

Fig. 1. Atmospheric CO₂ has been increasing.

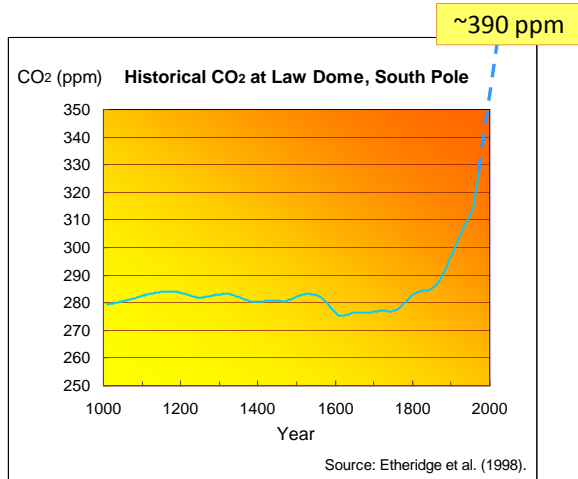
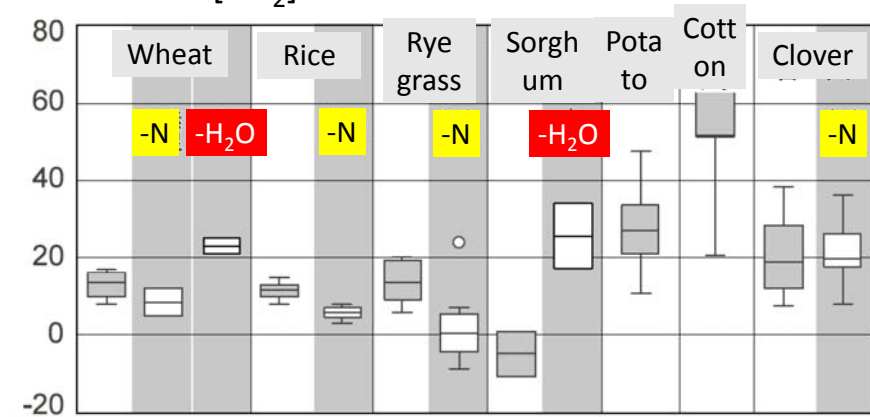


Fig. 2. Increase (%) of crop yields by a 200 ppm increase of [CO₂].



Source: B.A. Kimball et al. (2002) *Advances in Agronomy* 77, 293-368 and H.Y. Kim et al. (2003) *Field Crops Research* 83, 261-270.

Fig. 4a. The earth's carbon cycle: without human disturbances

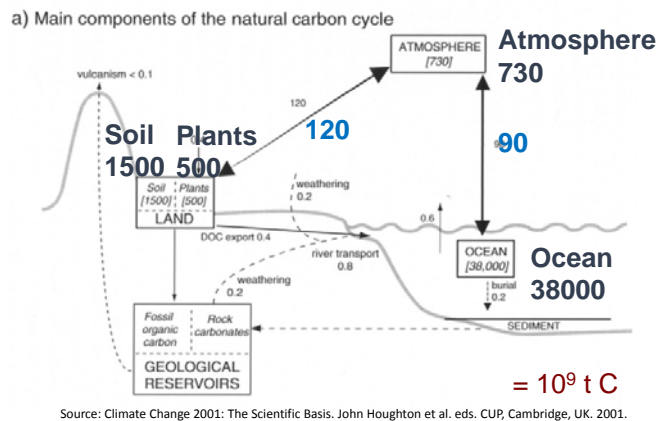


Fig. 4b. The earth's carbon cycle: with human disturbances

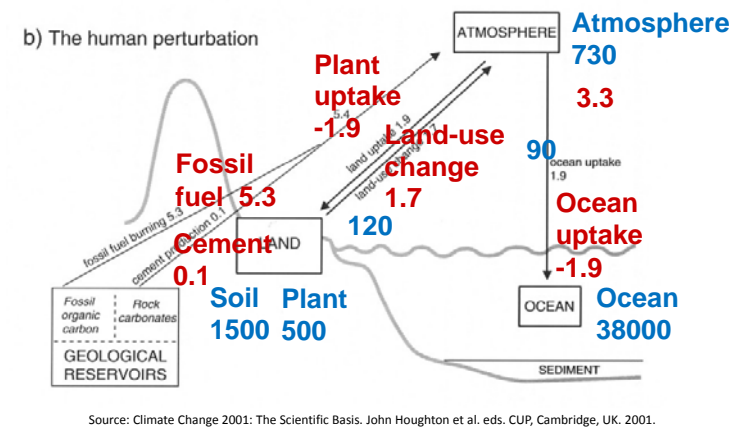


Fig. 3. Predicted effects of temperature rise and CO₂ increase on rice yield: model estimates

TABLE 2
Mean Predicted Changes (%) in Potential Yields Under the 'Fixed' Temperature and CO₂ Scenarios. Temperature Increments are Above the Current Mean Temperatures at Each Site. Changes are Averaged Across all Sites and all Available Years

	Present	Temperature increments			
		+0°C	+1°C	+2°C	+4°C
ORYZA1					
340 ppm	0.0	-7.3	-14.2	-31.0	
1.5 × CO ₂	23.3	14.3	5.6	-15.7	
2 × CO ₂	36.4	26.4	16.8	-7.0	
SIMRIW					
340 ppm	0.0	-4.6	-9.8	-26.2	
1.5 × CO ₂	13.0	7.8	1.9	-16.6	
2 × CO ₂	23.9	18.2	11.7	-8.5	

Matthews et al. (1997)

Fig. 5. Photosynthesis: energy capture and CO₂ fixation

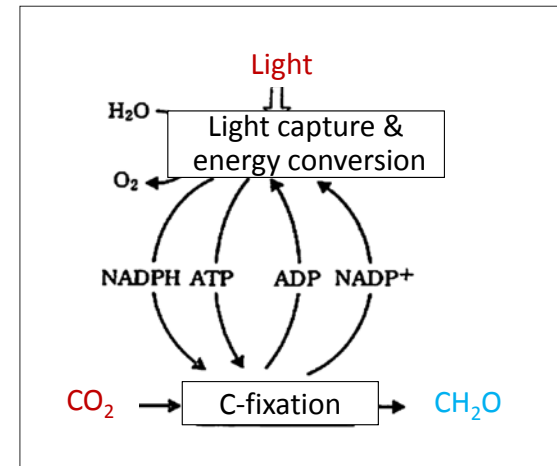


Fig. 6. Transport of CO₂ into plant interior and chloroplasts

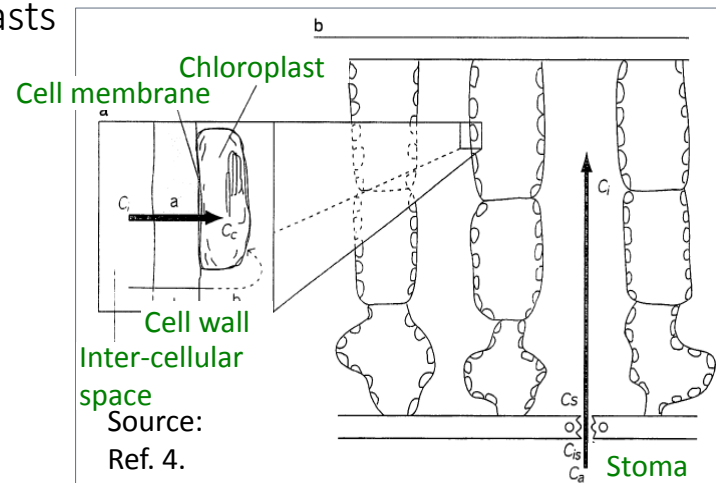


Fig. 7. Calvin-Benson Cycle.

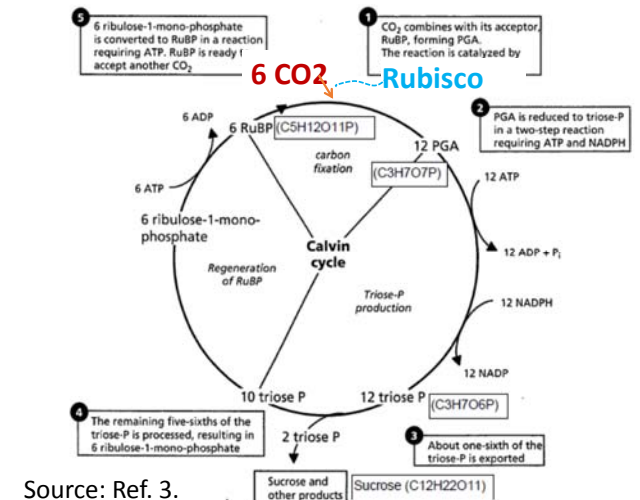


Fig. 8. A 'cartoon' of photosynthesis.

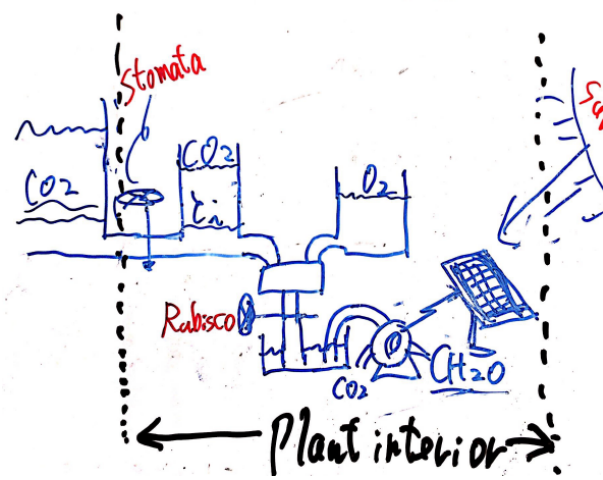
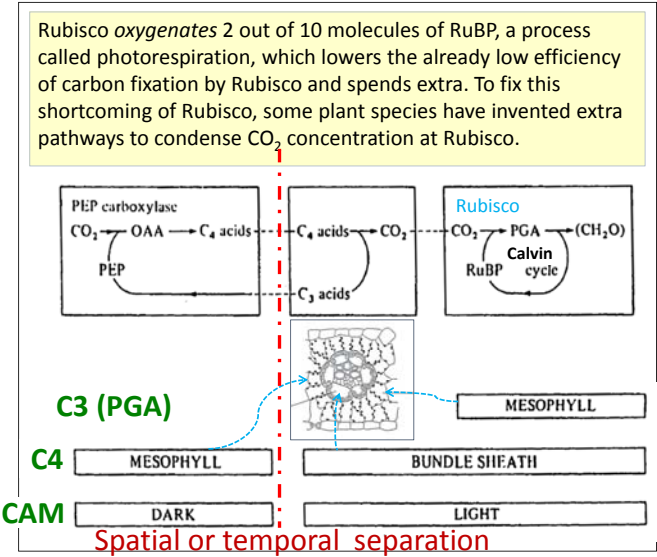


Fig. 9. Extra pathways for higher efficiency of carbon fixation by Rubisco.



Source: Ref. 2.

Fig. 10. A 'cartoon' of C₄ photosynthesis.

