Interactive comment on "Marginal cost curves for water footprint reduction in irrigated agriculture: guiding a cost-effective reduction of crop water consumption to a benchmark or permit level" by Abebe D. Chukalla et al.

Reply to Anonymous Referee #2
We thank Referee #2 for the comments; below we give the reply to the comments.

Comment
Thanks to the Authors for the reply. I feel they answered to all points. However, I still have a question. I can understand this is an example of the methodology adopted and that the focus is not specifically on the single crops of the single countries, but maize cannot be cultivated in UK due to local weather and temperatures. Saying that maize is cultivated there is a conceptual mistake and I cannot understand how you could find data to calculate its Water Footprint.

Reply:
The referee's comment is correct in that UK grows little grain maize and the majority used in the country is imported (Statistics-GOV.UK, 2017a). However, maize is still cultivated under both rain-fed and irrigation conditions; according to FAO-aquastat (2017) the irrigated maize is sown in April and covering 4,300 ha in 2007. The total maize cultivation in UK covered 197,000 ha in 2016 (Statistics-GOV.UK, 2017b). According to (Statistics-GOV.UK, 2017b, a) most of the maize production in UK is used for fodder, followed by bioenergy and grain maize: 76% fodder maize, 19% bioenergy maize, and 5% grain maize in 2015. Water footprint calculations were done based on simulations with the AquaCrop model using general validated crop files (Steduto et al., 2011) and local specific growing conditions. AquaCrop simulated maize yields in the UK in the range of 9.5 to 13 t ha^{-1} for different soil types and hydrological years, which is in agreement to the maize yield 9 to 11 t ha^{-1} reported in literature (Marsh, 2017).

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