

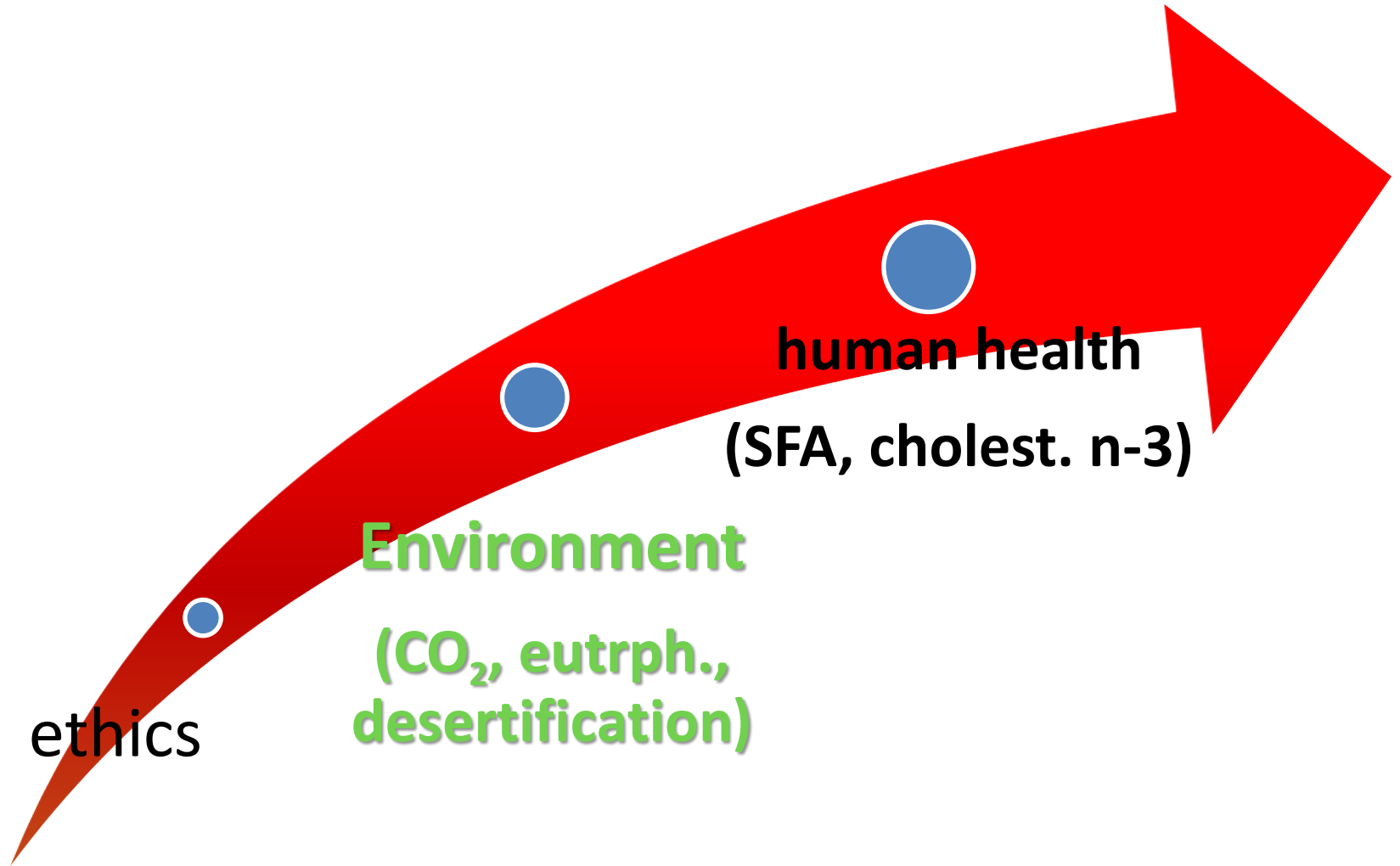


One welfare: criticità e potenzialità

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Pillars of animal production



Cambiare i paradigmi

Convenzionale

- > incrementi
peso/unità di tempo
- < ICA
- < immagine
- < Welfare
- < Qualità prodotti

Free Range- organic

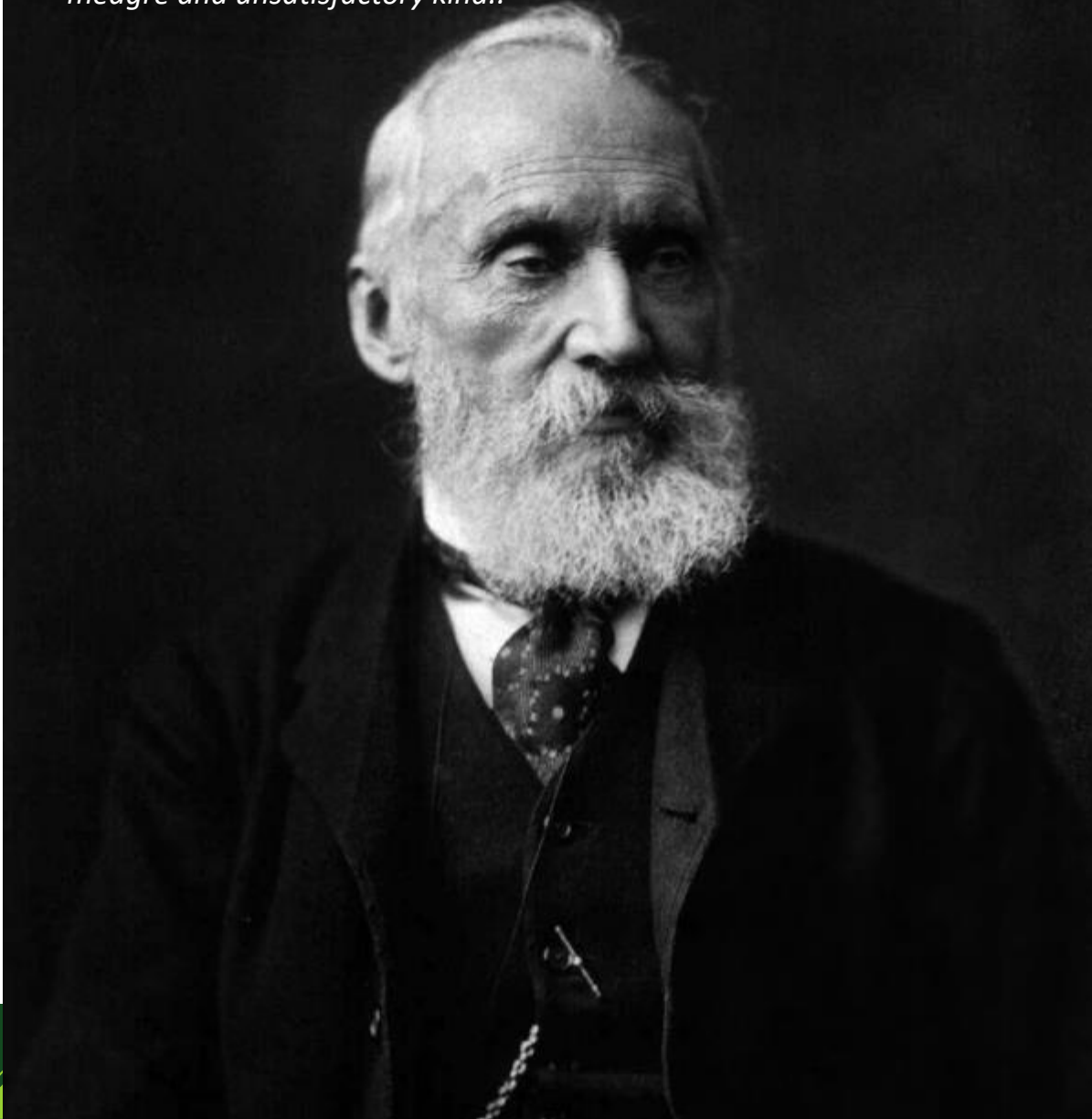
- > Land use (fase
agricola+pascolo)
- > immagine
- > Welfare
- > Qualità prodotti

ONE ONE WELFARE

preliminary remarks



..when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind..



Lewis Carroll
Sylvie e Bruno (LC incontra un geografo :

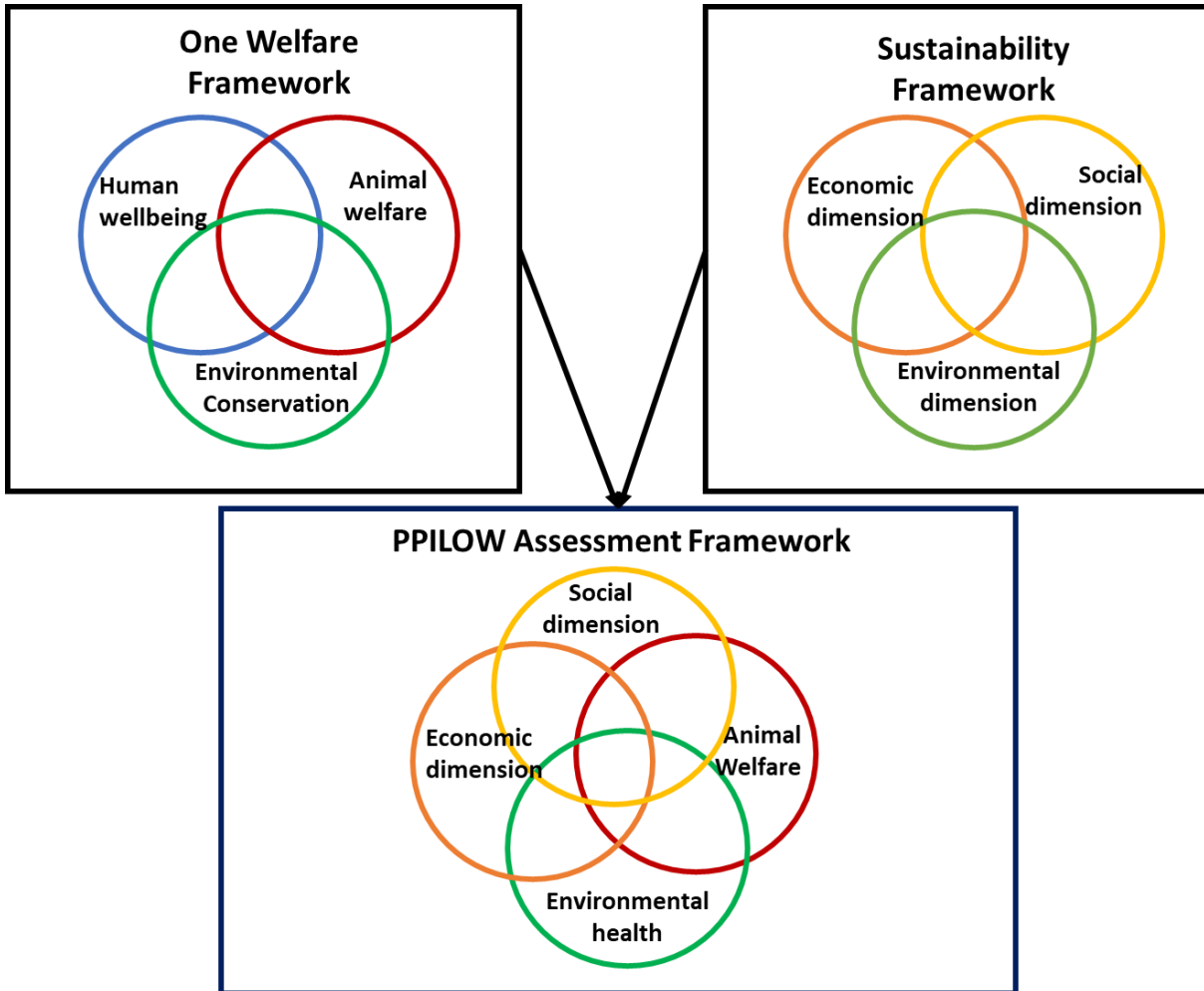
LC “grande, una mappa tascabile!”...quale sarebbe la scala utile per le mappe?...100 su 1000, un cm per km?”

Mein Herr “Solo un cm! ..L’abbiamo fatto subito, poi siamo arrivati a 10m per km. Poi abbiamo provato 100m per km. E finalmente abbiamo avuto l’idea grandiose ...una mappa del paese alla scala di 1 Km per km!”

LC “L’avete utilizzata?”

Mein Herr “No....I contadini hanno obiettato che avrebbe coperto tutta la campagna e offuscato il sole. Così adesso usiamo la campagna vera e propria come mappa di se stessa e vi assicuro che funziona ottimamente».







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- Appropriate behaviour
- Good Environment
- Good feeding
- Good Health



- Performance-quantity
- Performance-quality
- Returns
- Costs



- Enhance Biodiversity
- Reduce Pollution
- Minimize External Resources used



- Working conditions
- Job perception
- Job motivation
- Connection With territory
- Social acceptance



Specific criteria and indicators for each species type

Same criteria and indicators For all the species types

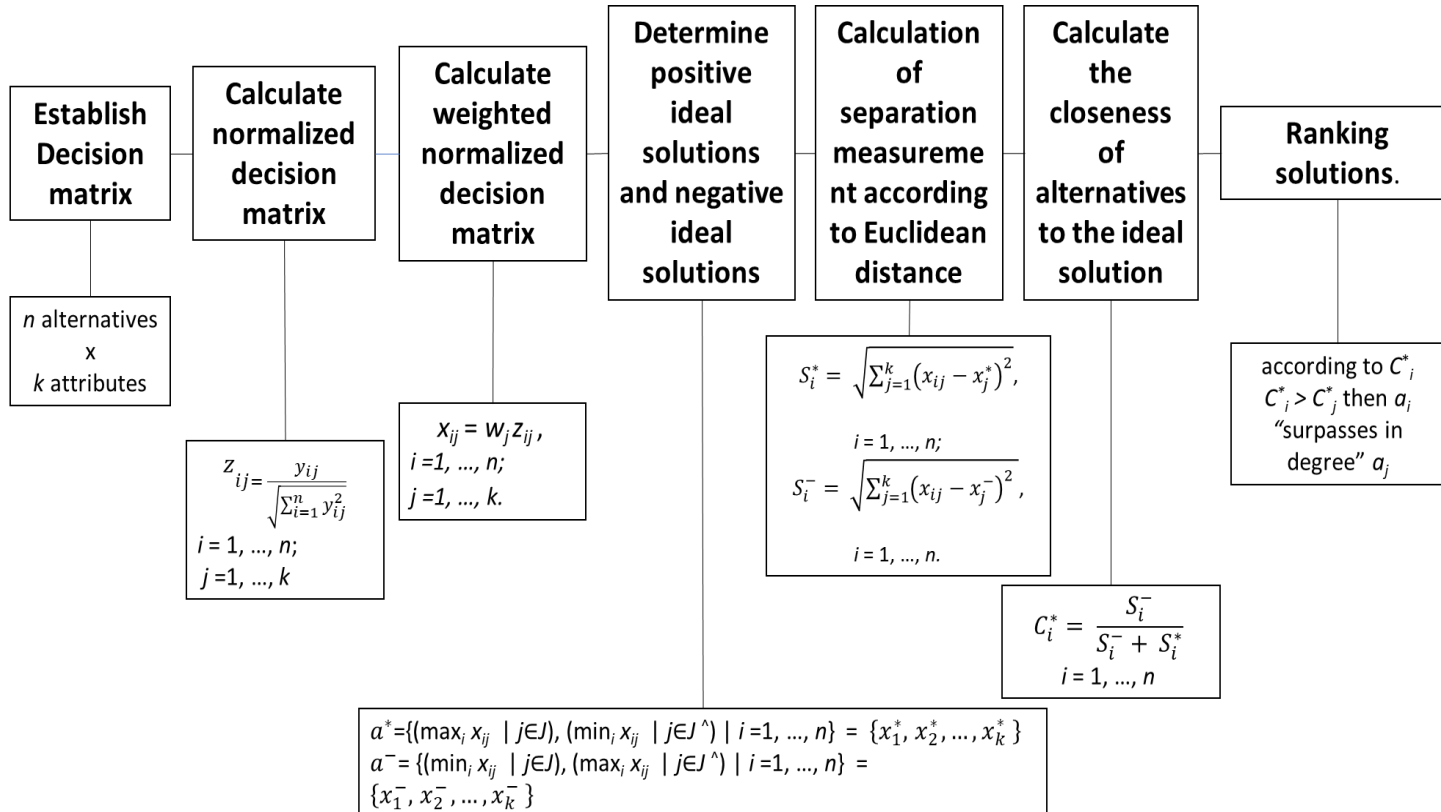
Framework dimension, criteria and indicators

	OW dimension	Criteria	Indicators
Animal Pillar	4	18	39
Economic Pillar	4	17	19
Environmental Pillar	4	8	15
Social Pillar	5	14	18

Weights of the different criteria for the various stakeholders and mean value for calculating sensitivity.

CRITERIA	Farmers & breeder	Veterinary	Consumers	Retailers	Expert and Technicians	Feed producers
Enhance biodiversity	3.70	4.17	8.07	4.65	6.15	3.57
Reduce pollution	6.41	4.17	10.01	6.98	6.16	3.57
Minimize external resources used	5.23	4.17	7.08	9.30	5.59	1.19
Work conditions	9.06	6.25	5.00	9.30	7.75	4.76
Job perception and motivation	6.41	8.33	4.47	6.98	7.75	4.76
Connection with local community	3.70	2.08	3.54	4.65	7.76	1.19
Social acceptability	4.53	2.08	2.23	6.98	7.04	3.57
Performance & quantity	7.40	10.42	3.16	4.65	3.08	8.33
Performance & quality	9.06	10.41	10.01	6.98	6.15	9.53
Costs	7.39	6.25	3.87	9.30	5.59	7.14
Returns	9.06	10.42	4.47	9.30	7.75	8.33
Good feeding	7.40	8.33	8.06	4.65	7.04	9.53
Good health	6.40	10.42	8.07	4.65	7.75	9.53
Appropriate behaviours	2.62	4.17	10.01	2.33	5.59	4.76
Good housing	7.39	8.33	6.13	9.30	6.16	8.34
Depopulation	3.70	2.08	3.16	4.65	3.08	3.57

Multicriteria analysis



To compare different alternatives (factors, farms, countries..) with a multicriteria approach and from different point of views

Case study - poultry

LD

CB

NN

RJ



Organic

Different strains

Different enrichments



LD

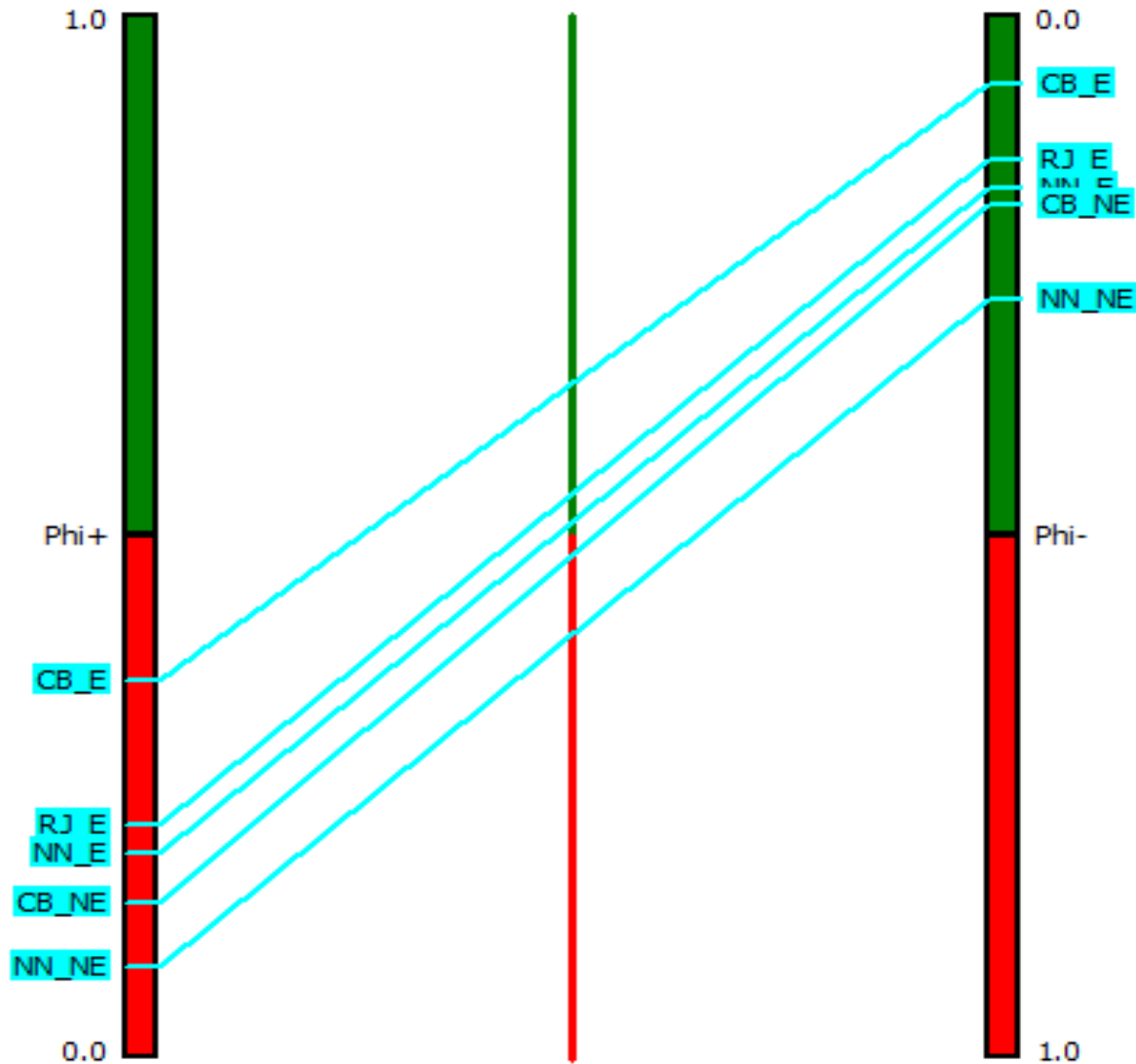
CB

NN

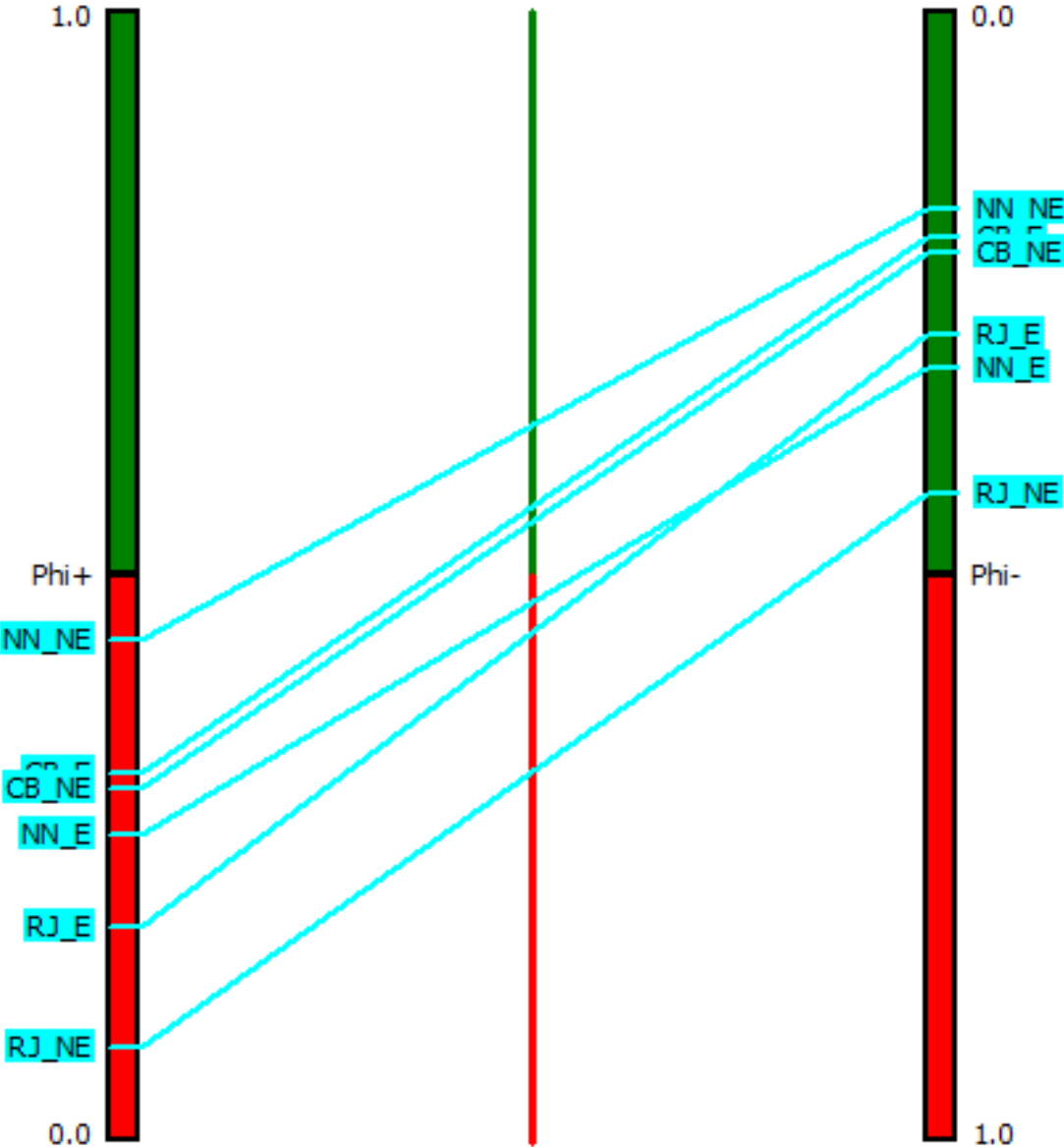
RJ



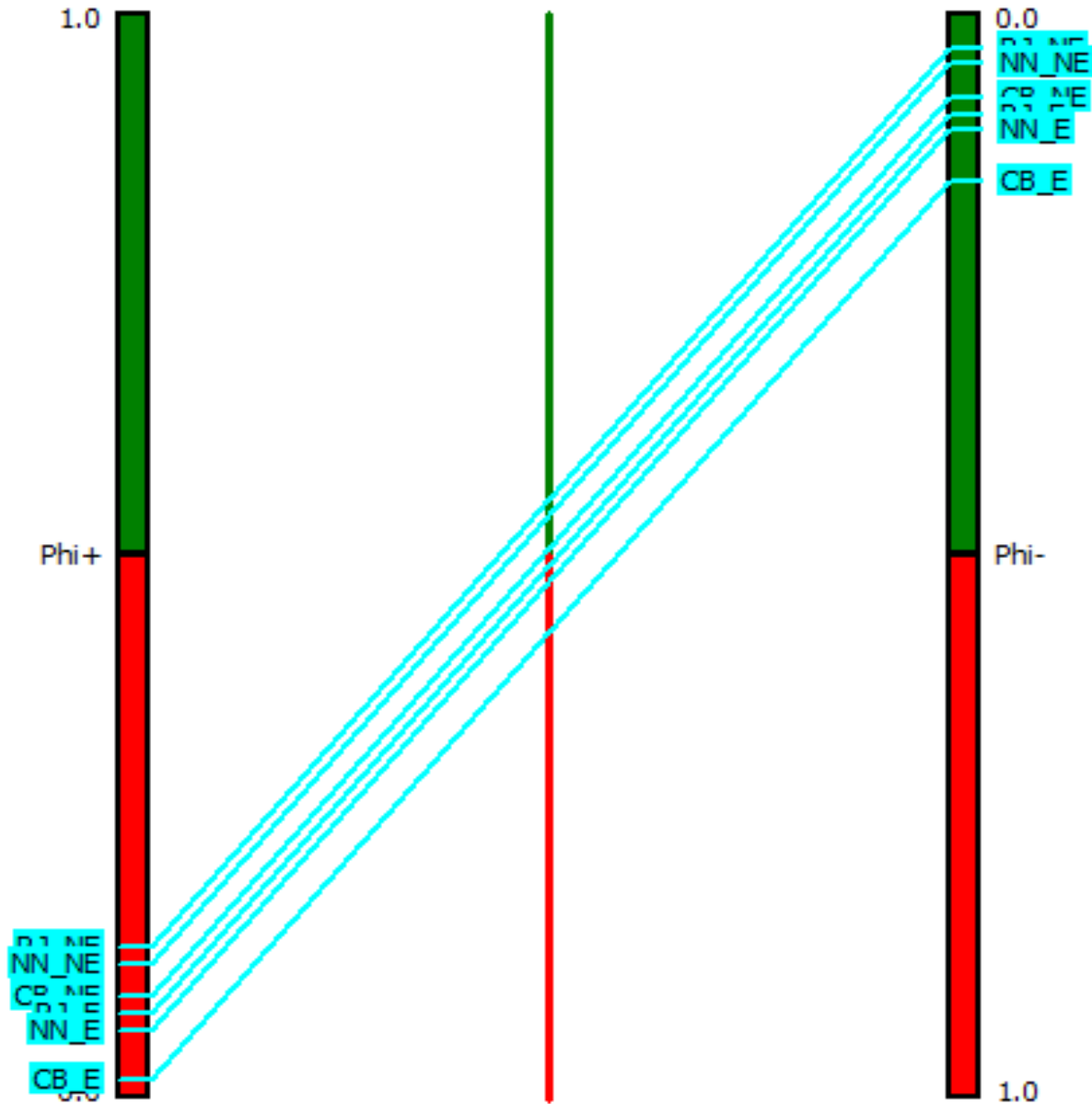
welfare



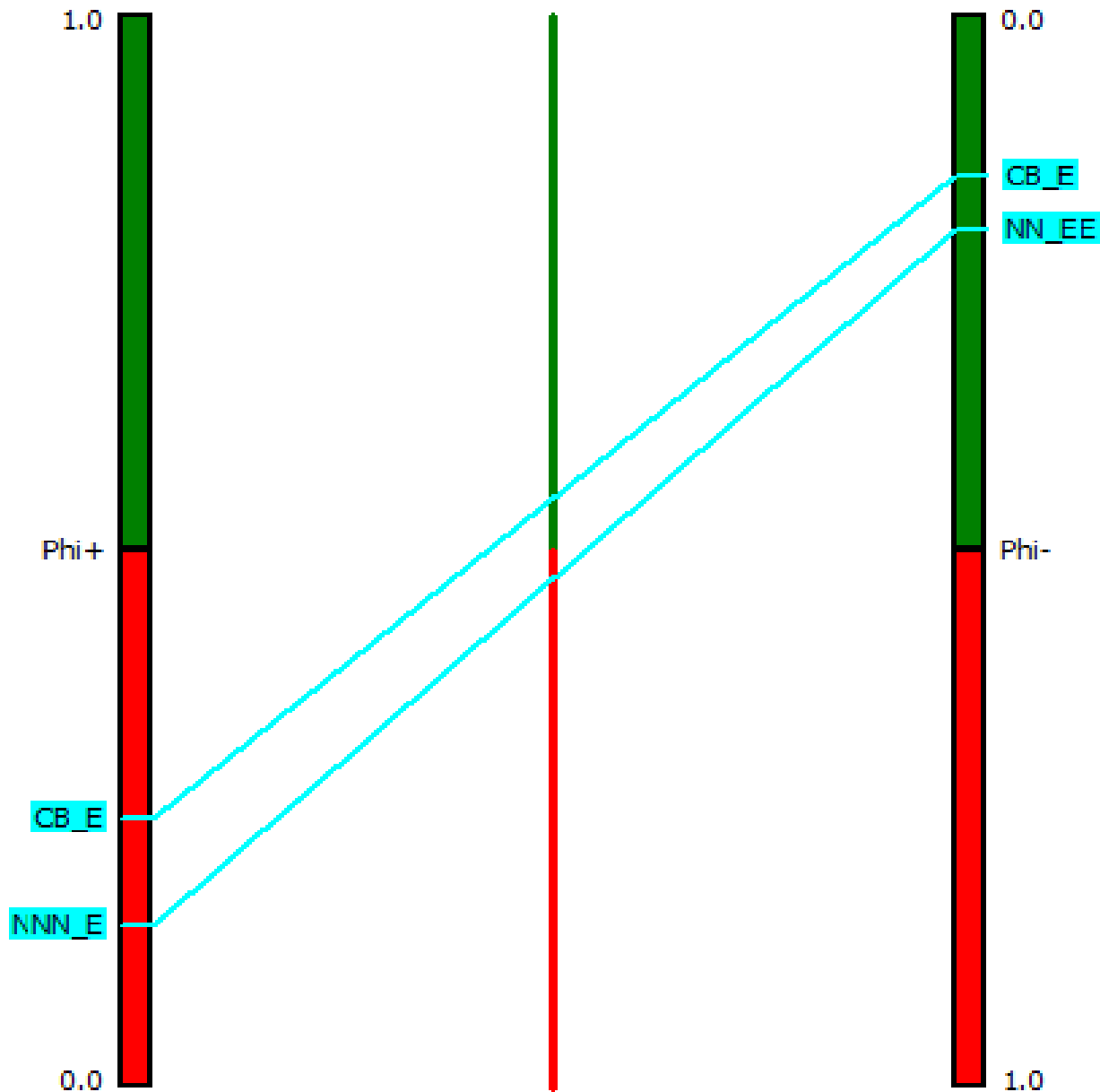
economy



Environment



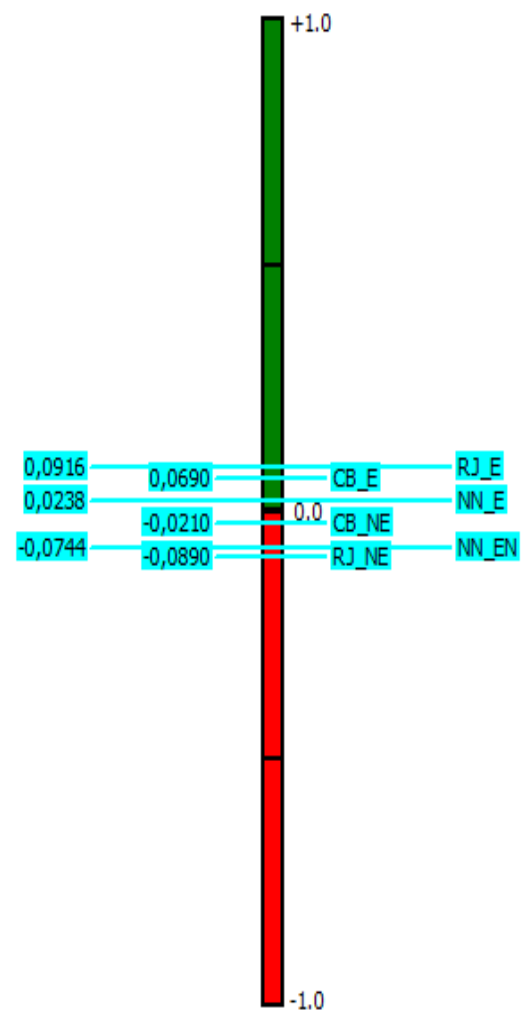
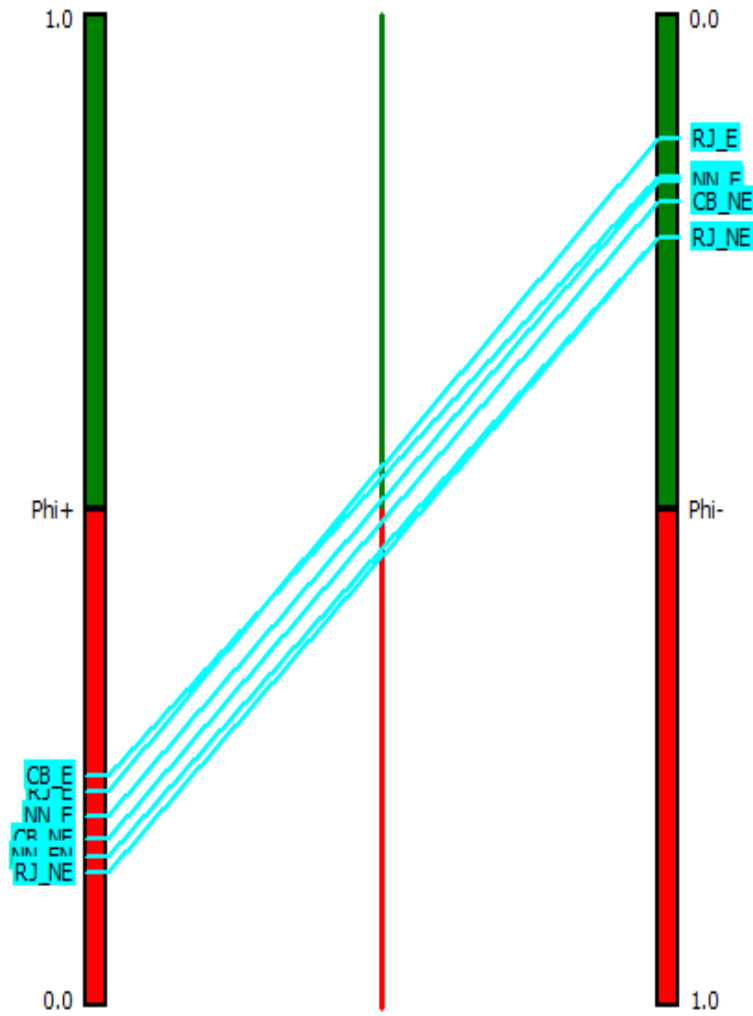
Social indicators



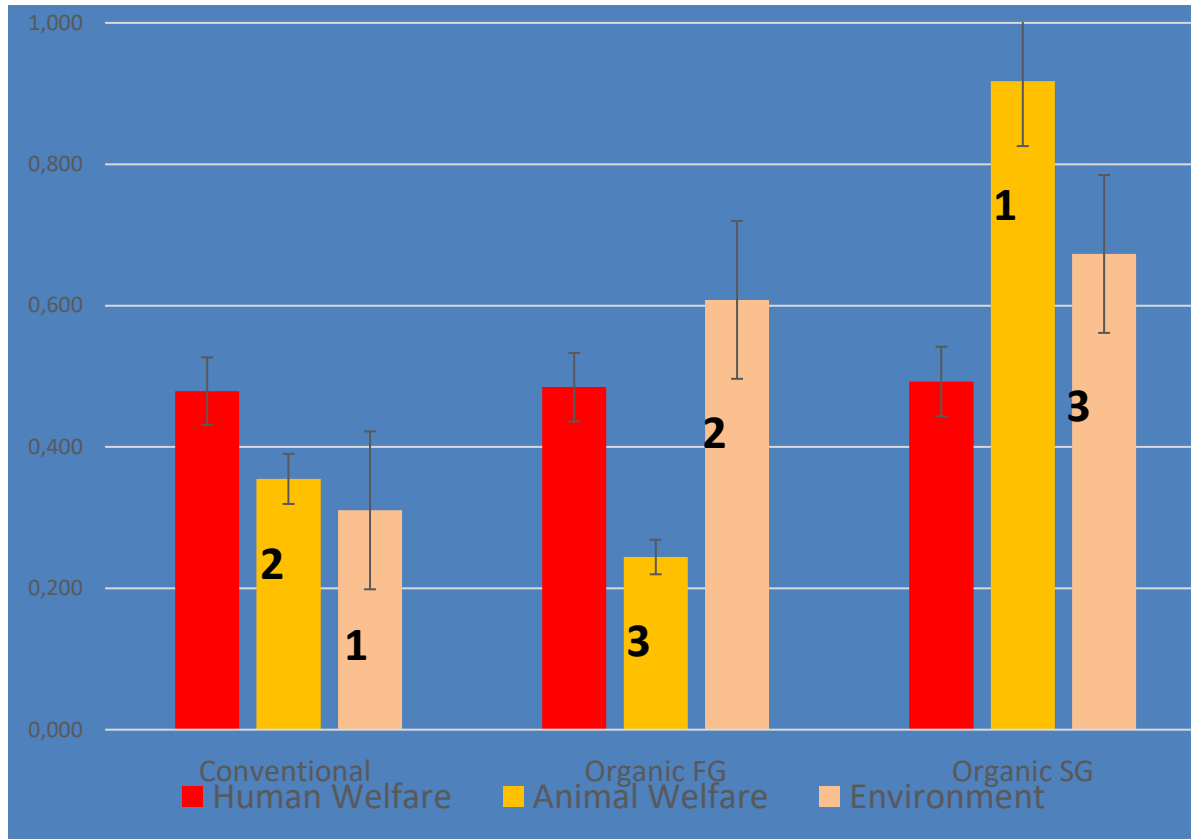
OWA

Enrichment

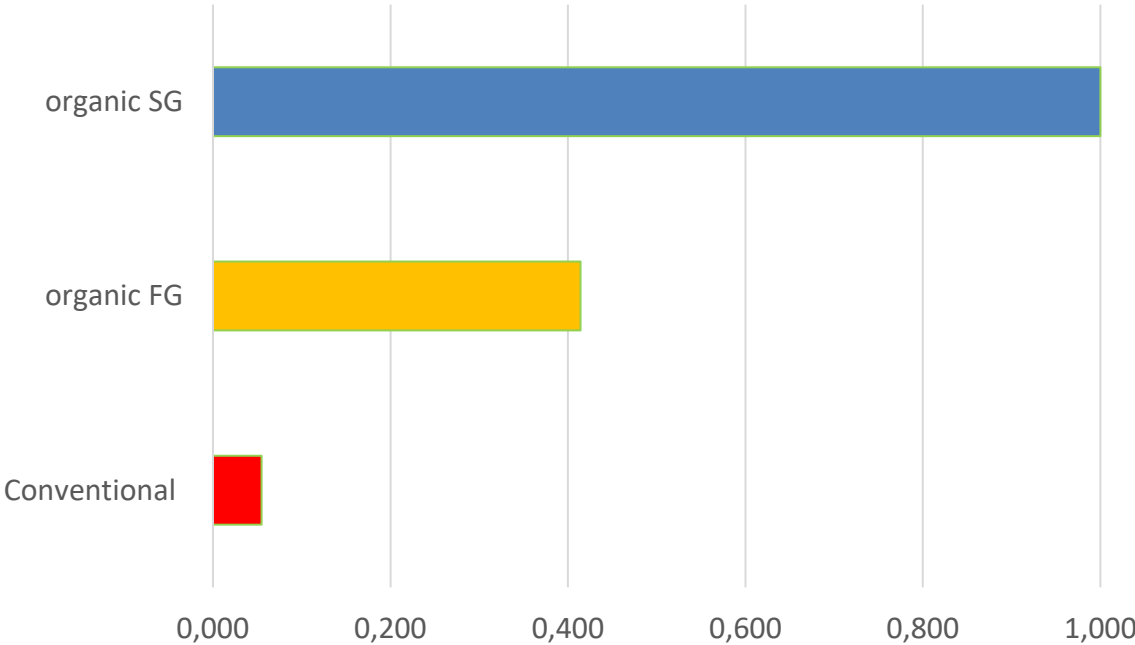
Genetic strain



Comparison of traits alternatives

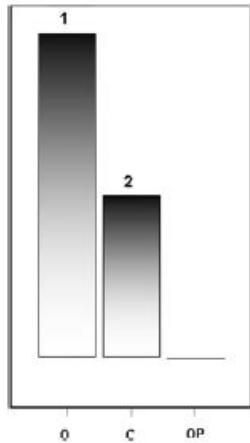


Final Ranking

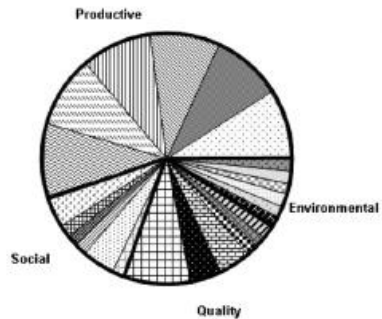


MCDA from different points of view

a Final ranking



b Weight of each indicator



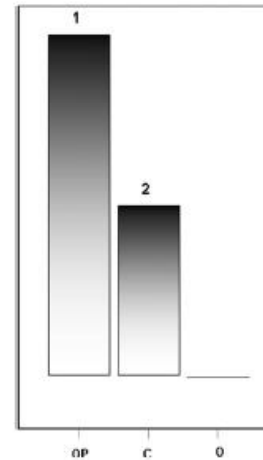
c List of indicators

- Final weight
- Feedratio
- Mortality rate
- Net income
- Revenue
- Labour per production unit
- Index of labour safety
- Biodiversity birds
- Kinetic
- Foot lesions
- Breast blister
- HLL
- Breast blister
- Tenderness
- Fat %
- n-3
- Oxidation
- Antioxidants
- Climate change
- Land Use
- Ecoicity
- Fossil fuels
- Ecological Footprint
- Environmental Loading Ratio

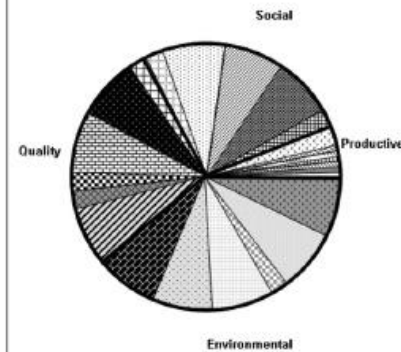
farmers

citizens

a Final ranking



b Weight of each indicator



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Take to home message

- «One welfare» is a useful framework for representing a comprehensive approach in animal science
- Current applications needs to develop suitable and measurable responses
- The analysis can be restricted to the farm or alternative extended to territory (region, state)