

1 **Integrating Consumer Choice Experiments and SD Supply Chain Modeling to Increase**
2 **Vegetable Consumption in Kenya**

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7 **Abstract**

8 Improvement of diets through increasing consumption of fruits and vegetables is of global
9 importance. However, existing information about the factors affecting fruit and vegetable
10 consumption often is insufficient for the development and implementation of effective policy and
11 programmatic efforts. This research integrates choice experiments evaluating five potential
12 attribute improvements (two quality levels, safety/hygiene, pre-cutting and lower acquisition
13 time costs) with participatory SD modeling to evaluate the potential impact of these attribute
14 improvements on spinach consumption in Kenya. Choice experiment data from 300 households
15 in six counties of Kenya, analyzed with panel Tobit models indicates quality, safety and hygiene,
16 and acquisition time affect expected vegetable purchase quantities, but the effect of increased
17 convenience is lower. Analyses with the SD model of the vegetable supply chain including
18 farmers, marketing intermediaries, vendors and consumers indicate that all of the attribute
19 improvements would increase consumption even in light of higher value-chain costs, but also
20 facilitate larger sales and profits by supply chain actors. These results suggest that a focus on
21 increasing demand through the improvement of product attributes may be an important strategy
22 for simultaneously increasing fruit and vegetable consumption and benefitting supply chain
23 participants in low- and middle-income country settings.

24 **Keywords:** Kenya, choice experiment, supply chain, system dynamics