Soil as a source and/or sink for carbon

Carbon sink and source capacity of the soil is the most debated topic in recent decades to minimize carbon (C) release to the atmosphere. The ambiguity related to the sink capacity of the soil is yet to be resolved, resulting in continuous publications with various types of analysis to prove the hypothesis that 'soils are sink or source of carbon'. With this background the article by Dinakaran and Krishnayya[1] makes an attempt to analyse the quantity of carbon in soil profiles of various land-use systems. However, there is no mention on the generic classification of soil types in each of these land-use systems as the particle size distribution appears to vary largely, which is a critical flaw in the manuscript. Arguably, looking at the dataset suggests that there appears to be variation in soil C content in different land-use systems with annual to perennial vegetation types. It makes sense to argue that interpretation cannot be drawn as soils are sinks for C rather than how vegetation types affect accretion of C in soils. The authors clearly fail to explain the discrepancies in the many fold increase of C values in aggregate size classes of the same soil depth. The C values were analysed taking data from tables 2 and 3 of the article[1]. Table 2 presents C values in different depth layers, and table 3 presents C values in aggregate size classes of corresponding depth layers of the same soil sample, thus qualifying the comparability for each site. For instance, the dataset for site 1, depth 0–2 cm soil has a C value of 8.9 t/ha. Interestingly, pooled C value in the aggregates (coming from the same depth of 0–2 cm) is 34.6 t/ha, which is 3.8-fold higher than the C value in the same soil depth layer. There appear to be critical flaws in the dataset leading to speculative inference, which is clear in the authors' ambiguous explanation and lack of clarity in the concept[1]. There appears to be a critical problem as to why the pooled C value in aggregates is many fold higher than that in the respective soil depth layer, which is not a possibility. Moreover, interpretation is not appropriate in the given case of comparison of land-use systems and vegetation types. The authors must address this issue so that readers will not be misrepresented about the concept of soil as a source and/or sink for C.

1. Dinakaran, J. and Krishnayya, N. S. R., *Curr. Sci.*, 2008, **94**, 1144–1150.

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Response:

The title of our article is illustrative of what we wish to say. It is to look into the impact of vegetal cover on the heterogeneity of soil organic carbon (SOC). General soil characteristics as available have been mentioned in the article. Uniformity of landscape mentioned is with reference to the vegetal cover. There is no 'appearance' in the variation of SOC. It is a fact coming from the dataset generated and supported by statistical analysis. Litter is the main factor for SOC inputs into the soil. These data are large and would be published later. Variations in the addition of C by vegetation have differently altered the SOC of soils and this prompted us to mention about their sink capacity. Tables 2 and 3 may not be viewed together. Values given in table 3 are for tonnes per hectare of the same particle size, i.e. 8.7 t ha^{-1} is present in one hectare area of >500–2000 μm size particles. It is not in an aggregate soil sample (of different particle sizes). Hence the summation cannot be equated with the values given in table 2.

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Impact factor does not have to monopolize scientific journals ranking

Much has been written about impact factor (IF) and problems concerned with it when it comes to comparing journals and individual scientists. Despite all these problems, however, the IF is used as a standard quantitative measure of the quality of journals and scientists and apparently this is a problem worldwide.

Recently, Mishra and Patel[1], entering a discussion on the usefulness of the IF, mentioned that 'the impact factor, as calculated by Thomson Scientific, is the only quantitative value for ranking scientific journals'. It is not necessarily so: the IF is *not* the only quantitative measure for ranking journals. Other such measures include, for example, Hirsch's *h*-index and its several variations, or Egghe's *g*-index. There is also the so-called SJR (SCImago Journal Rank), published by the portal SCImago Journal & Country Rank, which uses information from Elsevier's Scopus database.

That the IF monopolized the field of scientific journal ranking is a fact. This can be changed, but not without a change in the approach of the scientists and the bureaucrats who evaluate the scientists. This is not to say that the IF is a necessary evil and has no actual merits. But it must be stressed that it is not the only quantitative measure for scientific evaluation. With only the IF as such a measure, bibliometrics would be uninteresting, had it existed at all.

1. Mishra, B. K. and Patel, S., *Curr. Sci.*, 2009, **96**, 324.

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