Internal Audit of the Development and Delivery of COMET

Office of the Inspector General
Internal Audit Report AR/19/02

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Internal Audit of the Development and Delivery of COMET

I. Executive Summary

Introduction and context

1.   As part of its annual work plan, the Office of Internal Audit conducted an audit of the development and delivery of the Country Office Tool for Managing Programme Operations Effectively – an application referred to by the acronym COMET. The audit focused on the period from 1 January 2017 to 31 March 2018, but also looked at prior or subsequent events or transactions as required. The audit team conducted the fieldwork from 2 July to 30 September 2018 at WFP headquarters in Rome; this included a review of related corporate processes that impact across the organisation.

2.   COMET is WFP's comprehensive online database tool to design, implement and monitor programmes and to improve organisational performance. At the time of the audit the COMET system consisted of a design module in which projects, country strategic plans and logframes are created; and an implementation module which encompasses planning, partnership implementation, and actual results at outputs level. The planned monitoring module had not yet been implemented and was under assessment at the time of the audit.

3.   The audit was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing*. It was carried out as an extension of an internal audit of monitoring within WFP, for which a separate audit report has been issued (audit report reference AR-18-11).

Audit conclusions and key results of the audit

4.   COMET was originally envisaged as a tool for WFP programme officers to design, plan, implement, monitor, evaluate and report on the performance of operations, from the inception of a project and throughout its life-cycle. After six years of customized development of the design and implementation modules, the system does not yet fully support ongoing programmatic performance management and monitoring. As highlighted in the recent internal audit report on Monitoring[1] the COMET system is largely used for periodic inputs and storage of country programme processes, including year-end indicators to support annual corporate reporting purposes; and in order to address monitoring needs not yet met by the system, some of which are country-specific, a variety of shadow systems are used within WFP country offices for continuous monitoring data collection, analysis and visualization.

5.   The audit noted multi-stakeholder involvement at the onset of the project and at specific milestones, as well as COMET's adaptation to evolving corporate processes throughout the development period; one example being positive feedback that COMET was aligned with requirements for the Integrated Road Map, the Food Release Note process, and other areas. This however led to delays in developing and implementing the monitoring functionalities of COMET.

6.   Ownership of COMET within the Performance Management and Monitoring Division has contributed to the perception that COMET is solely a performance management tool. There was a lack of sustained cross-functional input throughout the project cycle, which may have impacted the development and evolution of the system as a corporate solution. The audit observed that although an operational project team existed, there was an absence of effective governance and project management structures.

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[1] AR/18/11 Internal Audit of Monitoring in WFP, October 2018.

7.   As a result, the organisation has not developed measures to assess the success of COMET in meeting business needs, in that these are not yet clear or agreed upon at the cross-functional level, and to determine whether it is fit-for-purpose in the context of WFP's wider information technology architecture. There was general acknowledgement of the increasing needs that COMET could address in potentially supporting broader and evolving corporate processes, and a recognition of its central role as the source for organisational operational data, as a repository for strategic information and results master data, as a driver for improving data coordination, integration and quality, and in providing linkages to both internal and external corporate dashboards. This would require cross functional project governance structures to be put in place to guide further the definition of needs, development of a business case, decision-making and oversight of further development.

8.   This should also include definition of criticality. As of today, lack of definition of system criticality has impacted COMET's project management and key general IT and application controls including *REDACTED*.

9.   The audit observed a number of unsustainable project management practices such as the high degree of reliance placed upon an external system developer without in-house capacity to ensure system continuity, limited internal knowledge within WFP of the technical architecture of the system, absence of clear exit and handover strategies, and storage of all technical documentation on system development outside of WFP.

10. Based on the results of the audit, the Office of Internal Audit has come to an overall conclusion of **Partially satisfactory / Major improvement needed**. The assessed governance arrangements, risk management and controls were generally established and functioning, but need major improvement to provide reasonable assurance that the objectives of the audited area should be achieved. Issues identified by the audit could negatively affect the achievement of the objectives of the audited area. Prompt management action is recommended to ensure that identified risks are adequately mitigated.

11. The audit report contains two high priority and five medium priority observations. The high priority observations relate to issues highlighted above of clarity on business needs and on system criticality, and success in meeting user needs; and technical ownership of COMET, reliance on the external developer and sustainability.

Actions agreed

12. Management has agreed to address the reported observations and work to implement the agreed actions by their respective due dates.

13. The Office of Internal Audit would like to thank managers and staff for their assistance and cooperation during the audit.

Kiko Harvey

Inspector General

II. Context and Scope

COMET – the Country Office Tool for Managing Programme Operations Effectively

14. The initial definition of requirements for COMET was carried out in 2010-11. Contracting for the system purchase and development took place in 2012 with the contract awarded to an external development company, which at the time of the audit continued to be the primary provider of development services for the COMET system. Payments to the external development company for acquisition and development of the system totalled approximately USD 3 million to date.

15. After initial definition and acquisition, further business requirements were collected during COMET workshops, including a prototype workshop with 19 country offices (COs) and user acceptance testing, and roll-out took place to all regions and countries in 2013-2016. Development of the system has been ongoing since 2012 and was continuing at the time of the audit to capture evolving corporate processes, standardise core CO implementation processes, and align to the Integrated Road Map (IRM).

16. COMET software architecture is based upon the latest version of the Zend Framework for the business and presentation layers and implements MariaDB (a customization of MySQL) for the data layer. SAP Business Objects is used for reporting functions. More recently, with the introduction of the IRM, a new component introduced in the architecture is SAP HANA for live reporting of data. Tableau has also been adopted for visualisation following the introduction of the IRM.

17. Ownership of the COMET system within WFP rests with the Monitoring and Evaluation Liaison Unit (RMPM), within the Performance Management and Monitoring Division (RMP). The Technology Division (TEC) provides technical support to the system, including liaison with the external development company; internal TEC expenditure related to COMET since 2012 to the time of the audit has been approximately USD 4 million.

18. A 2016 directive from RMP[2] guides COs in using COMET to accurately reflect performance data, and to facilitate operational management and reporting processes in a timely manner. It further establishes COMET as an integrated information tool to be used throughout all levels of the organization.

Lines of enquiry

19. Audit planning and risk assessment of relevant processes and activities led to the formulation of the following lines of enquiry for the audit:

1) Is the development and delivery of COMET aligned to meet WFP's evolving business needs?

2) Are governance and project management arrangements for the development and delivery of COMET appropriate and sustainable?

3) Are there adequate controls over the development of and changes to COMET, to ensure these are authorised, tested, approved, properly implemented and documented?

4) Are selected IT general and application controls designed and operating effectively?

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[2] Directive reference RM2016/004 dated 12 April 2016

Objective and scope of the audit

20. The objective of the audit was to evaluate and test the adequacy and effectiveness of the processes associated with the internal control components related to the development and delivery of COMET. Such audits are part of the process of providing an annual and overall assurance statement to the Executive Director on governance, risk-management and internal control processes.

21. The audit was carried out in conformance with the Institute of Internal Auditors' International Standards for the Professional Practice of Internal Auditing. It was completed according to an approved engagement plan and took into consideration the risk assessment exercise carried out prior to the audit.

22. The scope of the audit covered the period from 1 January 2017 to 31 March 2018. Where necessary, transactions and events pertaining to other periods were reviewed.

23. The audit field work took place from 2 July to 30 September 2018 at WFP headquarters in Rome.

III. Results of the Audit

Audit work and conclusions

24. Based on the results of the audit, the Office of Internal Audit has come to an overall conclusion of **Partially satisfactory / Major improvement needed**. The assessed governance arrangements, risk management and controls were generally established and functioning, but need major improvement to provide reasonable assurance that the objectives of the audited area should be achieved. Issues identified by the audit could negatively affect the achievement of the objectives of the audited area. Prompt management action is recommended to ensure that identified risks are adequately mitigated.

25. The Office of Internal Audit, in supporting WFP's management's efforts in the areas of risk management and data quality, separately reports its assessments or gaps identified in both areas.

Risk management maturity

26. An up-to date risk register for COMET was not maintained. The audit observed an absence of clear processes and pathways to identify and escalate risks where necessary. The organisation would benefit from analysis of the audit observations as appropriate and from updating and finalizing a risk register.

Data quality

27. COMET is used as an information management tool for all Corporate Results Framework-related master data; the audit noted that operating controls over the processes for creating, storing and sharing such information were well-designed and in place.

28. Audit testing highlighted issues with tracing business requirements lifecycles, especially for those created before 2018, due to the number of tools used to monitor the development process.

Observations and actions agreed

29. Table 1 outlines the extent to which audit work resulted in observations and agreed actions. These are classified according to the lines of enquiry established for the audit and are rated as medium or high priority; observations that resulted in low priority actions are not included in this report.

Table 1: Overview of areas in scope, observations and priority of agreed actions	**Priority of issues/agreed actions**

1: Is the development and delivery of COMET aligned to meet WFP's evolving business needs?	
The audit assessed whether the development of COMET has effectively taken into account evolving business requirements and corporate processes and reviewed the development of the system, including processes for consultation and receipt of feedback to direct COMET development. The audit noted COMET's adaptation to evolving corporate processes throughout the development period; this however led to delays in developing and implementing the monitoring functionalities of the system. The organisation has not developed measures to assess the success of COMET in meeting business needs, in that these are not yet clear or agreed upon at the cross-functional level, and to determine whether it is fit-for-purpose in the context of WFP's wider IT architecture. Lack of definition of system criticality impacted project management and key general IT and application controls.	
1 Clarity on business needs and on system criticality, and success in meeting user needs	*High*
2: Are governance and project management arrangements for the development and delivery of COMET appropriate and sustainable?	
The audit assessed the existence, and where relevant the adequacy, of governance and project management arrangements for COMET development and delivery. A general absence of such arrangements had resulted in risks to the successful delivery of the system and to its sustainability. Lack of in-house technical knowledge, and reliance upon external expertise without adequate backup and handover plans, had exacerbated sustainability and continuity risks.	
2 Governance and project management arrangements for the development and delivery of COMET	*Medium*
3 Technical ownership of COMET, reliance on the external developer and sustainability	*High*
3: Are there adequate controls over the development of and changes to COMET, to ensure these are authorised, tested, approved, properly implemented and documented?	
Processes to manage business requirements and change requests had not developed in parallel to the increased complexity of COMET since its acquisition in 2012; consequently, a number of gaps and opportunities for improvement in these processes were identified.	
4 Business requirement lifecycle management and change management procedures	*Medium*
4: Are selected IT general and application controls designed and operating effectively?	
The audit assessed and tested a selection of general IT and application controls; a number of gaps and shortcomings were identified, reflecting a lack of prioritisation of COMET and the fact that the system is not defined as critical from a corporate perspective.	
5 COMET general IT controls	*Medium*
6 User access management controls	*Medium*
7 COMET helpdesk and external developer system support	*Medium*

30. The seven observations of this audit are presented in detail below.

31. Management has agreed to take measures to address the reported observations[3]. An overview of the actions to be tracked by internal audit for implementation, their due dates and their categorization by WFP's risk and control frameworks can be found in Annex A.

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[3] Implementation will be verified through the Office of Internal Audit's standard system for monitoring agreed actions.

LOE1: Is the development and delivery of COMET aligned to meet WFP's evolving business needs?

The audit consulted with a variety of key stakeholders to receive and assess feedback on whether the development of COMET has taken into account effectively business requirements and corporate processes – these stakeholders included the IRM team, the Logistics Execution Support System (LESS) team, and the Policy and Programme Division (OSZ). The development history of COMET was reviewed, including processes for consultation and receipt of feedback to direct COMET development.

Available data on COMET system access was analysed to gain an understanding of the extent and frequency of system usage.

Observation 1	**Proposed Agreed Actions** [High priority]

Clarity of business needs and on system business criticality, and success in meeting user needs

In 2011 COMET was originally envisaged as a tool for WFP programme officers to design, plan, implement, monitor, evaluate and report on the performance of operations, from the inception of a project and throughout its life-cycle. After six years of customized development of the design and implementation modules (COMET Basic[4]), and investment of at least USD 11 million, delivery of the first phase is almost complete, with integration of the IRM changes. The COMET system is largely used for input and storage of year-end indicators to support annual corporate reporting purposes. It does not yet fully support ongoing and evolving programmatic performance management and monitoring. The assignment of system ownership to RMP since 2012/13, within the Resource Management Department (RM), has contributed to a perception that COMET is purely a reporting system requiring management by monitoring staff. Lack of sustained cross-functional input throughout the project cycle may have impacted the development and evolution of the system as a corporate solution. The audit observed that, although an operational project team existed, there was an absence of effective governance and project management structures.

Due to the delay in the monitoring module implementation and in order to address the business needs not met by COMET in its actual configuration, and as highlighted in the Internal Audit of Monitoring in WFP, a variety of shadow systems have been developed or acquired within WFP COs for continuous data collection, analysis and visualization, leading to duplication of efforts and investment, fragmentation of sources of information due to lack of integration of the shadow systems, as well as various IT security, data availability, accuracy and protection issues. At the time of the audit, TEC and RMP had mapped shadow systems used in the field for monitoring and work had commenced to collect initial monitoring business requirements with a proposal that a monitoring solution for WFP be built separately from COMET.

Stakeholders interviewed by the audit provided mixed feedback on the alignment of COMET to business needs, as expectations from COMET were also very diverse. The delivery of business requirements for the IRM corporate processes and for the Food Release Note (FRN) process, as well as consultations on integration with LESS, were reported to be successful and welcomed.

Concerns were raised on whether the system is fit-for-purpose in the wider context of the IT technical architecture and framework of the organization, although a clear assessment of fit-for-purpose and what 'purpose' means against the evolving role of the system had not been clearly established. Nonetheless all stakeholders interviewed

(1) RMP, with the support of the Operations Services Department (OS) and TEC, will reclarify the expected functionalities of COMET beyond Phase 1; reassess user needs and establish clear measures of success to assess whether the system is delivering on user needs; and will regularly measure whether these are being achieved and whether system usage and adoption are increasing, and the use of shadow systems decreasing;

(2) The Management Information Systems Steering Committee (MISSC), in consultation with TEC, RMP, OS and field entities as relevant, will:

(i) Establish a cross-functional governance structure with clear reporting lines to support COMET as a corporate system, and further clarify the roles of business owners and technical support;

(ii) Reassess and formally conclude on the business criticality of the COMET system to the organization, considering its current and future role in supporting corporate processes such as the Integrated Roadmap, system integration and linkages to corporate dashboards and reports, expected functionalities, and in light of the system as the source of operational data for the organization;

(3) RMP will establish a corporate directive clarifying required use of the system; this may be achieved by updating the 2016 RMP directive; and

(4) TEC will undertake a full architecture review to determine whether, from an IT systems perspective, COMET is fit-for-purpose.

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[4] Includes the design of log frames as well as operational data relating to partnerships, beneficiaries, food release note and actual distribution data.

during the audit acknowledged the increasing importance for the organization of a system, enhanced from the current COMET, to support broader corporate processes in the future. They also highlighted its central role as the source for organisational operational data; as a repository for strategic information and results master data; as a driver for improving data coordination, integration and quality; and in providing linkages to both internal and external corporate dashboards.

COMET is to date not classified as a core application or as a WFP IT "crown jewel" – lack of determination of the criticality of COMET has contributed to gaps in general IT and application controls (see observations 5, 6 and 7 below) including related to business and system continuity, and to shortcomings in its governance and project management (see observation 2).

A 2016 RMP directive was issued instructing that the system should be used, and usage was observed to some extent in all COs at least for data collation for corporate reporting, but mixed feedback was received from the field regarding the perceived usefulness of the system in other areas. Some regional bureaux (RBx) and COs have invested effort and resources in ensuring active participation of different roles and functions in entering and validating data in the system, but such commitments are inconsistent and largely depend on management buy-in. Unavailability of useful simple reports for programme staff discouraged use of the system; and it was still not fully clear whether the planning and implementation module was providing useful information.

OIGA's review of data on COMET system use indicated an increase of on average 55 percent in the number of monthly users from 2016 (1,444 users) to 2018 (2,167); COMET analytics also indicate an improvement in this period with increased access to the system on an ongoing monthly basis, rather than just at year-end, showing a possible trend of staff working on monthly data validation checks and in the implementation and design modules.

Underlying causes: No corporate re-assessment of the system criticality of COMET to the organisation, considering its evolving role in meeting broader organizational processes and as a source of operational data. Absence of clear measures of success for the development and use of the system. Unclear criteria to determine whether the system is fit-for-purpose in the context of the wider IT architecture of WFP.
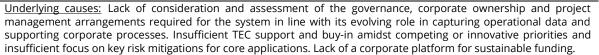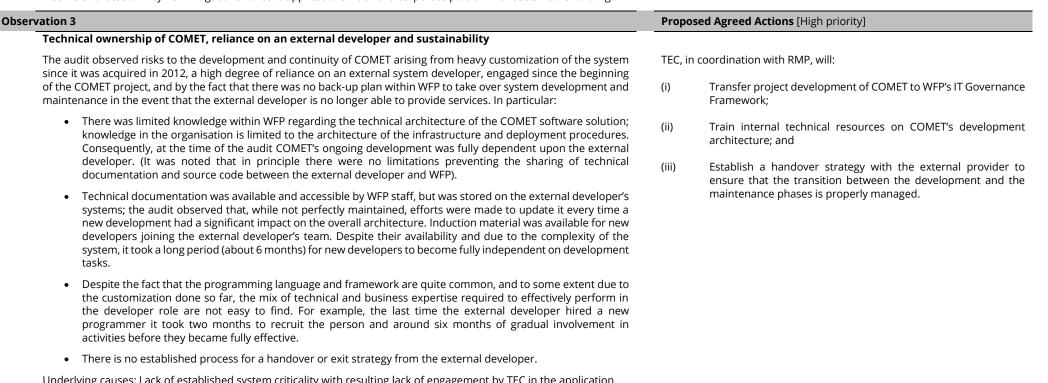
LOE2: Are governance and project management arrangements for the development and delivery of COMET appropriate and sustainable?

The audit reviewed governance and project management arrangements, establishing whether such measures were in place and operating effectively. The audit noted multi-stakeholder involvement at the onset of the project and at specific milestones. System ownership and mechanisms for identification and provision of support were discussed and reviewed. Consultations were held with the external developer engaged to work on COMET since 2012, and with the consultants engaged within TEC to work on the project. Relevant contracts and terms of reference were reviewed to establish reporting lines, and assessments were made of WFP's capacity to manage the project internally, and if strategies were in place to mitigate against excessive reliance on external parties with respect to system maintenance and development.

A full review of budgeted and actual costs, both external and internal, related to the procurement and development of COMET was attempted, but not all data was available or distinctly identifiable.

Observation 2	Proposed Agreed Actions [Medium priority]
Governance and project management arrangements for the development and delivery of COMET A number of inadequate and unsustainable project management practices were observed with consequent risks related to the successful development and delivery of the system, and to retention of core system knowledge. Independent of the assessment of criticality of COMET as discussed in observation 1, the audit observed that there is no established governance and project management structure aligned to the evolving and growing role of the application in the organization. *Internal capacities: S*upport from TEC has been inconsistent, and there has been a lack of clarity on aspects of system ownership and responsibility for provision of technical expertise and support. Since 2016 there has been no assessment of the internal capacity needs of TEC to support COMET in light of evolving business requirements. The team size, essentially staffed by consultants, gradually shrank from six in early 2016 to three in mid-2016, two in 2017-18 and one consultant at the time of the audit. There were no back-up arrangements, including for knowledge transfer, with respect to the consultants engaged to work on COMET, despite the fact that they possess a majority of the technical institutional knowledge of COMET within WFP. Reporting lines within TEC contained in the terms of reference for the two consultants (one business analyst and one service delivery manager) working on COMET from 2017 until immediately prior to the time of the audit were either not clearly defined or did not provide for effective supervision. RMPM had escalated issues related to resource and capacity constraints. *Project risk management:* There was no current project risk register available. A risk register provided to the audit dated from early 2016; however it did not include risks and issues highlighted in this audit report, such as those relating to internal and external capacities, to governance and project management structures, and to third-party risks (see observation 3). In addition, all risks were scored at a relatively low level with no escalation. *Sustainability of the budget/funding:* The audit was not able to obtain sufficient information to perform a comprehensive review of budget requirements including sources of funding versus actual costs for the development of COMET to date and to completion. Costs to date were reported to include approximately USD 3 million paid to the vendor and external developer, and internal TEC expenditure of approximately USD 4 million. Consolidated costs to date were not available, but RMPM management reported that funding for the system development and delivery has been reliant on investment cases with no PSA-funded posts attached to the project and team structure going forward.	The MISSC, in consultation with TEC, RMP, OS and field entities as relevant, and in line with the business criticality they determine for COMET, will: (i) Ensure technical support from and capacities within TEC are appropriately resourced to support the development and delivery of COMET and to promptly address key risks highlighted in this report; and (ii) Establish sustainable funding to support the corporate system.

Underlying causes: Lack of consideration and assessment of the governance, corporate ownership and project management arrangements required for the system in line with its evolving role in capturing operational data and supporting corporate processes. Insufficient TEC support and buy-in amidst competing or innovative priorities and insufficient focus on key risk mitigations for core applications. Lack of a corporate platform for sustainable funding.

Observation 3	Proposed Agreed Actions [High priority]
Technical ownership of COMET, reliance on an external developer and sustainability The audit observed risks to the development and continuity of COMET arising from heavy customization of the system since it was acquired in 2012, a high degree of reliance on an external system developer, engaged since the beginning of the COMET project, and by the fact that there was no back-up plan within WFP to take over system development and maintenance in the event that the external developer is no longer able to provide services. In particular: • There was limited knowledge within WFP regarding the technical architecture of the COMET software solution; knowledge in the organisation is limited to the architecture of the infrastructure and deployment procedures. Consequently, at the time of the audit COMET's ongoing development was fully dependent upon the external developer. (It was noted that in principle there were no limitations preventing the sharing of technical documentation and source code between the external developer and WFP). • Technical documentation was available and accessible by WFP staff, but was stored on the external developer's systems; the audit observed that, while not perfectly maintained, efforts were made to update it every time a new development had a significant impact on the overall architecture. Induction material was available for new developers joining the external developer's team. Despite their availability and due to the complexity of the system, it took a long period (about 6 months) for new developers to become fully independent on development tasks. • Despite the fact that the programming language and framework are quite common, and to some extent due to the customization done so far, the mix of technical and business expertise required to effectively perform in the developer role are not easy to find. For example, the last time the external developer hired a new programmer it took two months to recruit the person and around six months of gradual involvement in activities before they became fully effective. • There is no established process for a handover or exit strategy from the external developer. Underlying causes: Lack of established system criticality with resulting lack of engagement by TEC in the application development lifecycle. Consequent management of the COMET project outside of WFP's IT Governance Framework.	TEC, in coordination with RMP, will: (i) Transfer project development of COMET to WFP's IT Governance Framework; (ii) Train internal technical resources on COMET's development architecture; and (iii) Establish a handover strategy with the external provider to ensure that the transition between the development and the maintenance phases is properly managed.

LOE3: Are there adequate controls over the development of and changes to COMET, to ensure these are authorised, tested, approved, properly implemented and documented?

The audit reviewed and tested samples of business requirements resulting in systems changes that had been fully implemented and deployed into production, with the aim of establishing whether processes and controls were in place to obtain appropriate approvals, whether requirements and changes could be tracked, whether work inputs were monitored, and whether adequate and appropriate testing was carried out prior to deployment into production.

Observation 4	**Proposed Agreed Actions** [Medium priority]
Business requirement lifecycle management and change management procedures	

The audit observed several control gaps and opportunities for improvement in relation to business requirement lifecycle management and change management procedures for COMET.

The process for collating and tracking information regarding reasons for changes (resulting from business requirements), development completion, testing, and deployment of developed packages into production was complicated, posing risks to the effective monitoring and control of such processes. Although audit could ascertain that requests and changes could be tracked using multiple information sources, the process was not straightforward and not centrally recorded until early 2018.

The variance between the estimated development time for each requirement and actuals was high; the developers tended to overestimate the time required for high priority issues, and in turn underestimate that for low priority issues. The main cause for the difficulties in estimation, according to the developers, was the complexity of new requirements and challenges in tailoring estimates to the various members of the team.

There was an absence of structured test procedures before the release into production of newly developed packages. Although RMPM did document formal acceptance before any developed package was released in production, this acceptance was not based upon the results of formal documented testing.

The audit observed that tests performed by both RMPM (sometimes with the help of a selected audience of final users) and TEC aimed at stressing the system on known weaknesses; as a consequence, they were effective only if the testers had a very specialized knowledge of the application and the newly developed packages. Moreover, the tests were not documented (thus not repeatable), increasing the risk of introducing potential regression errors with future developments.

Underlying causes: The complexity of COMET changed since its first release and project management methodologies were not updated at the same pace, with resulting gaps.

TEC, in coordination with RMP, will:

(i)   Re-assess the methodology used to track requirement lifecycles, linking each request for change to the relevant development activity and deployment package;

(ii)   Ensure the performance of an impact analysis before every major change to the application; and

(iii) Establish a process to write formal test cases (acceptance criteria, for Agile methodology) for every requirement shared with the development team.

LOE4: Are selected general IT and application controls designed and operating effectively?

The audit reviewed and tested a selection of the IT general and application controls related to COMET.

- General IT controls reviewed covered key controls and processes related to the COMET hosting environment, including procedures related to backup and business continuity.
- Application controls reviewed covered the area of user access management, including key controls related to segregation of duties within the system. Aspects of internal and external system support were also assessed.

Observation 5	Proposed Agreed Actions [Medium priority]
COMET general IT controls	
REDACTED	*REDACTED*

Observation 6	Proposed Agreed Actions [Medium priority]
User access management controls	
REDACTED	*REDACTED*

Observation 7	Proposed Agreed Actions [Medium priority]

COMET helpdesk and external developer system support

The audit noted issues relating to support available to COMET users, both internally from the COMET helpdesk, and externally from the system support available from the external developer.

1. *COMET helpdesk*

   The COMET helpdesk is made up of both TEC and RMPM staff. RMPM is the first level of escalation for issues, and if the issue is not resolved it is forwarded to TEC for resolution. In cases where TEC is unable to resolve the issue, it is forwarded to the system developer for resolution (see point 2 below).

   The audit noted the following gaps:

   - Incident management procedures for the COMET helpdesk had not been defined and documented. There was no service level agreement (SLA) between the COMET helpdesk and business users to define issue resolution timeframes.

   - All incidents were logged through email and there was no incident tracking, management and monitoring system in place. Lack of an incident management system to record all incidents occurred may result in delays in resolving incidents, failure to identify recurring incidents, low levels of accountability for persons responsible to resolve incidents, and failure to identify incidents of high priority.

   - There had been no formally documented periodic reviews of the performance of the COMET helpdesk; such performance reviews are essential to identify areas of improvement in service delivery.

2. *External developer system support*

   COMET incidents and failures, including those reported by users, were logged to the external developer using the JIRA system. Incident management procedures to manage this process had not been developed and implemented.

   JIRA is the same system used to log change requests to the external developer; it is designed more as a change management logging system and, as a result, incident tracking and resolution timeframe monitoring was not supported to facilitate performance review against defined SLA timeframes. Consequently, review of the external developer's performance was subjective, based upon the assessment of the service delivery manager and the headquarters COMET team. Furthermore, periodic reviews of external developer performance had only been carried out annually at the time of contract renewal.

Underlying causes: Lack of corporate of prioritization in the development of processes and procedures. Funding constraints and limited resources.

RMP, in coordination with TEC, will:

(i) Define incident management procedures for both the COMET helpdesk and external developer system support;

(ii) Establish an SLA between COMET helpdesk and the business, clearly defining the timeframes for incident resolution;

(iii) Implement a helpdesk tracking system, for the COMET helpdesk team and the external developer system support; and

(iv) Perform periodic performance reviews of the COMET helpdesk and external developer.

Annex A – Summary of observations

The following tables shows the categorization, ownership and due date agreed with the auditee for all the audit observations raised during the audit. This data is used for macro analysis of audit findings and monitoring the implementation of agreed actions.

| High priority observations | Categories for aggregation and analysis | | | Implementation Lead | Due date |
	WFP's Internal Control Framework	WFP's Enterprise Risk Management Framework	WFP's Internal Audit Universe		
1 Success in meeting user needs and clarity on system business criticality	Control Enviroment	Business process	ICT governance and strategic planning	RMP	(1) 31 Dec 2019
				MISSC	(2) 31 Dec 2019
				RMP	(3) 31 Dec 2019
				TEC	(4) 30 June 2019
3 Technical ownership of COMET, reliance on an external developer and sustainability	Control Enviroment	Governance and oversight	Selection/development and implementation of IT projects	TEC	31 March 2019

| Medium priority observations | Categories for aggregation and analysis | | | Implementation Lead | Due date |
	WFP's Internal Control Framework	WFP's Enterprise Risk Management Framework	WFP's Internal Audit Universe		
2 Governance and project management arrangements for the development and delivery of COMET	Control Enviroment	Governance and oversight	Selection/development and implementation of IT projects	MISSC	31 Dec 2019
4 Business requirement lifecycle management and change management procedures	Control Activities	ICT	Selection/development and implementation of IT projects	TEC	31 March 2019
5 COMET general IT controls	Control Activities	ICT	Security administration/controls over core application systems	TEC	30 June 2019

High priority observations	Categories for aggregation and analysis			Implementation Lead	Due date
	WFP's Internal Control Framework	WFP's Enterprise Risk Management Framework	WFP's Internal Audit Universe		
6 User access management controls	Control Activities	ICT	Security administration/controls over core application systems	RMP	(1) 31 Dec 2019
				TEC	(2) 30 Sept 2019
7 COMET helpdesk and external developer system support	Control Activities	ICT	Security administration/controls over core application systems	RMP	31 Dec 2019

Annex B – Definitions of audit terms: ratings & priority

1 Rating system

1. The internal audit services of UNDP, UNFPA, UNICEF, UNOPS and WFP adopted harmonized audit rating definitions, as described below:

Table B.1: Rating system

Rating	Definition
Effective / Satisfactory	The assessed governance arrangements, risk management and controls were adequately established and functioning well, to provide reasonable assurance that issues identified by the audit were unlikely to affect the achievement of the objectives of the audited entity/area.
Partially satisfactory / Some improvement needed	The assessed governance arrangements, risk management and controls were generally established and functioning well but needed improvement to provide reasonable assurance that the objective of the audited entity/area should be achieved. Issue(s) identified by the audit were unlikely to significantly affect the achievement of the objectives of the audited entity/area. Management action is recommended to ensure that identified risks are adequately mitigated.
Partially satisfactory / Major improvement needed	The assessed governance arrangements, risk management and controls were generally established and functioning, but need major improvement to provide reasonable assurance that the objectives of the audited entity/area should be achieved. Issues identified by the audit could negatively affect the achievement of the objectives of the audited entity/area. Prompt management action is required to ensure that identified risks are adequately mitigated.
Ineffective / Unsatisfactory	The assessed governance arrangements, risk management and controls were not adequately established and not functioning well to provide reasonable assurance that the objectives of the audited entity/area should be achieved. Issues identified by the audit could seriously compromise the achievement of the objectives of the audited entity/area. Urgent management action is required to ensure that the identified risks are adequately mitigated.

2 Categorization of audit observations and priority of agreed actions

2.1 Priority

Audit observations are categorized according to the priority of the agreed actions, which serve as a guide to management in addressing the issues in a timely manner. The following categories of priorities are used:

Table B.2: Priority of agreed actions

High	Prompt action is required to ensure that WFP is not exposed to high/pervasive risks; failure to take action could result in critical or major consequences for the organization or for the audited entity.
Medium	Action is required to ensure that WFP is not exposed to significant risks; failure to take action could result in adverse consequences for the audited entity.

Low	Action is recommended and should result in more effective governance arrangements, risk management or controls, including better value for money.

Low priority recommendations, if any, are dealt with by the audit team directly with management. Therefore, low priority actions are not included in this report.

Typically audit observations can be viewed on two levels: (1) observations that are specific to an office, unit or division; and (2) observations that may relate to a broader policy, process or corporate decision and may have broad impact.[5]

To facilitate analysis and aggregation, observations are mapped to different categories:

2.2 Categorization by WFP's Internal Control Framework (ICF)

WFP's ICF follows principles from the Committee of Sponsoring Organizations of the Treadway Commission's (COSO) Integrated Internal Control Framework, adapted to meet WFP's operational environment and structure. WFP defines internal control as: "a process, effected by WFP's Executive Board, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting, compliance."[6] WFP recognizes five interrelated components (ICF components) of internal control, all of which need to be in place and integrated for them to be effective across the above three areas of internal control objectives.

Table B.3: Interrelated Components of Internal Control recognized by WFP

1	Control Environment	The control environment sets the tone of the organization and shapes personnel's understanding of internal control.
2	Risk Assessment	Identifies and analyses risks to the achievement of WFP's objectives through a dynamic and iterative process.
3	Control Activities	Ensures that necessary actions are taken to address risks to the achievement of WFP's objectives.
4	Information and Communication	Allows pertinent information on WFP's activities to be identified, captured and communicated in a form and timeframe that enables people to carry out their internal control responsibilities.
5	Monitoring Activities	Enable internal control systems to be monitored to assess the systems' performance over time and to ensure that internal control continues to operate effectively.

2.3 Categorization by WFP's Enterprise Risk Management Framework (ERM)

WFP is further developing its ERM tools and is in the process of introducing a new risk taxonomy to facilitate aggregation and analysis of risk information. The new taxonomy is being piloted in a selection of COs during 2018 to test for the roll-out of a database/system in 2019. As a means to facilitate the testing and roll-out, audit observations are mapped to the new risk taxonomy.

Table B.4: WFP's new Risk Taxonomy recognizes 4 risk categories and 15 types of risk

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[5] An audit observation of high risk to the audited entity may be of low risk to WFP as a whole; conversely, an observation of critical importance to WFP may have a low impact on a specific entity, but have a high impact globally.
[6] OED 2015/016 para.7

1	Strategic	1.1 Programme risks, 1.2 External Relationship risks, 1.3 Contextual risks, 1.4 Failure to innovate/adjust business model
2	Operational	2.1 Beneficiary health, safety & security risks, 2.2 Employee health, safety & security risks, 2.3 Partner & vendor risks, 2.4 Asset risks, 2.5 ICT failure/disruption/attack, 2.6 Business process risks, 2.7 Governance & oversight breakdown
3	Fiduciary	3.1 Breach of obligations, 3.2 Fraud & corruption
4	Financial	4.1 Adverse price/cost change, 4.2 Adverse asset outcome

2.4 Categorization by WFP's Audit Universe

WFP's audit universe[7] covers organizational entities and processes. Mapping audit observations to themes and process areas of WFP's audit universe helps prioritize thematic audits.

Table B.5: WFP's 2018 Audit Universe (themes and process areas)

A	Governance	Change, reform and innovation; Governance; Integrity and ethics; Legal support and advice; Management oversight; Performance management; Risk management; Strategic management and objective setting.
B	Delivery	(Agricultural) Market support; Analysis, assessment and monitoring activities; Asset creation and livelihood support; Climate and disaster risk reduction; Emergencies and transitions; Emergency preparedness and support response; Malnutrition prevention; Nutrition treatment; School meals; Service provision and platform activities; Social protection and safety nets; South-south and triangular cooperation; Technical assistance and country capacity strengthening services.
C	Resource Management	Asset management; Budget management; Contributions and donor funding management; Facilities management and services; Financial management; Fundraising strategy; Human resources management; Payroll management; Protocol management; Resources allocation and financing; Staff wellness; Travel management; Treasury management.
D	Support Functions	Beneficiary management; CBT; Commodity management; Common services; Constructions; Food quality and standards management; Insurance; Operational risk; Overseas and landside transport; Procurement – Food; Procurement - Goods and services; Security and continuation of operations; Shipping - sea transport; Warehouse management.
E	External Relations, Partnerships and Advocacy	Board and external relations management; Cluster management; Communications and advocacy; Host government relations; Inter-agency coordination; NGO partnerships; Private sector (donor) relations; Public sector (donor) relations.
F	ICT	Information technology governance and strategic planning; IT Enterprise Architecture; Selection/development and implementation of IT projects; Cybersecurity; Security administration/controls over core application systems; Network and communication infrastructures; Non-expendable ICT assets; IT support services; IT disaster recovery; Support for Business Continuity Management.

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[7] A separate universe exists for information technology with 60 entities, processes and applications.

G	Cross-cutting	Activity/project management; Knowledge and information management; M&E framework; Gender, Protection, Environmental management.

5. Monitoring the implementation of agreed actions

The Office of Internal Audit tracks all medium and high-risk observations. Implementation of agreed actions is verified through the Office of Internal Audit's system for the monitoring of the implementation of agreed actions. The purpose of this monitoring system is to ensure management actions are effectively implemented within the agreed timeframe to manage and mitigate the associated risks identified, thereby contributing to the improvement of WFP's operations.

Annex C – Acronyms

BCP	Business Continuity Plan
CO	Country Office
COMET	Country Office Tool for Managing Programme Operations Effectively
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CP	Cooperating partner
FRN	Food Release Note
LESS	Logistics Execution Support System
MISSC	Management Information Systems Steering Committee
OS	Operations Services Department
RB	Regional Bureau
RM	Resource Management Department
RMP	Performance Management and Monitoring Division
RMPM	Monitoring and Evaluation Liaison Unit
SLA	Service Level Agreement
TEC	Technology Division
UNICC	United Nations Information Computing Centre
WFP	World Food Programme