

Effects of applying direct land use change in GHG-balance

- the case of cocoa agriculture

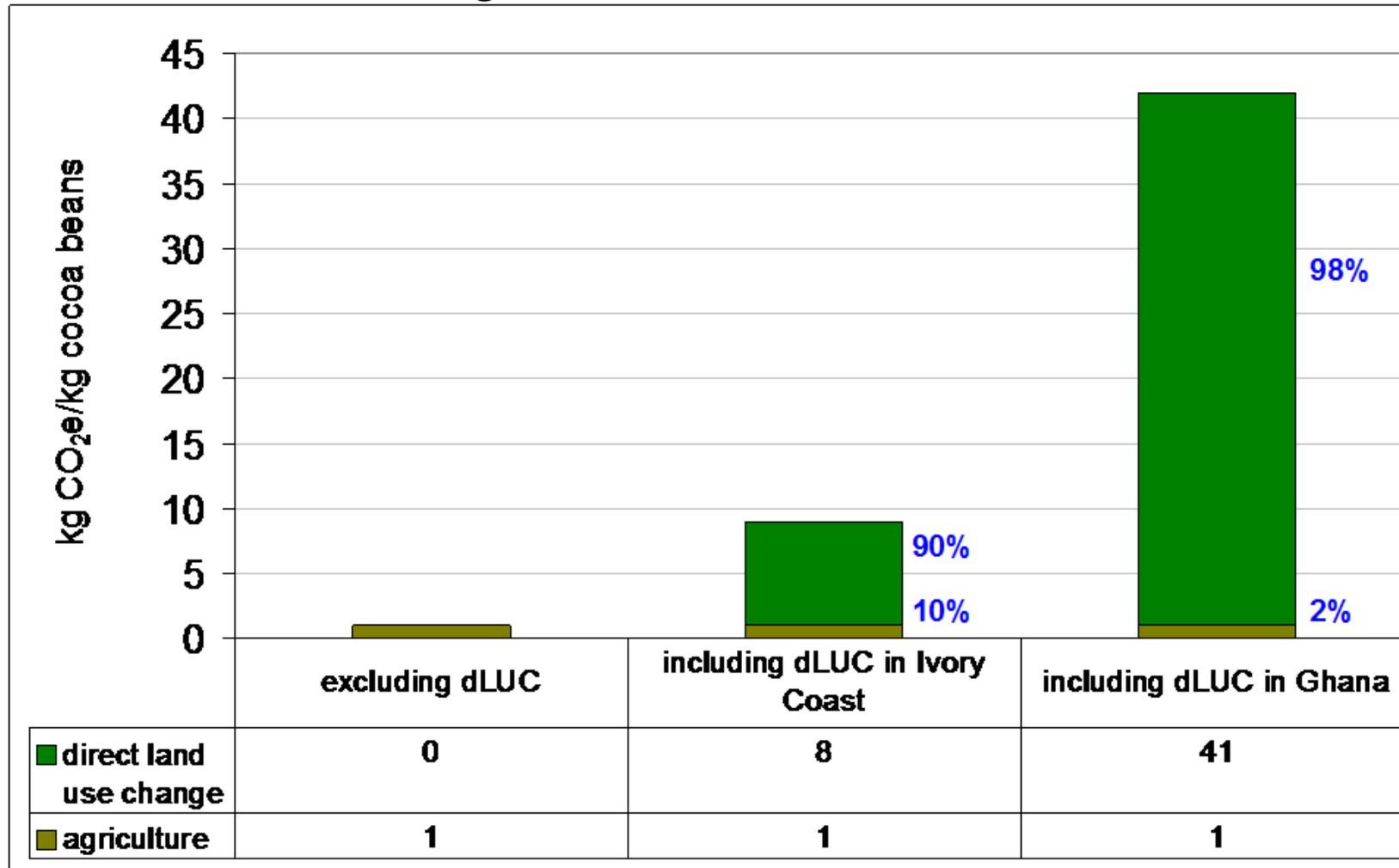
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PCF of chocolate pastry

- Investigated the PCF of a pastry product with chocolate topping
- FU is one package of pastry, ready for consumption
- PCF included the whole life cycle from production of agricultural raw materials, processing, distribution and disposal of packaging.
- Result of the PCF indicated that chocolate (incl. LUC) had a very significant impact on the total.

GHG emissions of cocoa

Comparison of GHG emission including and excluding direct land use change



• Source (Wiltshire et al. 2009, FAOSTAT)

Conclusions

- The place of origin of cocoa is very important, due to the large differences in individual countries.
- Cocoa plantations established pre 1990 have an advantage, even if only established 1989! – methodological problem
- For PCF analyses, point of origin of cocoa should be averaged over larger time frame to account for changes in procurement behavior.
- LUC impacts have a large influence on the overall result and can dominate the GHG balance!!!
- In case of LCAs for chocolate, LUC impacts need to be considered.
- The uncertainty associated with direct LUC and indirect LUC is still relatively large, due to lacking data and methodological difficulties. Further investigation is needed.
- The impact of the indirect LUC has not been quantified, but should also be considered (s. Memorandum PCF of German Federal Ministry for the Environment - BMU).

Thank you for your attention!

Questions:

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