



75th Annual EAAP meeting / 1-5 Sept. 2024
*Session 86 - Tailored housing and management strategies
from incubation to slaughter house, for poultry*



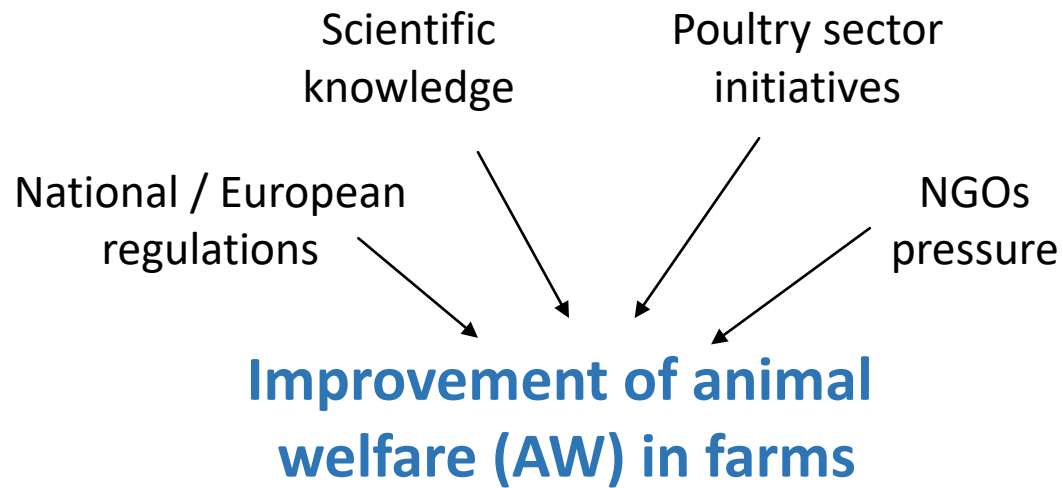
MULTICRITERION ASSESSMENT OF TWO SCENARIOS DESIGNED TO IMPROVE ANIMAL WELFARE IN FRENCH CONVENTIONAL BROILER PRODUCTION

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THE NEED FOR A MULTICRITERION APPROACH



VS.

**Competitiveness, jobs,
food autonomy...**

**GHGs, N&P excretion,
use of natural resources...**

**Labour time, working conditions,
stress, pride, confidence...**

**Perception of AW, purchasing power,
consumption habits...**



GOAL, SCOPE & PRELIMINARY CONSTRAINTS

- **Goal** : Developing a **multicriterion assessment method** to study the **effects of implementing animal-friendly practices** in broiler production
- **Scope**:
 - Focus on **French conventional production**
 - Effects **on farm** (animals, farmers), in the **supply chain** (operators) and on **society**
- **“Constraints”**:
 - **Relevance**: selecting the criteria that “make the most sense” for the broiler sector
 - **Parsimony**: limited number of indicators
 - **Feasibility**: data availability, “simple” calculations...

CONCEPTUAL FRAMEWORK

PILLARS (4)	COMPONENTS (10)	CRITERIA (23)
ANIMAL WELFARE (AW)	Expression of appropriate behaviours	Inactivity level
		Expression of foraging behaviours
		Expression of comfort behaviours
		Perches availability
	Good animal health	Walking ability
		Footpad conditions
		Mortality

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ECONOMY (ECO)	Upstream effects in the supply chain	Cost of equipments
		Farm-gate production cost
	Downstream effects in the supply chain	Slaughterhouse-gate production cost
		Absence of meat defects
	Dynamics of the French poultry sector	Food autonomy
		Jobs dynamics in the French supply chain

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ENVIRONMENT (ENV)	Efficient use of resources	Jobs dynamics in the French supply chain
		Energy consumption
		Water consumption
	Climate change	Land occupation
		Greenhouse gas emission

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		Energy consumption
		Water consumption
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		Greenhouse gas emission
FARMER (FAR)	Working time	Annual working time
	Work arduousness	Physical arduousness
		Stress at work
	Satisfaction with production system	Satisfaction and pride of farmer for practices
		Image reflected back to society
		Confidence in the future of the production system

ASSESSMENTS STEPS

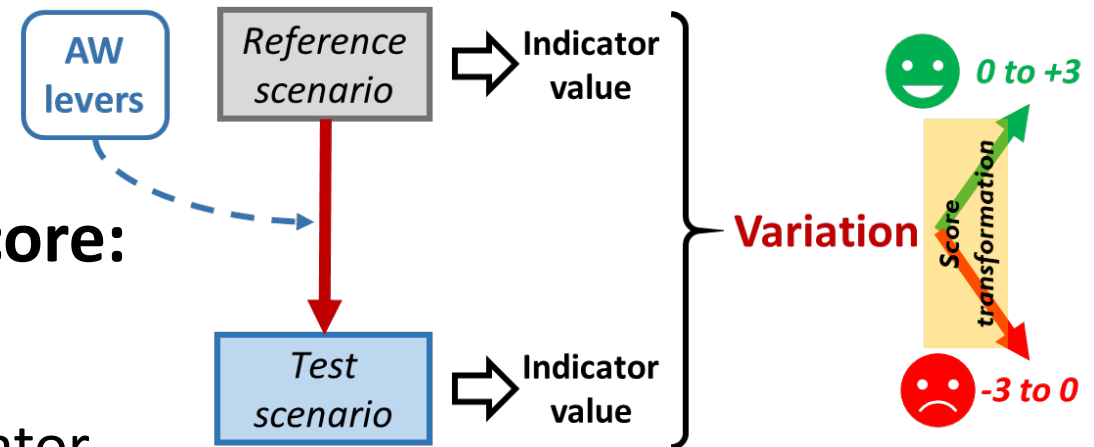
- Each criterion is **assessed with a single indicator**

- Indicator values are **calculated for 2 scenarios**:

- *Reference* scenario = starting point
- *Test* scenario = levers to improve AW

- Indicator variation is **converted into a score**:

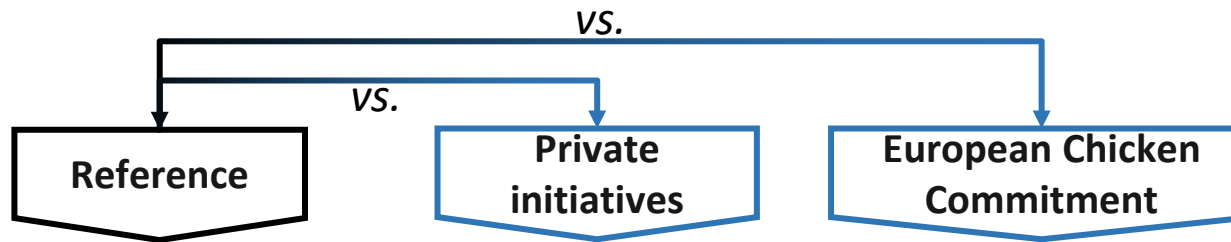
- Score between -3 and +3
- Positive score = improvement of the indicator



- Criteria scores are **aggregated at the component level**:

- Same weight for all criteria
- Except for two ECO criteria (*Upstream effects & Downstream effects in the supply chain*)

TWO TESTED SCENARIOS: CONVENTIONAL+ & ECC



Scenario	Conventional	Conventional+	ECC
Genetic strain	Ross 308		Redbro
Density	39 kg/m ²		30 kg/m ²
Slaughter weight	2.00 kg		2.00 kg
Feed efficiency	1.61 kg/kg BW		1.77 kg/kg BW
Breast yield	22.0 % BW		20.5 % BW
Slaughter age	36 d		43 d
Natural light	Yes		Yes
Enrichments	No	Yes*	Yes*

BW: Body weight

***Environmental enrichments for 1000 chickens:**



Pecking blocks:
2 blocks of 4 kg

+

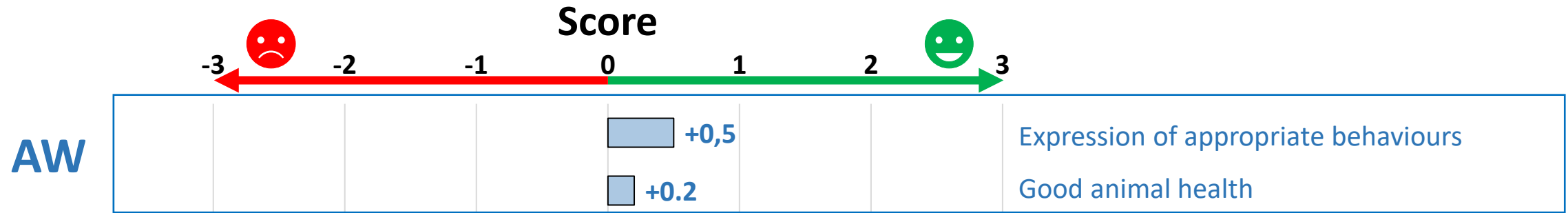


Platforms:
1 m²

Indicators filled in with:

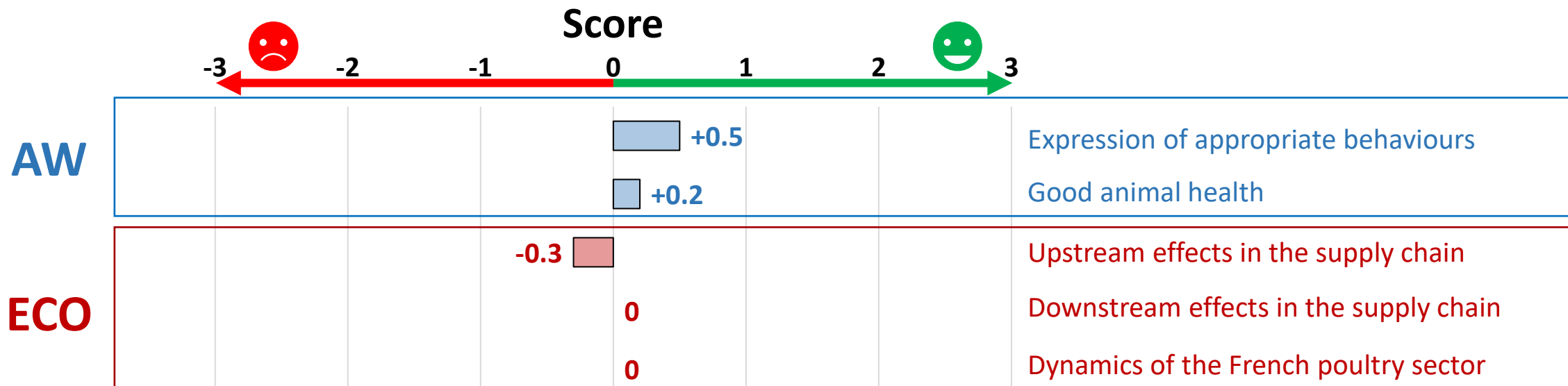
- Scientific literature
- Research / commercial trials
- National statistics
- Commercial flock data
- Expertise (private operators, project partners, farmers...)

RESULTS: CONVENTIONAL+ SCENARIO

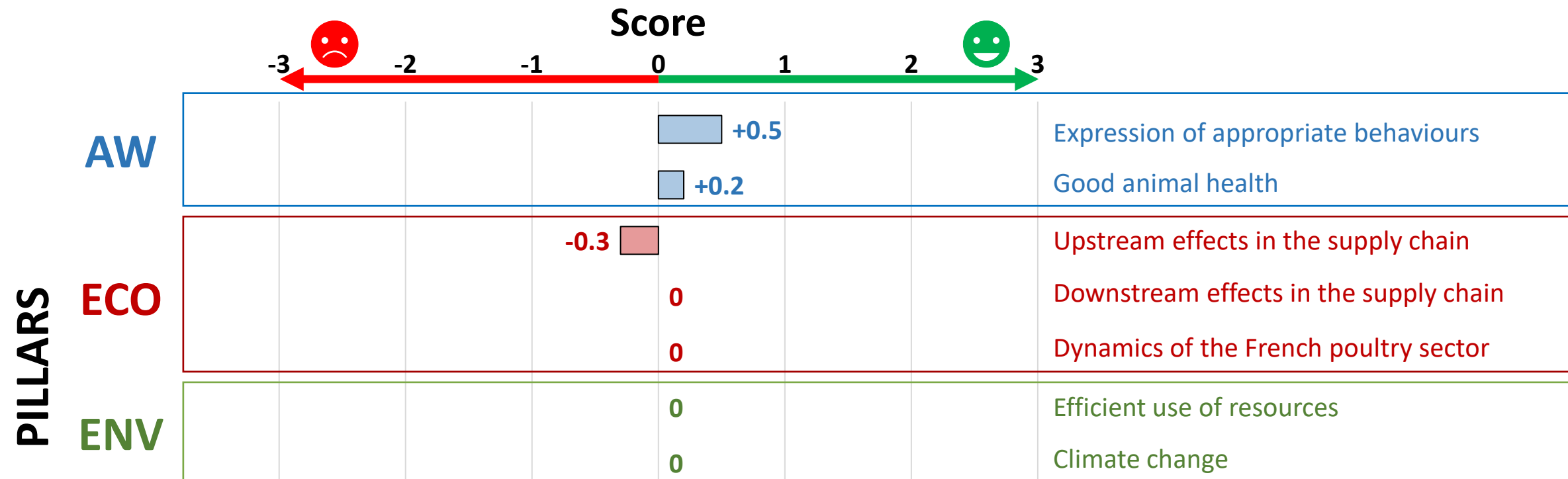


PILLARS

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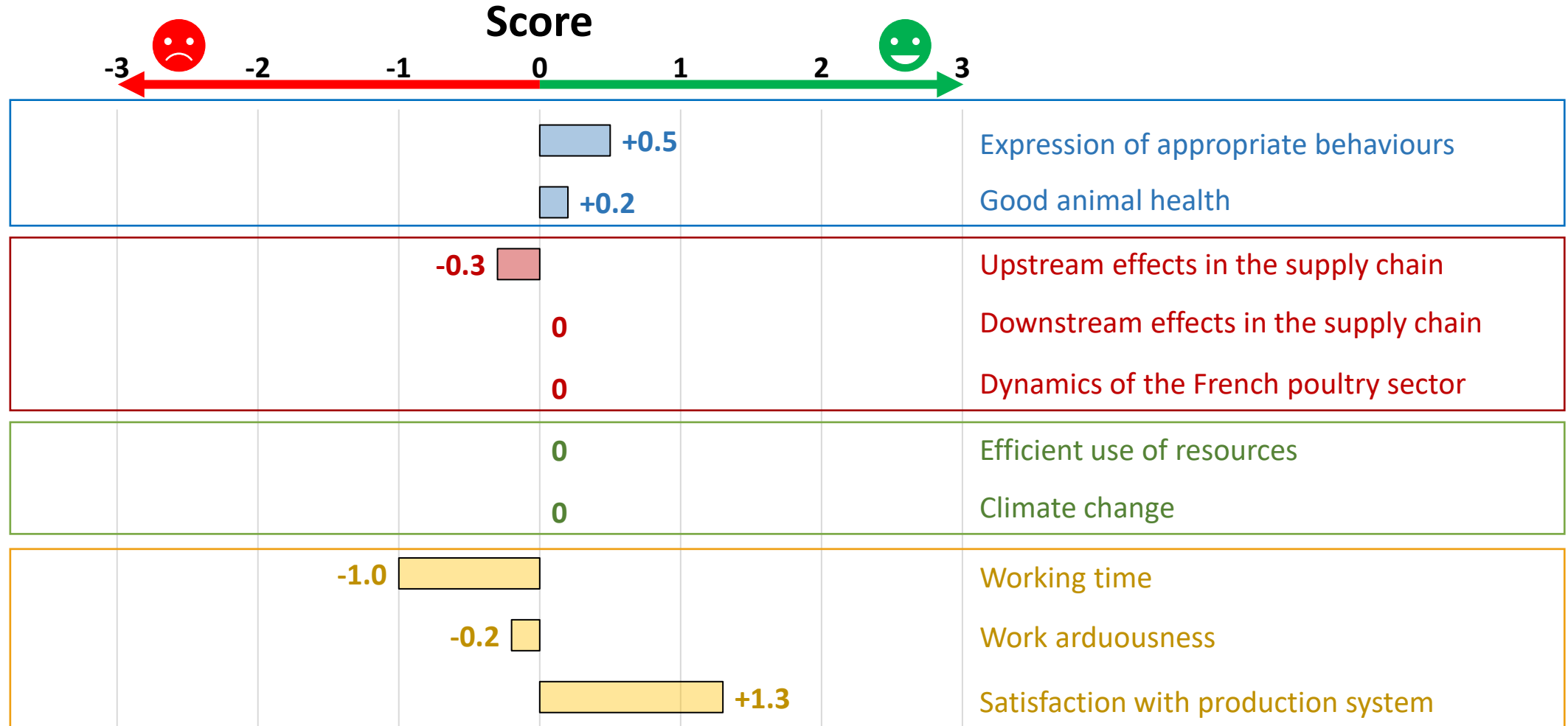


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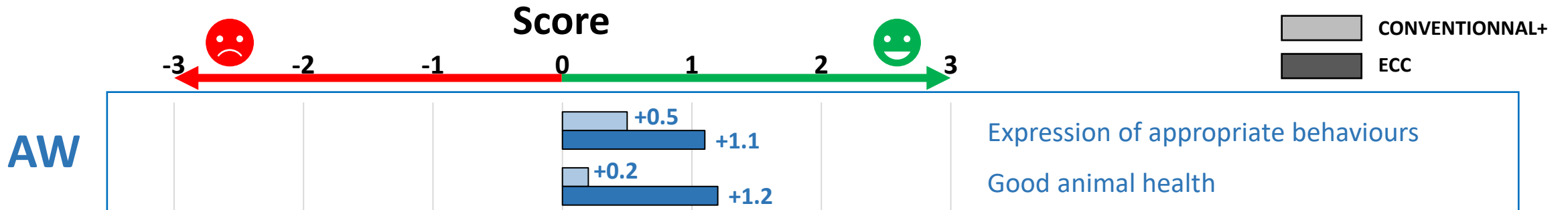


RESULTS: CONVENTIONAL+ SCENARIO

PILLARS

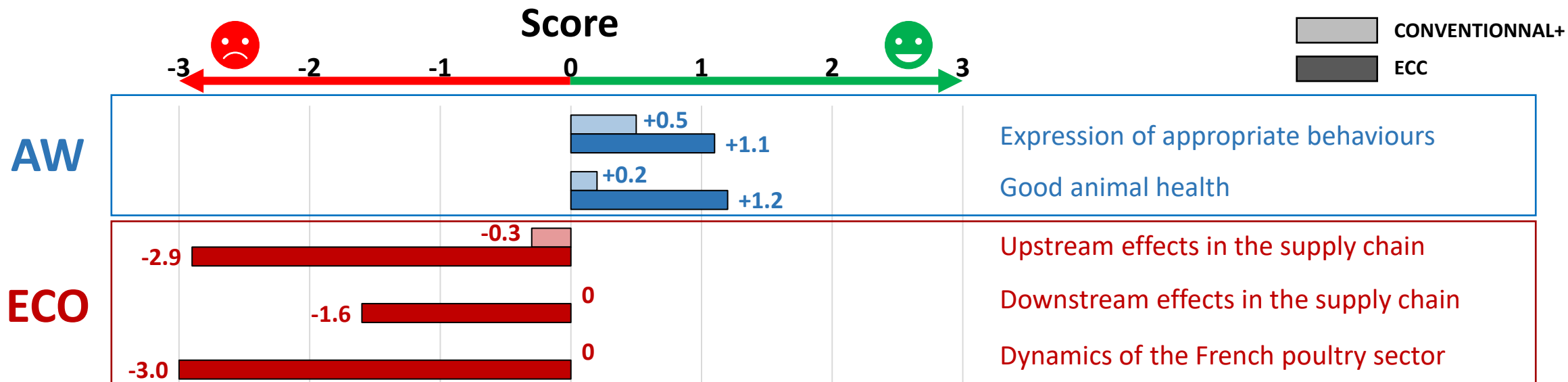


RESULTS: ECC SCENARIO

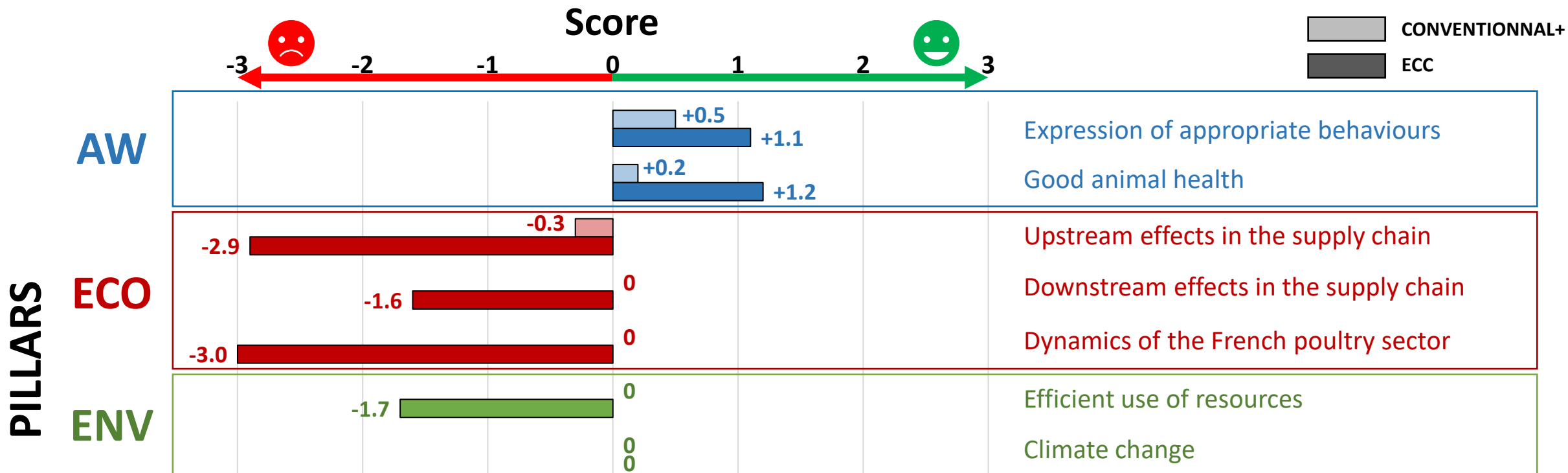


PILLARS

RESULTS: ECC SCENARIO

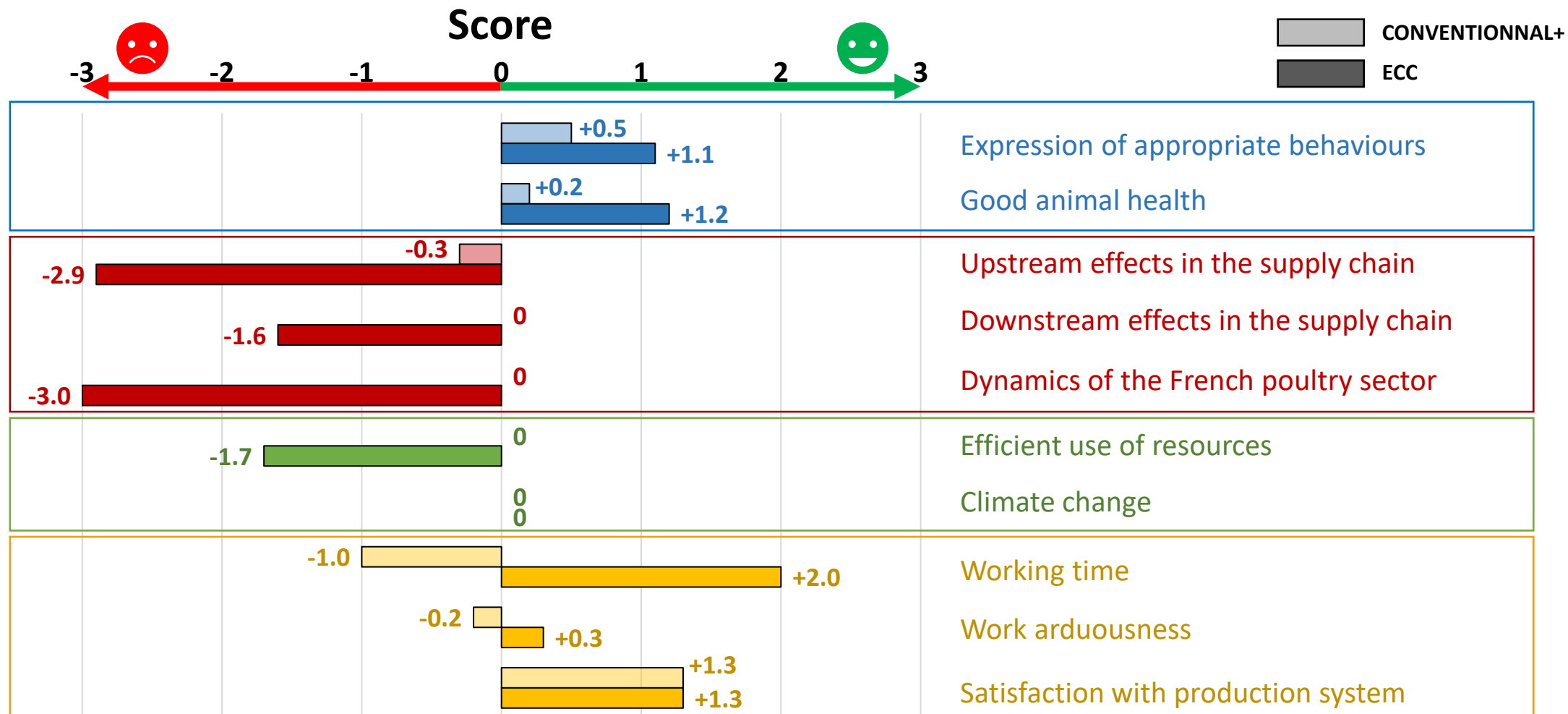


RESULTS: ECC SCENARIO



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PILLARS



CONCLUSIONS

- A method for **objectifying the effects of practice changes**
 - Discussion among stakeholders
 - Decision-making & strategic choices
- A tool to study **how improving AW influence $\neq$ dimensions** (*i.e.* trade-offs):
 - Economy: confirmed antagonistic effects
 - Environment: increase in environmental impacts (climate change: to be confirmed)
 - Social: improvement of farmer welfare
- Possible **other AW levers to be studied**: *e.g.* veranda
- **Place of consumers** in the evolution of farming systems:
 - Perception of animal-friendly practices
 - True willingness to pay



THANK YOU FOR YOUR ATTENTION!

Financial support



EAAP 2024



- Organising committee
- Scientific committee
- Session chairs

Special thanks to:



- Partners of the project
- Experts
- Farmers
- Private operators

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