APHLIS - AFRICAN POSTHARVEST LOSSES INFORMATION SYSTEM

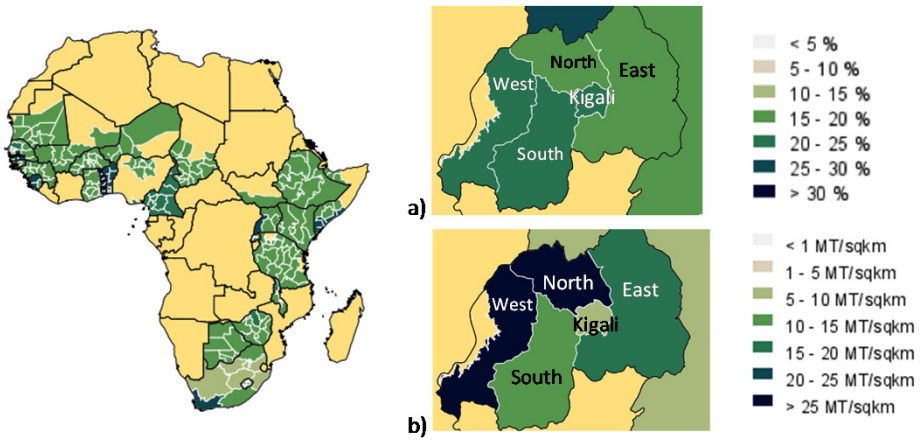
- A TRANSNATIONAL NETWORK OF CEREAL GRAIN EXPERTS

APHLIS provides estimates of postharvest weight losses for cereals in Sub-Saharan Africa, provincially and nationally

Background: Agriculture is being challenged to produce ever more food for a rapidly growing world population. This problem is exacerbated by competition for limited physical resources and the negative impacts of climate change on the environment. Food prices are not expected to decrease in this high demand and high risk scenario, so that data on postharvest losses (PHLs) have a central role in agricultural planning. Reliable PHL figures are important for a better targeting of loss reduction programmes and are essential for the estimation of food availability in countries threatened by food insecurity.

What the system does: APHLIS provides weight loss estimates for the cereal grains of Sub-Saharan Africa, by province and by country. These can be viewed on the APHLIS website at http://www.aphlis.net as interactive maps or as tables of loss values.

Loss estimates: maps



Sub-Saharan Africa % weight loss **Rwanda a)% weight loss b) loss density**

Maize losses 2012

Loss estimates: tables

Weighted average according to reported figures						
Regional total for cereals [% of total annual production]						
2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
15.0	15.6	14.8	15.2	14.9	15.0	14.8

Regional PHL by cereal [% of total annual production]							
Cereal	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Maize	18.9	19.9	17.8	18.8	17.8	18.0	17.8
Rice	11.8	12.1	12.0	12.6	12.0	13.9	12.1
Sorghum	12.3	12.8	12.5	12.6	12.4	12.4	12.4
Millet	10.1	10.0	9.7	9.4	9.8	9.6	9.6

PHLs are cumulative weight loss from cereal production taking into account each link in the postharvest chain. By convention, they do not include any losses from processing (e.g. milling) and in this system do not include quality losses if food is still fit for human consumption.

Components of the system:

*A*PHLIS is based on the following components:

- **A network** – of local experts from each country in the region. Network members supply relevant data and verify loss estimates.
- **A shared database** - holding relevant data by province and by country for the calculation of losses.
- **A loss calculator** – based on a simple model that calculates losses from all provinces of the countries in the region. Losses are estimated from the best known loss figures for each link in the postharvest chain allowing for crop type, climate and scale of farming (smallholder/commercial). Further corrections are applied for a range of other seasonal factors.

Key features for the user:

*A*PHLIS users get a lot more than just PHL figures:

- *A*PHLIS offers a downloadable version of the loss calculator as an Excel spreadsheet. Users can change default values to those relevant to their situation and generate PHL estimates for any geographical scale.
- *A*PHLIS PHL tables can be 'clicked' to reveal a complete breakdown of the loss calculation, the sources of data and an appraisal of the quality of the data used. Users can subject PHL estimates to critical examination.
- *A*PHLIS is easily upgraded as new loss data become available. Users can contribute their loss data and, if it complies to current data quality standards, will be added to the database.
- *A*PHLIS provides some 'Country Narratives' that give a context to the PHLs.
- APHLIS gives advice on loss assessment and tips on loss reduction.

Future development and other uses:

*A*PHLIS offers a robust system for the estimation of PHLs, is transparent in operation and can capture improvements in loss estimates, so it is a means by which more accurate loss estimation is achieved. For the future there will be:

- A drive to improve the accuracy of the APHLIS by generating more data for the losses at the various links in the postharvest chain.
- Improved data gathering by automatic uploading of climate data and by novel approaches to training and incentivise the APHLIS network.
- New uses, for example as climate change makes unseasonal climatic events more common, new data on how these events affect postharvest losses at one location can be included in the model so that future impacts on a wider geographical range can be predicted.
- Broadening of the system to include more features of direct relevance to loss reduction and to attract the interest of a wider audience.

For more information:

Please contact APHLIS3@gmail.com

Natural Resources Institute

European Commission

MARS Monitoring Agricultural ResourceS

Federal Office for Agriculture and Food

Acknowledgements

*A*PHLIS was created within the work programme of the European Commission's Joint Research Centre (Italy) and implemented with the Natural Resources Institute (UK) and BLE (Ministry of Food, Germany). In Africa, the team has included the regional research organisations ASARECA and SADC/FANR. During development the Advisory Board has included the Forum for Agricultural Research in Africa (FARA), CILSS/AGRHYMET, the UN Food and Agriculture Organisation (FAO), the Joint Research Centre (EC), and EUROPEAID (EC). Special thanks goes to the APHLIS national network partners without whom there would be no APHLIS.

www.aphlis.net