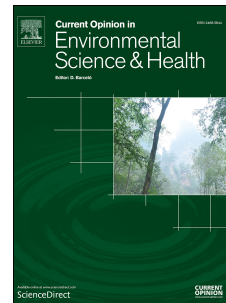


# Accepted Manuscript

Land degradation: multiple environmental consequences and routes to neutrality

F.A.L. Pacheco, L.F. Sanches Fernandes, R.F. Valle Junior, C.A. Valera, T.C.T. Pissarra



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3 Pacheco, F.A.L.<sup>a</sup>, Sanches Fernandes, L.F.<sup>b</sup>, Valle Junior, R.F.<sup>c</sup>, Valera, C.A.<sup>d,e</sup>,  
4 Pissarra, T.C.T.<sup>e</sup>

5

6 <sup>a</sup>Centro de Química de Vila Real, Universidade de Trás-os-Montes e Alto Douro, Ap 1013, 5001-801,  
7 Vila Real, Portugal

8 <sup>b</sup>Centro de Investigação e Tecnologias Agroambientais e Biológicas, Universidade de Trás-os-Montes e  
9 Alto Douro, Ap 1013, 5001-801, Vila Real, Portugal

10 <sup>c</sup>Instituto Federal do Triângulo Mineiro, Uberaba, Estado de Minas Gerais, Brasil.

11 <sup>d</sup>Promotoria de Justiça do Ministério Público do Estado de Minas Gerais, Brasil.

12 <sup>e</sup>UNESP – Universidade Estadual Paulista, Campus de Jaboticabal, Estado de São Paulo, Brasil.

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**15 ABSTRACT**

16 Degradation is currently affecting 25% of Earth's land and 40% of Earth's agricultural  
17 land. The environmental consequences of land degradation are vast, including amplified  
18 soil losses, water quality deterioration, biodiversity decline and degradation of  
19 ecosystem services and corresponding values, especially if actual land uses disrespect  
20 capability (natural use), in which cases land is in a state of environmental conflict. The  
21 global cost of land degradation just looking to agriculture approaches US\$ 500  
22 billion/yr. Facing this terrible ecological and economic scenarios, the United Nations  
23 General Assembly adopted the "Sustainable Development Goals" in 2015, which  
24 comprise a target to combat desertification and restore degraded land. The aim is to  
25 achieve land degradation neutrality by 2030. Framework models have already been  
26 proposed to unpack this innovative concept and address its operation through the Rio  
27 Conventions. While implementing these models, which follow the response hierarchy of  
28 avoid > reduce > reverse land degradation, environmental consequences of land  
29 degradation should be compensated by sustainable land management practices that  
30 render the Earth no net loss of the land-based natural capital relative to a baseline. The  
31 ultimate goal is however to attain self sustainability whereby environmental and  
32 production potentials are supported by self-regulating processes within the system.

33

34 *Key-words:* soil erosion; degradation of stream water quality; biodiversity decline;  
35 degradation of ecosystem services; environmental land use conflicts; land degradation;  
36 neutrality

37

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