Leibniz Centre for
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Raising the burden: healthy food and cooking energy scarcity

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Challenge

Most staple foods in countries of the global south need to be cooked before they can be consumed. Hence, not only access to food, also the availability to cooking energy is important. Therefore, food security cannot be achieved without considering energy access as part of the equation. However, as the process of land degradation is ongoing especially in Sub-Saharan Africa - but also in other regions of the global South - forested areas and likewise forest products are diminishing. This has substantial consequences for the 3 billion people globally who depend on so-called traditional bioenergy for cooking.

As coping strategies play an intermediary role between the scarcity of fuelwood and food security they must be considered as a leverage point that can alter the course of food insecurity.

Research goal

This research provides more detailed insights into general coping strategies from the literature, strategies applied on the ground and their impact on local food security criteria. The objective of the research is to enhance food security and to identify what advantages and risks are assessed from the farmer's point of view in regards to social life, the economy and the environment.

	Clusters	Coping Strategies	Coping strategies applied in Idifu (N=19)	Coping strategies applied in Mzula (N=20)
Preventive strategies	Increased fuelwood provision	On-farm tree planting	15 %	58 %
	Decreased fuelwood demand	Use of improved cooking stoves (prerequisite)	0 %	100 %
Acute strategies	Alternative fuelwood consumption	Cut wet fuelwood instead of collecting dry fuelwood	75 %	0 %
		Cut down a tree as a fuelwood source	5 %	5 %
		Use of private trees instead of trees from communal land	5 %	5 %
		Use of wet fuelwood instead of dry fuelwood	0 %	3 %
		Use of fuelwood with less quality	0 %	5 %
	Increased use of substitutes for fuelwood	Use of twigs instead of fuelwood	60 %	47 %
		Use of crop residues instead of fuelwood (esp. maize residues)	15 %	21 %
		Use of cow dung instead of fuelwood	0 %	11 %
	Increased input of time & effort	Increase in walking distance to collect fuelwood	70 %	79 %
		Increase in frequency of fuelwood collection	25 %	32 %
		Increase in time spent to collect fuelwood	10 %	0 %
		Change in weight of bundle collected	5 %	0 %
	Market-based measures	Use of improved collection means (wheelbarrow, oxcart, bicycle)	0 %	37 %
		Purchase fuelwood	5 %	11 %
		Purchase charcoal	5 %	0 %
		Hire someone to collect fuelwood	5 %	0 %
	Utilization of human resources & social relationships	Ask a neighbor for fuelwood	85 %	53 %
		Involve children in fuelwood collection	10 %	0 %
		Gathering remains of charcoal production	10 %	0 %
		Ask relatives for fuelwood	0 %	5 %
	Decreased food & health	Eat fewer meals	55 %	37 %

Newly identified coping strategies

Tab. 1: Coping strategies derived from the household interviews of both CSS including a quantified ranking. The ranking is based on how frequently they were mentioned by the households. Multiple responses are possible.

Picture 1: Impact assessment of local coping strategies on food security criteria with farmers in Mzula.

Study area

The study was conducted at the two case study sites – Idifu and Mzula – both located in the Chamwino district of Dodoma region, Tanzania. Dodoma region is semi-arid, consisting mainly of savannas and grasslands with one long rainy season that lasts from December to April. The food and livelihood security is dependent on these rains.

Methodology

In a first step, we identified coping strategies that households in rural areas apply to cope with fuelwood scarcity from 24 articles. The identified strategies were classified to be used as a code book. In a second step 39 household interviews were conducted in the two case study sites and analyzed using qualitative content analysis. The codebook was used to identify the adaptation measures at the case study sites including a quantitative comparison of the strategies between the two villages (see Tab. 1). In a last step an impact assessment using the FoPIA* approach was done to assess the impact coping strategies have on local food security criteria from a farmers point of view.

Results

In total, the 24 studies identify 28 coping strategies that address the problem of fuelwood scarcity. Three preventive strategies in two clusters and 25 acute strategies in six clusters are identified.

The analysis of interview data collected in Mzula and Idifu show that a total of 23 strategies are applied in the villages, 21 of which are already identified in the codebook. We find two strategies used to cope with existing fuelwood scarcity that are not cited in literature:

- Use of improved collection means
- Gathering remains of charcoal production

The impact assessment presents direct linkages fuelwood scarcity has on the food security of the people. The results indicate:

- 3 positive strategies (frequency of application: low to medium)
- 2 negative strategies (frequency of application: medium to high)
- 2 neutral strategies (frequency of application: medium to high)

***Framework for Participatory Impact Assessment (FoPIA)**

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