

Supplementary Material

The following Tables and Figures report the completed alternative matrix, along with Priority Scale, weights vector and solved alternative matrix for each decision-maker.

Decision-maker 1

Table S1. Completed alternative matrix for Decision-maker 1

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	2	2	1	1
A2_Biolubricant	1	3	1	1
A3_Biosurfactant	3	3	3	3

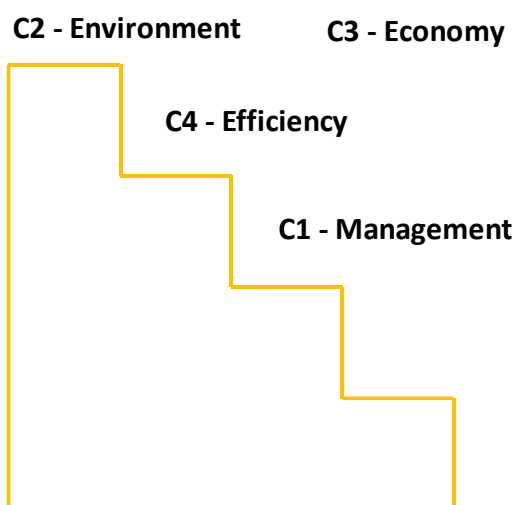


Figure S1. Priority Scale for Decision-maker 1

Table S2. Weights vector for Decision-maker 1

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.1	0.35	0.35	0.2

Table S3. Solved alternative matrix and Priority index for Decision-maker 1

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.2	0.7	0.35	0.2	1.45
A2_Biolubricant	0.1	1.05	0.35	0.2	1.70
A3_Biosurfactant	0.3	1.05	1.05	0.6	3.00

Decision-maker 2

Table S4. Completed alternative matrix for Decision-maker 2

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	3	3	1	3
A2_Biolubricant	1	2	2	2
A3_Biosurfactant	2	1	3	1

C3 - Economy

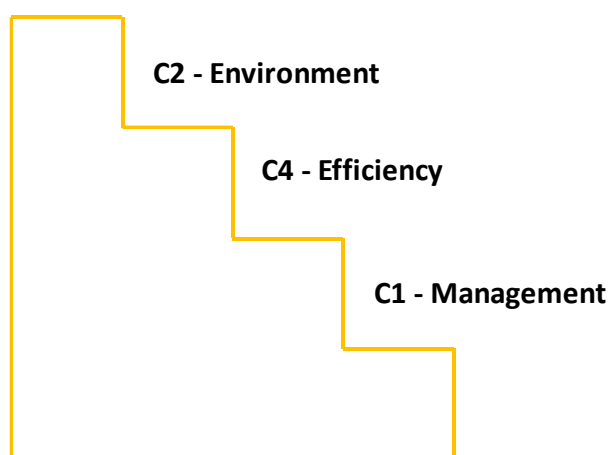


Figure S2. Priority Scale for Decision-maker 2

Table S5. Weights vector for Decision-maker 2

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.1	0.3	0.4	0.2

Table S6. Solved alternative matrix and Priority index for Decision-maker 2

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.3	0.9	0.4	0.6	2.20
A2_Biolubricant	0.1	0.6	0.8	0.4	1.90
A3_Biosurfactant	0.2	0.3	1.2	0.2	1.90

Decision-maker 3

Table S7. Completed alternative matrix for Decision-maker 3

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	1	1	1	1
A2_Biolubricant	2	2	2	2
A3_Biosurfactant	2	2	2	3

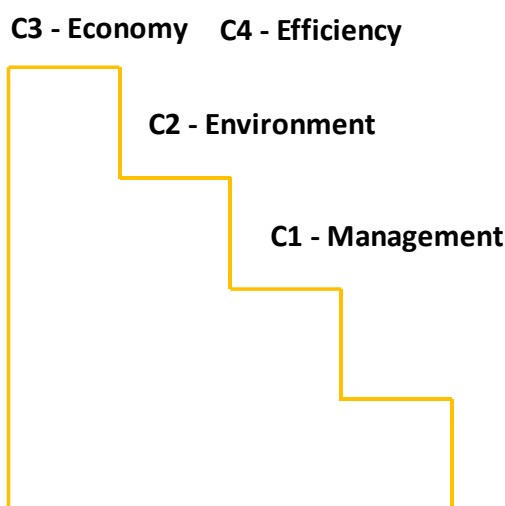


Figure S3. Priority Scale for Decision-maker 3

Table S8. Weights vector for Decision-maker 3

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.1	0.2	0.35	0.35

Table S9. Solved alternative matrix and Priority index for Decision-maker 3

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.1	0.2	0.35	0.35	1.00
A2_Biolubricant	0.2	0.4	0.7	0.7	2.00
A3_Biosurfactant	0.2	0.4	0.7	1.05	2.35

Decision-maker 4

Table S10. Completed alternative matrix for Decision-maker 4

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	2	1	1	1
A2_Biolubricant	1	2	2	2
A3_Biosurfactant	3	3	3	3

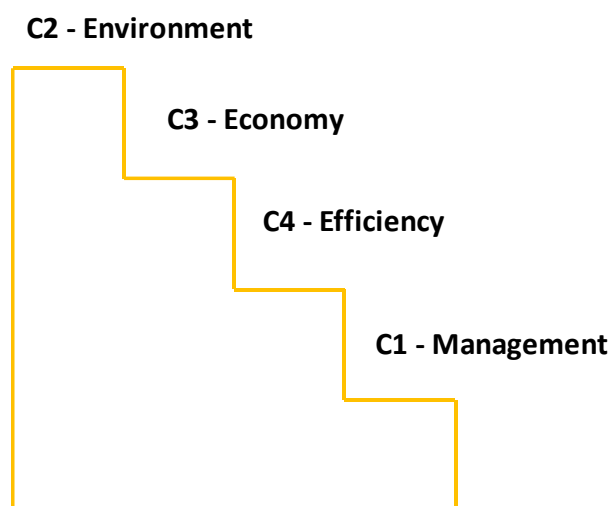


Figure S4. Priority Scale for Decision-maker 4

Table S11. Weights vector for Decision-maker 4

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.1	0.4	0.3	0.2

Table S12. Solved alternative matrix and Priority index for Decision-maker 4

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.2	0.4	0.3	0.2	1.10
A2_Biolubricant	0.1	0.8	0.6	0.4	1.90
A3_Biosurfactant	0.3	1.2	0.9	0.6	3.00

Decision-maker 5

Table S13. Completed alternative matrix for Decision-maker 5

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	2	1	2	3
A2_Biolubricant	3	3	3	2
A3_Biosurfactant	3	3	3	1

C2 - Environment

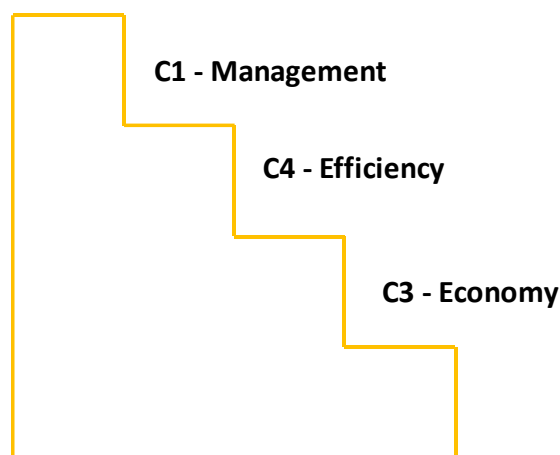


Figure S5. Priority Scale for Decision-maker 5

Table S14. Weights vector for Decision-maker 5

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.3	0.4	0.1	0.2

Table S15. Solved alternative matrix and Priority index for Decision-maker 5

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.6	0.4	0.2	0.6	1.80
A2_Biolubricant	0.9	1.2	0.3	0.4	2.80
A3_Biosurfactant	0.9	1.2	0.3	0.2	2.60

Decision-maker 6

Table S16. Completed alternative matrix for Decision-maker 6

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	2	1	1	1
A2_Biolubricant	2	2	1	2
A3_Biosurfactant	3	3	2	2

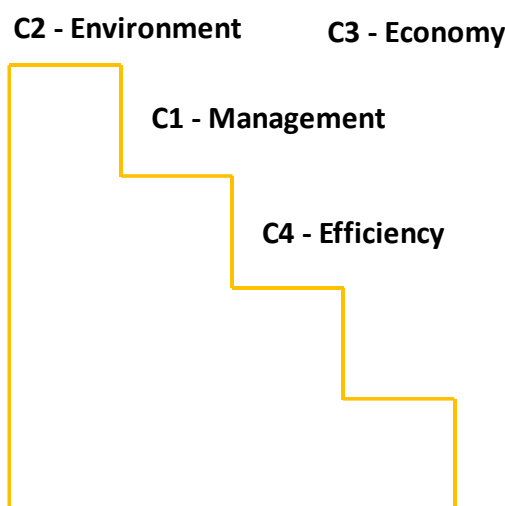


Figure S6. Priority Scale for Decision-maker 6

Table S17. Weights vector for Decision-maker 6

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.2	0.35	0.35	0.1

Table S18. Solved alternative matrix and Priority index for Decision-maker 6

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.4	0.35	0.35	0.1	1.20
A2_Biolubricant	0.4	0.7	0.35	0.2	1.65
A3_Biosurfactant	0.6	1.05	0.7	0.2	2.55

Decision-maker 7

Table S19. Completed alternative matrix for Decision-maker 7

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	2	1	1	3
A2_Biolubricant	3	2	1	1
A3_Biosurfactant	3	3	2	3

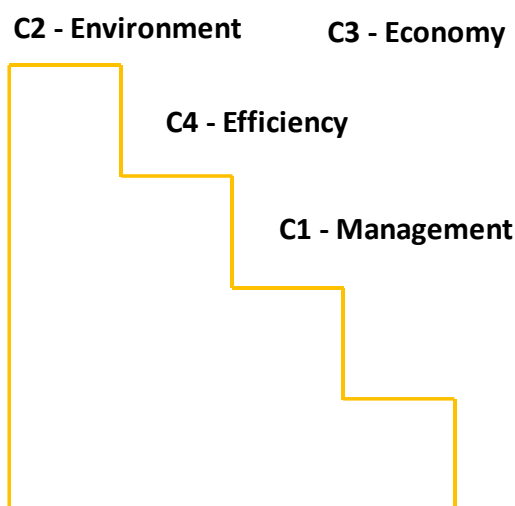


Figure S7. Priority Scale for Decision-maker 7

Table S20. Weights vector for Decision-maker 7

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.1	0.35	0.35	0.2

Table S21. Solved alternative matrix and Priority index for Decision-maker 7

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.2	0.35	0.35	0.6	1.50
A2_Biolubricant	0.3	0.7	0.35	0.2	1.55
A3_Biosurfactant	0.3	1.05	0.7	0.6	2.65

Decision-maker 8

Table S22. Completed alternative matrix for Decision-maker 8

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	1	3	2	3
A2_Biolubricant	2	1	2	2
A3_Biosurfactant	3	2	3	2

C4 - Efficiency

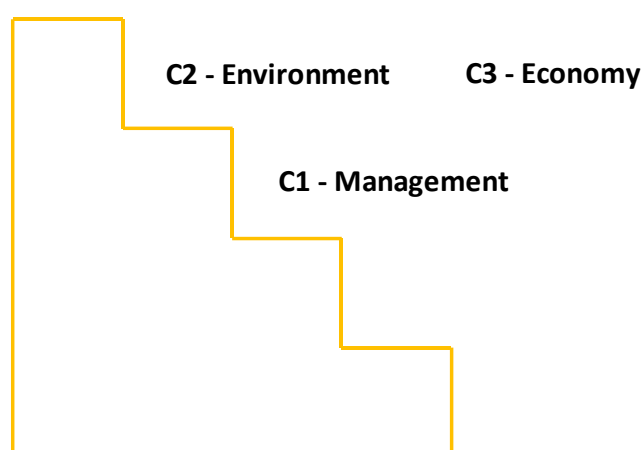


Figure S8. Priority Scale for Decision-maker 8

Table S23. Weights vector for Decision-maker 8

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.1	0.25	0.25	0.4

Table S24. Solved alternative matrix and Priority index for Decision-maker 8

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.1	0.75	0.5	1.2	2.55
A2_Biolubricant	0.2	0.25	0.5	0.8	1.75
A3_Biosurfactant	0.3	0.5	0.75	0.8	2.35

Decision-maker 9

Table S25. Completed alternative matrix for Decision-maker 9

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	1	1	1	2
A2_Biolubricant	3	3	3	2
A3_Biosurfactant	3	2	3	3

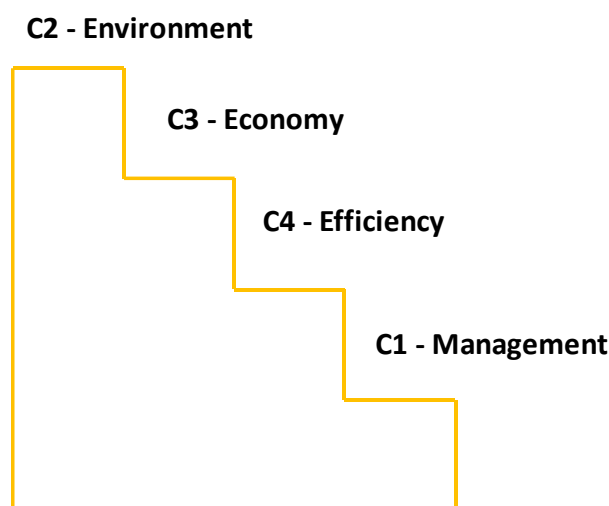


Figure S9. Priority Scale for Decision-maker 9

Table S26. Weights vector for Decision-maker 9

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.1	0.4	0.3	0.2

Table S27. Solved alternative matrix and Priority index for Decision-maker 9

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.1	0.4	0.3	0.4	1.20
A2_Biolubricant	0.3	1.2	0.9	0.4	2.80
A3_Biosurfactant	0.3	0.8	0.9	0.6	2.60

Decision-maker 10

Table S28. Completed alternative matrix for Decision-maker 10

Alternatives	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
A1_Biodiesel	1	2	2	2
A2_Biolubricant	2	3	2	2
A3_Biosurfactant	3	3	2	2

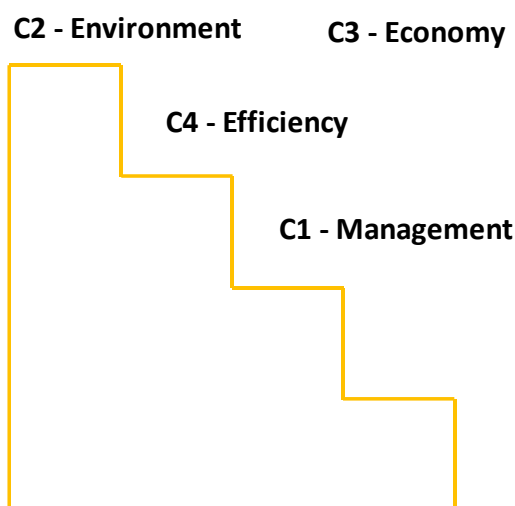


Figure S10. Priority Scale for Decision-maker 10

Table S29. Weights vector for Decision-maker 10

Weights vector	Evaluation criteria			
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency
Values	0.1	0.35	0.35	0.2

Table S30. Solved alternative matrix and Priority index for Decision-maker 10

Alternatives	Evaluation criteria				Priority index
	C1-Management	C2-Environment	C3-Economy	C4-Efficiency	
A1_Biodiesel	0.1	0.7	0.7	0.4	1.90
A2_Biolubricant	0.2	1.05	0.7	0.4	2.35
A3_Biosurfactant	0.3	1.05	0.7	0.4	2.45