



## **East Africa Tea Trade Association**

### **Automation of the Tea Auction in East Africa Tea integrated Tea Trade System (iTTS)**

#### **End of Project Report**

**June 2022**

#### **Project Supported By**



#### **Project Funded By**



**MINISTRY OF FOREIGN AFFAIRS  
OF DENMARK**  
*Danida*

<b>Proposed Project Title</b>	East Africa Tea Trade Association integrated Tea Trade System (iTTS)
<b>TMEA Outcome</b>	Enhanced Trade Environment
<b>TMEA Intermediate Outcome</b>	Improved efficiency and effectiveness in the trading of tea in Eastern Africa
<b>End of Project Outcome(s)</b>	<ul style="list-style-type: none"> <li>Increased access to information in the trading of tea in East Africa auction</li> <li>East Africa auction members increase compliance in the tea auction procedures</li> </ul>
<b>Implementing organisation(s)</b>	East Africa Tea Trade Association (EATTA)
<b>Project Focal Person</b>	John Sudi
<b>Project Budget</b>	USD 2,170,000 *
<b>Project Duration</b>	2017 - 2022
<b>TMEA Project Leader</b>	Lee Birir
<b>TMEA Portfolio Director</b>	Erick Sirali

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\* There are additional tax savings accrued at a value of USD 46,698.99

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### **List of Acronyms**

BCP	Business Continuity Plan
CCTV	Closed-circuit Television
COVID-19	Coronavirus Disease
DC	Data Center
EATTA	East Africa Tea Trade Association
ICT	Information and Communication Technology
iTTS	integrated Tea Trade System
JEG	Joint Evaluation Group
KTDA	Kenya Tea Development Agency
PIT	Project Implementation Team
PSC	Project Steering Committee
SAP	System Application and Product in Processing
TA	Technical Assistant
TMEA	TradeMark East Africa
UPS	Uninterruptable Power Supply

## **1. Introduction and background information**

### **1.1 East Africa Tea Trade Auction**

The East African Tea Trade Association (EATTA) is a voluntary organization bringing together Tea Producers, Buyers (Exporters), Brokers, Tea Packers and Warehouses, all working to promote the best interests of the Tea Trade in Africa. EATTA is mandated to promote and facilitate the interests of all the stakeholders in the tea trade in Africa by creating an enabling business environment geared towards maintaining global standards and delivering tea products to the customers in the most profitable way.

### **1.2 About the project**

East Africa is the world's largest exporter of black tea, one of the region's biggest generator of foreign-currency earnings. For Kenya, tea is the leading foreign currency earner. The organization of tea export processes in Eastern Africa is structured around the tea auction, operated by the East African Tea Trade Association (EATTA) based in Mombasa.

The Mombasa Tea Auction, the world's largest black tea auction, was established in 1956, and handles about 75% of tea exported through the Port of Mombasa that includes shipments from countries including Kenya, Burundi, Rwanda, Uganda, Democratic Republic of Congo, Malawi, Mozambique, Madagascar, Ethiopia and Tanzania. The tea value chain in Eastern Africa consists of several actors from the farm-level to the consumers of tea. They include producers/farmers, tea pickers, brokers, warehousemen, buyers/exporters, packers, tea Trade Intermediaries (e.g. banks, customs agents, logistics service providers, transporters, shipping lines etc.), the Government and government agencies.

Most of the tea is auctioned by factory name and grade at the public Mombasa Tea Auction Centre resulting in direct feedback of market prices to factories and farmers. Days before the auction, buyers taste different grades of teas produced by different factories to determine which are most appropriate for their companies' products. Tea that is purchased at the auction is exported by containers to processing facilities, where it is blended with teas from around the world. Tea auction process is usually organized in as a three-step process, that is, pre-auction (factory dispatch and warehouse receiving, tea allocation, tea sales notification, catalogue creation) then the actual auction at the trading floor and post-auction process (payment, transfer of ownership export then packing/blending). Most of these processes were being handled manually. This has a huge implication to processes time, cost and transparency.

EATTA with the support of TMEA has changed the way tea is traded in Eastern Africa through the introduction of the integrated Tea Trade System (iTTS). The iTTS is an end-to-end tea trade solution that facilitates all trade actors to offer, sell and buy their teas in an effective and efficient way. The new system enables all tea trade actors to operate on the same platform hence impacting the tea trade cycle right from when tea is processed to the time it is exported to targeted destination markets.

## 2. Project Progress

Output/Activity	Status
<b>System developed and deployed</b>	
Inception and review of functional analysis	Complete
Onboarding of developers	Complete
System development and delivery of prototype	Complete
System testing	Complete
System go-live	Complete
<b>Integration to other systems</b>	
Inception and review of functional analysis	Complete
Integration interfaces development and delivered	Complete
Integration testing	Complete
Integration go-live	Complete
<b>Change management plan implemented</b>	
Preliminary project kick-off activities	Complete
Sensitization of users	Complete
Training of users	Complete
System launch	Complete
<b>Monitoring and evaluation</b>	
Project baseline survey	Complete
Project evaluation	Complete
<b>Support services implemented</b>	
Supply and installation of infrastructure	Partially complete
System security audit	Complete
Technical assistance	Complete

### 2.1 Key activities, outputs completed

Two key project outputs and their dependent activities as outlined above were successfully completed.

#### Output 1: System developed and deployed

This involved the development and deployment of an integrated Tea Trading System that automated the manual tea trade cycle at EATTA which includes the pre-auction, auction, and post-auction processes. All activities have been completed apart from the business module going live which is pending decision of the EATTA board to go live as they seek approval from tea trade stakeholders. The business module which is part of the post-auction process supports the generation and confirmation of sale invoices. It is integrated with Bank systems to get confirmation on payment, generation of tea release documents and respective approvals, generation of delivery order, loading instructions and tea release certificate. From the trials done on the business module during the piloting period, the post-auction time is expected to reduce from 17 days to 10 days when the business module becomes fully operational.

#### Output 2: Integration to other systems

This output entailed integrating the iTTS with other systems (internal and external) whose processes affect and/or are affected by the automation of the tea trade cycle processes. iTTS had been integrated with two (2) banking systems namely Stanbic Bank and Equity Bank for effective payment and interfaced with three (3) other systems namely brokers' Chai man system, KTDA SAP system and CTCW SAP system which facilitate sharing of information between brokers, producers, warehousemen and buyers.

### **Output 3: Change management plan implemented**

This output mainly focused on sensitizations and trainings to increase the acceptability and adoption of the system. Ten (10) stakeholder engagement forums had been held as of December 2020 and these included: awareness and status review sessions, decision-making sessions (where membership consensus was required), and training and retraining sessions. EATTA trained staff continue to offer training to the system users on a need basis.

### **Output 4: Support services implemented**

In order to support the necessary support structure for the system rollout, the following was done.

- i) Technical Assistance Services: A technical assistant was contracted through the software developers to support the rollout of iTTS.
- ii) Laptops and Projector: Laptops and a projector were procured to assist the EATTA staff with the operation of the iTTS.
- iii) Systems security audit: a consultant was contracted to conduct a security audit of the iTTS to ensure security mechanisms have been put in place to ensure security, integrity, and privacy of iTTS data is not exposed to unauthorized users.
- iv) Provision of Cloud Based Secondary site: cloud services to host the iTTS were procured to ensure continuity of the iTTS in case the mini data center infrastructure is not operational.
- v) Tier 2 Mini-Data Center: services and ICT equipment were procured for a mini data center to provide hosting environment for the iTTS at the EATTA offices.
- vi) Internet: Internet services were procured for EATTA at their head office to ensure EATTA staff and stakeholders have Internet connectivity as well as for the hosting infrastructure in the mini data centre.
- vii) Business Continuity Plan and ICT Policy: A consultant was contracted to develop a business continuity plan (BCP) and ICT policy for EATTA to adopt and ensure data privacy and protection, disaster recovery and continuity of EATTA's operations.

## **2.2 Key outputs not achieved**

The set-up of the tier 2 mini data center (DC) was 75% complete by the end of the project reporting period. Site survey was conducted, and bill of materials formulated for the data center, all designs for the DC were completed as well as their statutory approvals and all civil, electrical and mechanical works as per approved designs were completed. Delivery of equipment which included network switches, access points, routers, firewall, servers, server operating system, external storage, CCTV, UPS, generator, access control and accessories were completed except for the Air Conditioner. The vendor delayed on delivery of the required air conditioning unit for the data center hence their contract was terminated on non-

performance grounds. The vendor took the matter to Court where it was pending deliberation and way forward by the end of the project reporting period. Mitigation measures have been put in place where once the Court upholds the termination of the contract, alternative air conditioning units have already been identified and a vendor to supply the same will be contracted using the balance of the funds from the previous contract.

### 2.3 Key outcomes achieved

A key outcome of the project was to improve the efficiency and effectiveness in the management of tea trade. This was measured in terms of time taken to complete a tea trade cycle and costs incurred in completing a tea trade cycle. Targets set out of the start of the project have been achieved beyond target for reducing costs incurred and almost achieved for reduction in time, as confirmed by the evaluation exercise conducted by an independent evaluator on behalf of TMEA's Joint Evaluation Group (JEG).

Indicator	Baseline	Targets	Results
Indicator 1: Time taken to complete a tea trade cycle	37 days 10 hours	At least 30% reduction in the total time	28 days 8 hours 24% reduction
Indicator 2: Costs incurred in completing a tea trade cycle (US\$)	US\$4,533	At least 15% reduction	US\$1,889 58% reduction

- Automation of EATTA's tea auction processes through iTTS has led to a 24% reduction in time taken to complete a tea trade cycle, from an average of 37 days and 10 hours to 28 days and 8 hours.
- Costs incurred in completing a tea trade cycle have also reduced by more than 58%, from an average of US\$4,533 to US\$1,889.

There were significant gains observed on the governance in the management and administration of tea trade:

Indicator	Target	Results
Percentage of tea trade actors satisfied with the online process of trading of teas	>=75%	80%
Perceived degree of transparency in the trading of teas	>=65%	88%
Perceived degree of accountability in the trading of teas	>=75%	82%
Perceived degree of convenience in the trading of teas	>=75%	92%



## 2.4 Financial report (brief analysis of expenditure vs project outputs)

This project was funded under project code 3537.

#	Activities Implemented	Output Realised	Amount Spent
1.	<ul style="list-style-type: none"> <li>i) Requirements Gathering and Needs Analysis</li> <li>ii) Policy review and Development of iTTS Guidelines</li> <li>iii) Systems development and deployment</li> <li>iv) System to system integration</li> </ul>	iTTS Developed and Deployed; and System to systems Integration	1,001,331
2.	<ul style="list-style-type: none"> <li>i) iTTS Online security certificate</li> <li>ii) Mini Data Center Due Diligence</li> <li>iii) Technical Assistance Services</li> <li>iv) Laptops and Projector</li> <li>v) Systems Security Audit</li> <li>vi) Provision of Cloud Based Secondary site</li> <li>vii) Tier 2 Mini-Data Center</li> <li>viii) Internet</li> <li>ix) Hosting services</li> <li>x) Development of Business Continuity Plan and ICT Policy</li> </ul>	iTTS Project Support Services Implemented	906,602
3.	<ul style="list-style-type: none"> <li>i) Sensitizations</li> <li>ii) Trainings</li> <li>iii) Launch</li> </ul>	iTTS Project Change Management Plan Implemented	257,266
4.	Monitoring and Evaluation	iTTS project monitored and evaluated	50,000
5.	<b>Total</b>		<b>2,215,199</b>

### 3. Lessons learnt

The project has provided numerous valuable lessons touching on project management, technical execution, process, and policy changes, all of which are critical in informing quicker turnaround and delivery of projects going forward.

#### 3.1 Lessons learnt on what was done well

- i) **Stakeholder engagements through consultative and inclusive robust change management strategies is critical for project success** through building stakeholder trust and project ownership by the stakeholders. The effective engagement of the partner agency, relevant government agencies and the private sector enhances political will and improves project ownership.
- ii) **Strong project governance structures with a Project Steering Committee (PSC) consisting of selected top management of key stakeholder groups and Project Implementation Committee (PIT) comprising of technical personnel from key stakeholders is crucial for project success** because it ensures that their concerns are technically discussed and taken into consideration during project design and implementation. The members of PIT and PSC can also be used during sensitizations and awareness creation, which enhances ownership.
- iii) **Planning for risks and delays in project implementation due factors beyond project control** such as electioneering activities allows projects to have realistic milestones given predictable effects of election-related delays.
- iv) **Projects' flexibility and ability to positively respond and adapt to evolving local and international realities** such as the COVID-19 pandemic enhances resilience, which minimises disruptions of implementation of activities due to changing realities on the ground.
- v) **Dealing with public sector institutions** and developing trade systems that are responsive to their needs requires having dedicated work force from both the client and the developer working closely with each other. Also, while dealing with a government partner, it is strategic to train them at a location out of the vicinity of their work stations to increase attendance and the buy-in.
- vi) **Providing for resident Technical Assistants (TAs) and reliable technical support** services in project design and implementation enhances knowledge transfer, which ensures projects' technical sustainability.
- vii) **Blending consultant's team with resident local experts minimizes interruptions** during projects' implementation due to restrictions on physical movements because of pandemics, etc.
- viii) **Identifying and taking lessons learnt during project implementation** improves project success.

#### 3.2 Lessons learnt on what needs to be improved

- i) There is need to have consultants working on the project to have local presence where the consultant is based in a remote country. This was especially learnt during the Covid-19 pandemic as the software developers could not travel due to restrictions where they were needed for physical meetings to unlock some of the issues that cropped up.

- ii) There is need to have joint training where different stakeholders are represented in training sessions. This will help with some of challenges faced such as a lot of change requests being made where stakeholders were trained differently based on their role in the tea trade value chain and each of the stakeholder's input in the system would affect the other.

### **3.3 Case studies of success**

The following are testimonials from various stakeholders of EATTA about iTTS:

Caesar Muraguri Thairu, the General Manager of Tea Brokers Mombasa, expressed optimism with the ongoing automation saying, "more tea will be sold and EATTA will have a business case to expand its reach and embrace more markets such as Nigeria and Egypt. Further, brokers will be more efficient, doing less clerical work and becoming more analytical focusing more on statistics, analysing trends and informing buyers, and producers on market needs. They will be like brokers who sell stocks, in a stock exchange and much more."

EATTA chairperson Arthur Sewe said the platform would increase farmers' and dealers' profits by cutting operation costs. "The digitisation (iTTS) seeks to fill gaps in the current procedures, which are done manually including membership and cataloguing. This will reduce cost and time as traders would not have to travel physically to trade their teas," said Mr Sawe. "To ensure sustainability, the cost of maintenance of the system has been distributed among users based on a kilogramme of tea transacted and appointment depends on the business model and level of utilisation by the membership."

East African Community Permanent Secretary Dr. Kevit Desai said the system would replace the manual system, which added high transaction costs for traders, delays in payments and exportation, as well as a limited timeline for trading. "The manual procedure involves a couple of middlemen, ranging from producers, warehouses, brokers, buyers, and middlemen. In the long run, the trickle-down effect is that the farmers have little say on the prices of their tea but in this, farmers will benefit immensely," said Dr. Desai.

According to EATTA Managing Director Edward Mudibo, the system is expected to shorten the pre-auction, auction and post-auction stages. "It will create the potential for increased frequency in trading volumes and reduce the tea trading cycle by about 65 per cent from the current 45 to 60 days to less than a month. It will also fast track payments to farmers and reduce the need to take loans to finance farming operations," said Mudibo. Mr. Mudibo further stated that the platform will ensure that stakeholders of the tea auction, including farmers, buyers and sellers receive real-time information on what is happening on the auction bourse, which will boost confidence in the process.

George Omuga, the General Manager of Ngorogo Tea Factory said "At the comfort of our offices, at a click of a button, we are able to input dispatch details. So, by saving paper that means that we'll be reducing the rate at which the trees are cut down for paper production.

If we reduce the destruction of forests, you mitigate any form of climate change, that means we are able to remain in tea business sustainably.”

## 4. Recommendations and way forward

### 4.1 Recommendations

- i) **Review the internal procurement and decision-making policies:** To increase on efficiency and effectiveness in the implementation of projects by partner agencies. Some stakeholders felt that TMEA procurement/decision making processes were to some extent longer compared to their own processes, implying that had they been in charge of procurement, the processes would have moved faster.
- ii) **Consultants/ contractors should have local support team** to continue providing the required services even if there are restrictions in movements such as lock downs, such as during COVID-19 Pandemic.
- iii) **Systems developers need to have experts with knowledge on** processes being automated (such as tea trade processes, etc) to avoid misunderstanding between the developers and the process owners.
- iv) **The trade system (EATTA iTTS) needs to provide for complaint raising and feedback mechanism** so that stakeholders can raise the complaints through the system, to enable EATTA to respond promptly to complaints.
- v) **Enhance the iTTS to handle multiple auctions** to reduce on the open auction window time.
- vi) **Finalise the implementation of the business module** to contribute to increased efficiency in the post auction processes.
- vii) **Review the rules and regulations in the Rule Book** to effect and operationalize the different processes time reductions to increase the trade cycle efficiency in EATTA due to iTTS.
- viii) **There is need for intentional affirmative action for women to actualize the 1/3 rule** for women representation in the tea auction. While the EATTA iTTS is accessible to anyone who has registered for a particular service, findings show for instance that men dominated the tea trade cycle.
- ix) **Update the Monitoring Plans with targets that are specific and measurable and baselines to enable clear assessment of the results:** The evaluation findings indicated that some indicators in the monitoring plans had no baselines nor targets or the targets were not specific (e.g. >1) which made the assessment of the results difficult. There is need for the key performance indicators to have clear baselines and targets.
- x) **Engage and support new trade systems agencies in the East African region:** TMEA should continue supporting other trade agencies with manual systems by automating their key trade processes in the East African region to reduce the time and cost of doing business by replicating what has worked well in the trade systems projects already supported by TMEA.
- xi) **Training of trainers to increase awareness to the target stakeholders about the system use and their benefits:** TMEA should continue supporting the training of trainers to carry out sensitization activities and refresher training about the regulatory requirements, system use and the benefits at local levels. This is because

the traders are scattered all over the country in addition to having new traders. In addition, awareness, training and refresher courses about iTTS and its benefits should be part of the operational policy of EATTA to ensure ITTS continues post TMEA support.

#### **4.2 Sustaining and expanding the project**

Overall, the EATTA iTTS project's sustainability was very good. As per the endline evaluation's findings its (EATTA iTTS) net benefits would continue even after the cessation of TMEA's support based on the following:

- i) There was stakeholder engagement and involvement to manage the EATTA iTTS through training and sensitization of both internal staff and external stakeholders (traders); and through governance structures such as Project Steering Committee (PSC) and Project Implementation Committee (PIT).
- ii) iTTS was hosted within the ICT department/section in EATTA and budgeted for by charging fees to maintain it post-TMEA support.
- iii) There was full-time staff and a Technical Assistant that provided support to the system users and knowledge transfer.
- iv) There was good political will and commitment within the EATTA and the business community.
- v) EATTA iTTS was scalable and extendable on a need basis.
- vi) The EATTA is legally constituted and had the necessary legal mandates and capacity to sustain the results.

#### **4.3 Way forward**

The system is fully operational and focus now shift for sustaining operations and offering effective user support. There is need to further enhance the system to include a multi-hall auction which will enable the iTTS handle multiple auctions at a time to reduce the auction window time. Results measurement and reporting will continue to ascertain that the intended results are attained and sustained.

Project close out report for East Africa Tea Trade Association (EATTA) integrated Tea Trade System (ITTS)

**For East Africa Tea Trade Association:**

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Designation	Managing Director, East Africa Tea Trade Association
Signature	
Date	

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