



## Empowering Youth to Reduce Horticulture Post- Harvest Losses in Tanzania

A Policy Brief

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This *Policy Brief* documents and analyze post-harvest losses, why they occur, and what obstacles impede the progress of young people in Tanzania's horticulture sector with respect to reducing post-harvest losses. It provides a point of departure for a science-based search for the private sector actions and government policies that should be undertaken to overcome the obstacles.

### Tanzanian Youth and Horticulture

Youth unemployment is a global challenge. Because Tanzania's population is young, it is also a national concern. There were over 1 million unemployed youth between the ages of 15 and 24 in 2014 in Tanzania. Almost a fifth of all young women (769,800) and over a tenth of young men (409,200) were not in employment, education or training ILOSTAT (2014). On the other hand, Tanzania's agri-food sectors employ about two-thirds of the country's workforce. And the Government of Tanzania, through the Ministry of Agriculture recently put forward the *National Strategy for Youth Involvement in Agriculture (NSYIA) for 2016 – 2021* with a vision to empower youth to participate fully in agricultural development and to contribute to national economic growth.

The horticulture sector, with its short growing season- averaging three months-- offers quick yields and returns on investment. Small plots from a tenth to two hectares are sufficient. It is labor intensive, and offers employment throughout each crop cycle. These aspects of horticulture are particularly conducive to more youth employment in agriculture.

But vegetables and fruits are perishable after harvest. Researchers (Kitinoja 2013; Addo et al.

2015) have documented that about 50 to 70% of the horticultural output is lost during harvesting, handling, packaging, transport, and marketing. Thus, post-harvest management is critical to success in the horticulture sector.

Reducing post-harvest loss rates for fresh produce would raise returns to young agribusiness people as well as increase food security and nutritional quality in Tanzania. Higher returns would enable more of Tanzania's youth to further reduce horticultural post-harvest losses, leading a cycle of rural growth, prosperity, and further growth.

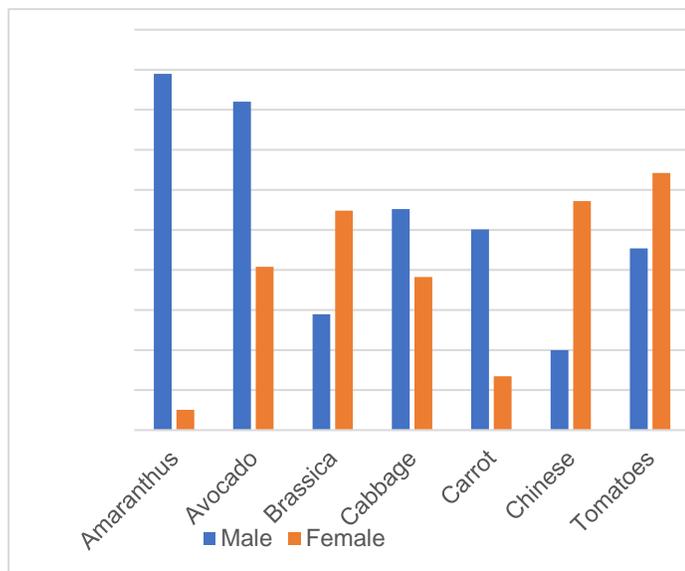
This *Policy Brief* documents and analyze post-harvest losses in horticulture, when and why they occur, and what obstacles impede the progress of young people in Tanzania's horticulture sector with respect to reducing post-harvest losses. It provides a point of departure for a focused discussion about the policies and actions that could jump-start the cycle of growth.

### Post-Harvest Losses in Horticulture

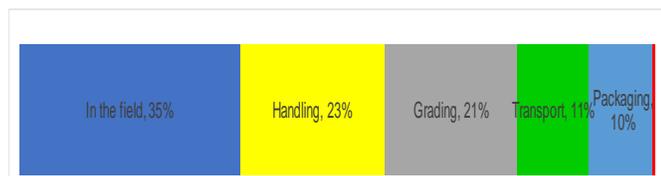
A research was conducted in three of the six districts in the Njombe Region in the southern highland of Tanzania: the Njombe district, the Njombe Town Council district and the Makambako Town Council district. In November and December, 2018, we scientifically surveyed 576 respondents whereby male youth were 343 and female youth were 233 and engaged them in focus groups, one in each ward.

Data on post-harvest losses were collected using electronic surveys with tablets from youth in horticulture agribusiness through interviews by using pre-tested questionnaires. Figure 1 shows that male youth experience highest crop losses in their involvement in horticulture. The highest losses were recorded in amaranthus (*amaranthus cruentus*) (44.5%) and avocado (*Persea Americana*) (41.0%) and the lowest losses were recorded for Chinese

mallow (*Malva verticillata*) (10%). While female youth highest losses were experienced in tomatoes (32.1%) Chinese mallow (*Malva verticillata*) (28.6 %); and lowest losses were experienced in amaranthus (*amaranthus cruentus*) (2.5%). Lower losses for female youth could be explained by female being more involved in vegetable production and marketing and their ability to handle perishable crops with care compared to their male counterparts.

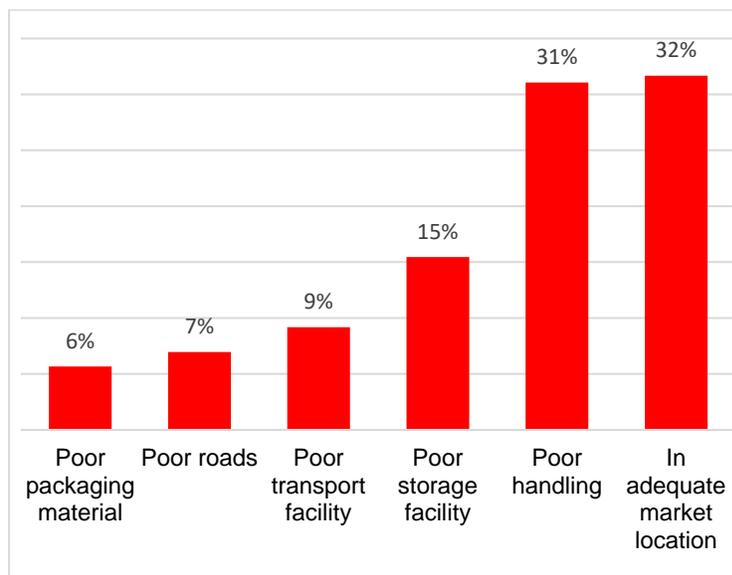


**Figure 1.** Extent of crop losses in horticultural crops produced by Gender



**Figure 2.** Stages when losses occur

Poor agronomic practices in the field account for the largest share (35%) of horticulture crop losses (Figure 3), followed by losses during handling (23%), grading (21%), transport (11%), packaging (10%).

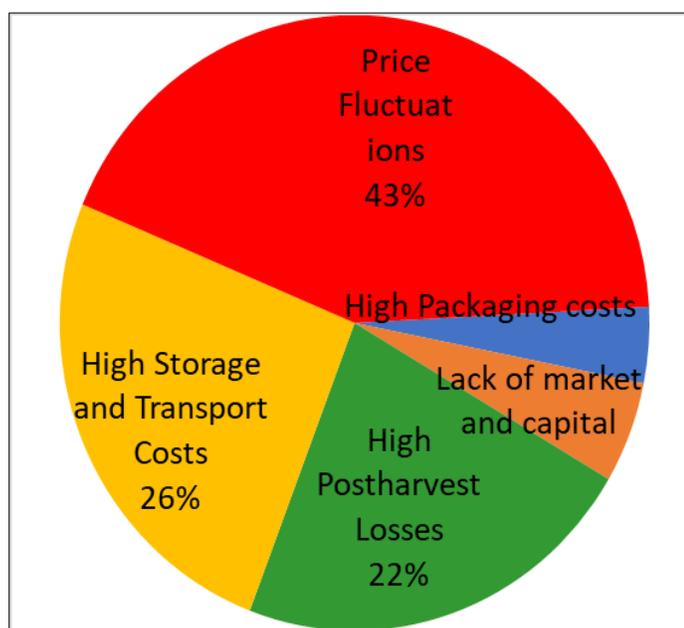


**Figure 3.** Causes for crop losses in the Njombe Region of Tanzania

Figure 3 summarizes the causes crop losses. In adequate market location is clearly the major causes. in adequate market location accounted for almost a third (32%) of the reasons indicated by the Tanzanian horticulture farmers studied. This implies that in adequate market places is serious problem in the study area where the majority (69%) of the respondents claimed about absence of market in their localities. Therefore, they waste the produce once the crops are harvested or absence of customers after harvesting may pose losses of their produces. Another version of ‘in adequate market ’ is shown in Figure 5, “price fluctuation.” After harvest, if all youth farmers sell their produce at the same time and place, they may sell their produces at lower prices just to get rid of it. Sometimes they

cannot even give it away, and thus experience wastage of their produces.

The other causes for post-harvest losses of horticulture is 'poor handling' (31%). It is noteworthy that 'poor storage facility' was just 15% of all the reasons noted, even though affordable and effective storage infrastructure offers one of the best solutions to in adequate market location. That is, if farmers can afford to store locally, then they do not need to sell all at the same time or low price. Finally, 'poor transport network (15.5%) and poor transport facility' (20.3%) was mentioned to contribute to post harvest losses.



**Figure 4. The Problems faced by horticulture producers in the Njombe Region of Tanzania**

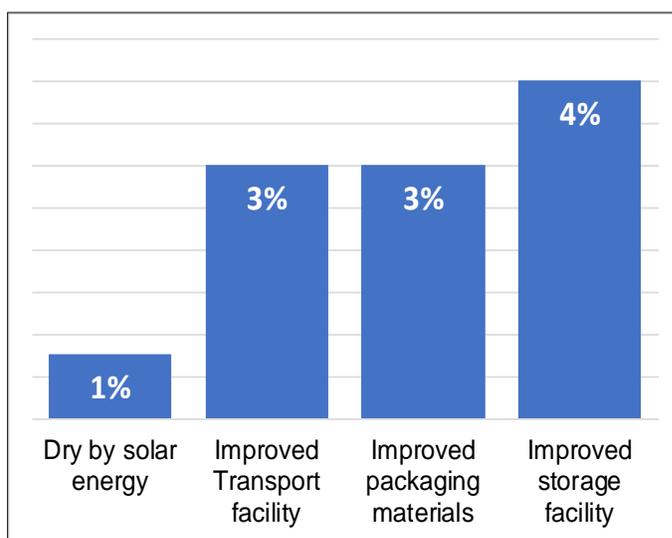
Figure 4 summarizes the problems confronting young horticultural producers in the Njombe region. "Price fluctuations" was cited most often (43%). As noted earlier, because fruits and vegetables are perishable, post-harvest management innovations are needed to help farmers avoid excess supply when they all attempt to sell at the same time or place. Solutions include staggered planting and harvest times, just-in-time harvesting, ripening while warehoused, cold storage, drying to lengthen shelf-life, and cost-effective transport.

But those solutions are not accessible to most: "high storage and transport costs" were noted as 26% of

the problems (Figure 4). "High post-harvest losses" (which arise because of all the things in Figure 3) are 22% of the problem. Packaging costs, markets, and capital needs accounted for 4% and 5% of the reported problems, respectively.



Figure 5 documents that few young horticulture agribusinesses have been able to implement any of the more obvious post-harvest management innovations. At best, 4% of the young horticulture producer-respondents reported that they use an "improved storage facility," 3% use improved packaging materials or transport, and only 1% dry by solar energy. *This highlights that many solutions to the horticulture post-harvest losses have yet to be implemented. There are so many opportunities.*



**Figure 5. Horticulture post-harvest loss management innovation use rates**

- **Generally**, to raise returns and attract more youth to the horticulture industry in Tanzania, this research recommends that, there is a need to **improve agronomic practices**;

need for **more market places** and **storage facilities**. Most importantly, farmers must be able to store their produces so that, they can increase shelf life of their produce and sell when there is good price. The study further recommend that government should continue to undertake **fiscal reforms** and implement recommendation on Tanzania blue print of regulatory reforms so that to **attract private sector investment in storage facilities** like cold chains and pack houses. For example, currently there is only one pack house which was constructed by a public-private partnership between the Government of Tanzania and the Tanzania Horticulture Association. Also, there is a need to emphasize government to continue to allocate more fund to Tanzania Rural and Urban Road Agency (TARURA) so that to improve **rural roads networks**. Alleviating financial constraints: Youths face lack of financial resources to start and develop the horticultural businesses. There is the need to create incentives for the **small and medium financial institution** or micro credits financial institutions to open sub-offices in Njombe to provide credits with an interest rate that is affordable by youths. Such a youth-friendly credit scheme will help them to access farm inputs and PHM innovations.



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