Smallholder farms in western Kenya have limited soil greenhouse gas fluxes Revised draft review

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The author have made some effort to clarify the level of uncertainty which characterize their approach.
The intent of the authors is clear, to provide the emission strength of the soils of small farms of central east Africa under their typical routine management, which involves limited disturbance and low fertilizer inputs.
However, I still am a bit puzzled on the validity of the approach in terms of usefulness for tier II approaches, as we cannot always come out with a precise idea of EFs and which are the drivers of fluxes.
If you do not distinguish between background and fertilizer induced emissions, how can we differentiate among higher fluxes due to good soil quality, from higher fluxes due solely to fertilizer addition, from higher fluxes due to the combination of the two?
I do understand the background concept. On average savannas emit xx N2O, grassland yy, rain forest zz, degraded land aa, stratified by climate and soil quality. Ok. So if you get a background emission where the N cycle is in equilibrium with the land use/cover then you have an expected average N flux which is predictable and stable. But if you have also the fertilization variable how do we scale up without FIE Efs? What about if a poor farmer decides to add the double of manure that year? Or if it changes in few years due to new policies? The N cycle of the ecosystem (background) would not change but the fertilizer induced emission would. So Can we use these data to scale up the results to other small farm realities over Africa? And over time? It is not a chance that the IPCC approach based on background emission and FIE Efs is so widely used to scale up agricultural emissions, it is because it is quite flexible.
Can we say we have thresholds which apply here? For example rainfall inputs and water content. Do we have a threshold above which FIE EFs are >0? Or is a matter of N competition? i.e below a certain amount of N plant and microbes competed for N and uptake it quickly? Do we have a threshold here? Or is a matter of acidity? Or low organic matter or a combination?
My question is which are the limits for using the emissions strengths of GHG that you are providing here for scaling up studies on agriculture contribution? Geographic? Based on which properties? Soil? Climate? Or can we extrapolate to all small farms in Africa? Which is the boundary? Does is also depend on the level of fertilizer used? Can we say that the N2O FIE of these areas is zero below a limit of xx kg of N applied to the land rather than 1% or 2% as reported by IPCC?

I think that the text might be improved in the discussion to help the reader to use these data. It is in the interest of the authors that data users understand the extent at which these data are valid and can be used and how well they can replace Tier I IPCC EFs.

Some specific comments

Table 1: I still think that the way data are reported in table 1 is not optimal. There are strange numbers. For example Predotova et al. 2010 you write N2O: 48 – 92 kg ha-1 a-1 or Lompo et al. 2012 you write N2O: 80.5 – 113.4 kg ha-1 a-1. What are these number? And how do I read them?

The observed rates would have a maximum of 58 kg N_N2O ha-1 a-1 and 72 kg N_N2O ha-1 a-1, which with an emission factor of 1% would mean a fertilization input of 5800 and 7200 respectively, which is non sense. Same would be for other values you have there. It means that what you are representing is not realistic in its unit. If you are representing a minimum-maximum rate it could be a daily or hourly peak that than fades away, so you need to leave it as a daily or hourly maximum, but then you also need to provide an average or mean for the presented data. If you instead say that your site really receives 7200 kg of fertilizer, than we need to see this somewhere as a new column "N inputs" so that we know that in that specific site there was some lunatic adding lots of N and it is not that we have strange biogeochemistry going on.

Past comment MM3: now line 108. I was very surprised to find out that you have a tropical rainforest AF Koppen climate, because the east Africa does not definitively has a tropical rainforest climate. Just looking a Koppen classification East Africa is characterized by: trop.savanna (AW), semiarid (Bsh) and hot desert (Bwh) climates. So I checked the map and indeed you are in the only little dark blue spot of Kenya (AF). So as you are scaling up your result for East Africa I wonder how much you sites and your result are representative of the rest of East Africa??? For sure if N2O background is low for you will be also low for drier climates. But what about where N2O fluxes are > than zero? Can we say fluxes are expected as they would be in savannas' and semi arid areas of Ethiopia?

Line 483: Why we cannot just assume that higher water content limit CH4 diffusion from the atmosphere into the soil and thus CH4 uptake rates?

523-526: I don't think you can make such a statement from the work of someone else, there are many variable which might influence N2O emissions.