

WP8: Multi-Criteria Decision Support System

Prof. Dr. Udo Buscher, Maria Beranek, Michael Hölscher
TU Dresden, Germany

Weights for different indicators in optimization

	Scenario I Society under voluntary green transition	Scenario II Climate change adaption and green transition	Scenario III Protection and recreation-oriented forest management	Scenario IV Climate change mitigation in a slow- growing bioeconomy
Standing timber		5	10	10
Harvested timber total	50	30	10	20
Periodic annual increment	5	5	5	5
QMD (harvested species)	5	3		
QMD (harvested stand)	10	3		
QMD (standing species)		2	5	
QMD (standing stand)		2	5	
Height variability (SD)				5
Diameter variability (SD)				
Deadwood with decomposition			10	10
Carbon in stock aboveground		5		5
Carbon sequestration	5	15		10
Number of large trees		5	20	10
Visual attractiveness		5	20	10
Risk of economic loss		5		
Shannon index	5	5	15	10
Wood revenues	20	10		

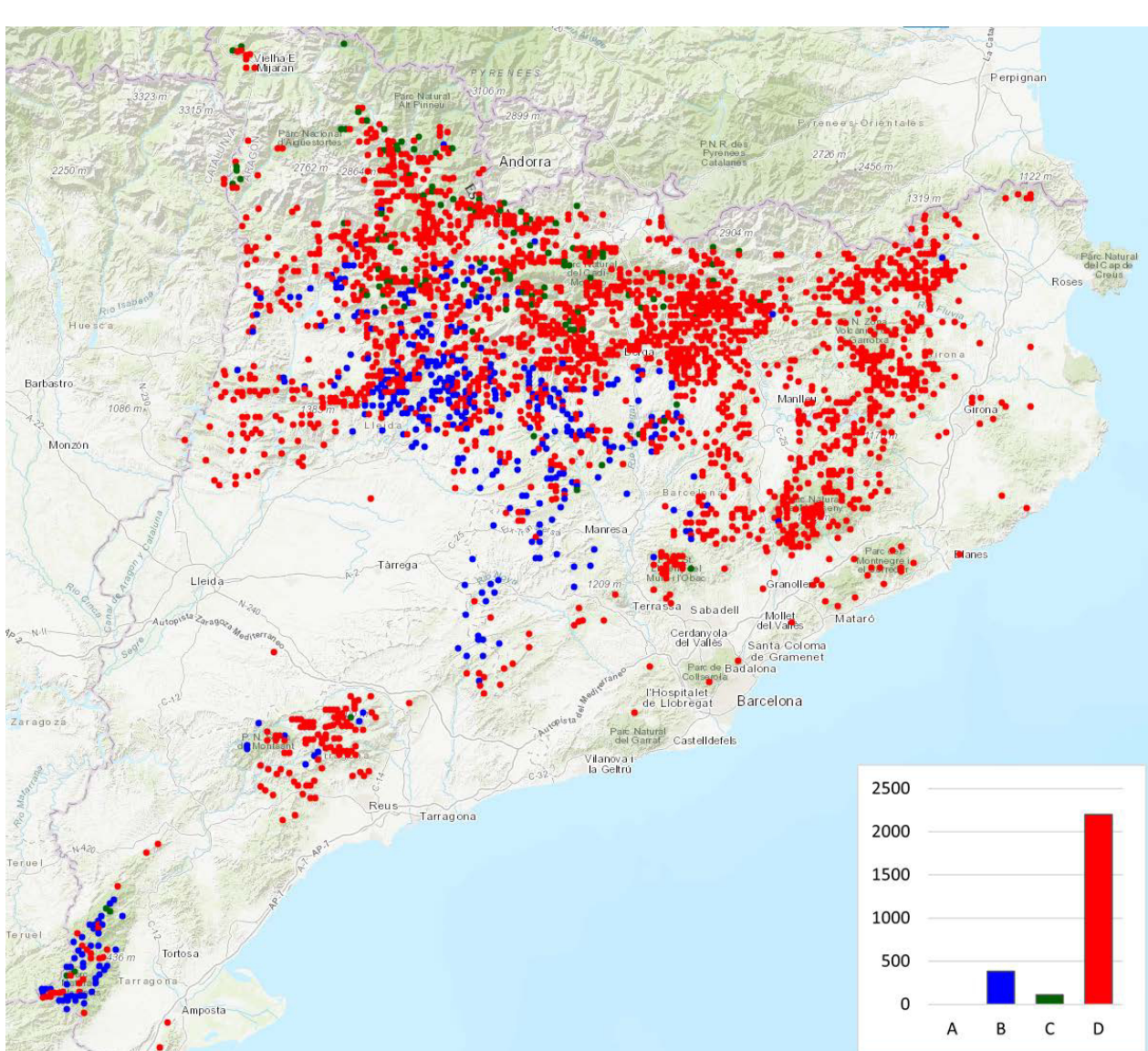
Methodology

For the CSR Catalonia (represented by 2693 cells) four different scenarios were identified. Their characteristics should be reflected by assigning different weights to the indicators available for the MCDSS. This results in different prioritization of the objectives during the optimization. One of the four different management options (A,B,C,D) can be used for each of the cells. The effects of the different weights in the four scenarios can be observed in the figures. The distribution of the management options in CSR Catalonia and the values of the indicators in the radar charts are shown in each case.

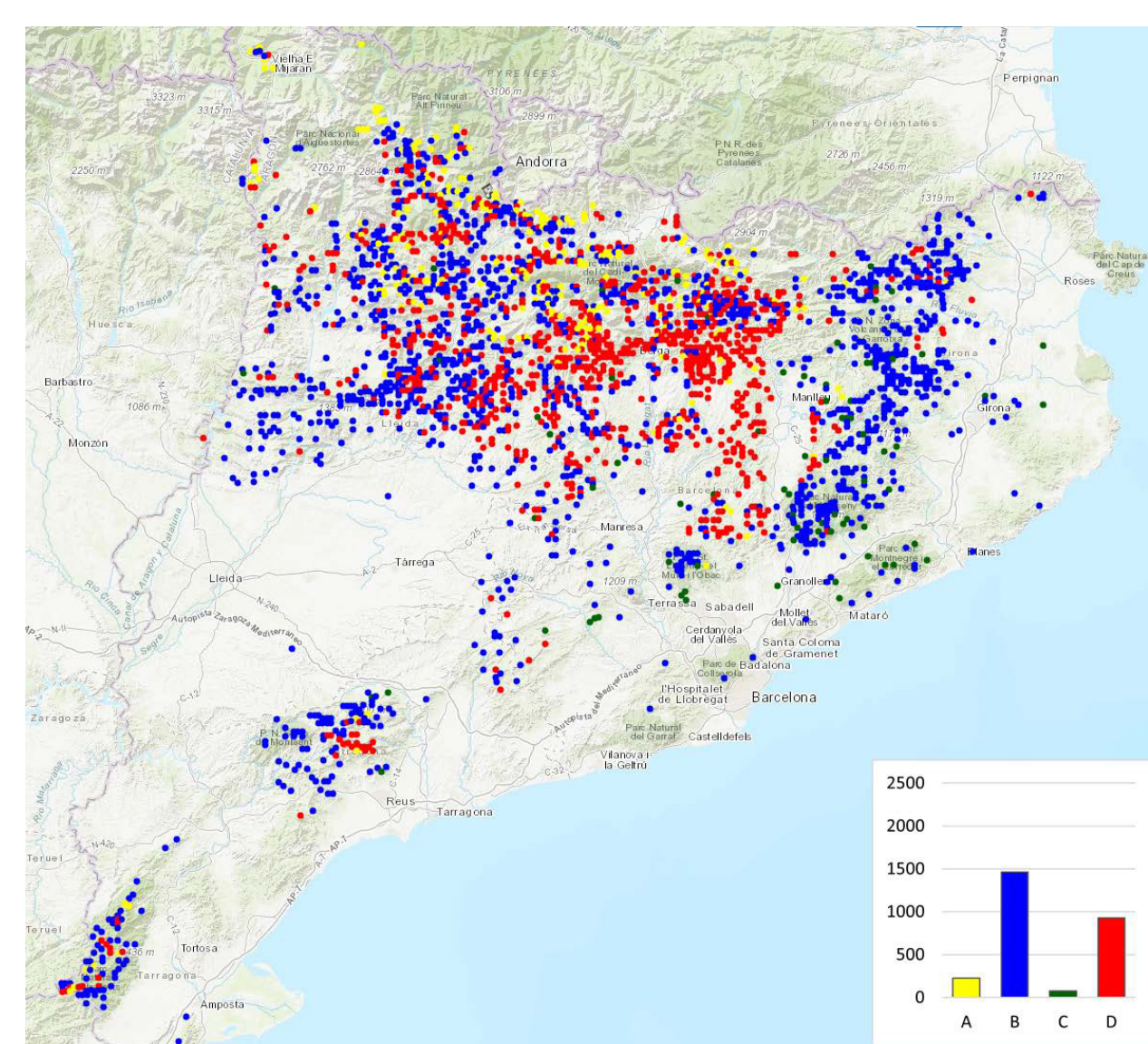
Possible management options in CSR Catalonia

Management option	Description	Colour in map
A	Low intensity management / biodiversity	Yellow
B	Protection function / BAU	Blue
C	Climate-adapted forestry	Green
D	Wood production	Red

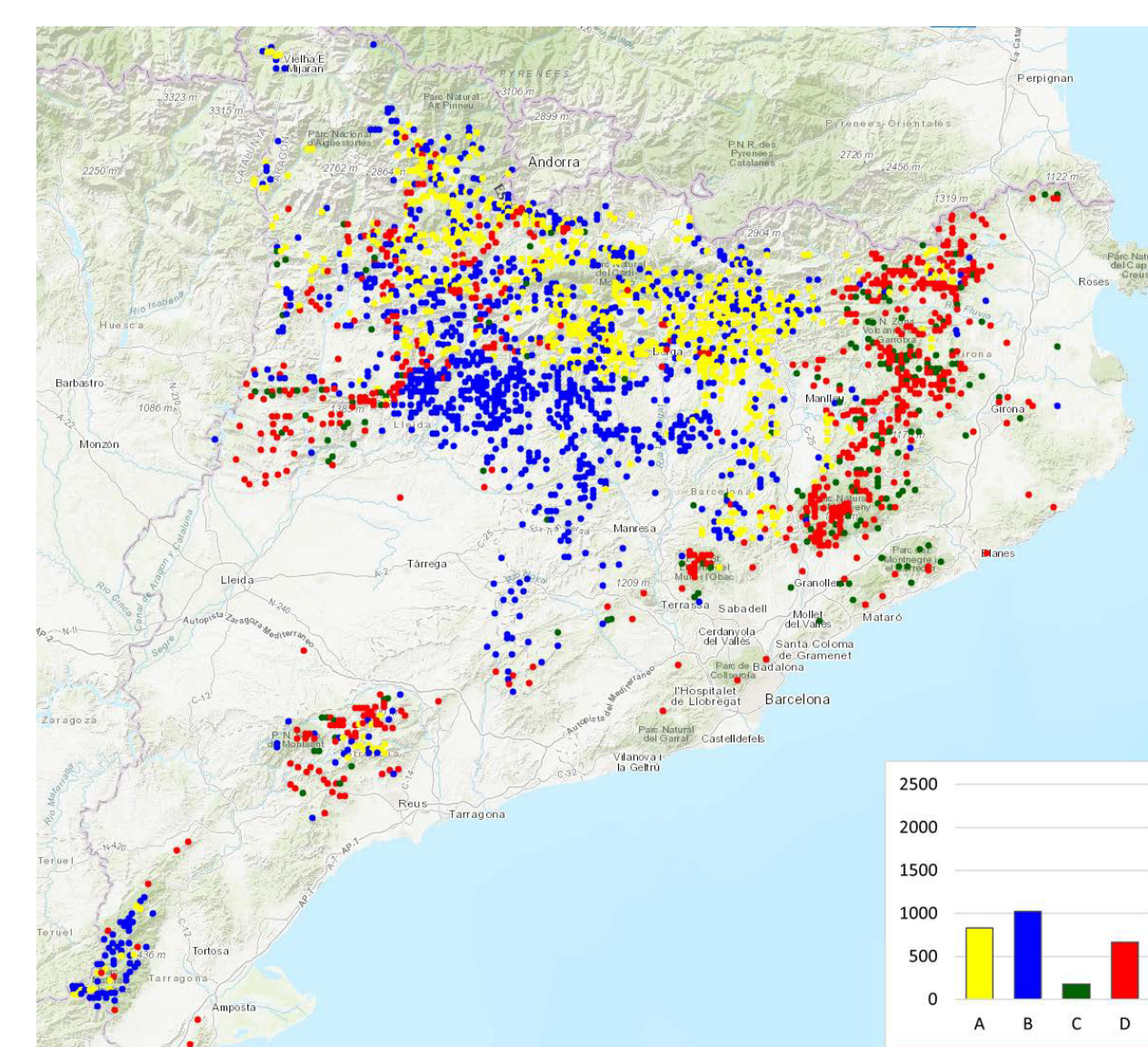
Distribution of management options in the CSR Catalonia for the different scenarios



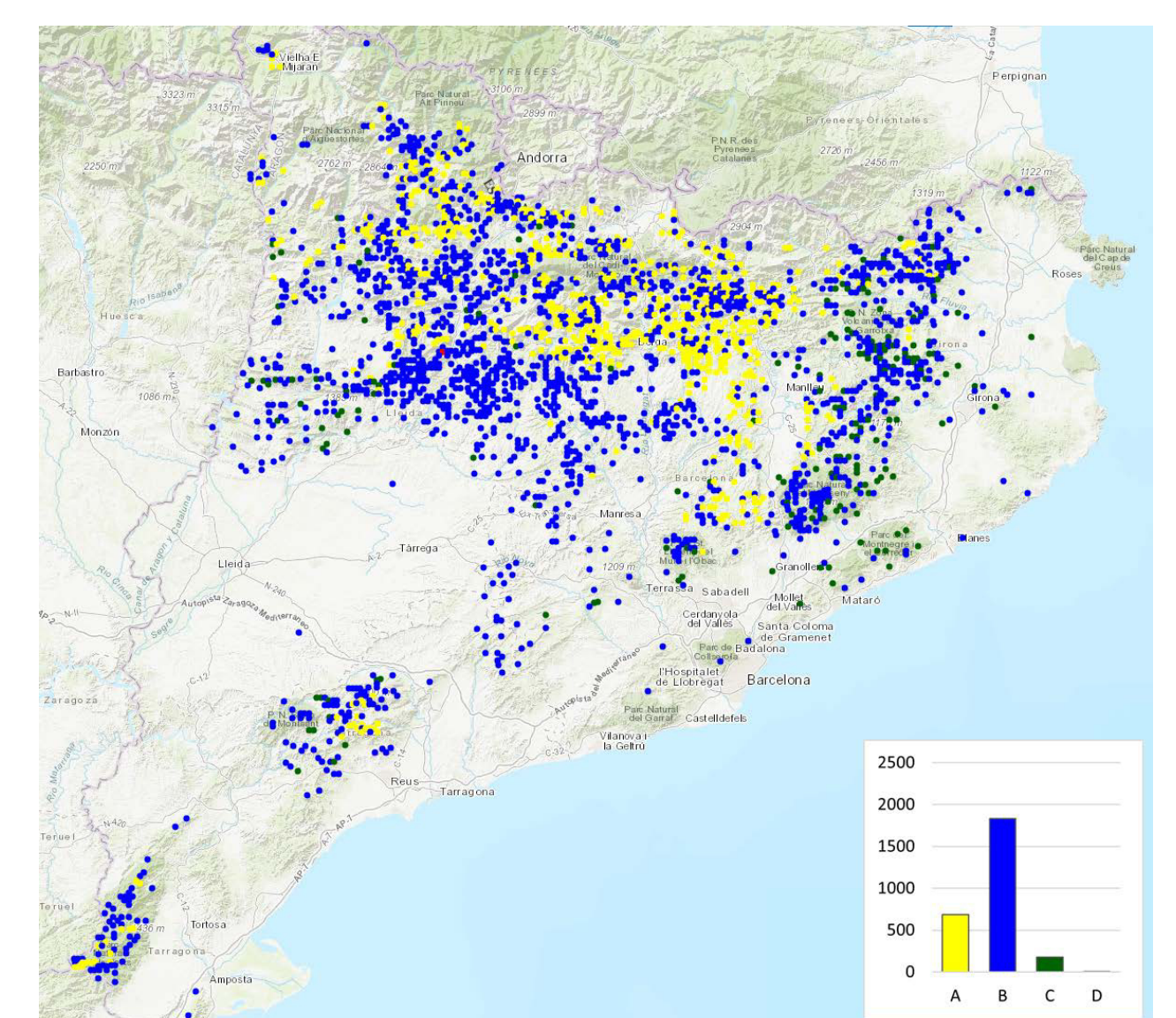
Scenario I



Scenario II

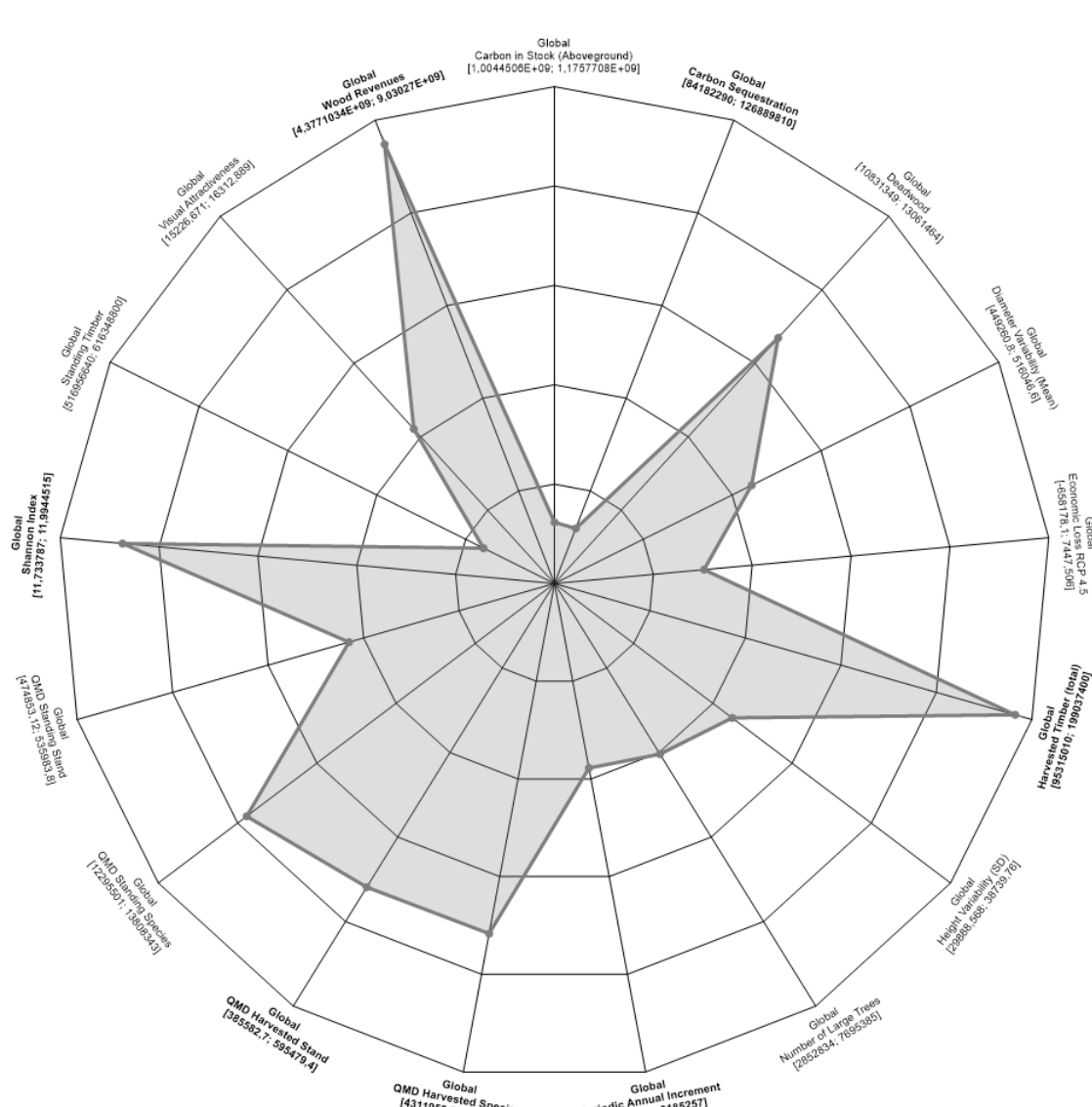


Scenario III

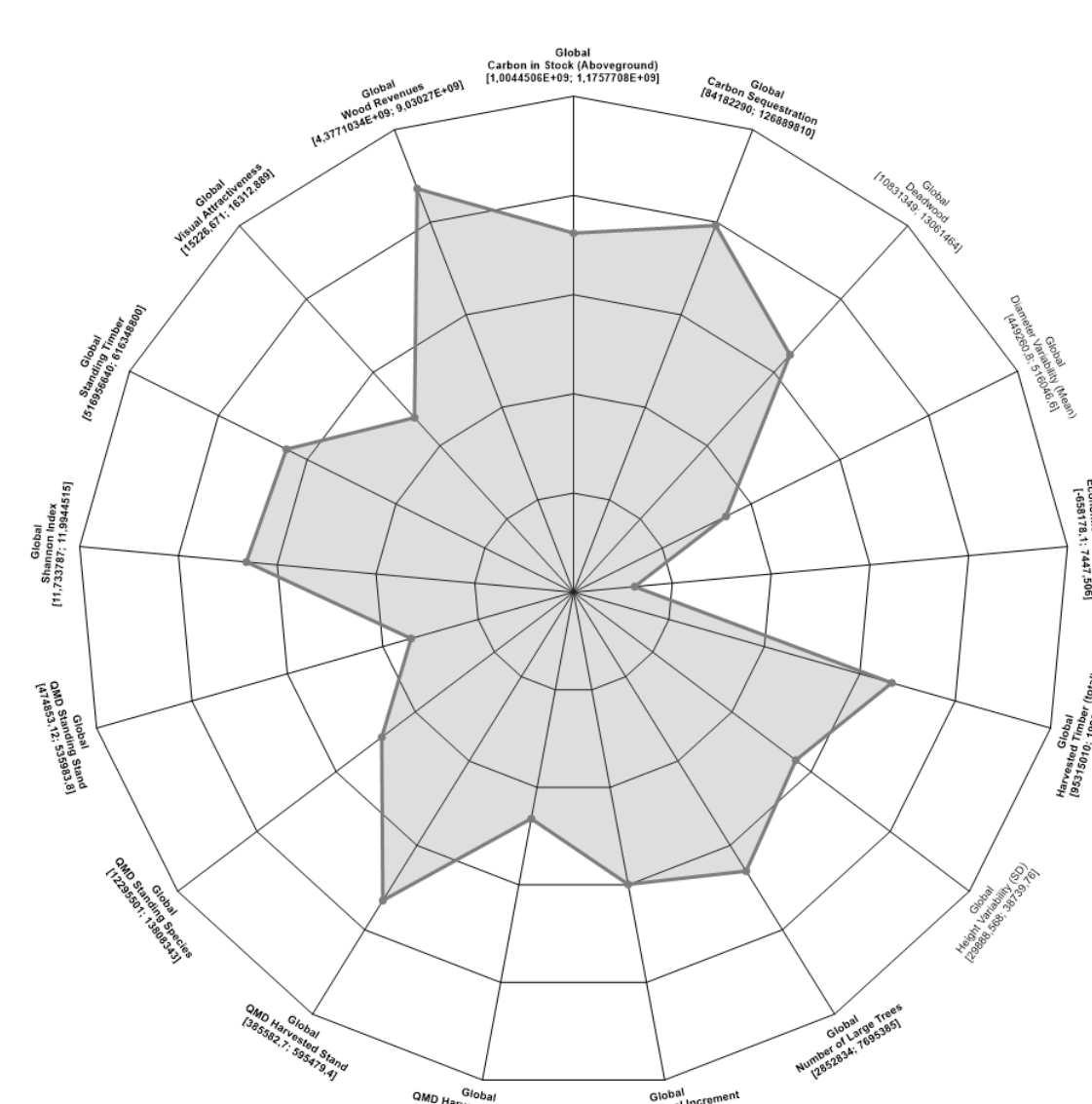


Scenario IV

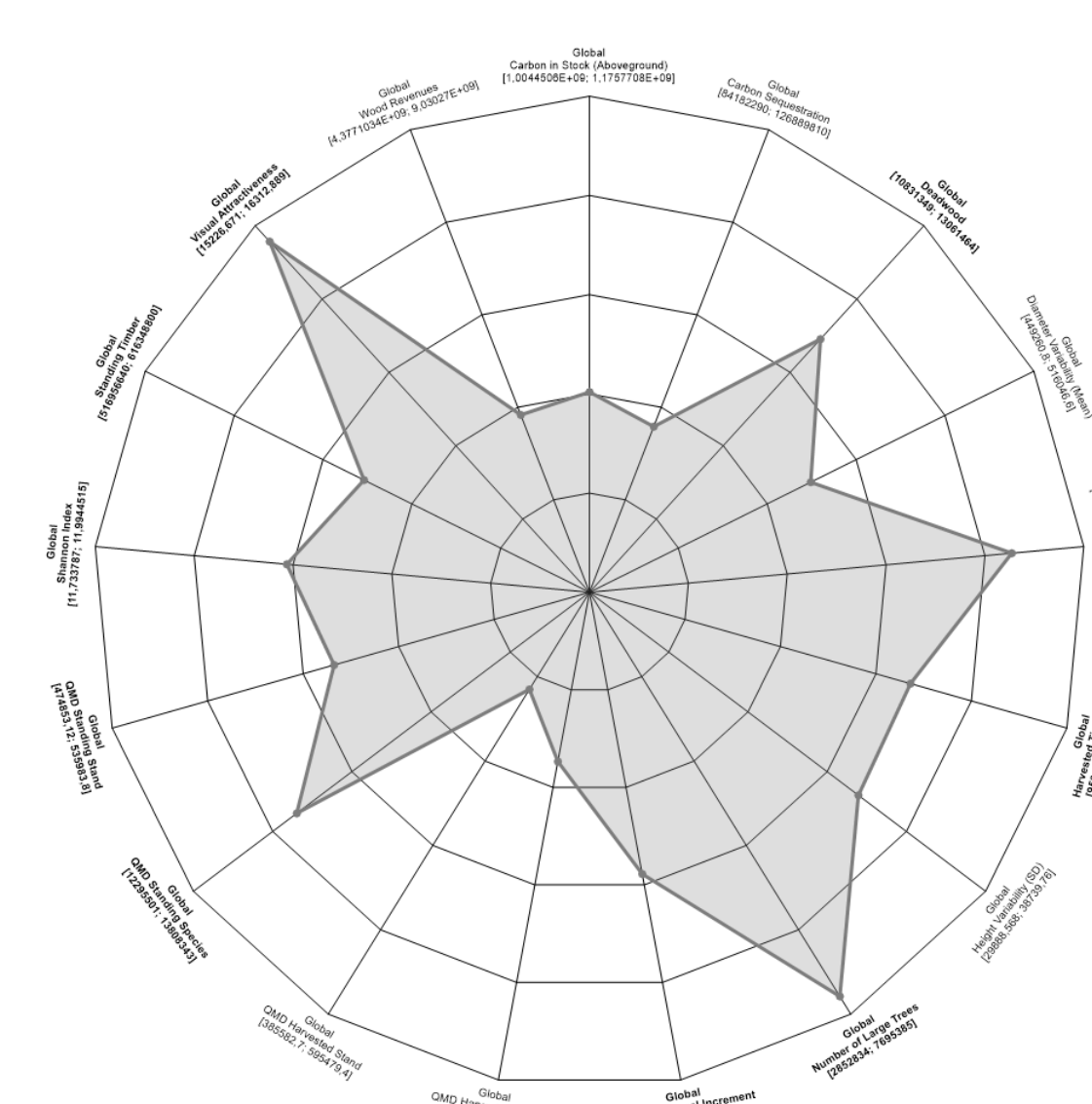
Values of the indicators after optimization for the different scenarios as radar charts



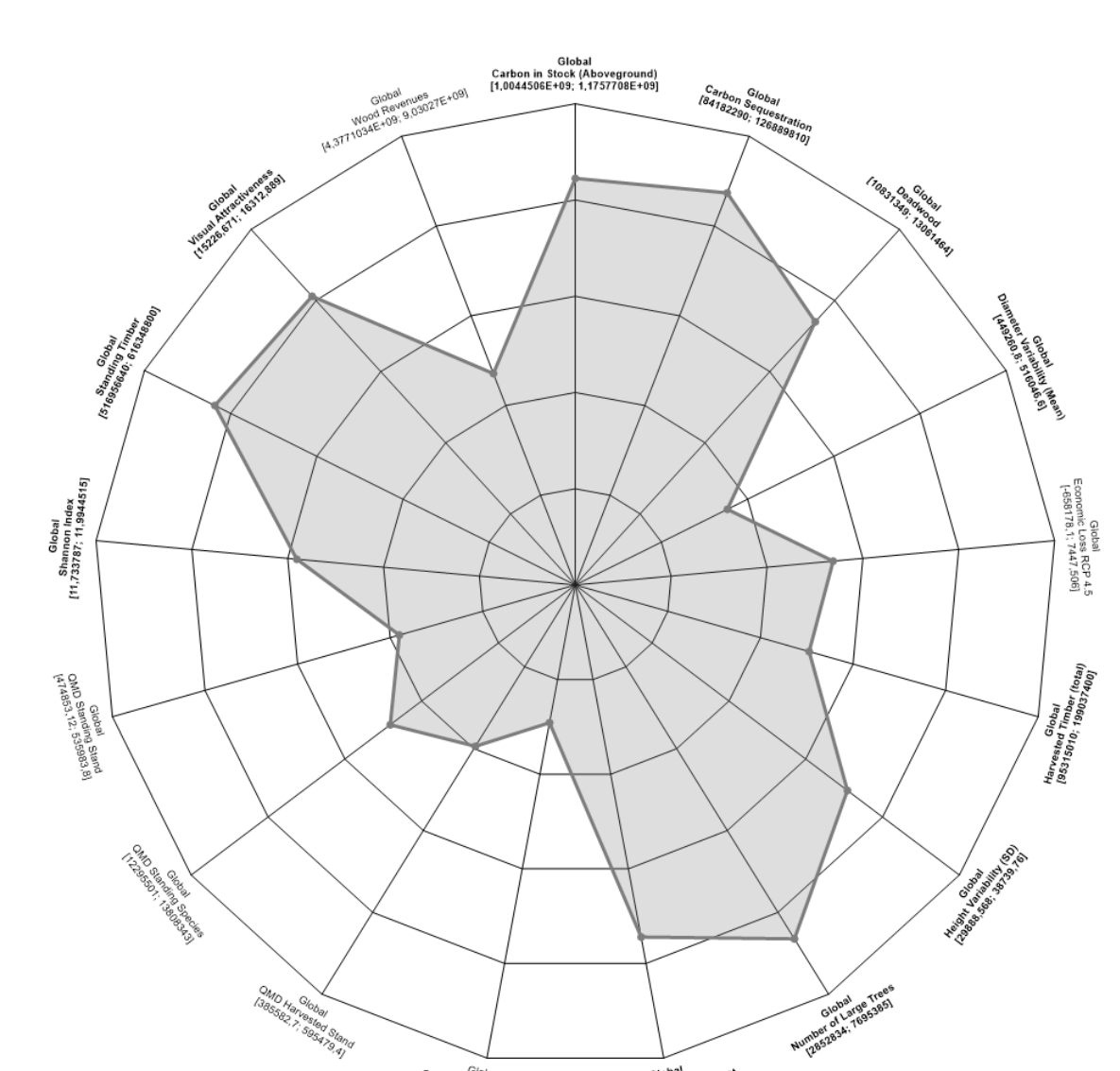
Scenario I



Scenario II



Scenario III



Scenario IV