ENVIRONMENTAL IMPACT ANALYSIS OF LUNCH SUPPLY SYSTEM FOCUSING ON FOOD CONTAINER ~A CASE STUDY IN KYOTO UNIVERSITY KATSURA CAMPUS~

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During the internship, we found factors such as communication, independence, and bottom-up important in constructing valuable EMS. Based on the founding, the working group focusing on container along with "Katsura Eco Model Project" was established by students in Kyoto University, in the purpose of constructing the system of reducing environmental impact that relates to food container.

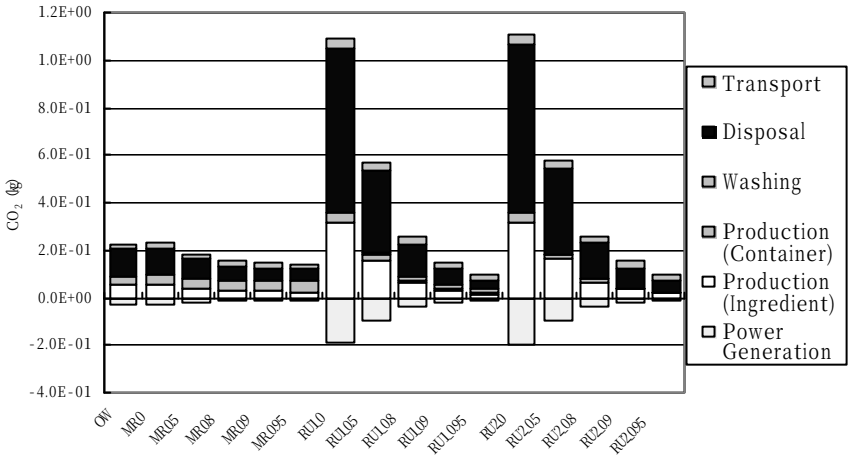

Figure 1 CO_2 Emission concerning Food Container

The environmental impact of washing dishes at the restaurant in Kyoto University was measured and used to analyze LCIs of disposable (OW) , recycling (MR) , and reusable (RU1, RU2) food container. The results showed that the solid waste was less in RU1 and RU2 when the rate of return (RR) was above 0.9 though that of MR was less when RR was between 0 and 0.9. Similar results were obtained in energy consumption and CO2, NOx and SOx emissions. Figure 1 shows emission levels of CO2 in 16 different scenarios including one scenario for OW and five scenarios with different RR for MR, RU1 and RU2 ("_0.8" in fig. means RR was 0.8). Water pollution (BOD, COD and SS) was significantly higher in RU1 than in OW and MR, but that of RU2 became low under the effect of filming.

In the case of application in Katsura campus, RR must be above 0.9 (time of reuse is 10) in terms of waste generation and emission of green house gas.

Interviews with members in Katsura campus showed that consumers were very sensitive to the price and that willingness to pay for deposit of food container changed between consumers considerate toward environmental problems and consumers not considerate. One way to increase RR should be the deposit refund system. However, our interviews showed limitation in deposit refund system.

Operation of food containers were confirmed to be feasible in Katsura campus. Operation showed the distance between consuming place of lunch and collecting place of food container has an strong effect on RR.