



Universität  
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*Food Price Volatility:  
Political Causes, Effects on Hunger and Poverty, Sustainable  
Solutions*

FINAL PROJECT REPORT: EXECUTIVE SUMMARY



*Farmers in Mnenia, Tanzania threshing their harvest. Own Picture, 2017*

## 1 Introduction

In the wake of the global food crisis of the years 2007 and 2008, food security and the fight against hunger have risen again to the top of the international political agenda (Tadesse, Algieri, Kalkuhl, & Braun, 2014). Ending hunger remains central to all global development efforts and has been given a prominent position on the Sustainable Development Agenda 2030. Limiting the excessive volatility of food prices has been set as one of the key targets for achieving the SDG on ending hunger (Transforming our world: the 2030 Agenda for Sustainable Development, 2015). Yet, progress has been limited since the Agenda's adoption in 2015. The prevalence of severe food insecurity on global average has increased.

Our project addressed critical gaps in the current literature and thereby seeks to inform the implementation of the Agenda 2030, specifically the realization of its goals on hunger and food security.

## 2 Research Plan, Hypotheses and Results

The research project included three main research topics, which start with a more global focus and then move towards more localized solutions: 1) The effects of national trade policy interventions on global food price volatility; 2) the effects of global food price increases on local food insecurity; and 3) the role of improved on-farm storage in reducing seasonal food price fluctuations in Sub-Saharan Africa. Thanks to additional fundraising efforts, the project team secured additional co-funding from the Swiss Agency for Development and Cooperation (SDC). The additional funds allowed us to extend the data collection for the third part by an additional year (two years in total; 9/2018-9/2019) and to broaden the scope to also consider the implications of improved on-farm storage on adopting household's food security. The research project was made possible thanks to the financial support of the SNIS, and its implementation was strongly supported through our project partnerships with Helvetas Swiss Intercooperation, SDC, the Food and Agriculture Organization of the United Nations (FAO), the World Trade Institute at the University of Berne, and the Institute for Strategy and Policy of Agriculture and Rural Development (IPSARD) in Hanoi.

### 2.1 Effects of Trade Policy on Global Food Price Volatility

The first project part analyses the research question: *What is the relative influence of different types of trade policy measures on storage-dependent price volatilities in agricultural markets?* The dominant political response to volatile global food prices are national trade policy interventions. There, however, is a wide-spread concern that such interventions in turn amplify food price volatility in global markets, which can render national trade policy actions ineffective at domestic level and imply adverse effects on other countries (Gilbert & Morgan, 2010). This concern has led to growing calls on countries to refrain from national trade policy interventions in the face of volatile global food prices. Yet, the empirical evidence underpinning this concern is limited to two papers, both of which do not consider the most frequently used trade policy measure in times of high and volatile global food prices: liberal import measures.

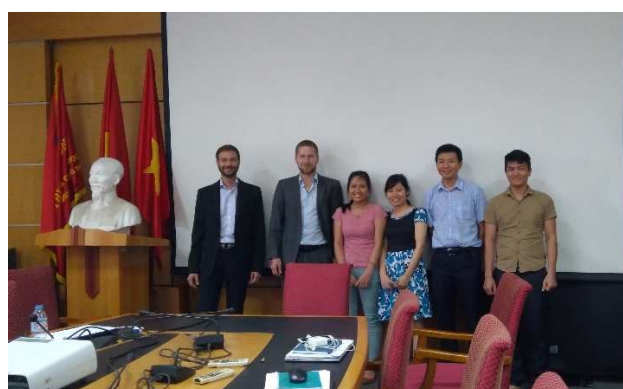
We addressed this research gap by compiling an original and hand-coded dataset on the announcement of trade policy changes for the world's three most important staple crops (wheat,

maize and rice) from 2005 to 2017. In addition to the initial research plan, we were able to include maize as an additional crop in our dataset and coding to complement wheat and rice, which had been mentioned in the SNIS research plan. The trade policy changes were identified through a replicable media search. The media search resulted in 27'507 articles. As a first step, the relevance of each article was assessed. The total number of relevant trade policy events that were identified is 1'737. All relevant articles were subsequently hand-coded by a dedicated team at the "Center for Agricultural Policy" (CAP) of the Vietnamese "Institute of Policy and Strategy for Agriculture and Rural Development" (IPSARD), a partner in the project, after a coding training workshop. The coding procedure and indicators were jointly developed by experts with different disciplinary backgrounds within our research consortium.

The so constructed dataset allows us to estimate the implications of trade policy changes on global food price volatility on the announcement day, as well as their persistence. The effects on global food price volatility are estimated from a Conditional Autoregressive Range (CARR) model, which is extended to take additional explanatory variables, such as innovations to policy measures, and the prevailing stock levels at the time of the announcement into account (CARRX). The Working Paper particularly focuses on the role of stock levels in moderating effects of trade policy on price volatility.

The results show that the announcement of trade policy changes can lead to short-term increases in global food price volatility. Yet, these short-term effects have little persistence beyond the announcement day, and, in particular, are conditional on low stock levels. The results hence provide little support for political concerns that national agricultural trade policy interventions amplify global food price volatility. Furthermore, with regards to short-term effects, the results highlight the need to ensure adequate stocks.

Although the results show that national trade policy changes are unlikely to persistently affect global food price volatility, they neither imply that trade policy interventions generally have neutral effects on global market prices, nor that they are effective means to achieve domestic policy objectives. Trade policies can still exhibit adverse effects by increasing food prices or amplifying spikes, as a related literature indicates (e.g. Yu & Jensen, 2014; Anderson & Nelgen, 2012; Jensen & Anderson, 2015).



Capacity-building and training workshop in Hanoi with IPSARD team involved in the research on trade policy and food prices.



Workshop on Food Price Volatility at IPSARD in Hanoi. On the left: IPSARD Deputy Director-General, and SNIS project member Dr. Thang.

## 2.2 Effects of Global Price Fluctuations on Local Food Insecurity

The second part of this project analyses the question: *What are the effects of global price fluctuations on local food insecurity?* During the world food price crises, the Food and Agriculture Organization of the United Nations (FAO) was soon to estimate that 75 million more people were undernourished as a result of rising food prices. The FAO argued that high food prices were “driving millions of people into food insecurity, worsening conditions for many who were already food-insecure, and threatening long-term global food security” (FAO, 2008, p. 2).

The empirical evidence behind this claim is thin and the limited previous research lends little support to this general conclusion. For example, the only large-scale survey on the impact of the global food crises on food insecurity shows that self-assessed food insecurity remained the same or even improved on average in the food price crises 2007/2008, and notes major differences across countries (Headey, 2013). It is commonly argued that these differences can be attributed to the composition of the country populations in terms of urban food consumers and rural food producers. Thereby, the argument neglects that in most developing countries, the rural population are food producers at harvest and food consumers in the lean season, the time shortly before the next harvest is brought in, when self-produced crops have been used up (Frelat et al., 2015). Hence, our hypothesis is that price increases during the harvest season reduce food insecurity for rural households, but not for urban households.

Our dependent variable is self-assessed food security at the household level measured from data gathered in the Gallup World Polls (2005-16). Since 2005, Gallup has conducted face-to-face interviews with households in approximately 150 countries, mostly on an annual basis. The surveys employ probability-based sampling to achieve national representativeness of the population aged 15 years and older, in most cases selecting 1,000 individuals for interviews. One of the items included in the world poll addresses food security: “Have there been times in the past 12 months when you did not have enough money to buy food that you or your family needed?”, and a yes or no answer is recorded. The question reflects a snapshot of self-assessed food security for all individuals surveyed in the Gallup World Polls (see Headey, 2013, for a detailed discussion of the indicator).

To measure the main independent variable – changes in global food prices – we use the prices of nearby futures contracts (i.e., contracts with the shortest time to maturity) traded at the Chicago Board of Trade (CBOT), which is part of the Chicago Mercantile Exchange (CME). The context of this focus is the Sustainable Development Goals (SDG) target “limit extreme food price volatility”. Following the approval of our SNIS project, the United Nations had adopted indicators to track progress against each of the SDG goals and targets. With regards to food price volatility, the respective indicator focuses on “abnormal food price changes” (not price volatility per se), based on a recommendation by the FAO. In response to this development, we have also focused our work on changes in food price levels and their effects on local food insecurity.

Information on the seasonality of agricultural production for the countries covered in our data, comes from the Crop Calendar Dataset (see Sacks, Deryng, Foley, & Ramankutty, 2010). The Crop Calendar Dataset sourced its information from FAO and the United States Department for Agriculture (USDA). We further analyse effects and present the results for sample splits

according to each countries' income group, which is based on the classification of the World Bank (World Bank Group, 2019). Our results are estimated from a mixed-effects model with random intercepts for country and year.

Our preliminary results from a work-in-progress paper are consistent with our hypothesis. Our findings suggest that an increase of global food prices results in higher food insecurity in low-income countries, whereas the opposite effect is observed for middle- and high-income countries. For urban households, a rise in global food prices consistently increases food insecurity in low-income countries. However, the effect is seasonality-dependent for rural households in low-income countries; an increase of global food prices during the harvest season even slightly reduces food insecurity. In contrast, increasing prices during the lean season have adverse effects on both urban and rural household's food insecurity.

This empirical insight is complemented by a qualitative two-country case study, which was conducted by the Vietnamese research team at IPSARD's Center for Agricultural Policy. The case study focuses on rice, and describes the differences of the effects of food price volatility on local food insecurity, and the associated support policies, for the Philippines, a country depending largely on rice import, and Vietnam, a leading rice export country. The research team used structured surveys with rice experts in both countries as the basis for the case study. The case study shows that trade policy changes are used in both countries as a response to high global food prices. During the food price crises, the Philippines applied incentives for supporting domestic rice production, while Vietnam implemented export bans and control. The study concludes that a large proportion of Philippine households, particularly poor urban and rural households, were negatively affected by rising food prices. In Vietnam, rice farmers generally benefitted from an increased income, yet their benefits were limited as a result of the export ban. In contrast, poor Vietnamese rice consumers were negatively affected.

In summary, the results highlight the need to strengthen the resilience of poor urban household's in developing countries to food price increases, for example through the provision of effective social safety nets. Moving forward, the results from the large sample empirical analysis will be extended with a price dataset from the FAO, which allows to apply the same measurement as is recommended by the UN for tracking progress on the SDG target on limiting food price volatility. This extension, which is left open to the post-funding period, will complement the current focus on global agricultural futures prices and will allow us to include national level price data. Furthermore, the main insights from the qualitative case study will be used to further inform the quantitative analysis, and, as we finalize the large sample Working Paper, we will continue to work with IPSARD to discuss the interpretation of the quantitative results in light of the case study findings.

## 2.3 Effects of Improved On-Farm Storage on Local Food Prices and Food Insecurity

The third part of the project moves towards a local perspective by addressing the research question: *Is improved on-farm storage an alternative, decentralised measure to reduce price volatility on local markets?* In Sub-Saharan Africa, food prices show strong and recurring seasonal fluctuations. These seasonal food price gaps, which are the differences between the highest and lowest prices in a harvest cycle, have important welfare consequences as income



from agricultural production and expenditure for food have considerable shares in household's budgets. The extent of seasonal food price gaps implies that intertemporal arbitrage is constrained. In the literature, limits to arbitrage are commonly attributed to credit and liquidity constraints (e.g. Kadjo, Ricker-Gilbert, Abdoulaye, Shively, & Baco, 2018; Burke, Bergquist, & Miguel, 2019; Fink, Kelsey, & Felix, 2018; Dillon, 2017; Stephens & Barrett, 2011; Basu & Wong, 2015). Yet, prior experimental research finds little support for this argument (c.f. Burke et al., 2019). In contrast, our hypothesis is that high post-harvest storage losses constrain farmer's intertemporal arbitrage and thereby contribute to seasonal food price gaps.

Thanks to additional co-financing, the project team was able to extend the duration of the data collection by one further year (2 years in total). This extension is particularly valuable as it allows us to cover a harvest cycle with an atypical seasonal price trend where prices decreased after harvest (Year 1), and one harvest cycle showing the more typical pattern of increasing prices after harvest (Year 2). This allows testing our hypothesis on the mediating role of improved on-farm storage for both price patterns. Thanks to the extension, data collection is still on-going at least until September 2019. The respective working paper presents the results based on data collected until 5 June 2019.



The affordable hermetic storage bags allow farmers to safely store their grain and are easy to use.



The research team during a field visit in Kondoa, June 2018.

The additional co-financing further allowed to extend the scope of the field experiment to include a further research question: *What are the direct effects of improved on-farm storage on smallholder household's food security?* Much of the programmatic and political efforts on reducing food insecurity focus on increasing agricultural production and productivity, whereas reducing post-harvest losses receives much less attention. This neglect may be attributed to the lack of empirical evidence on the food security effects of improved on-farm storage. Our research presents the first experimental analysis on the effects of improved on-farm storage on household food insecurity.

Our studies are the first to experimentally analyse the effects of improved on-farm storage on local market prices, and on food insecurity, respectively. We implemented a matched-pair, cluster-randomized design to assess the effect of improved on-farm storage on market prices and food insecurity (see Imai, King, & Nall, 2009). 1023 farmers, clustered in 62 farmers

groups, and matched in 31 pairs, participate in the study. Households in treatment clusters received five hermetic storage bags per household, with a capacity to store about 100kg of maize in each bag. The interventions were implemented by SNIS project partner Helvetas. The technology, hermetic storage bags, is able to minimize post-harvest storage losses even under extended time periods (e.g. Abass et al., 2018; Murdock, Margam, Baoua, Balfe, & Shade, 2012; Groote et al., 2013; Baoua, Amadou, & Murdock, 2013; Chigoverah & Mvumi, 2016; Likhayo, Bruce, Mutambuki, Tefera, & Mueke, 2016). The effects of the intervention are estimated as the average of within-pair mean differences between treatment and control groups.

Local prices of maize, the staple food in the project areas, are tracked on a weekly frequency, while household food insecurity is measured on a quarterly basis, both using SMS-based mobile phone surveys. As an incentive for participation and responding to the SMS surveys, respondents received a phone credit (airtime) of 1 USD after completing the longer food security survey, and a credit of 0.25 USD for each completed weekly price survey. The SMS surveys were very well received by participating farmers and yielded a response rate of 50% on average, which is well above industry standards.



Data collection is mainly done through frequent, simple SMS-based mobile phone surveys. This allows us to analyse seasonal fluctuations in food security.



As incentive to participate in the SMS surveys, farmers automatically receive an airtime top-up upon completing a survey.

Our results, presented in two separate Working Papers (see attachments), show that the experimental intervention reduced seasonal food price gaps, as well as the proportion of seasonally food insecure households, on average, in the observation period. The reduction of food insecurity is most pronounced in the lean season where a reduction of 40% is observed, and for households of female participants (43% reduction).

With regards to the effects on local market prices, we observe differences in treatment effect size across the two study regions. The treatment effect appears to be higher in one of the two study districts, Kondoa, which is the district with less integrated markets with higher trade frictions. In stark contrast to the prevailing literature, the here presented results suggest that it is premature to disregard post-harvest storage losses as a factor constraining intertemporal arbitrage and consumption smoothing of smallholder farmers households.

In summary, the results highlight the need to consider the promotion of improved on-farm storage as a policy and development option not only to further year-round food security, but also to reduce the seasonality of food prices.

### 3 Policy Implications and Policy Outreach

The presented results have implications for policy, strategies, and programmes designed to further the implementation of the Agenda 2030 for Sustainable Development. For policy-makers and development actors engaged in implementing the Agenda 2030, our results highlight the need to:

- 1) consider the promotion of improved on-farm storage as a policy and development option not only to further year-round food security, but also to reduce the seasonality of food prices (SDG 2; Target 2.1 and 2.c);
- 2) strengthen the resilience of urban household's in developing countries to cope with rising food prices, for example through the provision of effective social safety nets (SDG 2); and,
- 3) ensure adequate global food stocks to dampen short-term increase of global food price volatility due to national agricultural trade policy changes (SDG 2.c), and monitor the efficacy such policies in stabilizing domestic market prices.

The research project has implemented a range of policy outreach activities in the duration of this project to disseminate the research results.

The research team attended the **1<sup>st</sup> All Africa Post Harvest Congress**, which was held from 28-31 March 2017 in Nairobi, Kenya. The project team used the event to organize coordination meetings with SNIS project partners Helvetas, SDC, and FAO, and additional major stakeholders engaged in post-harvest loss reduction, including the Rockefeller Foundation, Alliance for a Green Revolution in Africa (AGRA), and the United Nations World Food Programme (WFP).



Official side-event to the 44<sup>th</sup> Session of the Committee on World Food Security. SNIS project presented by Project PI Matthias Huss.



The side-event was very well attended with around 80 participants. SNIS project member Michael Brander introduced the topic and moderated the event.

The project was presented and its implications were discussed with delegates at an **official side-event to the Committee on World Food Security (CFS)** on 12 October 2017. Participants



have learned from presenters and panelists about recent experiences and innovations in reducing grains post-harvest losses, and the leverage they present in achieving the 2030 Sustainable Development Agenda. The University of Zurich (UZH) had organized this event in collaboration with international key actors engaged in policy, business and development programmes on post-harvest losses, including the AGRA, Biovision Foundation, Helvetas Swiss Intercooperation, Rockefeller Foundation, Vestergaard S.A., and the UN World Food Programme (WFP). Simon Zbinden (SDG GPFS) had participated in the event as speaker and panelist, and Michael Brander (UZH research team) had moderated the event. An event summary is available [here](#).

The research team was further invited by WFP to present at a **side-event to the WFP Executive Board meeting** on 29 November 2018. The Executive Board is WFP's supreme governing body. Comprising 36 States Members of the United Nations or Member Nations of the Food and Agriculture Organization of the United Nations (FAO), the Board provides intergovernmental support, policy direction and supervision of the activities of WFP. We presented the research part on the effects of reducing post-harvest losses through improved on-farm storage on household food security and local market prices. The event featured further expert presenters and panelists from WFP and the private sector and took place at the Headquarters of WFP in Rome (see [Event Programme](#)).



Presentation of project results by Matthias Huss to the WFP Executive Board Members on 29 November, 2018. The event was attended by around 50 participants.



The event further included experts from the UN World Food Programme and producers of hermetic storage bags.

## 4 Public and Media Outreach

We have presented an invited poster on the Tanzania RCT at the **World Food System Center Symposium 2017** at ETH Zurich on 25 October 2017, which is open to the public.

The project team has further organized a **field visit for selected journalists** to cover the field experiment on improved on-farm storage in Tanzania. The trip was held from 5 to 8 June, 2018, and included field visits in Kondo district (2 days) and Arusha (1/2 day).



The field visit with journalists resulted in various print, TV and radio features in English, German and French-language media.



The field visit included seven regional and international journalists as well as staff from SNIS project partners University of Zurich, Helvetas and SDC.

We were highly satisfied with the number and quality of journalists joining the trip and the resulting **media publications in TV, radio and print**, including:

**Frankfurter Allgemeine Zeitung**, "Von kleinen Dingen, die Afrika ein Segen sind", Niklas Zaboji, 20 July 2018, <http://www.faz.net/aktuell/race-to-feed-the-world/techniken-gegen-ernteeverluste-in-afrika-15699066.html>

**SRF Tagesschau**, "Kampf den Schädlingen - Luftdichte Getreidesäcke gegen den Hunger", Samuel Burri, 18 July 2018, <https://www.srf.ch/news/international/kampf-den-schaedlingen-luftdichte-getreidesaেকে-gegen-den-hunger>

**Tagesanzeiger & Der Bund**, "Sackstark gegen Ernteeverluste", Barbara Reye, 2 July 2018, <https://www.tagesanzeiger.ch/wissen/natur/sackstark-gegen-ernteeverluste/story/18897086>

also appeared in Der Bund: <https://www.derbund.ch/wissen/natur/sackstark-gegen-ernteeverluste/story/18897086>

**Le Monde & Le Temps**, "Un sac « trois en un » pour sauver les récoltes en Tanzanie", Marion Douet, 20 June 2018, [https://www.lemonde.fr/afrique/article/2018/06/20/un-sac-miracle-trois-en-un-pour-sauver-les-recoltes-en-tanzanie\\_5318387\\_3212.html](https://www.lemonde.fr/afrique/article/2018/06/20/un-sac-miracle-trois-en-un-pour-sauver-les-recoltes-en-tanzanie_5318387_3212.html)

also appeared in Le Temps on 10 July 2018: <https://www.letemps.ch/sciences/un-sac-suisse-trois-un-sauver-recoltes-tanzanie>

**Reuters**, "Pest-proof bags and bins slim Tanzania's 'lean season'", Wesley Langat, 7 Sept 2018, <https://www.reuters.com/article/us-tanzania-agriculture-foodsecurity/pest-proof-bags-and-bins-slim-tanzanias-lean-season-idUSKCN1LN1MJ>

**The Epoch Times**, "New Sack Technology Goes Long Way in Safeguarding Grain for Tanzanian Farmers", Reuben Kyama, 28 August 2018, [https://www.theepochtimes.com/new-sack-technology-goes-long-way-in-safeguarding-grain-for-tanzanian-farmers\\_2632512.html](https://www.theepochtimes.com/new-sack-technology-goes-long-way-in-safeguarding-grain-for-tanzanian-farmers_2632512.html)

**Voice of America (VOA)**, Online and Radio, "For Tanzanian Farmers, Grain Harvest Is in the Bag", Reuben Kyama, 21 June 2018,

Online: <https://www.voanews.com/a/for-tanzanian-farmers-grain-harvest-is-in-the-bag/4448573.html>

Radio (starts min 13:54): <https://www.voanews.com/a/4421934.html>

Radio Interview with Martin Fischler (starts at 18.23):  
<https://www.voanews.com/a/4424571.html>

## 5 Outlook

With regards to the first project part, extending the analysis to consider the effects of the announcement of national trade policy changes on global food price levels, as well as their domestic price, food security and income effects, are key opportunities for future research. Such an analysis may, however, need to be focused on a limited set of countries where sufficient national food price data is available. The database developed for the purpose of this analysis presents ample opportunities for future research along these lines.

Considering the second part on the effects of global food prices on local food security, the research team will work on finalizing the working paper and seeks to extend the data basis with country-level food price data, which will be established in collaboration with FAO.

Concerning the third part on the effects of improved on-farm storage, the project team aims to consider interlinkages between the two studies in future papers. Moreover, the project team was able to raise co-funding to extend the data collection for the here presented research from an initial one year to a minimum two years (data collection is on-going at the time of writing of the final report).

Furthermore, given the highly promising results, replicating the presented findings in other regions is a key opportunity for further research. Such further research can provide external validity to the results derived in Tanzania, and will substantially benefit from the results presented here, such as an in-depth analysis of our (first) evidence on stronger effects for households of female participants, but may also go beyond immediate implications on food security to consider other pertinent topics of sustainable development.

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## **Additional Outreach and Final Workshop**

**Addendum to the Final Report on the SNIS-supported Project “Food Price Volatility: Political Causes, Effects on Hunger and Poverty, Sustainable Solutions”**

Matthias Huss and Michael Brander

# 1 Final Workshop

Fifty participants, mainly from Africa, representing governments, the private sector, NGOs, academia and the United Nations Rome-Based Agencies (FAO, IFAD, WFP), gathered in Arusha from October 21 to 26, 2019 on the topic of post-harvest losses in Sub-Saharan African farming systems. The workshop was organized by our SNIS project partners, the Swiss Agency for Development and Cooperation (SDC) and Helvetas Swiss Intercooperation. Integrating the SNIS final project workshop in this larger workshop allowed us to present and discuss our research findings not only with our SNIS project partners, but also with a broad range of influential actors in agriculture and rural development in Sub-Saharan African. The four-day event was organized in an interactive format where participants shared their diverse practical, academic and policy experiences in post-harvest loss reduction and their perspectives on challenges and success factors for efforts aimed at reducing post-harvest losses. One day was dedicated to a field visit where SNIS project partner Helvetas introduced their efforts to promote the adoption of practices and storage technologies that allow reducing post-harvest losses.

The SNIS project team presented the results of the SNIS-funded research project implemented in Tanzania and discussed their implications for policy and practice with the diverse stakeholders present. The results from the SNIS-funded research project show that improved on-farm storage reduces seasonal food insecurity in smallholder farming households. Most pronounced reductions were found for the lean season, the time shortly before a new harvest is brought in, and for households of female farmers. Additionally, the results show that improved on-farm storage can reduce seasonal food price gaps, which are the differences between the highest and lowest prices for a given market and commodity in a harvest cycle. The randomly allocated intervention studied were five hermetic storage bags per household and training in their use. Hermetic storage limits atmospheric oxygen, which causes desiccation of insects and other pests that damage stored grains, and thereby minimizes post-harvest losses even under extended periods of storage.

In view of these promising results and positive experiences shared by participants from other countries, much of the discussion at the workshop focused on effective and efficient strategies and policies that can increase the adoption of improved on-farm storage among resource-limited smallholder farmers. Especially, hermetic storage bags and hermetic metal silos were stressed as effective solutions for smallholder farmers. Yet, increasing their adoption will require appropriate approaches and business models that aim at systemic changes in postharvest systems, as stressed by participants. Efforts to create favorable market systems should be gender-sensitive and well adapted to local conditions. Importantly, the extent to which smallholder farmers have the financial means and liquidity to purchase even the relatively cheap hermetic storage bags (currently sold at around 2 USD per bag of 100kg) remains to be understood better. Additionally, considering the benefits of improved on-farm storage for food safety and avoiding qualitative losses, in addition to quantitative food losses, is considered a key opportunity as many Sub-Saharan African countries strive to tackle food safety concerns, including as a response the challenge of Aflatoxin contamination.

Participants stressed that scientific evidence proved to be necessary for shaping policies and knowledge generation, particularly for post-harvest losses as a new topic, with new practices and technologies. It is however not sufficient. Linking the knowledge with the right key actors and in the right form is a challenge that needs to be determined for each context. In this regard, the efforts of the SNIS project team are highly relevant and the project team will continue to disseminate the findings from the SNIS research project and the final workshop.



Workshop participants during a one day field visit to a Helvetas project on post-harvest management near Arusha.



The workshop was highly interactive as it aimed at harnessing the experiences and knowledge of all workshop participants.



Shamin Daudi of SNIS partner Helvetas in Tanzania introduces field activities to promote practices and technologies that reduce post-harvest losses.



Simon Zbinden, Co-Head Global Programme Food Security and associated team member in the SNIS project, inspecting hermetically stored grain during the field visit.

## 2 Side-Event and Presentation at the African Union

The SNIS project team presented their research results at the Second All Africa Postharvest Congress and Exhibition. The conference was organized by the African Union Commission in Addis Ababa, Ethiopia, on 17th - 20th September, 2019 under the theme “Postharvest Loss Reduction and Agro-Processing: Drivers of Agricultural Transformation in Africa”. The Congress was attended by over 450 participants from Member States of the African Union, academia, International Organizations, Non-Governmental Organizations, and the private sector.

SNIS Project Coordinator Matthias Huss presented the research results at a side-event jointly organized by the University of Zurich and the World Food Programme (WFP) on September 17. The event resulted in media coverage in Ethiopian television, which featured an [interview with Matthias Huss](#) (starts minute 3:07). Additionally, SNIS project principal member Michael Brander gave an invited



presentation during the conference on September 18, and a poster on the SNIS project research results was displayed at the conference booth of SNIS project partner Helvetas.

The conference overall resulted in a “call to support AU [African Union] member states to put in place systems and processes to achieve the postharvest loss reduction target set in the Malabo Declaration that will contribute to the achievement of the Sustainable Development Goals (SDG 12.3.)” (para. 2), as summarized in the [African Union communique](#) of the conference. The communique further stressed the importance of research in the causes and consequences of post-harvest losses and the value of multi-disciplinary research collaborations to conduct such research and disseminate the results in a form well accessible for end users (para. 28 and 35).



The joint side-event with the World Food Programme was very well attended by around 50 participants.



Matthias Huss, SNIS project coordinator, presents the SNIS project results from Tanzania.



Further panelists and presenters at the side-event included representatives from WFP and hermetic storage bag producers.



SNIS principal team member Michael Brander during his presentation of the effects of improved on-farm storage on seasonal food insecurity.

### 3 Presentation at the World Food Programme's Regional Center of Excellence Against Hunger and Malnutrition

The SNIS team gave an invited presentation at a conference of the United Nations World Food Programme Regional Center of Excellence Against Hunger and Malnutrition. The conference was

convened under the topic "Investing in good practices and innovative technologies to reduce post-harvest losses and contribute to improving food security and nutrition" and was held from 23 to 24 November in Abidjan, Ivory Coast. The conference was opened by the Vice-President of the Republic of Cote d'Ivoire, H.E. Daniel Kablan Duncan, and attended by 70 participants mainly from national ministries of agriculture, United Nations Agencies and Programmes, NGOs and the private sector.

SNIS Project coordinator Matthias Huss presented in a plenary session on the effects of improved on-farm storage on seasonal food insecurity and food price fluctuations, based on our respective SNIS funded research project in Tanzania. In the ensuing discussions, various participants stressed their interest to collaborate in research projects on post-harvest losses in Central and Western African countries in order to benefit from the Tanzanian experience. The SNIS project team hopes that the presentation will spur further research in this regard and will continue their efforts to explore multi-stakeholder research partnerships.



The WFP conference was opened by the Vice-President of Ivory Coast, H.E. Daniel Kablan Duncan (right-hand side of the picture).



Matthias Huss, SNIS project coordinator, presenting the project results. Further panelists in the session included representatives from CIRAD and WFP.



The workshop in Abidjan was attended by 70 participants, mainly representatives of government ministries from various Sub-Saharan African countries, United Nations, NGOs, and the private sector.