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Hydrology and Earth System Sciences Discussions

Interactive comment on "Consumptive water use associated with food waste: case study of fresh mango in Australia" *by* B. G. Ridoutt et al.

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The authors wish to thank the Reviewer for his thoughtful and constructive comments.

1. Figures on consumptive water use for food production

We agree wholeheartedly with the Reviewer's point that not all water consumed in food production has an equal opportunity to be used for alternative purposes. This is one of the drivers behind the development of the revised approach to product water footprinting developed by Ridoutt and Pfister (Global Environmental Change, in press, DOI:10.1016/j.gloenvcha.2009.08.003) – the methodology which was applied to the mango food chain in this paper.

2. Regarding the cost to reduce waste

The point is made that the expense to reduce waste may not always be justified from a purely financial perspective and one reason why more is not done to reduce waste is that many of the environmental costs are externalised. Unfortunately, we do not have data to support an expanded discussion of this point in the current manuscript.

However, we do perceive that environmental labelling is one way of making environmental burdens transparent and this will lead to companies and individuals taking greater responsibility for these burdens.

In regard to the examples cited on p. 5089, we are not in a position to be able to describe quantitatively the extent to which they are representative of industry generally. However, we again perceive that examples of this kind are becoming increasingly common, especially with respect to GHG emission reductions.

3. Regarding the impact of land use on blue water resources

We are not suggesting that mango orchards could not be used for other agricultural purposes, e.g. growing bananas or melons. Furthermore, we do not have an opinion about which crop is grown. Our interest is in describing the impact of mango farming on the availability of blue water resources. It is for this purpose that we compare the conversion of green water to blue for a mango orchard with a (reference) natural ecosystem.

4. Regarding the incremental nature of waste in many steps and over many days

The Reviewer raises a collection of interesting points which are relevant to any strategy to reduce waste.

Our point of view is that techniques such as carbon and water footprinting have the potential to raise awareness of the environmental consequences of waste and provide the evidence base to support policy development in the private and public sectors. The target groups for this information are as diverse as the many stakeholders who have

the potential to reduce waste (i.e. from plant breeders through to consumers).

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