



Rapid Loss Appraisal Tool (RLAT) for agribusiness value chains

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ABSTRACT

The purpose of the Rapid Loss Appraisal Tool - RLAT is to provide a sufficiently accurate pre-screening tool for identifying intervention points along agribusiness value chains. The RLAT aims to identify incentives for value chain operators and to propose activities to reduce pre- and post-harvest losses. The methodology supports the design of concrete interventions that have the primary aim of improving food security at the subsistence level, either on farms or in communities, and the secondary aim of upgrading specific value chains. The supporting literature is divided into two publications, the RLAT User Guide and RLAT Toolbox. Together they provide information on the requirements and use of RLAT as well as ready-to-use instruments and materials. The Rapid Loss Appraisal Tool is particularly useful for value chain projects that have a focus on reducing food loss and food waste along the chain as well as for professionals and stake holders working in this domain. Given that these documents provide hands-on support materials, the use of RLAT does not require scientists; technicians can quite easily manage the appraisal exercise. RLAT was designed to serve the needs of local or regional practitioners and not those of macroeconomic policymakers.

Keywords: food loss, value chain, aflatoxin

1. Introduction

1.1 Addressing food losses: a sustainability imperative

Losses and inefficiencies along agribusiness value chains are a major impediment to rural development, food security and sustainable growth and, hence, to rural transformation in developing countries. The most common causes for food loss in developing countries are the generally weak economic infrastructure and largely inappropriate practices employed at all stages in the value chain - from input procurement, through farming and harvesting, to processing and trading. The resulting quantitative and qualitative losses seriously affect livelihoods and food security. In addition, contamination with mycotoxins - especially aflatoxin, the presence of which is largely due to the very same factors that cause food losses - presents a severe problem for consumer health and livestock productivity. Food losses imply the waste of scarce resources (such as labour, land, financial means, water, energy and other inputs) invested in the production and handling of food that ultimately is not available for improving food security, increasing rural incomes and creating employment opportunities.

1.2 Developing a rapid appraisal tool

GIZ commissioned the design and piloting of the Rapid Loss Appraisal Tool for agribusiness value chains (RLAT) with the aim of producing a 'lean' and easily manageable methodology to provide quick results. It is meant to yield hands-on strategic orientation to those developing realistic and realisable measures for sustainable food loss reduction. The methodology is designed to serve as a pre-screening for further in-depth-studies and to identify leverage points for reducing losses at the various value chain stages - from farming, through handling and processing, to retail trade. RLAT's developers based the tool around a set of tried-and-tested participatory approaches and tools that draw on GIZ's experience of using rapid appraisal methods and on others' experiences of assessing losses (APHLIS, PHFLA, recent studies on food losses implemented by GIZ in Kenya and Nigeria, and GIZ's ValueLinks Methodology for value chains development and rapid and participatory appraisal methods). The tools and approaches have been simplified for rapid implementation at the local level, enabling users to quickly and systematically collect information, assess stakeholder perceptions of food losses, and triangulate the findings using fast-track multiple evaluation methods that make it possible to confirm the results without undertaking elaborate and more time consuming representative sample surveys.

1.3 Expectations

A rapid appraisal tool intends to support project management decision making by allowing for a quick:

- pre-screening of food losses and their hotspots (critical loss points) in local/regional value chains, including self-consumed food;
- identification of leverage points for reducing food losses along value chains (pre- and post-harvest) and the gathering of sufficient evidence for initiating interventions;
- identification of information gaps to support the planning of more detailed studies on losses and their impacts, on possible loss reduction measures as well as incentives that would engage private and public sector stakeholders in addressing food losses.

2. The Rapid Loss Appraisal Tool (RLAT)

2.1 Definition of 'losses' and of the RLAT's scope

Taking a broader look at food losses - by including pre-harvest operations and framework conditions as well as alternative uses beyond that of human food - is imperative when aiming to provide practitioners with a tool that supports informed technology and investment decisions targeting loss reduction. RLAT therefore takes a holistic view on food losses, both for food security purposes and for checking the viability of strategies for upgrading value chains that form part of rural economic development. It is also important to point out that, compared to other existing methodologies, RLAT explicitly is designed to serv the needs of local or regional practitioners and not those of macro-economic policymakers.

2.2 Further selected loss dimensions considered in the RLAT: lost opportunities, aflatoxin risk assessment and economic losses

Lost opportunities are a result of inadequate production methods, food quality problems or food safety hazards in early value chain operations that result in downstream losses along the value chain. Lost opportunities increase the unit costs of cultivating crops, breeding animals or bringing food and feed to market. This, in turn, makes food and feed more expensive for consumers and less remunerative for producers, traders and processors. Furthermore, lost opportunities weaken the competitiveness of value chains due to higher unit production and transaction costs and lower quality. Consequently, products featuring a high level of lost opportunities have a weak competitive position compared to imported and/or substituted products.

RLAT considers aflatoxin risk assessments to be an essential part of a comprehensive loss appraisal on crops that are susceptible to aflatoxin contamination (such as maize) and integrates them accordingly. The FAO estimates that around 25 percent of the world's grain harvest is contaminated with aflatoxin. Contaminated grain is often consumed in developing countries, leading to serious negative effects on human health and other related impacts. By using proxies for potential aflatoxin contamination (e.g. grain moisture, harvest periods, storage conditions), RLAT supports a realistic risk estimation for aflatoxin contamination along value chains.

RLAT also considers that all types of pre- and postharvest losses ultimately translate into economic losses:

- Economic losses refer to lost income opportunities resulting from low prices prevailing shortly after harvesting, when a lack of storage facilities or an immediate need for money urges producers to sell their produce immediately.
- Quantitative losses translate into economic losses either when farm households have to spend money to substitute losses in weight and/or volume to satisfy their subsistence needs or when lost produce along the value chain reduces operators' profits at any stage of the value chain.
- Qualitative losses translate into economic losses when products are no longer marketable or cannot be sold in higher-value market segments (i.e. produce is rejected by customers for quality reasons meaning that premium prices cannot be achieved and/or price discounts need to be applied).

2.3 Principles and challenges that guide the use of the RLAT

If RLAT is to be used proficiently and its results are to be sufficiently reliable, the following qualities are important: familiarity with participatory methods and instruments, excellent moderation and communication skills, interpersonal and cultural sensitivity, a deep knowledge of how the value chain functions in reality, an ability to quickly ascertain and digest situations and an unbiased approach to assessing findings and drawing out conclusions. To ensure optimal

implementation, the RLAT process needs to be guided by ‘optimal ignorance’ and ‘appropriate imprecision’. When planning a rapid appraisal, it is important to ensure that stakeholders will be available to participate in the workshops, focus groups and individual meetings. The scheduling of a rapid appraisal should, as far as possible, take into consideration the limited availability of value chain operators during the main production season. Since RLAT does not use representative sampling methods, special attention must be paid to the existence and significance of the seasonal, spatial and process-related variability of losses. When planning the schedule, selecting locations and deciding on the sub-chains of national value chains to be examined this needs to be considered. When applied in a competent and unbiased way, RLAT helps to expose the real causes of losses and provides reliable results for deriving potential solutions and planning measures to reduce such losses. However, care must be taken not to confuse symptoms with causes. Therefore facilitating the process is a demanding task in terms of harmonising understanding, clarifying terms and “translate” perceptions into assessment data.

3. Process steps of RLAT

The tool comprises three consecutive and interdependent phases and 10 process steps. Sequential appraisals of loss hotspots realised by different sets of value chain stakeholders make it possible to survey, compare, triangulate and scrutinise perceptions about losses. Finally, inconsistencies or discrepancies in the loss perception data collected through the different activities undergo a plausibility check (i.e. are discussed by experts). The aim of this check is to formulate a shared view of the prevalence of losses along the value chain and to provide realistic loss figures.

Table 1: *RLAT process steps for assessing losses along a particular value chain*

Process steps	Relevant tools
Phase 1: Preparation — essential groundwork	
<u>1. Scheduling the rapid appraisal</u> <ul style="list-style-type: none"> • Initiating the implementation of an RLAT for a particular value chain • Scheduling the field-research phase to ensure smooth implementation 	<u>Participatory methods:</u> sampling methods, key expert roundtable, stakeholder workshops, focus group meetings
<u>2. Training of RLAT users/facilitators</u> <ul style="list-style-type: none"> • Inculcating the knowledge and skills required for the proficient use of the RLAT, with a special focus on developing an understanding of RLAT principles 	The entire set of participatory methods, checklists and forms provided in the toolbox
<u>3. Desktop study</u> <ul style="list-style-type: none"> • Reviewing secondary data on quantitative and qualitative losses • Assessing the framework conditions (policies, infrastructure, laws, etc.) • Finalising the value chain map so that it 	<u>Checklists:</u> general data, farmer focus group meeting, trader focus group meeting, processor meeting

features all the value chain functions in detail	
Phase 2: Participatory assessments	
<u>4. Key expert roundtable (one day)</u> <ul style="list-style-type: none"> Analyzing loss hotspots (critical loss points) along the value chain Validating the results of the desktop study 	<u>Checklists:</u> general data, farmer focus group meeting, trader focus group meeting, processor meeting <u>Participatory methods:</u> loss hotspot analyses, key expert roundtable
<u>5. Stakeholder workshop (one-day workshop)</u> <ul style="list-style-type: none"> Collecting the loss perceptions of workshop participants Assessing loss hotspots (critical loss points) along the value chain Validating the results of the key expert roundtable 	<u>Checklists:</u> general data, farmer focus group meeting, trader focus group meeting, processor meeting <u>Participatory methods:</u> loss hotspot analyses, stakeholder workshop
<u>6. Focus group meetings with value chain operators</u> <ul style="list-style-type: none"> Assessing the loss perceptions of value chain operators Validating workshop results on the ground ('ground truthing') 	<u>Participatory methods:</u> transect walk, loss categories and ranking matrix <u>Checklists:</u> general data, farmer focus group meeting, trader focus group meeting, processor meeting <u>Data collection sheets and evaluation sheets:</u> general data, farmer focus group meeting, trader focus group meeting, processor meeting, biophysical measurements
<u>7. Key informant meetings (where required to support the findings)</u> <ul style="list-style-type: none"> Validating/complementing the results of the preceding process steps 	Tools from the aforementioned list selected according to specific needs for validating/complementing the results of the preceding steps
Phase 3: Follow-up — derived findings	
<u>8. Assessment of results</u> <ul style="list-style-type: none"> Triangulating different results (plausibility check) Outlining aggregated results 	<u>Forms for documenting results:</u> cumulative loss matrix, aflatoxin risk assessment
<u>9. Conclusions and recommendations</u> <ul style="list-style-type: none"> Drawing conclusions from the final assessment of the cumulative loss matrix/aflatoxin risk appraisal 	<u>Forms for documenting results:</u> cumulative loss matrix, summary aflatoxin risk assessment (also, if required, data collection sheets and roundtable and stakeholder workshop reports)
<u>10. Reporting</u> <ul style="list-style-type: none"> Consolidating the findings of the RLAT exercise in a concise report If required, creating a presentation to inform potential users and/or raise public awareness 	<u>Forms for documenting results:</u> reporting structure and contents, cumulative loss matrix, aflatoxin risk assessment (also, if required, data collection sheets and roundtable and stakeholder

	workshop reports)
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4. Further development of RLAT: adaptation to different agribusiness value chains (crops/livestock)

Both the RLAT itself and the user guide can be applied to livestock and other crop value chains. While the process steps are directly applicable to other agribusiness chains, the participatory instruments, checklists and data collection and evaluation sheets will need to be adapted to the specific features of the produce, the actual situation of the value chain and the external conditions (e.g. agro-ecological and framework conditions). To implement the RLAT assessment, it is first necessary to build the required capacities at the national sub national or local levels depending on the focus of the assessment. Following the RLAT training, users may most likely initially require support and guidance from experts / peers who have already mastered the tool.

REFERENCES

- Chambers R. (1994a) The Origins and Practice of Participatory Rural Appraisal, *World Development*, Vol. 22 (7), 953–969.
- Chambers R. (1994b) Participatory Rural Appraisal (PRA): Analysis of Experience, *World Development*, Vol. 22 (9), 1253–1268.
- HLPE (2014) Food losses and waste in the context of sustainable food systems, *High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*, Rome, 22.
- Krummacher A. (2004) Der Participatory Rural Appraisal (PRA)-Ansatz aus ethnologischer Sicht. PRA – a quick and dirty anthropology? *Arbeitspapiere/Working Papers Nr. 36*, Institut für Ethnologie und Afrikastudien, Johannes Gutenberg-Universität, Mainz, Germany.
- Schoonmaker Freudenberger K. (n.d.) Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA): A manual for CRS Field Workers and Partners, 17ff, available at: <http://www.crs.org/our-work-overseas/research-publications/rapid-rural-appraisal-andparticipatory-rural-appraisal>
- Schönhuth M. (nd.) Mit den Augen des Ethnographen: Ethnologinnen und ihre Begegnung mit partizipativen Planungsmethoden - Drei Erfahrungsberichte, available at: https://www.uni-trier.de/fileadmin/fb4/ETH/Aufsaeetze/Mit_den_Augen_Ethno.pdf
- Springer-Heinze A. and Finkel T. (2012) GIZ Concept Note: Greening value chains: A conceptual and methodological framework for integrating climate change and other environmental concerns into value chain development strategies, unpublished.
- Springer-Heinze A. (2008) ValueLinks Manual: The Methodology of Value Chain Promotion, first edition, 9, available at: http://www.valuelinks.org/images/stories/pdf/manual/valuelinks_manual_en.pdf

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USAID (2012) The Market for Maize, Rice, Soy, and Warehousing in Northern Ghana, 10, available at: <http://eatproject.org/docs/USAID-EAT%20Market%20Assessment%20Ghana.pdf>

USAID Center for Development Information and Evaluation (1996) Conducting Focus Group Interviews. Performance Monitoring and Evaluation, TIPS No 10., 1, available at: https://www.ndi.org/files/USAID%20Guide_Conducting%20Focus%20Groups.pdf

WRI (2015) Food Loss and Waste Protocol, World Resources Institute, available at: <http://www.wri.org/our-work/project/global-food-loss-and-waste-measurement-rotocol/documents-and-updates>