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## ***Interactive comment on “Increasing biomass carbon stocks in trees outside forests in China over the last three decades” by Z. D. Guo et al.***

**Anonymous Referee #2**

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This paper estimated the carbon stocks and sinks of trees out of forests. The spatial and temporal variations and possible drivers were also explored. Overall, this is an interesting and well-written paper, which is publishable after some modifications.

1. Equations 3 and 4 were used to convert volume into biomass for woodlands and four-side green tress, respectively. More detailed information on the development of them is useful. Were the volumes corresponding to different coverage rates given in the inventory of 1994–1998?

2. The continuous biomass expansion factor (CBEF) method might overestimate biomass of young forests (Pan et al., 2004). Does it might induce uncertainties in estimated carbon stocks and sinks in this paper?

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3.You assumed the biomass carbon density of shrubberies equal to 22.92 Mg ha<sup>-1</sup>. In reality, this value should change spatially. This simplification might cause spatial bias of estimated carbon stocks and sinks of shrubberies. Can carbon stocks of shrubberies be estimated using other methods, for example , remote sensing?

4.There are many uncertainties in the estimated carbon stocks and sinks related to algorithms and data use. Could you quantitatively estimate uncertainties?

5.There are some published studies estimating carbon stocks and sinks for trees out of forests at provincial and national levels. The comparison of your results with these published values will be interesting.

6.The text in Figures 2-4 is not clear.

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/11/C723/2014/bgd-11-C723-2014-supplement.pdf>

Interactive comment on Biogeosciences Discuss., 11, 3777, 2014.

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