



Women's diets in East Africa: can they be healthy and sustainable at the same time?



Tropentag 2022

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Introduction

- Many of our current food systems are **unsustainable** both in terms of food production and consumption.
- Often **only one perspective** is taken:
 - Diets as a driver of change in the food system**, e.g. through changing consumer demand, **or**
 - Diets as an outcome of food systems**, e.g. through climate change constraints.
- Therefore, a new index, namely the World Index for Sustainability and Health (WISH) was developed to assess diets for **both environmental sustainability and healthiness** (Trijsburg et al. 2021). □

Methodology

- Data were collected in the framework of the Fruits and Vegetables for all Seasons (FruVaSe) project (project partners see below).
- Four **24-hour dietary recalls**, two per season, were conducted with women of reproductive age (next to a socio-economic survey) in two different regions each in Kenya, Tanzania and Uganda.
- Food intake quantities were grouped into **13 food groups** and converted to the overall WISH index by giving a score between 0 and 10 for each food group (total WISH score 0-130) based on both their environmental sustainability and healthiness – a **higher score** meaning a **more healthy and sustainable** consumption of the respective food group.
- Data analysis consisted of 445, 292, and 415 **women** in Kenya, Tanzania and Uganda, respectively.



Results – general food intake

- An **increase in consumption** to obtain a higher WISH score is suggested for **all food groups** but for
 - Red meat and saturated oils: consumption is within the suggested range (**Table 1**);
 - Unsaturated oils: consumption is within the range, yet could increase for Tanzania and Uganda;
 - Added sugars: consumption is within the range, yet should decrease for Uganda.
- When **only women who consumed** a certain food group, are taken into account
 - Intake of red meat and poultry is **above the recommended intake** and should decrease.
 - Intake of legumes is good, yet it should increase for women in Uganda.

Table 1: Components consumption (non-consumers in % and intake in g/d) as compared to the recommended intake and WISH scoring for women in East Africa (pooled data from Kenya, Tanzania, Uganda) Total N=1152

Dietary component	Non-consumers (%)	Intakes of food groups for all participants in g/d Mean (SD)	Recommended Intake in g/day (Lower and Upper Range of Intake) ¹	Direction of change in intake to obtain higher WISH score
Whole grains	2.6	98.5 (55.9)	≥125 (100-150)	Increase
Vegetables	0	172.5 (404.0)	300 (200-600)	Increase
Fruits	56.4	36.7 (79.8)	200 (100-300)	Increase
Dairy foods	41.3	67.9 (86.7)	250 (0-500)	Increase
Red meat	70.1	19.2 (56.9)	14 (0-28)	Good
Fish	55.1	11.8 (23.5)	28 (0-100)	Increase
Eggs	97.3	0.3 (3.7)	13 (0-25)	Increase
Chicken and other poultry	97.3	1.0 (6.5)	29 (0-58)	Increase
Legumes	20.9	72.8 (77.0)	75 (0-100)	Increase
Nuts	64.8	9.8 (24.9)	50 (0-75)	Increase
Unsaturated oils	0.7	27.3 (34.1)	40 (20-80)	Good/ Increase
Saturated oils	85.1	0.8 (2.6)	11.8 (0-11.8)	Good
Added sugars	1.1	29.3 (22.2)	31 (0-31)	Good/ Decrease

¹Recommended intake according to Global Burden of Disease Study (Collaborators 2017), Willett et al. 2019 and as suggested by Trijsburg et al. 2021

Results – WISH score

In **Figure 1** the mean WISH score reached by rural women in Kenya, Tanzania, Uganda and East Africa (pooled data) for each food group is depicted:

- The mean score reaches 10 (meaning healthy and sustainable consumption) for **eggs, chicken/other poultry** and **saturated oils** for all three countries and East Africa (pooled data).
- It reaches 10 for **added sugars** in Tanzania and 9 for added sugars in Kenya while it reaches also about 9 for **red meat** in all three countries and East Africa – meaning a healthy and sustainable consumption of the respective food groups.
- The WISH score is with values between 0.8 and 2.6 (for East Africa) extremely low (meaning unhealthy and unsustainable consumption) for **fruits, nuts, vegetables, dairy foods, fish and unsaturated oils**.

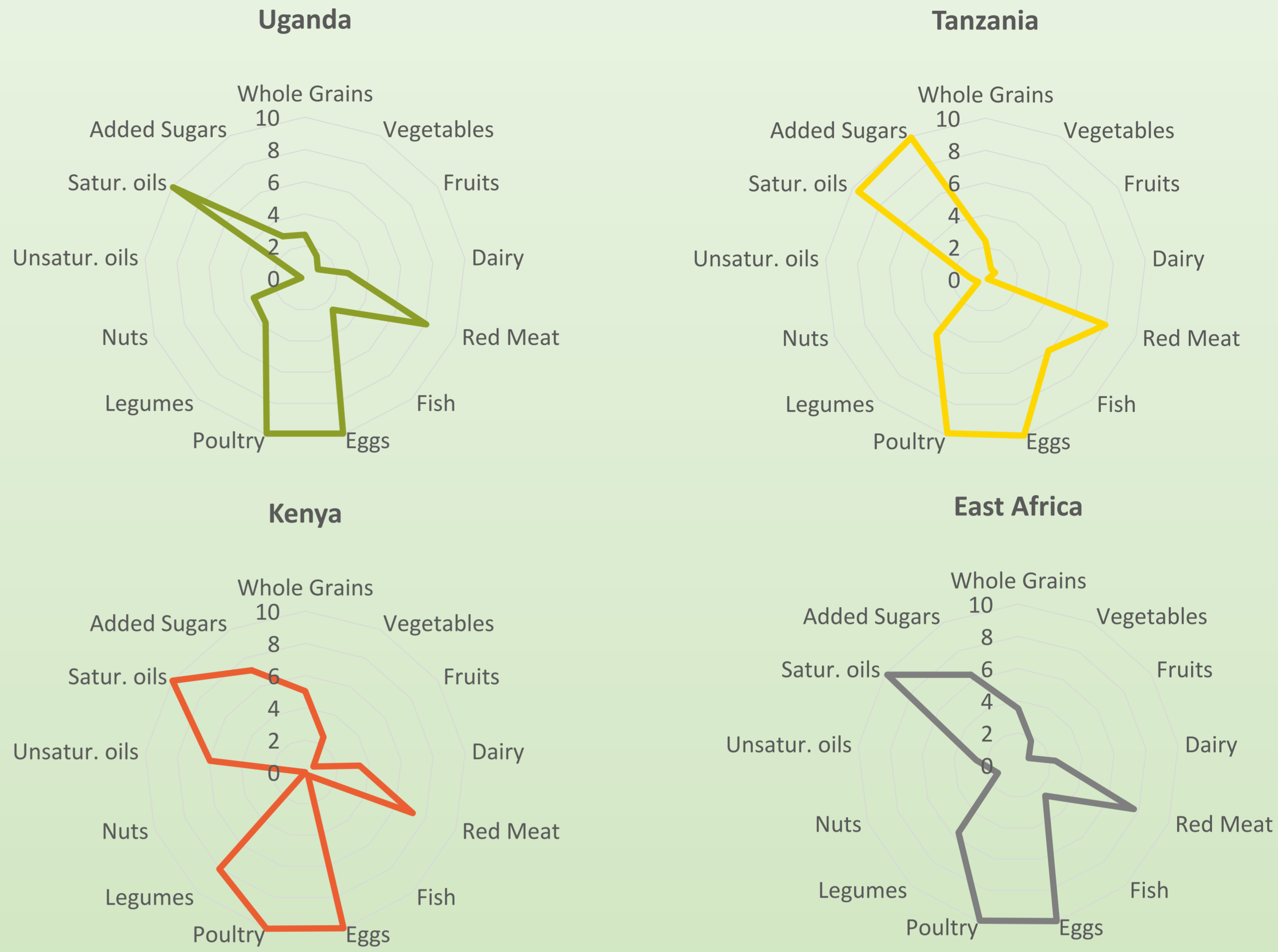


Figure 1: Mean scores of the components of the WISH score of rural women in Kenya, Tanzania, Uganda and East Africa (pooled data)

Results – WISH sub-scores

- As the WISH score can be biased, in addition **four sub-scores** were calculated.
- The same as for the total WISH score applies: **the higher the sub-score, the healthier** are the diets (for the two health sub-scores) and **the lower is the impact on the environment** (for the two environmental impact sub-scores) (Trijsburg et al. 2021).
- The mean “**less healthy sub-score**” is close to its maximum for all countries - meaning that there is limited consumption of the less healthy food groups red meat, saturated oils and added sugars.
- The other three scores are far from the maximum score (**Figure 2**).
- Especially the “**healthy sub-score**” (summing 8 protective and 2 neutral food groups) in Tanzania and Uganda as well as the “**low environmental impact sub-score**” (summing 6 low environmental impact food groups) in Uganda is far from the optimum – meaning that food groups that contribute to these sub-scores are **not consumed in sufficient quantities**.

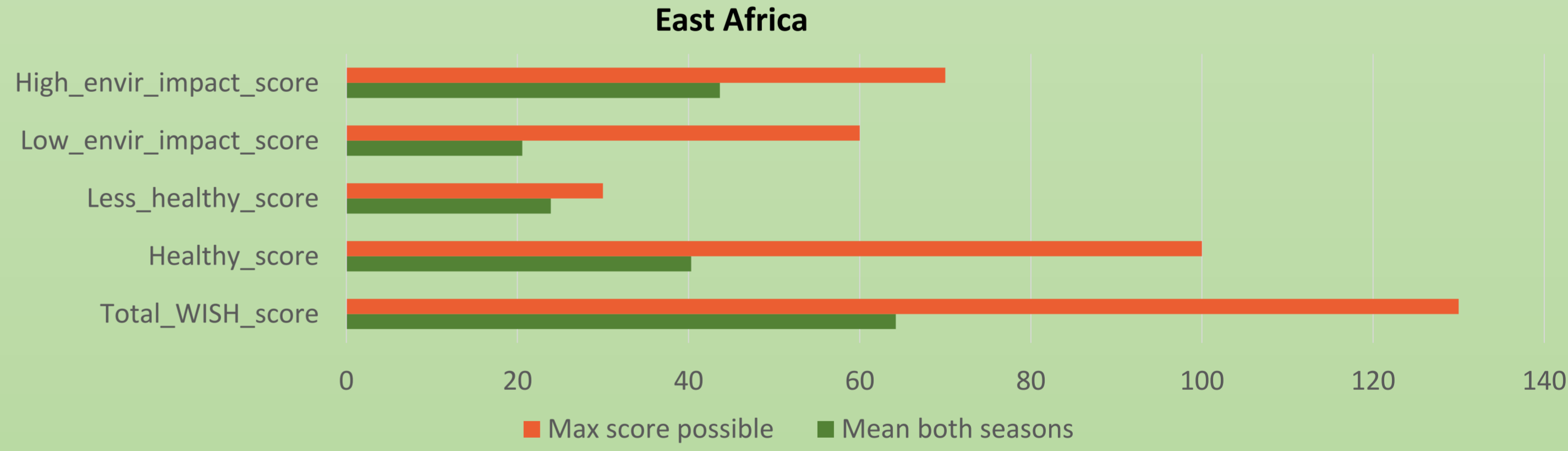


Figure 2: Total WISH and sub-scores for women in East Africa (pooled data) as compared to the maximum score possible

Conclusions

- The WISH index and sub-scores show that in the investigated areas in rural East Africa the consumption of “**protective**” food groups such as fruits, nuts and vegetables need to **increase**, while the consumption of “**limiting**” food groups is sufficient or should even **decrease**.
- Due to a high number of non-consumers of particular food groups the picture is partly biased.
- In general, the WISH index and sub-scores allow to differentiate between the **overall healthiness and environmental sustainability** of diets in one country and even compare between countries.
- The WISH index does not include any foods from **refined grains** and also no **roots, tubers or starchy vegetables**. These are, however, important food groups in the rural communities of this study and would need to be considered in the score to show a complete picture.
- It is suggested to **divide** complex and critical food groups such as vegetables further into **sub-groups** to understand their contribution to this index (e.g. vitamin A rich vegetables vs. others).

References:

- Trijsburg L, Talsma EF, Crispim SP et al. **Method for the Development of WISH, a Globally Applicable Index for Healthy Diets from Sustainable Food Systems**. Nutr 2021;13, DOI: 10.3390/nu13010093.
- Collaborators GBD 2017 D. **Health effects of dietary risks in 195 countries, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017**. Lancet (London, England) 2019;393:1958–72.
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