Peer reviewer:

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Peer review of the study

Balancing of greenhouse gas emission of rice
dated 05.11.2009, conducted by Thomas Kägi, myclimate

Initial situation and assignment

This study examines the question if there are products out of the Migros rice assortment that are significantly more advantageous from a climate perspective than other products. Therefore, climate impact of different standard long grain rice was analyzed and on basis of these results basmati, perfumed, risotto and milk rice were evaluated. Carbotech AG was assigned with the conduct of a critical review.

Criteria and procedure of the critical review

Experience shows that the critical points of life cycle assessments are the definitions of parameters such as goal of the study, comparison basis and system boundaries. Accordingly, especially these points are verified in a peer review. Additionally the used data, assumptions, calculations, data communications, etc. were reviewed on consistency and adequacy by means of a relevance based methodical sample.

According to ISO 14040ff, the process of a peer review shall ensure, that

• the applied methods are consistent with the international standard,
• the applied methods are scientifically and technically valid and applicable,
• the used data are appropriate and reasonable in relation to the goal of the study,
• the conclusions consider the goals and limitations of the study,
• the report is transparent and consistent.

Within this review all of these points were examined and the results were reviewed for their plausibility.

The most important decisions, intermediate results as well as their plausibility were discussed. The results of these discussions have been integrated in the calculations and the final report and therefore; are not mentioned in this review anymore.

This review is based on these discussions on the one hand and on the other hand on the final report from 5th May 2009.
Statement on the final report of the study

Aims and parameters
The chosen constraints such as the functional unit, system boundaries and the considered indicators are adequate for the imposed goal. It was clearly defined what was and what was not considered.

The study is limited to the assortment of Migros. The major quantity of sales comes from Italy and Thailand. Some varieties are from the USA and Paraguay. As niche products Ticino rice and organic rice from Italy are sold in very small quantities. According to the author of the study the different rices are broadly comparable and were analyzed with selected products out of the standard varieties of long grain rice. Parboiled products dominate the standard assortment of long grain rice.

The evaluation of basmati, perfumed, risotto and milk rice was based on the standard varieties of long grain rice of the same region. It is believed that cultivation of different varieties of rice in the same region is comparable. This assumption could not be proofed within the review but seems to be plausible.

Although the aim of the study was to evaluate the climate relevant emissions, also the overall environmental impact was considered using the Swiss method of ecological scarcity (Environmental Impact Points, UBP 06). This is considered as extremely desirable, as the experience shows that the results on climate impact do not have to be in accordance with those on overall environmental impact. Due to this additional evaluation of the overall environmental impact, the climatop label is conferred on criteria which ensure that the labelled products also come off well regarding overall environmental impact.

Methods and data
The procedure used within this study is scientifically comprehensive and consistent with aims and constraints of the study. The chosen functional unit, system boundaries and considered indicators are adequate for the goal.

Data on cultivation of rice in Italy, Thailand and the USA were adapted from publications on rice cultivation of the country of provenance and completed with research done by myclimate. For the processing of rice and parboiling, literature independently from the country of provenance was used. Data on cultivation of rice in Ticino was gathered through “La Riseria” in Ticino and completed with literature values. Assumptions made during data ascertainment as well as the choice of the data basis of literature could only be evaluated regarding the plausibility. High replicability is given for the allocation of primary data to the data from ecoinvent used for calculations. This allocation was reviewed and considered as accurate.

In the current assortment of Migros only the - as favourite resulting - Ticino rice is cultivated in dry-fields. During the cultivation of all other products the paddy fields are flooded, Italian rice of dry cultivation was also analyzed for the purpose of future extension of the assortment. The results in favour of the dry cultivation method were supported by sensitivity analyses. In the process, “best case” assumptions for the favourite from dry cultivation were evaluated regarding field emissions, allocation of by-products as well as charges during processing in comparison to conservative values.

In the description of the results uncertainties were declared and additionally relevant magnitudes of influence were discussed. The conducted sensitivity analysis underpins the results in favor of the rice of dry cultivation. A placement of other analyzed products that are cultivated in flooded paddy fields was not possible within this study.
Results and discussion
The results in favour of rice cultivated in dry-fields were reviewed regarding their plausibility, in the course of this; the transparent description of the different steps of the life cycle as well as the description of uncertainties was helpful. Furthermore, the results for the essential parts were recalculated based on samples. Due to these examinations and the review of the input data we consider the results as correct.

The results in favour of rice grown in dry-fields are underpinned by the conducted sensitivity analyses. The results answer the initially defined question.

Summary
The results are plausible and seem to be correct according to the performed examinations. The procedure is scientifically correct and corresponds to the initially defined objectives. The sensitivity analyses as well as the discussion of the relevant magnitudes of influence on the results needs to be pointed out positively.

The resulting recommendation to climatop is comprehensible and conclusive.

Basel, 10 January 2010

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