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Design, assessment and feasibility of legume-based cropping systems in three European areas

E. Pelzer^{A,D}, C. Bourlet^A, G. Carlsson^B, R. J. Lopez-Bellido^C, E. S. Jensen^B and M. -H. Jeuffroy^A

^AUMR Agronomie INRA, AgroParisTech, Université Paris Saclay, 78850 Thiverval-Grignon, France.

^BSwedish University of Agricultural Sciences, SLU, Department of Biosystems and Technology, PO Box 103, SE-230 53 Alnarp, Sweden.

^CEco-efficient Cropping Systems Group, University of Cordoba, Edificio C4, Ctra. Madrid-Cadiz km 396, 14071 Cordoba, Spain.

^DCorresponding author. Email: Elise.Pelzer@inra.fr

Supplementary Material:

Assessment of the reference and innovative cropping systems with MASC®. The qualitative score of each criterion is indicated on the left of the criteria, as well as the best possible score. Blue means that the best score is reached, green means a good score, yellow means a medium score, brown/orange means a bad score and red means that the worst score is reached.

Assessment results, Sweden

SwR

4/4	Profitability														
4/4	Economic independence														
4/4	Economic efficiency		4	/4	Economic autonomy	4	/4	Economic results							
3/3	Specific material needs														
3/4	Control of acido-basic balance														
4/4	Control of structural integrity of the soil		4	/4	Control of physical and chemical fertility physico-chimique	4	/4	Long term production capacity	5	/5	Economic sustainability				
3/4	Control of phosphorus and potassium fertility														
3/4	Control of insect pest and diseases														
2/4	Weed control		3	/4	Pest control										
3/3	Sanitary quality														
3/3	Technologic and esthetic quality of products		4	/4	Product quality	4	/4	Contribution to economic development							
1/3	Contribution to new sector emersion														
2/4	Contribution to employment														
4/4	Raw material supply					3	/4	Fulfillment of society expectations							
4/4	Complexity of technical crop management														
2/3	Time spent to acquire technical and economical knowledge		4	/4	Implementation ease				3	/5	Social sustainability				
3/3	Work overload														
1/3	Health risk for users		1	/4	Quality of working conditions	2	/4	Fulfillment of farmer expectations							
3/3	Physical difficulty														
3/4	Ground waters	3	/4	Control of pesticide losses											
3/4	Surface waters														
4/4	Control of NO3 losses		4	/4	Contribution to water quality										
3/4	Control of P losses														
3/4	Control of NH3 emissions														
3/4	Control of N2O emissions		3	/4	Contribution to air quality	3	/4	Contribution to environment quality							
3/4	Control of pesticide emissions into the air														
4/4	Control of accumulation of toxic elements														
3/4	Control of organic matter		2	/4	Soil quality preservation										
2/4	Control of erosion														
3/3	Irrigation water use during critical periods		4	/4	Pressure on water				5	/5	Environmental sustainability				
2/3	Dependence on water ressources														
2/3	Energy consumption														
3/3	Energetic efficiency		3	/4	Pressure on energy	4	/4	Pressure on abiotic ressources							
3/4	Pressure on phosphorus														
3/4	Flying insect conservation														
2/4	Soil macrofauna conservation		2	/4	Macrofauna conservation										
3/4	Floristic abundance														
2/4	Floristic diversity		3	/4	Flora conservation	3	/4	Conservation of biodiversity							
3/4	Micro-organism conservation														
													6	/7	Contribution to sustainable development

SwI1

4/4	Profitability		4 /4	Economic autonomy	4 /4	Economic results	5 /5	Economic sustainability	7 /7	Contribution to sustainable development	
4/4	Economic independence										
4/4	Economic efficiency										
1/3	Specific material needs		2 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity	5 /5	Economic sustainability	7 /7	Contribution to sustainable development	
2/4	Control of acido-basic balance										
4/4	Control of structural integrity of the soil										
1/4	Control of phosphorus and potassium fertility		3 /4	Pest control	4 /4	Contribution to economic development	5 /5	Economic sustainability	7 /7	Contribution to sustainable development	
3/4	Control of insect pest and diseases										
2/4	Weed control										
3/3	Sanitary quality		4 /4	Product quality	4 /4	Contribution to economic development	5 /5	Economic sustainability	7 /7	Contribution to sustainable development	
2/3	Technologic and esthetic quality of products										
2/3	Contribution to new sector emersion										
2/4	Contribution to employment		2 /4	Implementation ease	3 /4	Fulfillment of society expectations	4 /5	Social sustainability	7 /7	Contribution to sustainable development	
3/4	Raw material supply										
2/4	Complexity of technical crop management										
1/3	Time spent to acquire technical and economical knowledge		4 /4	Quality of working conditions	3 /4	Fulfillment of farmer expectations	4 /5	Social sustainability	7 /7	Contribution to sustainable development	
3/3	Work overload										
2/3	Health risk for users										
3/3	Physical difficulty		4 /4	Contribution to water quality	4 /4	Contribution to environment quality	5 /5	Environmental sustainability	7 /7	Contribution to sustainable development	
3/4	Ground waters	4 /4									Control of pesticide losses
4/4	Surface waters										
4/4	Control of NO3 losses		4 /4	Contribution to air quality	4 /4	Contribution to environment quality	5 /5	Environmental sustainability	7 /7	Contribution to sustainable development	
4/4	Control of P losses										
4/4	Control of NH3 emissions										
4/4	Control of N2O emissions		4 /4	Soil quality preservation	4 /4	Contribution to environment quality	5 /5	Environmental sustainability	7 /7	Contribution to sustainable development	
4/4	Control of pesticide emissions into the air										
4/4	Control of accumulation of toxic elements										
3/4	Control of organic matter		4 /4	Pressure on water	4 /4	Pressure on abiotic ressources	5 /5	Environmental sustainability	7 /7	Contribution to sustainable development	
4/4	Control of erosion										
3/3	Irrigation water use during critical periods										
2/3	Dependence on water ressources		4 /4	Pressure on energy	4 /4	Pressure on abiotic ressources	5 /5	Environmental sustainability	7 /7	Contribution to sustainable development	
3/3	Energy consumption										
3/3	Energetic efficiency										
4/4	Pressure on phosphorus		3 /4	Macrofauna conservation	3 /4	Conservation of biodiversity	5 /5	Environmental sustainability	7 /7	Contribution to sustainable development	
3/4	Flying insect conservation										
3/4	Soil macrofauna conservation										
3/4	Floristic abundance		3 /4	Flora conservation	3 /4	Conservation of biodiversity	5 /5	Environmental sustainability	7 /7	Contribution to sustainable development	
3/4	Floristic diversity										
3/4	Micro-organism conservation										

2/4	Profitability								
4/4	Economic independence		4	/4	Economic autonomy	3	/4	Economic results	
3/4	Economic efficiency								
2/3	Specific material needs								
2/4	Control of acido-basic balance								
4/4	Control of structural integrity of the soil		2	/4	Control of physical and chemical fertility physico-chimique	3	/4	Long term production capacity	5 /5
1/4	Control of phosphorus and potassium fertility								Economic sustainability
3/4	Control of insect pest and diseases								
2/4	Weed control		3	/4	Pest control				
3/3	Sanitary quality								
2/3	Technologic and esthetic quality of products		4	/4	Product quality	4	/4	Contribution to economic development	
2/3	Contribution to new sector emersion								
2/4	Contribution to employment					3	/4	Fulfillment of society expectations	
3/4	Raw material supply								
1/4	Complexity of technical crop management		1	/4	Implementation ease				
2/3	Time spent to acquire technical and economical knowledge								3 /5
3/3	Work overload					2	/4	Fulfillment of farmer expectations	Social sustainability
2/3	Health risk for users		4	/4	Quality of working conditions				
3/3	Physical difficulty								
3/4	Ground waters	4 /4	Control of pesticide losses	4	/4	Contribution to water quality	4	/4	Contribution to environment quality
4/4	Surface waters								
4/4	Control of NO3 losses								
4/4	Control of P losses								
4/4	Control of NH3 emissions								
4/4	Control of N2O emissions		4	/4	Contribution to air quality	4	/4		
4/4	Control of pesticide emissions into the air								
4/4	Control of accumulation of toxic elements								
3/4	Control of organic matter		4	/4	Soil quality preservation				
4/4	Control of erosion								
3/3	Irrigation water use during critical periods		4	/4	Pressure on water				5 /5
2/3	Dependence on water ressources								Environmental sustainability
3/3	Energy consumption		4	/4	Pressure on energy	4	/4	Pressure on abiotic ressources	
3/3	Energetic efficiency								
3/4	Pressure on phosphorus								
3/4	Flying insect conservation		3	/4	Macrofauna conservation				
3/4	Soil macrofauna conservation								
3/4	Floristic abundance		3	/4	Flora conservation	3	/4	Conservation of biodiversity	
3/4	Floristic diversity								
3/4	Micro-organism conservation								
									6 /7
									Contribution to sustainable development

SwII'

3/4	Profitability				3 /4	Economic results	5 /5	Economic sustainability	7 /7	Contribution to sustainable development
4/4	Economic independence	4 /4	Economic autonomy							
3/4	Economic efficiency									
1/3	Specific material needs									
2/4	Control of acido-basic balance									
4/4	Control of structural integrity of the soil		2 /4	Control of physical and chemical fertility physico-chimique						
1/4	Control of phosphorus and potassium fertility									
3/4	Control of insect pest and diseases		3 /4	Pest control						
2/4	Weed control									
3/3	Sanitary quality		4 /4	Product quality						
2/3	Technologic and esthetic quality of products				4 /4	Contribution to economic development				
2/3	Contribution to new sector emersion									
2/4	Contribution to employment				3 /4	Fulfillment of society expectations				
3/4	Raw material supply									
2/4	Complexity of technical crop management		2 /4	Implementation ease	3 /4	Fulfillment of farmer expectations	4 /5	Social sustainability		
1/3	Time spent to acquire technical and economical knowledge									
3/3	Work overload		4 /4	Quality of working conditions						
2/3	Health risk for users									
3/3	Physical difficulty				4 /4	Contribution to environment quality	5 /5	Environmental sustainability		
3/4	Ground waters	4 /4	Control of pesticide losses	4 /4					Contribution to water quality	
4/4	Surface waters									
4/4	Control of NO3 losses									
4/4	Control of P losses									
4/4	Control of NH3 emissions									
4/4	Control of N2O emissions		4 /4	Contribution to air quality						
4/4	Control of pesticide emissions into the air									
4/4	Control of accumulation of toxic elements									
3/4	Control of organic matter		4 /4	Soil quality preservation						
4/4	Control of erosion									
3/3	Irrigation water use during critical periods		4 /4	Pressure on water	4 /4	Pressure on abiotic ressources				
2/3	Dependence on water ressources									
3/3	Energy consumption		4 /4	Pressure on energy						
3/3	Energetic efficiency									
4/4	Pressure on phosphorus									
3/4	Flying insect conservation		3 /4	Macrofauna conservation	3 /4	Conservation of biodiversity				
3/4	Soil macrofauna conservation									
3/4	Floristic abundance		3 /4	Flora conservation						
3/4	Floristic diversity									
3/4	Micro-organism conservation									

SwI2'

2/4	Profitability		4 /4	Economic autonomy	3 /4	Economic results	5 /5	Economic sustainability	7 /7	Contribution to sustainable development
4/4	Economic independence									
3/4	Economic efficiency									
2/3	Specific material needs									
2/4	Control of acido-basic balance		2 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity				
4/4	Control of structural integrity of the soil									
1/4	Control of phosphorus and potassium fertility									
3/4	Control of insect pest and diseases		3 /4	Pest control	4 /4	Contribution to economic development				
2/4	Weed control									
3/3	Sanitary quality		4 /4	Product quality	3 /4	Fulfillment of society expectations				
3/3	Technologic and esthetic quality of products									
2/3	Contribution to new sector emersion		3 /4	Implementation ease	4 /4	Fulfillment of farmer expectations				
3/4	Contribution to employment									
3/4	Raw material supply									
3/4	Complexity of technical crop management		4 /4	Quality of working conditions	4 /4	Contribution to environment quality				
2/3	Time spent to acquire technical and economical knowledge									
3/3	Work overload									
2/3	Health risk for users		4 /4	Contribution to water quality	4 /4	Contribution to environment quality				
3/3	Physical difficulty									
3/4	Ground waters	4 /4					Control of pesticide losses			
4/4	Surface waters									
4/4	Control of NO3 losses									
4/4	Control of P losses									
4/4	Control of NH3 emissions		4 /4	Contribution to air quality	4 /4	Pressure on abiotic ressources				
3/4	Control of N2O emissions									
4/4	Control of pesticide emissions into the air									
4/4	Control of accumulation of toxic elements		4 /4	Soil quality preservation	5 /5	Environmental sustainability				
3/4	Control of organic matter									
4/4	Control of erosion		4 /4	Pressure on water	4 /4	Conservation of biodiversity				
3/3	Irrigation water use during critical periods									
2/3	Dependence on water ressources									
3/3	Energy consumption		4 /4	Pressure on energy	3 /4	Macrofauna conservation				
3/3	Energetic efficiency									
4/4	Pressure on phosphorus		3 /4	Flora conservation	3 /4	Flora conservation				
3/4	Flying insect conservation									
3/4	Soil macrofauna conservation									
3/4	Floristic abundance		3 /4	Flora conservation	3 /4	Flora conservation				
3/4	Floristic diversity									
3/4	Micro-organism conservation		3 /4	Flora conservation	3 /4	Flora conservation				
3/4	Micro-organism conservation									

SwI3'

2/4	Profitability				3 /4	Economic results	5 /5	Economic sustainability	6 /7	Contribution to sustainable development
4/4	Economic independence		4 /4	Economic autonomy						
3/4	Economic efficiency									
2/3	Specific material needs									
2/4	Control of acido-basic balance				2 /4	Control of physical and chemical fertility physico-chimique				
4/4	Control of structural integrity of the soil									
1/4	Control of phosphorus and potassium fertility									
3/4	Control of insect pest and diseases				3 /4	Pest control				
2/4	Weed control									
3/3	Sanitary quality				4 /4	Product quality				
2/3	Technologic and esthetic quality of products				4 /4	Contribution to economic development				
2/3	Contribution to new sector emersion									
2/4	Contribution to employment				3 /4	Fulfillment of society expectations	3 /5	Social sustainability		
3/4	Raw material supply									
1/4	Complexity of technical crop management		1 /4	Implementation ease						
2/3	Time spent to acquire technical and economical knowledge				2 /4	Fulfillment of farmer expectations				
3/3	Work overload									
2/3	Health risk for users		4 /4	Quality of working conditions						
3/3	Physical difficulty									
3/4	Ground waters	4 /4	Control of pesticide losses	4 /4	Contribution to water quality	4 /4	Contribution to environment quality			
4/4	Surface waters									
4/4	Control of NO3 losses									
4/4	Control of P losses									
4/4	Control of NH3 emissions									
4/4	Control of N2O emissions		4 /4	Contribution to air quality						
4/4	Control of pesticide emissions into the air									
4/4	Control of accumulation of toxic elements									
3/4	Control of organic matter		4 /4	Soil quality preservation						
4/4	Control of erosion									
3/3	Irrigation water use during critical periods		4 /4	Pressure on water	4 /4	Pressure on abiotic ressources				
2/3	Dependence on water ressources									
3/3	Energy consumption		4 /4	Pressure on energy						
3/3	Energetic efficiency									
3/4	Pressure on phosphorus									
3/4	Flying insect conservation		3 /4	Macrofauna conservation	3 /4	Conservation of biodiversity				
3/4	Soil macrofauna conservation									
3/4	Floristic abundance		3 /4	Flora conservation						
3/4	Floristic diversity									
3/4	Micro-organism conservation									

SwI4'

1/4	Profitability								
4/4	Economic independence		4 /4	Economic autonomy	2 /4	Economic results			
3/4	Economic efficiency								
1/3	Specific material needs								
2/4	Control of acido-basic balance								
4/4	Control of structural integrity of the soil		2 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity	4 /5	Economic sustainability	
1/4	Control of phosphorus and potassium fertility								
3/4	Control of insect pest and diseases		3 /4	Pest control					
3/4	Weed control								
3/3	Sanitary quality		4 /4	Product quality	4 /4	Contribution to economic development			
2/3	Technologic and esthetic quality of products								
2/3	Contribution to new sector emersion								
2/4	Contribution to employment				3 /4	Fulfillment of society expectations			
3/4	Raw material supply								
3/4	Complexity of technical crop management		3 /4	Implementation ease					
2/3	Time spent to acquire technical and economical knowledge								
3/3	Work overload		4 /4	Quality of working conditions	4 /4	Fulfillment of farmer expectations	5 /5	Social sustainability	
3/3	Health risk for users								
3/3	Physical difficulty								
3/4	Ground waters	4 /4	Control of pesticide losses						
4/4	Surface waters			4 /4	Contribution to water quality				
4/4	Control of NO3 losses								
4/4	Control of P losses								
4/4	Control of NH3 emissions								
4/4	Control of N2O emissions		4 /4	Contribution to air quality	4 /4	Contribution to environment quality			
3/4	Control of pesticide emissions into the air								
4/4	Control of accumulation of toxic elements								
3/4	Control of organic matter		4 /4	Soil quality preservation					
4/4	Control of erosion								
3/3	Irrigation water use during critical periods		4 /4	Pressure on water			5 /5	Environmental sustainability	
2/3	Dependence on water ressources								
3/3	Energy consumption		4 /4	Pressure on energy	4 /4	Pressure on abiotic ressources			
3/3	Energetic efficiency								
3/4	Pressure on phosphorus								
3/4	Flying insect conservation		3 /4	Macrofauna conservation					
3/4	Soil macrofauna conservation								
2/4	Floristic abundance		3 /4	Flora conservation	3 /4	Conservation of biodiversity			
3/4	Floristic diversity								
3/4	Micro-organism conservation								

2/4	Profitability				3 /4	Economic results	4 /5	Economic sustainability	4 /7	Contribution to sustainable development
3/4	Economic independence		3 /4	Economic autonomy						
3/4	Economic efficiency									
3/3	Specific material needs				2 /4	Long term production capacity	4 /5	Economic sustainability	4 /7	Contribution to sustainable development
2/4	Control of acido-basic balance		2 /4	Control of physical and chemical fertility physico-chimique						
2/4	Control of structural integrity of the soil									
3/4	Control of phosphorus and potassium fertility				2 /4	Long term production capacity	4 /5	Economic sustainability	4 /7	Contribution to sustainable development
4/4	Control of insect pest and diseases		2 /4	Pest control						
2/4	Weed control									
3/3	Sanitary quality				4 /4	Contribution to economic development	4 /5	Economic sustainability	4 /7	Contribution to sustainable development
3/3	Technologic and esthetic quality of products		4 /4	Product quality						
2/3	Contribution to new sector emersion				3 /4	Fulfillment of society expectations	3 /5	Social sustainability	4 /7	Contribution to sustainable development
2/4	Contribution to employment									
4/4	Raw material supply				2 /4	Fulfillment of farmer expectations	3 /5	Social sustainability	4 /7	Contribution to sustainable development
3/4	Complexity of technical crop management		4 /4	Implementation ease						
3/3	Time spent to acquire technical and economical knowledge									
1/3	Work overload		1 /4	Quality of working conditions	2 /4	Fulfillment of farmer expectations	3 /5	Social sustainability	4 /7	Contribution to sustainable development
1/3	Health risk for users									
3/3	Physical difficulty									
4/4	Ground waters	4 /4	Control of pesticide losses	2 /4	Contribution to water quality	3 /4	Contribution to environment quality	3 /5	Environmental sustainability	Contribution to sustainable development
4/4	Surface waters									
2/4	Control of NO3 losses									
4/4	Control of P losses				3 /4	Contribution to environment quality	3 /5	Environmental sustainability	Contribution to sustainable development	
4/4	Control of NH3 emissions		4 /4	Contribution to air quality						
3/4	Control of N2O emissions									
3/4	Control of pesticide emissions into the air				3 /4	Contribution to environment quality	3 /5	Environmental sustainability	Contribution to sustainable development	
4/4	Control of accumulation of toxic elements		3 /4	Soil quality preservation						
2/4	Control of organic matter									
4/4	Control of erosion				4 /4	Pressure on abiotic ressources	3 /5	Environmental sustainability	Contribution to sustainable development	
3/3	Irrigation water use during critical periods		4 /4	Pressure on water						
2/3	Dependence on water ressources				3 /4	Pressure on energy	3 /5	Environmental sustainability	Contribution to sustainable development	
3/3	Energy consumption									
2/3	Energetic efficiency				4 /4	Pressure on abiotic ressources	3 /5	Environmental sustainability	Contribution to sustainable development	
4/4	Pressure on phosphorus									
3/4	Flying insect conservation		3 /4	Macrofauna conservation	1 /4	Conservation of biodiversity	3 /5	Environmental sustainability	Contribution to sustainable development	
3/4	Soil macrofauna conservation									
3/4	Floristic abundance		2 /4	Flora conservation						
1/4	Floristic diversity				1 /4	Conservation of biodiversity	3 /5	Environmental sustainability	Contribution to sustainable development	
1/4	Micro-organism conservation									

2/4	Profitability				3 /4	Economic results	4 /5	Economic sustainability		Contribution to sustainable development		
3/4	Economic independence											
3/4	Economic efficiency	3 /4	Economic autonomy									
3/3	Specific material needs											
2/4	Control of acido-basic balance		2 /4	Control of physical and chemical fertility physico-chimique	2 /4	Long term production capacity						
2/4	Control of structural integrity of the soil											
3/4	Control of phosphorus and potassium fertility											
4/4	Control of insect pest and diseases		2 /4	Pest control								
2/4	Weed control											
3/3	Sanitary quality		4 /4	Product quality	4 /4	Contribution to economic development						
3/3	Technologic and esthetic quality of products											
3/3	Contribution to new sector emersion											
2/4	Contribution to employment				3 /4	Fulfillment of society expectations	3 /5	Social sustainability				
4/4	Raw material supply											
4/4	Complexity of technical crop management		4 /4	Implementation ease	2 /4	Fulfillment of farmer expectations						
2/3	Time spent to acquire technical and economical knowledge											
2/3	Work overload		1 /4	Quality of working conditions								
1/3	Health risk for users											
3/3	Physical difficulty				3 /4	Contribution to water quality	6 /7					
4/4	Ground waters	3 /4	Control of pesticide losses	2 /4								
3/4	Surface waters											
2/4	Control of NO3 losses											
3/4	Control of P losses											
4/4	Control of NH3 emissions											
3/4	Control of N2O emissions		4 /4							Contribution to air quality		
3/4	Control of pesticide emissions into the air											
4/4	Control of accumulation of toxic elements		3 /4							Soil quality preservation	3 /4	Contribution to environment quality
4/4	Control of organic matter											
3/4	Control of erosion											
3/3	Irrigation water use during critical periods		4 /4	Pressure on water	5 /5	Environmental sustainability						
2/3	Dependence on water ressources											
3/3	Energy consumption		3 /4	Pressure on energy			4 /4	Pressure on abiotic ressources				
2/3	Energetic efficiency											
4/4	Pressure on phosphorus											
4/4	Flying insect conservation		4 /4	Macrofauna conservation	3 /4	Conservation of biodiversity						
4/4	Soil macrofauna conservation											
3/4	Floristic abundance		2 /4	Flora conservation								
1/4	Floristic diversity											
4/4	Micro-organism conservation											

2/4	Profitability				3 /4	Economic results	4 /5	Economic sustainability	6 /7	Contribution to sustainable development	
3/4	Economic independence										
3/4	Economic efficiency	3 /4	Economic autonomy								
3/3	Specific material needs										
2/4	Control of acido-basic balance		2 /4	Control of physical and chemical fertility physico-chimique	2 /4	Long term production capacity					
2/4	Control of structural integrity of the soil										
3/4	Control of phosphorus and potassium fertility										
4/4	Control of insect pest and diseases		2 /4	Pest control	4 /4	Contribution to economic development					
2/4	Weed control										
3/3	Sanitary quality		4 /4	Product quality	4 /4	Contribution to economic development					
3/3	Technologic and esthetic quality of products										
3/3	Contribution to new sector emersion										
2/4	Contribution to employment				3 /4	Fulfillment of society expectations	3 /5	Social sustainability			
4/4	Raw material supply										
4/4	Complexity of technical crop management		4 /4	Implementation ease	2 /4	Fulfillment of farmer expectations					
2/3	Time spent to acquire technical and economical knowledge										
2/3	Work overload		1 /4	Quality of working conditions	2 /4	Fulfillment of farmer expectations					
1/3	Health risk for users										
3/3	Physical difficulty				3 /4	Contribution to environment quality	5 /5	Environmental sustainability			
4/4	Ground waters	3 /4	Control of pesticide losses	2 /4							Contribution to water quality
3/4	Surface waters										
2/4	Control of NO3 losses										
4/4	Control of P losses										
4/4	Control of NH3 emissions										
3/4	Control of N2O emissions		4 /4	Contribution to air quality							
3/4	Control of pesticide emissions into the air										
4/4	Control of accumulation of toxic elements		4 /4	Soil quality preservation							
4/4	Control of organic matter										
4/4	Control of erosion										
3/3	Irrigation water use during critical periods		4 /4	Pressure on water	4 /4	Pressure on abiotic ressources					
2/3	Dependence on water ressources										
3/3	Energy consumption		3 /4	Pressure on energy	4 /4	Pressure on abiotic ressources					
2/3	Energetic efficiency										
4/4	Pressure on phosphorus				3 /4	Conservation of biodiversity					
4/4	Flying insect conservation		4 /4	Macrofauna conservation							
4/4	Soil macrofauna conservation										
3/4	Floristic abundance		2 /4	Flora conservation	3 /4	Conservation of biodiversity					
1/4	Floristic diversity										
3/4	Micro-organism conservation										

1/4	Profitability				1 /4	Economic results	3 /5	Economic sustainability	Contribution to sustainable development
1/4	Economic independence								
3/4	Economic efficiency	2 /4	Economic autonomy						
3/3	Specific material needs								
2/4	Control of acido-basic balance		2 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity			
2/4	Control of structural integrity of the soil								
3/4	Control of phosphorus and potassium fertility								
4/4	Control of insect pest and diseases		3 /4	Pest control	4 /4	Contribution to economic development			
3/4	Weed control								
3/3	Sanitary quality		4 /4	Product quality	4 /4	Contribution to economic development			
3/3	Technologic and esthetic quality of products								
2/3	Contribution to new sector emersion				2 /4	Fulfillment of society expectations			
2/4	Contribution to employment								
2/4	Raw material supply								
4/4	Complexity of technical crop management		4 /4	Implementation ease	4 /4	Fulfillment of farmer expectations			
2/3	Time spent to acquire technical and economical knowledge								
2/3	Work overload		3 /4	Quality of working conditions					
2/3	Health risk for users								
3/3	Physical difficulty								
4/4	Ground waters	4 /4	Control of pesticide losses	2 /4	Contribution to water quality	3 /4	Contribution to environment quality		
4/4	Surface waters								
1/4	Control of NO3 losses								
4/4	Control of P losses								
4/4	Control of NH3 emissions								
3/4	Control of N2O emissions		4 /4	Contribution to air quality					
4/4	Control of pesticide emissions into the air								
4/4	Control of accumulation of toxic elements		4 /4	Soil quality preservation					
3/4	Control of organic matter								
4/4	Control of erosion								
3/3	Irrigation water use during critical periods		4 /4	Pressure on water	3 /4	Pressure on abiotic ressources			
2/3	Dependence on water ressources								
3/3	Energy consumption		2 /4	Pressure on energy					
1/3	Energetic efficiency								
4/4	Pressure on phosphorus				4 /5	Environmental sustainability			
3/4	Flying insect conservation		4 /4	Macrofauna conservation					
4/4	Soil macrofauna conservation								
2/4	Floristic abundance		2 /4	Flora conservation	3 /4	Conservation of biodiversity			
2/4	Floristic diversity								
3/4	Micro-organism conservation								

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1/4	Profitability		1 /4	Economic autonomy	1 /4	Economic results	3 /5	Economic sustainability	Contribution to sustainable development
1/4	Economic independence								
3/4	Economic efficiency								
3/3	Specific material needs								
1/4	Control of acido-basic balance		2 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity			
2/4	Control of structural integrity of the soil								
3/4	Control of phosphorus and potassium fertility								
4/4	Control of insect pest and diseases		3 /4	Pest control	4 /4	Contribution to economic development			
3/4	Weed control								
3/3	Sanitary quality		4 /4	Product quality	4 /4	Contribution to economic development			
3/3	Technologic and esthetic quality of products								
2/3	Contribution to new sector emersion		2 /4		2 /4	Fulfillment of society expectations			
2/4	Contribution to employment								
2/4	Raw material supply								
4/4	Complexity of technical crop management		4 /4	Implementation ease	4 /4	Fulfillment of farmer expectations			
2/3	Time spent to acquire technical and economical knowledge								
2/3	Work overload		4 /4	Quality of working conditions	4 /4	Fulfillment of farmer expectations			
3/3	Health risk for users								
3/3	Physical difficulty								
4/4	Ground waters	4 /4	Control of pesticide losses	2 /4	Contribution to water quality	3 /4	Contribution to environment quality		
4/4	Surface waters								
1/4	Control of NO3 losses								
4/4	Control of P losses		4 /4	Contribution to air quality	4 /4	Contribution to environment quality			
4/4	Control of NH3 emissions								
3/4	Control of N2O emissions								
4/4	Control of pesticide emissions into the air		4 /4	Soil quality preservation	4 /4	Contribution to environment quality			
4/4	Control of accumulation of toxic elements								
3/4	Control of organic matter								
4/4	Control of erosion		4 /4	Pressure on water	3 /4	Pressure on abiotic ressources			
3/3	Irrigation water use during critical periods								
3/3	Dependence on water ressources		2 /4	Pressure on energy	3 /4	Pressure on abiotic ressources			
2/3	Energy consumption								
3/3	Energetic efficiency		1 /4	Pressure on phosphorus	3 /4	Conservation of biodiversity			
3/4	Flying insect conservation								
4/4	Soil macrofauna conservation		4 /4	Macrofauna conservation	3 /4	Conservation of biodiversity			
2/4	Floristic abundance								
2/4	Floristic diversity		2 /4	Flora conservation	3 /4	Conservation of biodiversity			
3/4	Micro-organism conservation								

2/4	Profitability		3 /4	Economic autonomy	3 /4	Economic results	5 /5	Economic sustainability		
3/4	Economic independence									
3/4	Economic efficiency									
3/3	Specific material needs									
1/4	Control of acido-basic balance		2 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity				
2/4	Control of structural integrity of the soil									
3/4	Control of phosphorus and potassium fertility									
4/4	Control of insect pest and diseases		3 /4	Pest control	4 /4	Contribution to economic development				
3/4	Weed control									
3/3	Sanitary quality		4 /4	Product quality	4 /4	Contribution to economic development				
3/3	Technologic and esthetic quality of products									
3/3	Contribution to new sector emersion									
2/4	Contribution to employment		3 /4	Fulfillment of society expectations	3 /4	Fulfillment of society expectations	3 /5	Social sustainability	4 /7	Contribution to sustainable development
4/4	Raw material supply									
4/4	Complexity of technical crop management		4 /4	Implementation ease	2 /4	Fulfillment of farmer expectations				
2/3	Time spent to acquire technical and economical knowledge									
2/3	Work overload									
1/3	Health risk for users		1 /4	Quality of working conditions	2 /4	Fulfillment of farmer expectations				
3/3	Physical difficulty									
4/4	Ground waters	4 /4	Control of pesticide losses	2 /4	Contribution to water quality	3 /4	Contribution to environment quality			
4/4	Surface waters									
1/4	Control of NO3 losses									
4/4	Control of P losses									
4/4	Control of NH3 emissions		4 /4	Contribution to air quality	3 /4	Contribution to environment quality				
3/4	Control of N2O emissions									
3/4	Control of pesticide emissions into the air									
4/4	Control of accumulation of toxic elements		4 /4	Soil quality preservation	2 /5	Pressure on abiotic ressources	2 /5	Environmental sustainability		
3/4	Control of organic matter									
4/4	Control of erosion		1 /4	Pressure on water	3 /4	Pressure on abiotic ressources				
1/3	Irrigation water use during critical periods									
2/3	Dependence on water ressources		4 /4	Pressure on energy	3 /4	Pressure on abiotic ressources				
3/3	Energy consumption									
3/3	Energetic efficiency									
4/4	Pressure on phosphorus		4 /4	Macrofauna conservation	1 /4	Conservation of biodiversity				
3/4	Flying insect conservation									
4/4	Soil macrofauna conservation		1 /4	Flora conservation	1 /4	Conservation of biodiversity				
2/4	Floristic abundance									
1/4	Floristic diversity									
3/4	Micro-organism conservation									

1/4	Profitability		1 /4	Economic autonomy	1 /4	Economic results	3 /5	Economic sustainability	7 /7	Contribution to sustainable development
1/4	Economic independence									
3/4	Economic efficiency									
3/3	Specific material needs									
1/4	Control of acido-basic balance		2 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity				
2/4	Control of structural integrity of the soil									
3/4	Control of phosphorus and potassium fertility									
4/4	Control of insect pest and diseases		3 /4	Pest control						
3/4	Weed control									
3/3	Sanitary quality		4 /4	Product quality	4 /4	Contribution to economic development				
3/3	Technologic and esthetic quality of products									
2/3	Contribution to new sector emersion		2 /4			Fulfillment of society expectations				
2/4	Contribution to employment									
2/4	Raw material supply									
4/4	Complexity of technical crop management		4 /4	Implementation ease	4 /4	Fulfillment of farmer expectations				
2/3	Time spent to acquire technical and economical knowledge									
2/3	Work overload		4 /4	Quality of working conditions						
3/3	Health risk for users									
3/3	Physical difficulty									
4/4	Ground waters	4 /4	Control of pesticide losses	2 /4	Contribution to water quality					
4/4	Surface waters									
1/4	Control of NO3 losses									
4/4	Control of P losses		4 /4	Contribution to air quality	3 /4	Contribution to environment quality				
4/4	Control of NH3 emissions									
3/4	Control of N2O emissions									
4/4	Control of pesticide emissions into the air		4 /4	Soil quality preservation						
4/4	Control of accumulation of toxic elements									
3/4	Control of organic matter									
4/4	Control of erosion		4 /4	Pressure on water	4 /5	Environmental sustainability				
3/3	Irrigation water use during critical periods									
2/3	Dependence on water ressources		2 /4	Pressure on energy	3 /4	Pressure on abiotic ressources				
3/3	Energy consumption									
1/3	Energetic efficiency		4 /4	Macrofauna conservation						
4/4	Pressure on phosphorus									
3/4	Flying insect conservation									
4/4	Soil macrofauna conservation		2 /4	Flora conservation	3 /4	Conservation of biodiversity				
2/4	Floristic abundance									
2/4	Floristic diversity									
3/4	Micro-organism conservation									

Assessment results, France

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2/4	Profitability		3 /4	Economic autonomy	3 /4	Economic results	4 /5	Economic sustainability	4 /7	Contribution to sustainable development
3/4	Economic independence									
2/4	Economic efficiency									
3/3	Specific material needs		2 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity				
2/4	Control of acido-basic balance									
4/4	Control of structural integrity of the soil									
1/4	Control of phosphorus and potassium fertility									
3/4	Control of insect pest and diseases		3 /4	Pest control	3 /4	Contribution to economic development				
2/4	Weed control									
2/3	Sanitary quality		3 /4	Product quality	3 /4	Fulfillment of society expectations				
3/3	Technologic and esthetic quality of products									
1/3	Contribution to new sector extension									
2/4	Contribution to employment		4 /4	Implementation ease	2 /4	Fulfillment of farmer expectations	3 /5	Social sustainability		
4/4	Raw material supply									
4/4	Complexity of technical crop management									
3/3	Time spent to acquire technical and economical knowledge									
3/3	Work overload									
1/3	Health risk for users									
3/3	Physical difficulty									
2/4	3 /4	Control of pesticide losses	2 /4	Contribution to water quality	2 /4	Contribution to environment quality	3 /5	Environmental sustainability		
3/4									Surface waters	
1/4	Control of NO3 losses									
4/4	Control of P losses									
4/4	Control of NH3 emissions		2 /4	Contribution to air quality	2 /4	Soil quality preservation				
1/4	Control of N2O emissions									
3/4	Control of pesticide emissions into the air									
4/4	Control of accumulation of toxic elements		4 /4	Soil quality preservation	4 /4	Pressure on water				
3/4	Control of organic matter									
4/4	Control of erosion		4 /4	Pressure on water	4 /4	Pressure on abiotic resources				
3/3	Irrigation water use during critical periods									
3/3	Dependence on water resources									
1/3	Energy consumption		2 /4	Pressure on energy	3 /4	Conservation of biodiversity				
2/3	Energetic efficiency									
4/4	Pressure on phosphorus		2 /4	Macrofauna conservation	3 /4	Flora conservation				
2/4	Flying insect conservation									
2/4	Soil macrofauna conservation									
3/4	Floristic abundance		3 /4	Flora conservation	3 /4	Micro-organism conservation				
2/4	Floristic diversity									
3/4	Micro-organism conservation									

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2/4	Profitability								
3/4	Economic independence								
2/4	Economic efficiency	3	/4	Economic autonomy	2	/4	Economic results		
1/3	Specific material needs								
2/4	Control of acido-basic balance								
3/4	Control of structural integrity of the soil	3	/4	Control of physical and chemical fertility physico-chimique	3	/4	Long term production capacity	2	/5
3/4	Control of phosphorus and potassium fertility							Economic sustainability	
2/4	Control of insect pest and diseases	3	/4	Pest control					
3/4	Weed control								
2/3	Sanitary quality								
2/3	Technologic and esthetic quality of products	2	/4	Product quality	2	/4	Contribution to economic development		
2/3	Contribution to new sector emersion								
2/4	Contribution to employment								
3/4	Raw material supply				3	/4	Fulfillment of society expectations		
3/4	Complexity of technical crop management								
1/3	Time spent to acquire technical and economical knowledge	2	/4	Implementation ease				4	/5
2/3	Work overload				3	/4	Fulfillment of farmer expectations		
3/3	Health risk for users	4	/4	Quality of working conditions					
3/3	Physical difficulty								
3/4	Ground waters	4	/4	Control of pesticide losses					
4/4	Surface waters				4	/4	Contribution to water quality		
4/4	Control of NO3 losses								
4/4	Control of P losses								
4/4	Control of NH3 emissions								
3/4	Control of N2O emissions	4	/4	Contribution to air quality	4	/4	Contribution to environment quality		
4/4	Control of pesticide emissions into the air								
4/4	Control of accumulation of toxic elements								
4/4	Control of organic matter	4	/4	Soil quality preservation					
4/4	Control of erosion								
3/3	Irrigation water use during critical periods				4	/4	Pressure on water	5	/5
3/3	Dependence on water resources								
2/3	Energy consumption				4	/4	Pressure on abiotic resources		
3/3	Energetic efficiency	3	/4	Pressure on energy					
3/4	Pressure on phosphorus								
2/4	Flying insect conservation	3	/4	Macrofauna conservation					
3/4	Soil macrofauna conservation								
2/4	Floristic abundance	3	/4	Flora conservation	3	/4	Conservation of biodiversity		
3/4	Floristic diversity								
3/4	Micro-organism conservation								
									Contribution to sustainable development

4/4	Profitability									
3/4	Economic independence	3	/4	Economic autonomy	4	/4	Economic results	5	/5	Economic sustainability
3/4	Economic efficiency									
1/3	Specific material needs									
3/4	Control of acido-basic balance	2	/4	Control of physical and chemical fertility physico-chimique	3	/4	Long term production capacity			
3/4	Control of structural integrity of the soil									
1/4	Control of phosphorus and potassium fertility									
2/4	Control of insect pest and diseases	3	/4	Pest control	4	/4	Product quality			
3/4	Weed control									
3/3	Sanitary quality	4	/4	Product quality	4	/4	Contribution to economic development			
2/3	Technologic and esthetic quality of products									
2/3	Contribution to new sector emersion									
2/4	Contribution to employment	2	/4	Fulfillment of society expectations	2	/4	Fulfillment of society expectations			
2/4	Raw material supply									
3/4	Complexity of technical crop management	2	/4	Implementation ease	3	/4	Fulfillment of farmer expectations	3	/5	Social sustainability
1/3	Time spent to acquire technical and economical knowledge									
2/3	Work overload	4	/4	Quality of working conditions						
3/3	Health risk for users									
3/3	Physical difficulty									
4/4	Ground waters	4	/4	Control of pesticide losses	4	/4	Contribution to water quality			
4/4	Surface waters									
4/4	Control of NO3 losses									
4/4	Control of P losses									
4/4	Control of NH3 emissions	4	/4	Contribution to air quality	4	/4	Contribution to environment quality			
3/4	Control of N2O emissions									
4/4	Control of pesticide emissions into the air	4	/4	Soil quality preservation	4	/4	Soil quality preservation			
4/4	Control of accumulation of toxic elements									
3/4	Control of organic matter									
4/4	Control of erosion									
3/3	Irrigation water use during critical periods	4	/4	Pressure on water	4	/4	Pressure on water	5	/5	Environmental sustainability
3/3	Dependence on water resources									
2/3	Energy consumption	2	/4	Pressure on energy	3	/4	Pressure on abiotic resources			
2/3	Energetic efficiency									
4/4	Pressure on phosphorus									
3/4	Flying insect conservation	3	/4	Macrofauna conservation	3	/4	Conservation of biodiversity			
3/4	Soil macrofauna conservation									
2/4	Floristic abundance	3	/4	Flora conservation	3	/4	Conservation of biodiversity			
3/4	Floristic diversity									
3/4	Micro-organism conservation									

Contribution to sustainable development

Fr13-Spring pea

3/4	Profitability		3 /4	Economic autonomy	4 /4	Economic results	5 /5	Economic sustainability	Contribution to sustainable development
2/4	Economic independence								
4/4	Economic efficiency								
3/3	Specific material needs								
2/4	Control of acido-basic balance		3 /4	Control of physical and chemical fertility physico-chimique	4 /4	Long term production capacity			
4/4	Control of structural integrity of the soil								
3/4	Control of phosphorus and potassium fertility								
4/4	Control of insect pest and diseases		4 /4	Pest control	3 /4	Contribution to economic development			
3/4	Weed control								
2/3	Sanitary quality		3 /4	Product quality	4 /4	Fulfillment of society expectations			
3/3	Technologic and esthetic quality of products								
2/3	Contribution to new sector emersion								
3/4	Contribution to employment		3 /4	Implementation ease	2 /4	Fulfillment of farmer expectations	4 /5	Social sustainability	
4/4	Raw material supply								
3/4	Complexity of technical crop management								
2/3	Time spent to acquire technical and economical knowledge		1 /4	Quality of working conditions	2 /4	Fulfillment of farmer expectations	4 /5	Social sustainability	
2/3	Work overload								
1/3	Health risk for users								
3/3	Physical difficulty		2 /4	Contribution to water quality	2 /4	Contribution to environment quality	2 /5	Environmental sustainability	
2/4	2 /4	Control of pesticide losses							
2/4									Surface waters
2/4			Control of NO3 losses						
4/4	Control of P losses		2 /4	Contribution to air quality	2 /4	Contribution to environment quality	2 /5	Environmental sustainability	
3/4	Control of NH3 emissions								
2/4	Control of N2O emissions								
2/4	Control of pesticide emissions into the air		4 /4	Soil quality preservation	3 /4	Pressure on abiotic ressources			
4/4	Control of accumulation of toxic elements								
4/4	Control of organic matter								
4/4	Control of erosion		4 /4	Pressure on water	2 /4	Pressure on abiotic ressources			
3/3	Irrigation water use during critical periods								
2/3	Dependence on water ressources								
2/3	Energy consumption		2 /4	Pressure on energy	3 /4	Pressure on abiotic ressources			
2/3	Energetic efficiency								
3/4	Pressure on phosphorus								
2/4	Flying insect conservation		2 /4	Macrofauna conservation	2 /4	Conservation of biodiversity			
2/4	Soil macrofauna conservation								
2/4	Floristic abundance								
2/4	Floristic diversity		2 /4	Flora conservation	3 /4	Pressure on abiotic ressources			
3/4	Micro-organism conservation								

Fr13-Winter pea

4/4	Profitability				4 /4	Economic results	5 /5	Economic sustainability			
2/4	Economic independence	3 /4	Economic autonomy								
4/4	Economic efficiency										
3/3	Specific material needs										
2/4	Control of acido-basic balance		3 /4	Control of physical and chemical fertility physico-chimique	3 /4	Long term production capacity					
4/4	Control of structural integrity of the soil										
3/4	Control of phosphorus and potassium fertility										
4/4	Control of insect pest and diseases		3 /4	Pest control	3 /4	Contribution to economic development					
2/4	Weed control										
2/3	Sanitary quality		3 /4	Product quality	3 /4	Contribution to economic development					
3/3	Technologic and esthetic quality of products										
2/3	Contribution to new sector emersion										
3/4	Contribution to employment				4 /4	Fulfillment of society expectations	4 /5	Social sustainability	5 /7	Contribution to sustainable development	
4/4	Raw material supply										
3/4	Complexity of technical crop management		3 /4	Implementation ease	2 /4	Fulfillment of farmer expectations					
2/3	Time spent to acquire technical and economical knowledge										
2/3	Work overload		1 /4	Quality of working conditions	2 /4	Fulfillment of farmer expectations					
1/3	Health risk for users										
3/3	Physical difficulty										
2/4	Ground waters	2 /4	Control of pesticide losses	2 /4	Contribution to water quality	2 /4					Contribution to environment quality
2/4	Surface waters										
1/4	Control of NO3 losses										
4/4	Control of P losses										
3/4	Control of NH3 emissions		2 /4	Contribution to air quality	2 /4	Contribution to environment quality					
2/4	Control of N2O emissions										
2/4	Control of pesticide emissions into the air										
4/4	Control of accumulation of toxic elements		4 /4	Soil quality preservation	2 /4	Contribution to environment quality					
4/4	Control of organic matter										
4/4	Control of erosion										
3/3	Irrigation water use during critical periods		4 /4	Pressure on water	3 /4	Pressure on abiotic ressources					
3/3	Dependence on water ressources										
2/3	Energy consumption		2 /4	Pressure on energy	3 /4	Pressure on abiotic ressources					
2/3	Energetic efficiency										
3/4	Pressure on phosphorus										
3/4	Flying insect conservation		2 /4	Macrofauna conservation	2 /4	Conservation of biodiversity					
2/4	Soil macrofauna conservation										
3/4	Floristic abundance		2 /4	Flora conservation	2 /4	Conservation of biodiversity					
1/4	Floristic diversity										
3/4	Micro-organism conservation										

