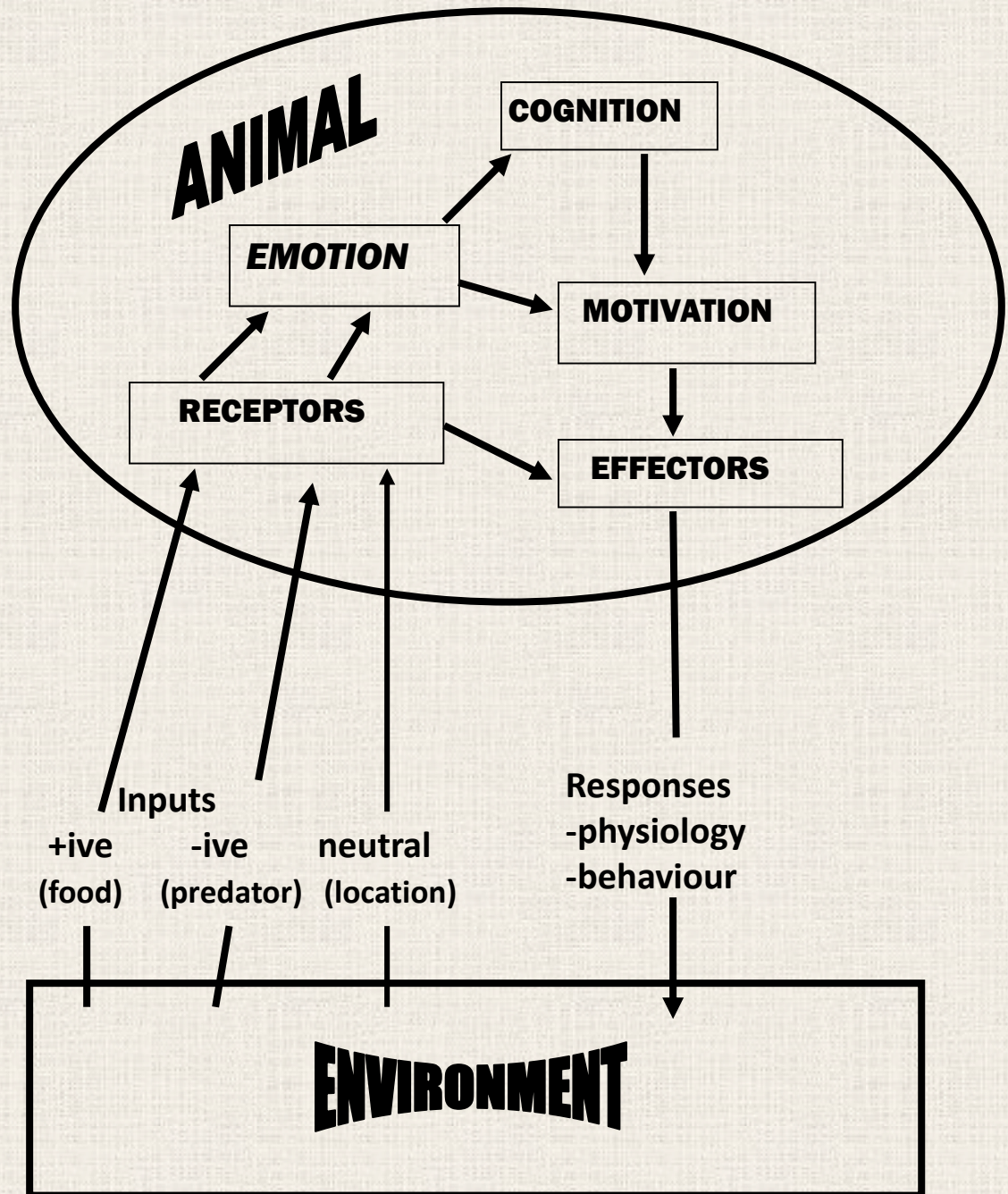
- Extensive is more costly in feed and energy
- Feed energy should be classified as competitive and complementary
- Pollution –the poison is in the dose
- Feedlot beef is the worst by all measures
- Extensive production can be environmentally friendly but can only survive as part of total agriculture.

Animal Welfare: Sentience

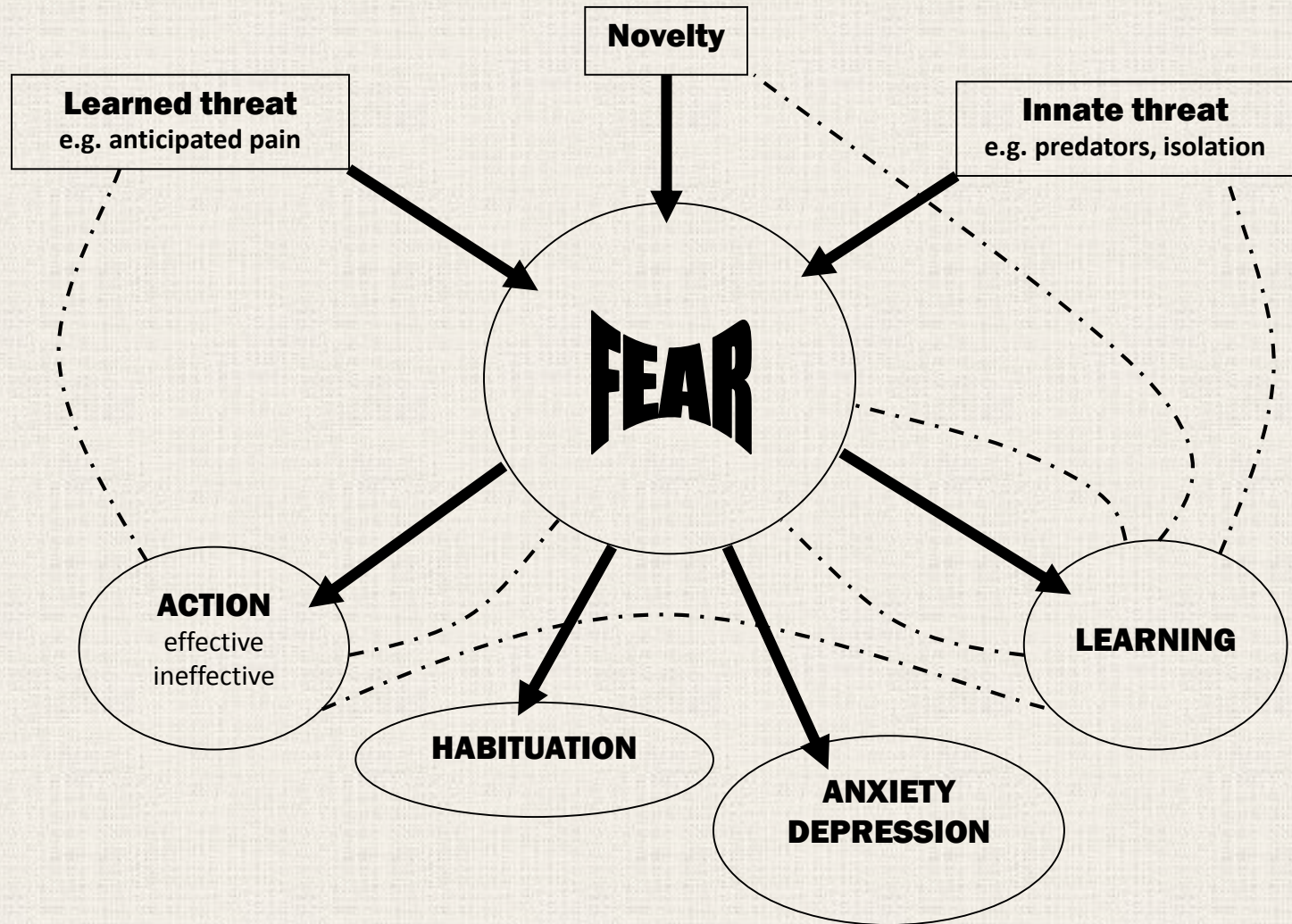
Sentient farm animals should be considered as contributors (alongside us) to total agriculture, not just as vehicles for the provision of food as a commodity.



Sentience



Fear & Anxiety



Sentience and suffering

- Suffering and stress are not synonymous
- Suffering occurs when an animal fails to cope with stress (or has difficulty in coping), either because:
- The stress is too severe, complex or prolonged
- It can take no constructive action to relieve the stress
- *Sentient animals do not just live in the present. They can experience hope and despair*

Principles of Animal Welfare

Five Freedoms	Welfare principles	Welfare criteria
Freedom from hunger and thirst	Good feeding	Absence of prolonged hunger Absence of prolonged thirst
Freedom from thermal and physical discomfort	Good housing	Comfort around resting Thermal comfort Ease of movement
Freedom from pain, injury and disease	Good health	Absence of injuries Absence of disease Absence of pain induced by management procedures
Freedom from fear and stress Freedom to exhibit normal behaviour	Appropriate behaviour	Expression of social behaviours Expression of other behaviours Good human-animal relationship Positive emotional state

Main welfare problems: intensive systems

Hazards	Pigs	Poultry	Dairy Cattle (including calves)
Feeding	Post weaning enteritis*	Lameness (Br)	Infertility*, ketosis Rumen acidosis Anaemia, ulcers (veal)*
Housing	Enzootic pneumonia Stereotypies Aggression, tail biting, Lameness	Lameness (Br) Frustration (LH) Bone fractures (LH) Feather pecking (LH)	Lameness, mastitis Abnormal behaviour (veal)*
Breeding	Lameness (sows)	Lameness (Br)* Bone fractures (LH)* Aggression (LH) Feather pecking (LH)?	Infertility*, mastitis, Lameness Exhaustion
Management	Aggression Pain following mutilations		Lameness* Pain following mutilations

Welfare problems: extensive systems

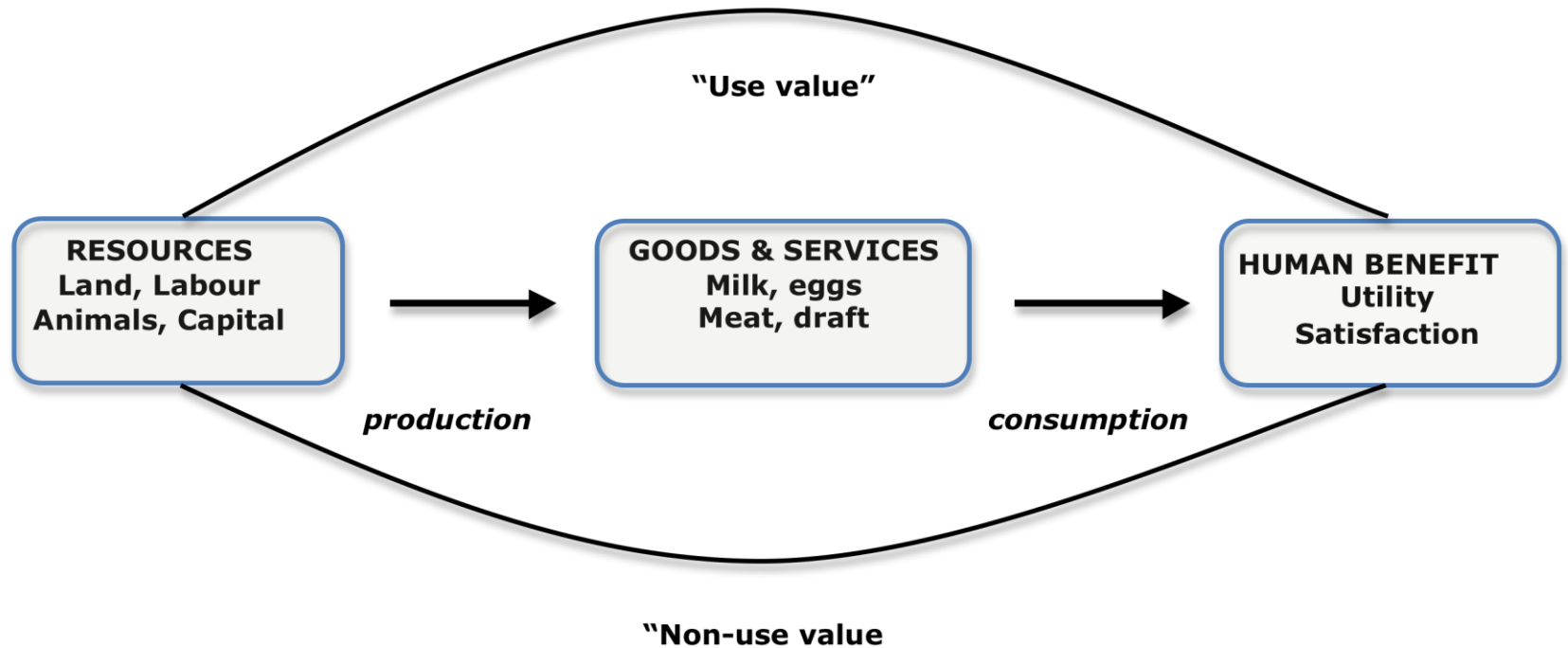
Hazards	Ruminants	Poultry	Pigs
Feeding	Hunger* Infertility		
Environment	Parasites*, infection Predation	Predation* Parasites*, infection Aggression, fear	Thermal stress
Management			Aggression
Breeding	Wrong phenotype	Wrong phenotype	Wrong phenotype



The ethics of animal husbandry: responsibilities and rewards

	Beneficence	Autonomy	Justice
Moral agents			
Human society at large	Wholesome, safe, cheap food Access to the countryside	Freedom of choice	Fair food pricing Legislation and incentives: production methods and land use
Producers and land owners	Financial reward Pride in work	Free competition	Fair trade Good husbandry
Moral patients			
Farm animals	Competent and humane husbandry	Environmental enrichment Individual freedom of choice	"A life worth living"
The living environment	Conservation Sustainability	Biodiversity "Live and let live"	Respect for environment and stewards of the environment

The economics of animal husbandry



Measures of food value

- **Direct measures**
- **Consumer-based**
 - Appearance, taste, cost, convenience.
 - Food safety.
 - Perceived health risks and benefits
- **Science-based**
 - Nutrient supply: meat, milk and eggs as components of a mixed diet
 - Health risks: obesity, diabetes, cardiovascular diseases and cancers.
 - Statistical associations: obesity, fatty acids, cholesterol and CHD, meat and cancers
 - Functional associations: integrity of the digestive tract, cellular integrity
- **Indirect measures**
 - Provenance: local produce, organic standards, fair trade
 - Production standards: sustainability, organic, animal welfare, farmer welfare
 - Advertising and social pressure

Better, kinder food: Priorities, poultry

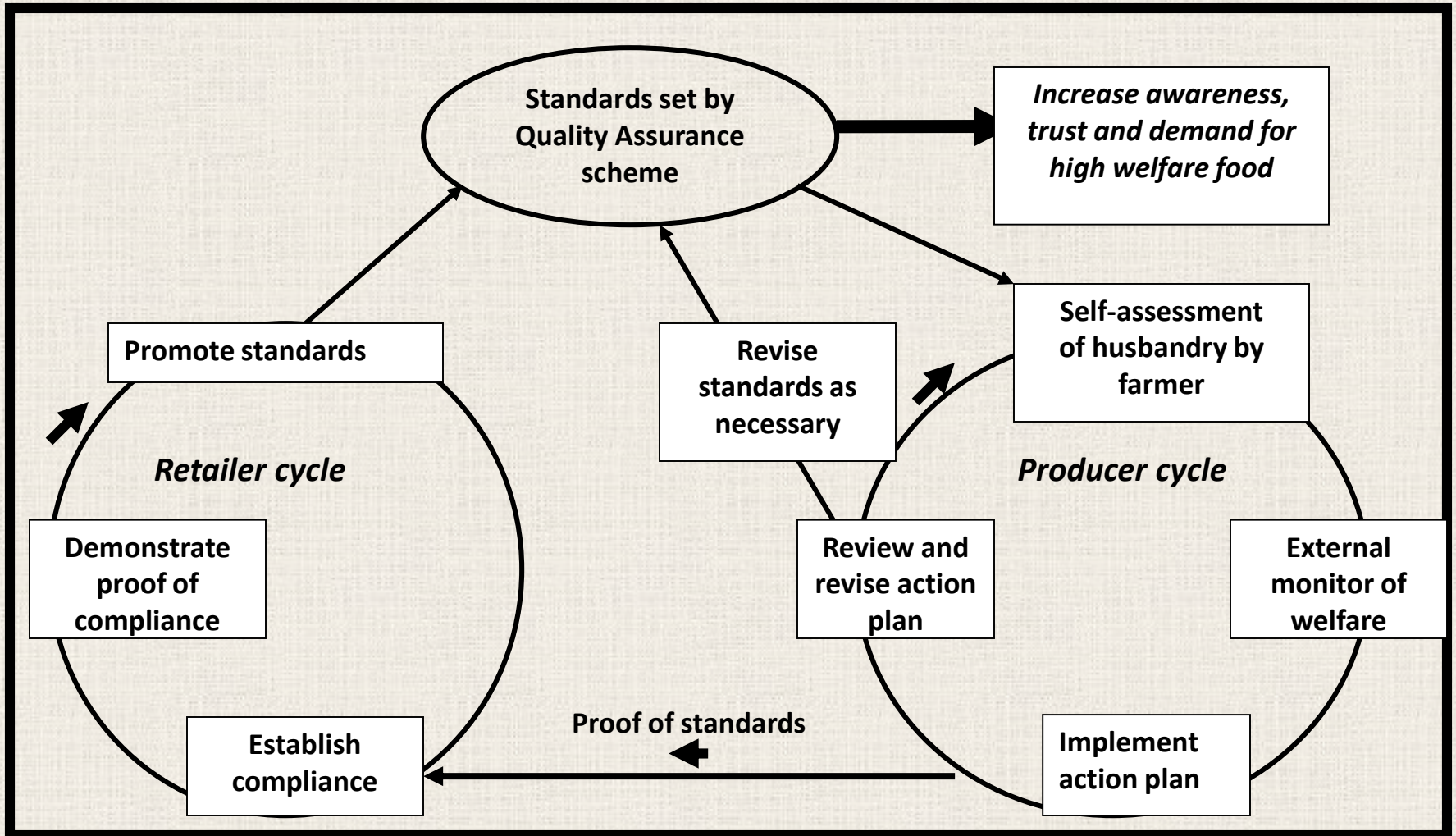
	Broilers	Layers
Practice	Ration formulation in early development Selection of fitter strains Hatchery hygiene	Building design (bone fractures)
Science	Improved selection indices	Calcium metabolism (osteoporosis) Disease resistance (vaccines, genetics) Selection for ↓ feather pecking
Society	Demand for 'high welfare' breeds Legislation for environmental standards	Legislation for environmental standards

Better, kinder food: Priorities, dairy cows

Practice	Selection for robustness Improved foot care Management in transition/early lactation
Science	Mastitis resistance (vaccines, selection, GM –QTL?) Milk composition: casein structure Nutri- and ‘Farmaceuticals’
Society	Quality control schemes –supermarket initiatives Legislation on environmental standards

The “Virtuous Bicycle” ◀

a delivery vehicle for improved farm animal welfare



Virtuous bicycle: farm wheel

- Self assessment
 - Reveals farmer knowledge & attitudes
 - Saves time
- External monitoring
 - Welfare outcome based
 - Confers/confirms quality assurance
 - Identifies and prioritizes any needs for action
- Action plan
 - HACCP
- Review

Virtuous bicycle: farm wheel

- Attractions
 - Less “box ticking”
 - Focuses on major issues
 - Farmer ownership of action plan
- Concerns
 - *“Where are the rewards?”* (money, praise, pride)
 - *“Will it create real improvements?”*
 - *“Will you ever admit that I am good enough?”*

Virtuous bicycle: fork wheel

- Compliance
 - Quality Assurance (1-3 stars)
 - based on overall assessment and proof of effective action on specific issues
- Proof of compliance
 - transparency of audits
 - visits to starred farms
- Promotion
 - *The door is open*: free-range eggs, freedom foods
 - Retailer-driven QA programmes

Stewardship

- “Planet husbandry”



Planet Husbandry: opportunities and responsibilities

Aims	Opportunities	Responsibilities
Goods		
Food from plants	Food for humans	Soil quality Pollution control Preservation of habitat
	Food for animals	Complementarity
Food from animals	Commodities Value-added products	Public health Pollution control Animal welfare
Non-food items	Fibres (cotton, wool), leather Draft power Biomass & biofuels Wind farms	Animal welfare Soil quality Aesthetics
Amenities & Recreation	Access to countryside Farm holidays Field sports	Health and safety Humanity, utility, stewardship
Stewardship	C & N cycling and sequestration Water management Wildlife management (flora and fauna) Enrichment and inheritance of capital	<i>Support from society!</i>


Farm animals in Planet Husbandry

Problems

- Stable ecosystems depend on plant/animal balance
- Much animal farming has damaged ecosystems
 - Intensive – pollution, Extensive – land degradation
- Most of us eat too much food from animals
 - Threats to health, food security and sustainability
- Mass production of arable crops for animal feeds is unfair
 - Inequities of food supply, threats to sustainability and climate change
- Man's exploitation of farm animals has failed to acknowledge sentience and recognize suffering
 - Intensive not inherently worse but less regard for individuals

Farm animals in Planet Husbandry Solutions

- Scope for increased efficiency of food production from animals through “complementarity” and improved health.
 - e.g. intensive dairy farming, village chicken production
- Grasslands and agroforestry contribute multiple values
 - Quality food, timber, corks, C sequestration, beauty
- Improved quality of animal husbandry (efficiency, compassion and stewardship) does not necessarily imply significant increase in the cost of food.
 - Added costs of “high welfare” can be <20%
 - Non-food value (e.g. C sequestration) can be met through subsidy.

A pastoral landscape featuring two white and brown cows in a green field. One cow is lying down on the left, and the other is standing on the right. The background shows a line of trees and rolling hills under a clear blue sky.

Animal Husbandry Regained: The place of farm animals in sustainable agriculture

John Webster
Earthscan

Animal Husbandry and Society

Sticks and carrots

- *“The philosophers have only interpreted the world in various ways. The point is to change it.”*

Karl Marx

Animal Husbandry and Society

Right action: rules of engagement 1-4

1. Clear definition of animal welfare (“fit and happy”) and a systematic approach to its evaluation (“Five freedoms”)
2. Structured and comprehensive understanding of the interactions between farm animals and the environment measured through transactions in matter and energy
3. A sound ethical framework that affords proper respect for the value of farm animals and the living environment within the context of our duties as citizens to the welfare of human society.
4. Realistic, practical, step-by-step, strategies for improving the quality of husbandry, measured by its impact on farm animal welfare and the farmed environment, within the context of other, equally valid aspirations of society

Animal Husbandry and Society

Right action: rules of engagement 5-8

- Education (not propaganda) that can convert human desire for better production standards into human demand for better products.
- Quality control based on robust protocols for assessing animal husbandry and welfare linked to quality assurance schemes that promote increased individual demand for these added-value products
- Legislation by proscription and incentive (stick and carrot) to promote right action, especially in regard to the environment, when it is unlikely to be achieved through individual action.
- “Politics by other means”: action by individuals and groups to encourage and promote husbandry standards that exceed requirements of existing laws and regulations.

Rewards (and penalties) for producers and consumers

- Food as a commodity
 - All consumers should pay (no subsidy)
- 'Added value' food
 - The discerning consumers should pay for specific products (but we need more discernment)
- Environmental stewardship
 - Individual polluters should pay.
 - Society should pay for actions directed to the long-term quality of the living environment (conservation of resources)
 - Greening of the CAP
 - Society and individuals should contribute to the costs of amenities

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Albert Schweitzer

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- No party has the right to expect too much.

Fortunately!

- The moral argument is consistent with our most basic and selfish needs for individual and collective survival.
- Most of those who can afford it can reduce the risks of disease and premature death by eating less food of animal origin.
- Those who cannot currently afford it deserve a fairer share of the meat, milk and eggs. For them nicer food is also healthier food (up to a point).
- The living planet *must* receive a more sympathetic, educated and intelligent approach to husbandry if successive generations are to enjoy a reasonable quality of life.



Thanks !

- Especially to the Good Shepherds