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INTEGRATED FINANCIAL MANAGEMENT SYSTEM

FINAL REPORT
SEPTEMBER 26, 2014 – JULY 25, 2019

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Contract No. AID-OAA-I-12-00035, **Task Order No.** AID-521-TO-14-00001

Cover photo: Haitian Ministry of Finance help desk technician, system administrator, and IT managers participate in an IT security (“vmware”) training delivered by IFMS through its partner Dell at the Ministry of Finance training room in Port-au-Prince, Haiti. (Credit: Chemonics/IFMS).

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ACRONYMS

AGD	Administration Générale des Douanes
CSC/CA	Cour Supérieure des Comptes et du Contentieux Administratif
DGI	Direction Générale des Impôts
IFMS	Integrated Financial Management System
IT	Information Technology
KO	Key Outcome
KONEKTE	KONesans E Konpetans TEknik project
LAN/WAN	Local Area Network/Wide Area Network
LOKAL+	Limyè ak Organizasyon pou Kolektivite yo Ale Lwen project
MOU	Memorandum of Understanding
NOC	Network Operations Center
OMRH	Office de Management et des Ressources Humaines
SDI	Schéma Directeur Informatique
SIGRH	Système Interministériel de Gestion des Ressources Humaines
ULCC	Unité de Lutte Contre la Corruption
UXP	Unified Exchange Platform

EXECUTIVE SUMMARY

The Integrated Financial Management System (IFMS) project began in September of 2014, in the wake of increased public discontent in Haiti over delayed elections and perceived government corruption. The state of information technology (IT) infrastructure supporting financial transparency in the country had been deprioritized given more urgent needs following the devastating 2010 earthquake. Much of the government of Haiti's IFMS network equipment had been damaged in the earthquake. A dearth of real-time data for decision-making contributed to governance challenges for the government of Haiti. Haiti's 2014-2019 Schéma Directeur Informatique (SDI or IT Master Plan) laid out the key challenges hampering its IT systems, such as a lack of planning and leadership; a desperate need for physical upgrades; undertrained staff; outdated, overlapping, and unconnected software; expensive and complicated communication systems; and poor physical and virtual security. The IFMS project was designed to tackle these challenges and support the government of Haiti in achieving greater financial transparency and decision-making capacity.

IFMS BY THE NUMBERS

- Number of training days provided to executive branch personnel: 71 days for men and 57 days for women
- Number of servers installed: 52
- Number of data-exchange transactions using the Unified Exchange Platform in the project's last quarter: 33,132
- Number of government staff receiving project-supported training: 184 (24 of whom were women)
- Number of municipalities using CIVITAX that receive data from the Direction Générale des Impôts to monitor daily tax collection at the commune level: 10
- Average days to onboard employees *before* the project: 60 days
- Average days to onboard employees *after* the project: 1 day
- Average time to license a business *before* the project: 7 days
- Average time to license a business *after* the project: 45 minutes

Emerging from nearly a decade of planning between USAID and the government of Haiti, the IFMS project engaged the government of Haiti to improve financial planning and public financial management by restoring, improving, and expanding its IFMS-related network infrastructure and financial management systems. The project was successful in upgrading this infrastructure, strengthening public financial management systems and governance, and providing the government of Haiti with an innovative interface (the Unified Exchange Platform or UXP), which allows the government of Haiti the ability, for the first time ever, to seamlessly share data between institutions.

The project experienced significant hurdles during its five-year lifespan, including hurricanes, a period of more than a year without a legitimate government after delays in presidential elections, key counterpart leadership transitions, and mass protests that shut down the country for weeks at a time. Additionally, the government of Haiti was unable to fulfill some of its commitments, such as contributing resources to repair

existing IFMS network site microwave towers and providing the leadership required to ensure that the IFMS-provided human resources software — Système Interministériel de Gestion des Ressources Humaines or SIGRH 2.0 — be rolled out across the government. Despite these real impediments, the IFMS project adapted and identified creative ways to move activities forward throughout the life of the project, such as using cost savings from other activities to repair all 42 IFMS network sites when the government of Haiti was unable to do so.

“IMAGINE IF A MAIL ADDRESS SHOULD BE HACKED, IMAGINE HOW EASILY A PIECE OF PAPER COULD BE FALSIFIED, IMAGINE AN OFFICIAL NEED FOR QUICK INFORMATION TO MAKE A STRATEGIC DECISION... THE OLD METHOD WAS NEITHER SECURE NOR EFFECTIVE...” — DONALD MARCELIN, MINISTÈRE DE L'ECONOMIE ET DES FINANCES, INFORMATION SYSTEMS DIRECTOR

Today, because of IFMS support, Haitian government agencies have real-time access to expenditure data through the improved IFMS network. Entities can send and receive key data faster, and make more informed planning decisions. IFMS installed the UXP, a technology developed in Estonia that enables peer-to-peer data exchange over encrypted and mutually authenticated channels. Through the UXP, the decision-making processes have improved for agencies because they now have access to data from different agencies that they didn't previously have. For example, the Ministère de l'Economie et des Finances can now directly access data on revenue from the Tax Agency (Direction Generale des Impots, or DGI) and the Customs Agency (Administration Generale des Douanes or AGD) to inform budgeting and key planning decisions. This improvement allows budgeting and planning to be grounded in actual data, reducing the opportunity for political influence over resource allocation and helping to ensure that plans are more responsive to citizen needs.

The IFMS project also revamped the “nucleus” of the Ministère de l'Economie et des Finances's network, the Network Operations Center (NOC). Before IFMS, the NOC was in disarray with outdated hardware and software, exposed wiring, few security protocols, and no backup systems, which put critical government data at great risk should Haiti experience another emergency — such as an earthquake. Now, thanks to IFMS, the NOC includes greatly improved and robust security protocols and software protection, including redundancies for data storage and backup. Today, the system could continue to operate and the government could still function even if one server fails. If there should be another earthquake, Haiti now has strong data backup and could recover faster.

IFMS contributed to increasing transparency on tax revenue data by connecting the three municipalities with the highest populations in the country with the DGI to share information on taxes. Prior to IFMS, data-sharing (if done at all) was conducted through the exchange of hard copy (paper) documents and the process often took months.

Municipalities are now actively sharing information in real time with the DGI on property assessments and property ownership, and the DGI is sharing data on property taxes collected. Thanks to IFMS support, both the DGI and municipalities can obtain more accurate information more quickly. This has in turn increased the overall transparency of the government of Haiti, reducing the opportunity for corruption and leakage in revenue collection activities. The Ministère de l'Intérieur et des Collectivités Territoriales has announced plans to invest in providing remaining municipalities the required private network capabilities to enable them to communicate with DGI. Overall, IFMS contributions included hardware and software procurement, installation, implementation, and training across a broad spectrum of government IT management and information-sharing functions. These activities contributed to improving current IFMS functionality, access, security, and system accountability; developing business continuity and contingency plans; and better aligning government business processes with technology. As a result, the project helped to pioneer electronic submissions of budget requests, improve monitoring capabilities, increase management control of budget expenditures, instill greater transparency and accountability in revenue collection, and improve public services.

At its start, the IFMS project focused on acutely needed infrastructure upgrades and equipment procurement. Later, the project turned to application development, process improvement, and capacity building of government institutions to put new systems and tools to effective use. By project end, the Ministère de l'Economie et des Finances demonstrated ownership of the UXP platform — for example, presenting on the transformational potential of UXP at an international finance summit held in Port-au-Prince in April 2019 and independently organizing and financing training sessions on the UXP for end-users.

The IFMS project provided the Haitian government with tools to boost efficiency, transparency, and accountability in public financial management, thereby strengthening the government's ability to identify and combat corruption. Now the government of Haiti must step up and make the best use of the tools provided. Below are some steps the government of Haiti should take to ensure sustainability of IFMS investments:

- *Internet connectivity and electricity challenges.* Internet connectivity and electricity challenges remain persistent problems. The extent to which the government of Haiti commits resources (financial and human) to ensure reliable Internet connections and continuous power supplies to maintain USAID's IT investments will be a measure of its commitment to improved public financial management using IFMS. The primary institutions of the government of Haiti involved with IFMS (Ministère de l'Economie et des Finances, Office de Management et des Ressources Humaines or OMRH, DGI) should commit to renewing high-speed Internet access with appropriate providers and to maintaining redundant systems to ensure a continuous electricity supply (e.g., generators, inverters).

- *Commitment to maintenance of the NOC.* There has been a vast improvement in the infrastructure, hardware, and software at the NOC that will allow the Ministère de l'Economie et des Finances to store and access data related to public financial management safely and efficiently. The new systems allow for IFMS data to be exchanged much faster than before — and in a secure way. However, maintenance of the renovated NOC by the Ministère de l'Economie et des Finances is essential to its sustainability. The government of Haiti should adhere to the IFMS-provided maintenance plan, and include the costs for this maintenance in its annual budget.
- *General budget for IFMS network maintenance.* IFMS prepared a budget for the maintenance of the IT hardware and software. The government of Haiti needs to include budgetary line items for the maintenance of existing equipment, the purchase of spare parts, the renewal of high-speed Internet contracts, the renewal of software licenses, and the provision of continuous and reliable power.
- *Sharing data through tools provided.* The tools provided by IFMS present a remarkable opportunity for the government of Haiti to digitize information-sharing and achieve real gains in financial transparency. However, a public financial management system is only as useful as the data it has access to. Certain agencies (i.e., DGI and AGD) have already begun sharing critical data on revenue and expenditures related to taxes and customs. Municipalities and the DGI are exchanging information on property and tax revenue. However, the government of Haiti has not yet populated certain tools provided by the IFMS project — for example, business intelligence tools — with real data, limiting the tools' utility. Additionally, intragovernmental government of Haiti memoranda of understanding (MOUs) prepared by the project to allow formal data exchanges between government of Haiti institutions were never signed by Ministère de l'Economie et des Finances, OMRH, and others, although the draft MOUs were provided three years ago. The government of Haiti must commit to populating IFMS tools with useful data in order to harness their full potential.

HIGHLIGHTS OF THE PROJECT'S MOST SIGNIFICANT ACHIEVEMENTS:

- Completely renovating and upgrading the NOC at the Ministère de l'Economie et des Finances, giving the ministry state-of-the-art servers with secured access and big-data analysis capability.
- Engaging an Estonian firm to develop a UXP that allows government institutions to securely and rapidly exchange information related to government financial flows. The project installed and made the UXP operational at 13 Haitian government institutions.
- Streamlining human resource management operations by developing the SIGRH software for the OMRH. This software automates financial transactions for government staff and makes the process of onboarding and paying staff faster and more accurate.
- Upgrading IT equipment and training staff in 25 DGI offices to automatically register local tax payments and share tax records in real time. Additionally, the IFMS project partnered with USAID's Limyè ak Oganizasyon pou Kolektivite yo Ale Lwen project (LOKAL+) project to install IT equipment in nine municipalities using CIVITAX software to improve efficiency and transparency in municipal tax collection.

TASK ORDER KEY OUTCOMES

This report serves as the Integrated Financial Management System (IFMS) project's final report, which covers activities from September 2014 to July 2019.

The purpose of this task order was to provide continued assistance to the Haitian government's Ministère de l'Economie et des Finances in developing a full and complete IFMS. The IFMS project's overall strategy was to provide technical, logistical, and managerial strengthening support to the ministry to restore, operate, and expand IFMS-related infrastructure and its financial management system. The project worked to address the following key outcomes (KOs) under this task order:

1. KO1: The IFMS network infrastructure is updated and improved
2. KO2: The Haitian government's capacity to utilize the IFMS for financial reporting and auditing processes is expanded
3. KO3: The capacity of the IFMS network to support both operational support and financial auditing is built
4. KO4: The expenditure and revenue systems are integrated, and financial management is improved
5. KO5: The Ministère de l'Economie et des Finances' [information technology] IT governance and management capabilities to document and implement governance policies and procedures for each stakeholder ministry and municipality are enhanced

SECTION I. PROJECT CONTEXT AND REVIEW OF THE COUNTRY SITUATION

The IFMS project has been a result of fruitful collaboration between USAID and the Haitian government for more than a decade. It served its primary goal of providing the Haitian government, the Ministère de l'Economie et des Finances, and other entities with the tools and infrastructure needed to support efficient, transparent, and accountable financial management activities. The IFMS project emphasized providing appropriate access and tools to prevent and fight corruption and empowering civil society organizations and government oversight institutions to monitor the Haitian government's financial transactions.

The Haitian Government's IT infrastructure, anchored by its IFMS for decades, evolved through several phases of implementation and upgrades, and experienced significant setbacks after the 2010 earthquake in Haiti. It served as the backbone of the Ministère de l'Economie et des Finances' network infrastructure and was the major communication and data-exchange channel for other government ministry applications (e.g., DGI and AGD). It needed to be completely reliable, accessible, scalable, and dependable for end-users.

Post-earthquake, USAID's assessments and the Ministère de l'Economie et des Finances' 2014-2019 SDI (IT Master Plan) outlined the IFMS' continued need for modernization, which led to this iteration of the IFMS project, implemented by Chemonics from 2014 to 2019. Building on the successes of past USAID projects and previous collaboration among implementers and Haitian government institutions, the project's scope of work identified a number of priority interventions, including greater integration of systems among the ministry's autonomous bodies; upgrades and updates to existing systems, software, hardware, and infrastructure; expanded functionality; training of IT staff; and improvement and consolidation of governance processes.

Despite turbulent national elections in 2016, and the lack of a functional government for several months, the IFMS project made progress toward supporting the government of Haiti's goals of improving financial efficiency, transparency, and accountability through strengthened infrastructure, software integration, and capacity building. In 2018 and into 2019, Haitian citizens' discontent with the way funds were managed by the government reached a boiling point, with protests calling for the resignation of government officials shutting down the country for weeks at a time. Now that the IFMS is online and functional, the new tools provided by IFMS, such as the UXP, have the capacity to bring additional transparency to funds management by the government of Haiti. Today's IFMS

has evolved to support the growing demands and needs of Haiti's public financial management functions and IFMS tools have been successfully transferred to the Haitian government. It is now up to the Haitian government to make the best use of tools that have been provided.

SECTION 2. MAJOR PROGRAM ACTIVITIES: IFMS HIGHLIGHTS AND ACHIEVEMENTS

PROJECT PURPOSE AND EVOLVING SCOPE

The IFMS project's Year 1 and 2 work plans focused on strengthening the existing IFMS network, including upgrading the Ministère de l'Economie et des Finances' NOC server room security; replacing servers, storage hardware, and network communications hardware and software; and establishing links for data exchange between key Ministère de l'Economie et des Finances institutions that manage budget, treasury, revenue, and expenditure functions.

Beginning in Year 1, the project also undertook a major initiative to automate DGI headquarters and regional offices, resulting in the provision of hardware to DGI headquarters and 13 regional tax offices.

In Year 2, the project configured data exchange software on servers that were delivered to eight government of Haiti institutions that were participating in UXP between ministries. The project also continued renovations of the NOC, and identified needs and conducted a competitive procurement process for the development of software to upgrade the OMRH's automated human resource system. The project also procured business intelligence solutions for the Ministère de l'Economie et des Finances. Lastly, the project conducted a procurement to repair infrastructure at 14 IFMS network sites, including repairs or complete replacement of microwave towers.

In Year 3, the project automated 12 additional DGI tax offices, installing equipment after ensuring they were ready to receive IT hardware, and trained staff at these locations to use tax-processing software. The project also focused on installation of procured IFMS network equipment. After the government of Haiti communicated its inability to repair the 42 remote IFMS network sites, the project changed direction and repaired the sites to ensure they were secure and that equipment could be safely installed and stored. In total, IFMS repaired 43 sites, including the NOC. IFMS then installed equipment at each of these sites, and trained Ministère de l'Economie et des Finances IT staff responsible for maintenance of these sites.

In Years 4 and 5, the project transitioned towards operationalizing the equipment installed in key sites, troubleshooting system maintenance and oversight software (e.g., network monitoring tools), and providing training/capacity building for IT staff and end-users on tools provided.

SNAPSHOT

UPDATED DATA PLATFORM AND COMPUTER EQUIPMENT IMPROVE CUSTOMS SERVICES

Thanks to new computer equipment and enhanced connectivity, the AGD can function more smoothly.

The General Administration of Customs (AGD) is responsible for collecting customs revenue in Haiti. Traditionally, paying taxes at the AGD level has involved long days of dealing with heavy bureaucracy. The country's complicated administrative system is not conducive to efficiency nor to the well-being of the citizens. As a result, the state is unable to replenish its coffers proportionally to ensure the flow of goods.

As part of its extensive public finance reform campaign, the Haitian government has leveraged US government expertise through the USAID-funded Integrated Financial Management System (IFMS) project to optimize the AGD's operations. As part of this, IFMS installed a Unified Exchange Platform (UXP) data exchange platform at the national and the AGD level, facilitating the exchange of information between various entities of the Haitian public administration.

Today, with this data exchange platform in place, a customs officer has the ability to connect from his workstation to the database of the Direction Générale des Impôts (DGI) to check in real time the validity of an importer's patent number. This approach will eliminate the need for time-wasting back-and-forth within the AGD and significantly improve the clearance process for goods entering the country.

The DGI, for its part, has the ability to check in real time the customs taxes paid by importers, and can also verify the information provided by importers in their final tax return documents.

Strong political will from the AGD and DGI, as well as strong collaboration with the IFMS project was all that was needed to: improve the work of customs agents, increase the state's tax revenue, strengthen the capacity of the DGI to control tax duties, and reduce wait time for taxpayers at the AGD.

KEY OUTCOME 1: IFMS NETWORK INFRASTRUCTURE UPDATED AND IMPROVED

The government's interministerial communication system for financial reporting uses a microwave-based technology established with USAID funding. The system, generally referred to as the IFMS network, is managed by the Ministère de l'Economie et des Finances' IT department. Although a microwave communication network of this type is generally capable of two-way transmission of any data type, the ministry has used the system primarily for one-way daily transmission of expenditure data, typically from remote network installations at line ministries' headquarter offices and other government budget institutions to the data center. The network sites are all located in the Port-au-Prince metropolitan area.

The Ministère de l'Economie et des Finances owns the IFMS communication equipment at these remote sites; the equipment is kept physically and electronically separated from line ministries' and other budget institutions' IT units, and is operated and maintained by ministry IT specialists. To report expenditure data through the IFMS network, IT specialists working for each budget institution had to re-enter data from their own internal IT systems into the IFMS system servers, which was inefficient, vulnerable to transcription errors, and created opportunities for corruption.

The massive earthquake that devastated the Port-au-Prince area in 2010 destroyed or damaged most of the physical infrastructure supporting the network's operation. In the three years that followed, USAID funded infrastructure repair and equipment replacement on a piece-by-piece basis. Large parts of the system, however, were not functional at the start of the IFMS project in 2014 and as many as one-third of the network sites were down on any given day.

REPLACEMENT OF NETWORK HARDWARE

The IFMS project was tasked with replacing and upgrading all end-of-life hardware and network support software, including communication equipment at the NOC and the 41 remote network sites — for a total of 42 sites, which comprise all of the Ministère de l'Economie et des Finances's priority spending sites. The project's scope of work also included renovating and upgrading the NOC and its physical support systems, including fire suppression, access security, and air conditioning. However, when the project assessed the IFMS infrastructure and functionality during project startup, it was clear that a more holistic approach was required for restoring and upgrading the network.

Following the network assessment, the project prepared a comprehensive plan for replacing all communication equipment in the NOC and existing remote sites, plus expanding the network to additional sites. New communication equipment provided at each site included a wireless bridge (transmitter/receiver), router, and switch. In addition, the plan included replacing physical servers with a newer technology that featured virtual servers. The project conducted an international competitive procurement for the communication equipment, servers, and virtualization software.

The Ministère de l'Economie et des Finances committed to repairing the microwave towers and electrical connections, ensuring proper grounding of each site.

During the project's second year, after the purchased equipment arrived, the project team learned that the Ministère de l'Economie et des Finances did not have the funds to repair the microwave towers and electrical connections. Accordingly, the project shifted resources to provide these needed repairs, working beyond its original scope. The project waited to install new communication equipment at each remote site until the repair work was complete to avoid exposing the new equipment to damage from lightning strikes. Using reprogrammed resources, the project also repaired transmission towers and cabling at the 42 sites; some sites required completely replacing the transmission towers, while others required replacing or repairing damaged sections of the towers. In addition, the project regrounded most of the towers, and rewired the electrical connections from the towers to the control rooms.

Concurrently, the project hired an engineer to test the new transmission equipment purchased for various combinations of distance and terrain. Based on the test results, the project team and the Ministère de l'Economie et des Finances' IT department agreed on a final configuration of the network sites, using a hub-and-spoke design with five backbone sites and the remaining remote sites clustered around them. After installing the new communication equipment at the remote sites, the project trained Ministère de l'Economie et des Finances IT directors responsible for maintaining each piece of equipment and network connection, ensuring that capacity existed within the MEF to maintain and fix equipment. Procedure manuals were developed by IFMS and shared with Ministère de l'Economie et des Finances IT staff, serving an important need for proper documentation that will improve the sustainability of activities.

UPGRADE OF THE NOC

In 2015, the project engaged a Haitian engineering firm to assess the NOC's physical infrastructure and design a full facility renovation and upgrade. Before these upgrades, the NOC was in disrepair. Security and access to the NOC room was limited — data could be easily stolen, equipment could be easily removed, and cords were a tangled mess, requiring hours to sort out which cords connected which pieces of equipment. Because of the repairs made by IFMS, the NOC now has increased physical security to restrict physical access to sensitive equipment as well as security cameras and an "ID card swipe" requirement allowing only authorized personnel to monitor access. The NOC is now fully protected against fire, and the NOC features redundancy in electrical power sources to ensure servers continue to operate even if the main electrical grid turns off. Cabling is now properly labeled and configured and connections between different pieces of equipment can be more easily adjusted, limiting the need for outside maintenance assistance. A Haitian construction consortium provided these renovation services, which included replacing the floor and interior walls of the server room, replacing and upgrading the electrical switching equipment for the entire building, installing systems for fire suppression and access security, carrying out electrical

rewiring and replacement/relocation of backup batteries, rewiring all electronic connections, and installing control room furniture and system monitors.

Following these renovations, the project installed the new network management equipment and high-level servers. To prepare for future growth and system additions, the project included two VXRails, which are computers on which servers can be virtualized. VXRail technology is easy to manage, provides more security to a system, and simplifies deployment of big-data analytics and business intelligence tools. The project trained ministry staff on Data Domain (a Dell system that focuses on computer storage, networking, and backup systems), VXRail, and troubleshooting using Dell helpdesk software. In total, five IT staff from the Ministère de l'Economie et des Finances and three from the DGI received full VXRail training.

The last phase of the NOC upgrade, conducted during the project's final months, included installing Cisco network monitoring software and network converters. These tools monitor how the network is functioning at all 42 sites. IT network administrators were trained on these tools by a Haitian-American IFMS senior network architect with advanced Cisco certifications. The new network monitoring software provides immediate alerts to NOC system operators about incidents affecting systems operation, including power outages at sites and other types of system failures or interruption at the NOC or remote sites. The administrators do not have to wait for an issue to be reported by the remote site administrator before taking action. It also provides performance statistics and usage data. A tape backup system and Avamar backup software were also configured to ensure that data can be restored in the event of a disaster that destroys all the equipment in the NOC.

EXPANSION AND UPGRADE OF TAX SYSTEM AUTOMATION

The Haitian tax authority, known as the DGI, underwent a major automation effort, including upgrading infrastructure, hardware, software, and training. The IFMS project was tasked with providing hardware to the DGI, while other donors funded new software (through the company "Tax Solutions") and the Haitian government upgraded software and trained DGI staff. DGI operates its own network using the government-owned communication company NATCOM's optical fiber system, which allows data transmission over mountainous terrain to regional Centre des Impôts locations.

SNAPSHOT

RENOVATION: NETWORK OPERATIONS CENTER GETS A MUCH-NEEDED MAKEOVER

The NOC at the Ministère de l'Economie et des Finances serves as a central storage room for critical electronic financial data.



Before its renovation, the NOC's server boxes and cords lacked organization.



After the NOC's renovation, servers and cords are clearly organized and easier to access.

PHOTOS: IFMS project

Previously, the Network Operations Center (NOC) was a confusion of server boxes and cords, making it difficult for the IT department to identify and troubleshoot challenges. This meant that issues often went unaddressed, since internal capacity was limited and the MEF lacked resources to hire external assistance. The room was not properly air conditioned, increasing the likelihood of equipment overheating and malfunctioning. Additionally, the room was not properly secured, increasing the risk of equipment theft.

To improve this situation, the Ministère de l'Economie et des Finances partnered with the IFMS project to organize and update this important electronic data storage room. Through a few key renovations — detailed below — the ministry has now significantly improved the NOC's organization and its networks' data security.

Brightly colored cords held in place by zip ties now clearly twist and turn around servers housed in metal shelving units neatly placed around the room. Each storage unit is easy to access, bringing clarity and organization to a once-chaotic space.

Metal trays that run across the room just below the ceiling hold bright blue network cables, which were previously hidden away in a false ceiling, making them difficult to access. This improvement keeps the cables safely out of the way, while providing clearer organization. Now IT staff can quickly access them to make adjustments as needed.

In addition, the IFMS project installed new drywall, creating a separate room for the air conditioning unit, which now safely keeps the room at a consistent cool temperature.

The IFMS project also installed additional security measures, such as security cameras, fire suppression equipment, and an upgraded door with a high-security lock system, which allows direct access only to IT technicians servicing the room.

At the beginning of their partnership, DGI and project staff agreed that the physical security of each site that required equipment had to be prepared to protect the new equipment from theft or damage. For many of the remote facilities, this involved building a new facility or conducting major upgrades. The timing for purchasing and delivering new hardware was thus dependent on DGI's construction schedule.

In total, the project procured new servers and storage hardware for DGI's headquarters and equipped 25 regional tax offices once upgrades were completed. While the project installed new equipment in each remote office, staff received training on the system and equipment. For some, the idea of such a major change was daunting, but DGI's IT director assured them that no one would lose their job or be left behind. Employees completed the training and are now proud to provide the public with better, more efficient, and more transparent services.

AGD has utilized these tools and made information available to other institutions. The Ministère de l'Economie et des Finances and DGI are now actively exchanging information on business registration, and what goods are being imported, providing the government of Haiti with better information on revenues versus expenditures so it can make more informed decisions.

KEY OUTCOME 2: CAPACITY TO UTILIZE THE IFMS FOR FINANCIAL REPORTING AND AUDITING PROCESSES EXPANDED

One of the IFMS project's key objectives was to build the Ministère de l'Economie et des Finances' IFMS technical support team's capacity to become a best practices-based IT organization, with the skills and tools to ensure IFMS transparency and accountability. Previously, the ministry had been unable to produce and publish accurate, timely monthly revenue and expenditure reports, which prevented evidence-based budgeting and planning decisions and limited international donors' ability and willingness to provide financial support.

BUSINESS INTELLIGENCE TOOLS

The IFMS project helped the government generate real-time dashboards and scorecards displaying GOH financial flows, which gave authorities accurate data to form sound policies and manage day-to-day public finance tasks with a higher level of quality and reliability. These business intelligence tools allowed end-users to generate reports and dashboards without extensive assistance from the ministry's IT units.

The project consulted ministry representatives to better understand the needs of government stakeholders, and investigated alternative software applications, including data warehousing and business intelligence software products. After extended discussions, staff agreed to purchase a business intelligence software from Sisense, which offered the best combination of functionality, user-friendliness, and acquisition and maintenance cost. The project installed this software on the NOC's VXRails for better security and easier maintenance and reconfiguration. The project then developed three

sample dashboards (see Exhibits 1 to 3) for operating budgets, investment budgets, and public revenue. At project end, these dashboards were awaiting ministry population of real data. At this stage, dashboards are complete, have been validated through tests with sample data, and are ready to be populated with information so they can be used to assist GOH stakeholders in making key budgeting and planning decisions. The government of Haiti should now provide access to key databases to link real information into the business intelligence tools provided by IFMS.

EXHIBIT 1 DASHBOARD EXPENDITURE ON OPERATING BUDGET

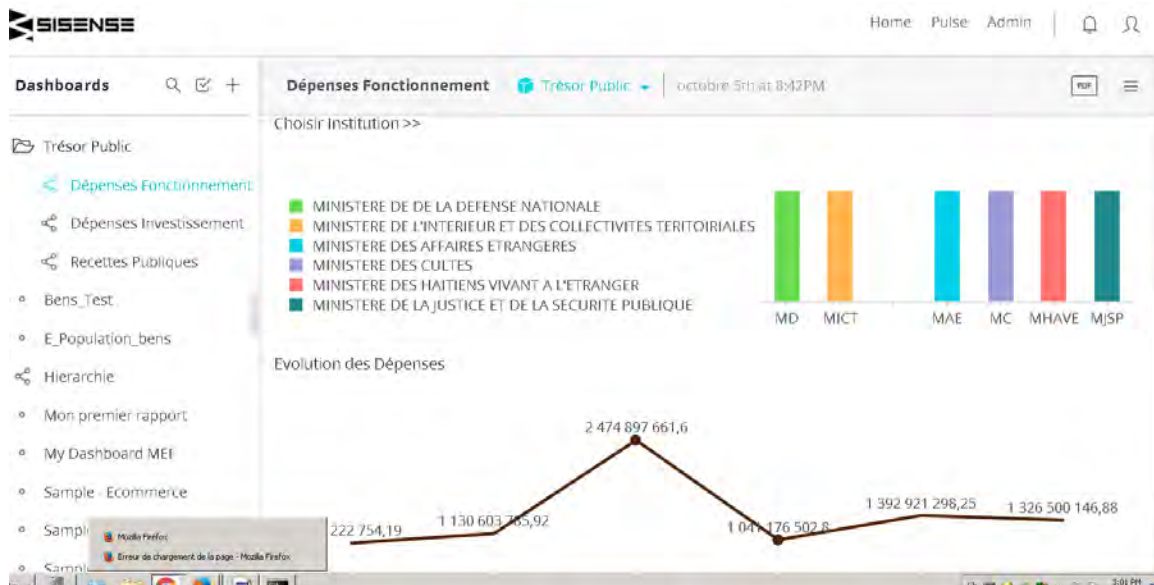
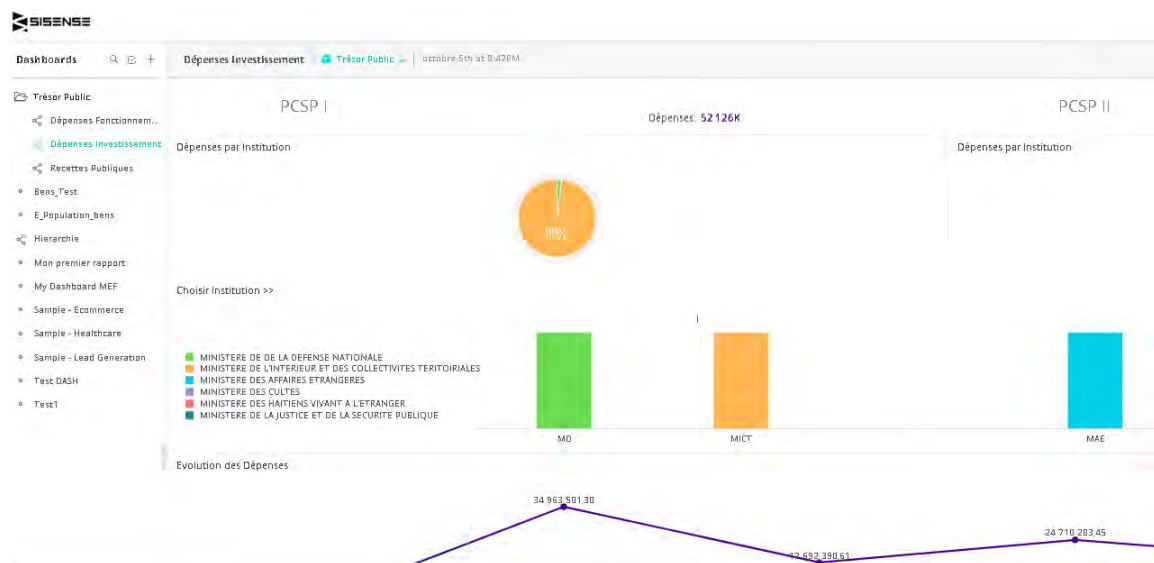


EXHIBIT 2. DASHBOARD EXPENDITURE ON INVESTMENT BUDGET



SNAPSHOT

REPLACING TYPEWRITERS: HAITI'S TAX AUTHORITY RECEIVES CRITICAL UPGRADES

The IFMS project has installed IT equipment at 25 regional DGI sites, which are now fully equipped and programmed to use the tax processing software, Tax Solution.



New computers make it easier for DGI employees in Cayes to provide high-quality, efficient services to customers.

PHOTO: IFMS project

The recent installation of new equipment and tax-processing software at 25 regional DGI sites has resulted in a significant increase in taxpayer and DGI staff satisfaction. Filing processing times have gone down from five to seven business days to only 45 minutes. With drastically reduced wait times of only five to 10 minutes, employees are thrilled with the significant improvement in productivity they experience. They now look forward to the busy tax period in March and April, knowing they have the equipment to meet demand effectively.

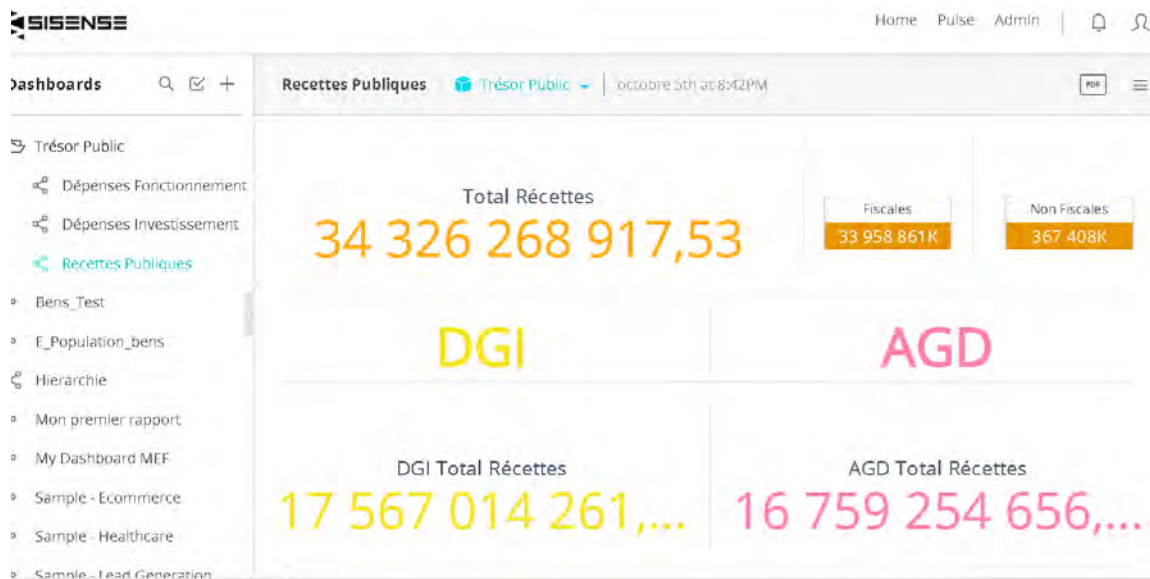
One DGI employee said, "Before the computers arrived, we had to keep all the calculations and institutional knowledge in our heads. Now I can calculate more efficiently and accurately and look [up] past records more easily." Another echoed this sentiment, saying, "Before, it was not possible to report on revenue each day. There was a two-month delay due to manual processing. Now I can do it immediately with just a few clicks."

Regional tax authorities reported how much easier it is for headquarters to access their data online, whereas previously, the regional offices had to hand-deliver boxes of hard-copy files and reports. Electronic data greatly reduces the opportunity for corruption and allows for timely inputs into the budgeting process.

This upgrade has not only improved efficiency, but also gave DGI employees an opportunity for professional development, as staff members were trained on how to use the new hardware and software. One team member with 15 years of experience working with tax-processing software said she was excited to use her expertise to train colleagues.

Tax offices can potentially increase revenue due to their ability to provide additional services, such as issuing passports, driver's licenses, and identification cards, which previously were only provided at DGI headquarters in the capital. Additionally, DGI's headquarters have added a call center to address citizens' questions, and launch RMS, a tax refund program.

EXHIBIT 3. DASHBOARD ON PUBLIC REVENUE



KEY OUTCOME 3: CAPACITY OF THE NETWORK TO SUPPORT BOTH OPERATIONAL SUPPORT AND FINANCIAL AUDITING BUILT

FINANCIAL AUDIT SOFTWARE

The IFMS project was tasked with expanding the Haitian government's capacity to use the IFMS network for financial reporting and auditing processes. This involved identifying the training, tools, and processes necessary to support financial auditing capability, and then procuring new auditing software and tools for the government's oversight agencies, Unité de Lutte Contre la Corruption (ULCC) and Cour Supérieure des Comptes et du Contentieux Administratif (CSC/CA).

In the project's third year, staff engaged a Haitian auditing firm, Analytics, to assess, in collaboration with their leadership, government institutions' auditing capabilities. The assessment identified gaps and recommendations for implementing auditing processes, performed a requirements analysis for procuring and rolling out audit software, and identified the types of training appropriate for ULCC's and CSC/CA's needs. The assessment resulted in a thorough market analysis of available audit software with suitable features for both agencies. Upon examination, the project determined that the audit software required would be too complex for the ULCC to implement at this time given basic capacity gaps.

Instead, the project focused on strengthening the ULCC's capacity in UXP network and Windows Server administration. Other donors (notably the United Nations Development Programme) are considering supporting the ULCC with additional auditing capacity building and monitoring their readiness to absorb new tools at a later date once their basic capacity has been strengthened.

HUMAN RESOURCE SYSTEM

The project's scope of work called for implementing a government-wide human resource management application within the OMRH, utilizing the IFMS network. OMRH works closely with line ministries to provide the Ministère de l'Economie et des Finances with key employee information needed for payroll processing. Previously, this information was transmitted via hard copy and submitted to the payroll team on a case-by-case basis as new employees were onboarded or as employees experienced a change in status. These paper-based processes involved many staff, and it was not uncommon for a payroll action to spend months in review before it was ultimately entered into payroll.

Initial meetings with OMRH staff indicated that they were already working on an upgrade of the existing human resource management software and did not need project support. However, in the project's second year, OMRH determined that the upgraded system did not function as expected. The project team determined that the software needed another upgrade. This upgrade would require a link to the Ministère de l'Economie et des Finances' payroll software, which is responsible for preparing the payroll and serves as a repository for budget and payroll expenditure data. The system also lacked a time-reporting function, which was needed to control the issue of payments to non-existent employees, a large source of leakages from the government's payroll budget. In addition, the project discovered that the electronic linkages between OMRH and line ministries did not function well, giving line ministries little incentive to use the system.

Based on a request from the Ministère de la Santé Publique et de la Population, the project prepared an upgraded design of SIGRH 2.0 and presented it to OMRH, the Ministère de l'Economie et des Finances, and several line ministries. This redesign was based on working sessions with the OMRH on what new business processes related to hiring and tracking of employees could look like with improved technological tools; these

processes weremapped out by the IFMS curriculum developer. The new design included linkages to the Ministère de l'Economie et des Finances' functioning government payroll system (SYSPAY) and expenditure management system (SYSDEP) through UXP, as well as linkages to line ministries through the IFMS network. It also included a monthly time-reporting function, whereby supervisors are required to log into the system every month and verify each employee's attendance before that employee can be paid a monthly salary. Once the design was approved, the project conducted a competitive international procurement for developing the new software. The successful vendor

SIGRH AS AN ANTI-CORRUPTION TOOL

The new SIGRH system enables efficient management and centralization of data at each ministry and offers transparency to combat corruption. The system ensures that data management complies with the Ministère de l'Economie et des Finances' payroll system by preventing generation of multiple checks for the same government agent and centralizing the payroll approval process. In addition, centralizing this information supports decision-making for managing the Haitian public service's human resources.

collaborated with OMRH to program and test the software in Year 3 and initiated a pilot with OMRH and the Ministère de la Planification.

This upgrade to SIGRH 2.0 (see Exhibits 4 and 5, below and next page) would enhance the government's financial oversight of personnel costs. OMRH now has access to a new SIGRH system which is able to:

- Transmit employee information electronically to the Ministère de l'Economie et des Finances for payroll processing
- Build smart controls before initiating a new hire in SIGRH to calculate budget availability and prevent budget excesses
- Provide monthly verification processes as well as processes to monitor candidate and movement activity
- Streamline the onboarding process

The project finalized and deployed this system on OMRH's servers, although the system was not rolled out across the government for reasons beyond Chemonics' manageable control. In March 2019, OMRH leadership announced, in spite of best efforts by Chemonics to convince them otherwise, that it would not roll out the SIGRH 2.0 version developed by IFMS. OMRH said that the International Development Bank had committed to providing a new human resources software to the government of Haiti, and OMRH noted that they would prefer to wait for this new system rather than rolling out the SIGRH 2.0.

As of the writing of this report in July 2019, IFMS had yet to see funding for the new human resources system materialize, despite repeated advocacy efforts from both IFMS and USAID. IFMS encourages the OMRH to rollout the IFMS-developed SIGRH 2.0 as an interim solution before the new system is in place. IFMS believes this would allow additional financial monitoring, oversight, and transparency while the government of Haiti awaits the new management tool to be developed by the International Development Bank. To administer the payroll, the Ministère de l'Economie et des Finances will need to develop and deploy its own part of the financial interface between SIGRH and SYSPAY and SYSDEP, the two software programs managing all public servants' payroll. The International Development Bank project will be able to use the re-engineered business processes designed by IFMS so they do not need to start from scratch in aligning the hiring process with technological automation.

EXHIBIT 4. SIGRHH INTERFACE I

Employee Record Management – Digital Archive

- All documents saved in database and displayed
- Support different formats of documents
- Recording of employment and movements history
- Display employee information on each profile tab

The screenshot displays the 'Dossier Agent' web application. On the left, a 'Général' sidebar contains a profile picture of 'Alain GENEVE' and a 'Informations Générales' section with fields for 'NIF', 'Institution', 'Service/Division', 'Poste', 'Statut', 'Numéro de téléphone', and 'Adresse électronique'. The main area shows 'Informations personnelles' with fields for 'Prénoms', 'Nom', 'Date de naissance', 'Sexe', 'Date d'arrivée', 'Date de départ', 'Date de fin de contrat', 'Date de fin de service', 'Date de fin de carrière', 'Date de fin de retraite', 'Date de fin de service', 'Date de fin de carrière', 'Date de fin de retraite', 'Date de fin de service', 'Date de fin de carrière', 'Date de fin de retraite'. A large green arrow points from the 'Informations personnelles' section to a 'Digital archive of Employee documents' table. The table has columns for 'Date', 'Type du document', and 'Document'. It lists three documents: 'Photo copie des diplômes' (OMRH.png), 'Carte NIF scannée' (MovNif.docx), and 'Copie ancien contrat' (MovNIT.pdf). Each document has a download icon and a document icon.

Dossier Agent

Alain GENEVE

Informations personnelles

Prénoms: ALAIN

Nom: GENEVE

Sexe: M

Date de naissance: 01/01/1970

Date d'arrivée: 01/01/2010

Date de départ: 31/12/2010

Date de fin de contrat: 31/12/2010

Date de fin de service: 31/12/2010

Date de fin de carrière: 31/12/2010

Date de fin de retraite: 31/12/2010

Date de fin de service: 31/12/2010

Date de fin de carrière: 31/12/2010

Date de fin de retraite: 31/12/2010

Modifier les informations

Modifier le photo

Informations Générales

NIF: 004 276 315-7

Institution: MINISTRE DU COMMERCE ET DE L'INDUSTRIE

Service/Division: CENTRE

Poste: MESSENGER

Statut: Fonctionnaire

Numéro de téléphone: 20672280

Adresse électronique: alain@nate.com

Table:

Date	Type du document	Document
30/12/2016 10:15:52	Photo copie des diplômes	OMRH.png
30/12/2016 10:16:04	Carte NIF scannée	MovNif.docx
30/12/2016 10:16:14	Copie ancien contrat	MovNIT.pdf

Digital archive of Employee documents

General info block

SNAPSHOT

REVAMPED IT SYSTEMS LEAD TO GREATER TRANSPARENCY IN DATA MANAGEMENT

The Haitian Ministère de l'Economie et des Finances champions IFMS contributions and the UXP at the 2019 Finance Summit



At the Finance Summit held in April 2019 in Port-au-Prince, Donald Marcelin, Information Systems Director of the Ministère de l'Economie et des Finances, praised the benefits of secure, real-time exchanges between ministries through the UXP.

PHOTO: Karine Roy, IFMS Project.

From 2014 to 2019, the Integrated Financial Management System (IFMS) project engaged the government of Haiti to not only overhaul the IFMS-related infrastructure, but to take ownership of improved IT governance and management capabilities. Most importantly, IFMS worked to help the GoH understand and adopt an IFMS-provided tool with extraordinary potential- the Unified Exchange Platform (UXP) facilitating real-time financial data exchange.

Near the end of the project in April 2019, the 8th annual Finance Summit brought together a cadre of Haiti's influential economists and government representatives to discuss opportunities for economic development in tourism and agribusiness. The Minister of Finance proposed to event organizers that his staff would conduct a presentation at the event about the UXP and its potential to revolutionize public financial management. The MEF's IT director conducted the presentation, which was picked up by several news outlets including Haiti's largest newspaper the *Nouvelliste*, whose editor-in-chief Frantz Duval independently penned an editorial titled "mini-revolution at the AGD". This was an example of the remarkable ownership the GoH has taken of the UXP and the kind of buy-in that can be achieved through careful and patient collaboration, as well as strong political will.

To date, more than 30,000 data exchanges have taken place on UXP, and the MEF can now directly access data on revenue from the DGI and the AGD to inform budgeting and key planning decisions, improving the GoH's responsiveness to citizen needs. UXP is now operational at 13 government of Haiti institutions, and there is significant potential for expansion to other agencies.

"Imagine if a mail address should be hacked, imagine how easily a piece of paper could be falsified, imagine an official need for quick information to make a strategic decision... the old method was neither secure nor effective."— Donald Marcelin, Ministère de l'Economie et des Finances Information Systems Director

EXHIBIT 5. SIGRH INTERFACE II

SIGRH
Système Inter-Ministériel de Gestion des Ressources Humaines

Accueil > Recensement > Recensés à valider > Dossier

Dossier Agent

Maxis Wilfrid

Informations personnelles

Titre: Mr. NIF: 471-788-199-9 CIN: 68-98-26-2426-01-98811

Nom: MAXIS Prénom: WILFRID Nom de jeune fille: N/A

Groupe Sanguin: A+ Genre: Masculin État Civil: Célibataire

Date de naissance: 15/01/1975 Religion: Sélectionner la religion

Numéro de téléphone: (509) 6766-7888 Adresse électronique: ingwilfrid@gmail.com Niveau d'étude: Supérieur

Adresse: 20, route Nle #1, Port-au-Prince, Haiti

Département: Ouest Commune: Port-au-Prince

Contact

Informations Générales

NIF: 471-788-199-9

Institution: WILFRID MAXIS

Service/Direction: DIRECTION WILFRID MAXIS

Poste: AFFECTE AUX AFFAIRES POLITIQUES

Statut: Fonctionnaire

Etat

Numéro de téléphone: (509) 6766-7888

Adresse électronique: ingwilfrid@gmail.com

KEY OUTCOME 4: EXPENDITURE AND REVENUE SYSTEMS INTEGRATED, AND FINANCIAL MANAGEMENT IMPROVED

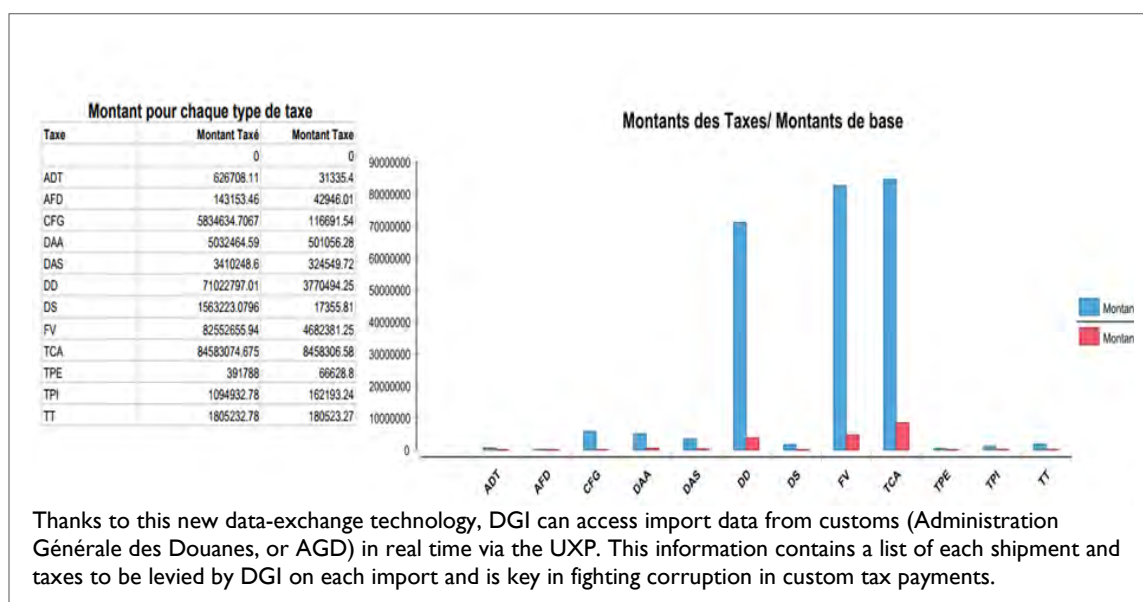
ESTABLISHMENT OF AN ELECTRONIC DATA-EXCHANGE CAPABILITY

Public administration and service delivery in Haiti, as in many other countries, suffers from stove-piped institutions that do not share data efficiently. In particular, public financial management is negatively affected by data compartmentalization. Before the project, government institutions exchanged financial data by email, on CDs, or on paper, none of which were secure or delivered in real time. These outdated systems prevented financial decisions from being made on a timely basis and grounded in evident, not to mention they also allowed for significantly higher levels of fraud and graft. The IFMS project thus set out to assist the Ministère de l'Economie et des Finances with electronic data-sharing to better link the government's revenue and expenditure systems.

The project determined that the most efficient approach with distinct sustainability advantages was to acquire a general electronic data-exchange capability that could facilitate any type of government-to-government data-sharing activity. In August 2015, the IFMS project awarded a subcontract to Cybernetica, an Estonian systems developer, to install a government data-exchange platform — UXP — which had been implemented successfully in Estonia and in several other developing countries. Data transmission through the UXP software is highly encrypted, secure, and efficient. Once the system is installed, designing and installing a new exchange application involves creating a web service, typically requiring no more than a few hours of web programming.

A project-supported study tour to Estonia solidified the Haitian government’s support for the new platform. Ten ministry IT directors and former OMRH coordonnateur général Uder Antoine saw the UXP in action, enabling them to better understand the system’s benefits and how decision-makers can access financial data in real time through the platform.

EXHIBIT 6. SAMPLE OF TAX IMPORTATION FROM CUSTOMS



Thirteen government institutions were designated as the initial participating institutions for using UXP, including six ministries, DGI, AGD, two anti-corruption institutions, the motor vehicle insurance agency, and OMRH. The IFMS project delivered servers and supporting IT hardware to these 13 institutions, installed the data-exchange software, and initiated a process of configuration and testing at each institution. The project also developed a web portal to facilitate UXP use by displaying data in user-friendly formats. For example, the project developed new web services between institutions like AGD and DGI, increasing the amount of exchanged data (see Exhibit 6 above). OMRH, the platform administrator, agreed to extend its use to the Police National d’Haiti with the help of the Bureau of International Narcotics and Law Enforcement, lending a new dimension to the platform.

Along with installing UXP at each site, the project trained IT directors and staff to administer and use it. Each training coincided with UXP configuration at each institution. In total, more than 40 IT staff received training; of these, 10 were women. As the software improved, the government progressively gained greater ownership of the platform. Ministère de l’Economie et des Finances staff participated in training sessions on web service development, security, and connector

UXP APPLICATION DEVELOPMENT

The project team, in collaboration with IT staff at DGI, AGD, and OMRH, have developed web services for exchanging data. For example, DGI shares information on NIF (fiscal ID) with AGD, ULCC, and OMRH.

servers. Counterpart institutions DGI and AGD developed their own web services to share information with other agencies, such as the Ministère de l'Economie et des Finances. For example, DGI is now receiving data on importation coming from AGD, and can ensure that taxpayers are accurately reporting import revenue on tax returns.

As the number of exchanges increased, the project team discovered that most institutions did not have enough bandwidth to use the UXP properly. To manage this issue, the team adapted the service to match each institution's quality and capacity of internet connection. Thanks to an upgrade of the UXP software, the UXP platform is now functioning well, with staff in connected institutions taking greater ownership of and circulating more data.

The project presented UXP's infrastructure and system to the primature (IT advisor to the prime minister) and to the coordonnateur général at OMRH. The latter presentation took place at an OMRH retreat as part of a larger seminar on e-governance. The project also presented the system to USAID and other implementing partners during a broader thematic meeting on e-governance at which several government agencies, businesses, donors, and other development actors were present.

The project also presented the UXP to the minister and his cabinet at a Ministère de l'Economie et des Finances conference to show the advantages that the Haitian government will be able to enjoy by encouraging the exchange financial information between AGD, DGI, and the ministry itself. The exchange of information between these institutions will focus on revenues and expenditures.

In order to facilitate the institutions in administering and maintaining the UXP, a series of training sessions was conducted on "UXP Administration," which provided the necessary skills and competences to the UXP IT administrator of each institution to manage and troubleshoot the UXP servers. The project also provided training on "Web Services Development" to IT software engineers of 11 UXP institutions to teach them how to develop web services, which are extremely important to allow each institution to obtain or query information. To date, five institutions have used this training to create their own customized web services. These institutions include the DGI, AGD, MEF, ULCC and MENFP.

GETTING UP TO SPEED ON UXP

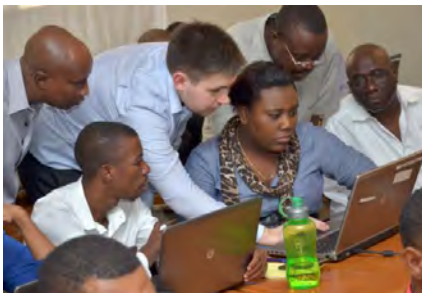
Cybernetica, the Estonian system developer of UXP, conducted a one-week training seminar on UXP for government IT directors in Port-au Prince. More than 40 IT staff from all 13 participating government institutions attended the training.

The project also conducted classroom and computer lab training for IT staff in administering and using the UXP software, with project IT staff serving as instructors. Project staff timed the training to coincide with UXP configuration at each institution. Staff developed a web portal to create a user-friendly display of exchange data and exchanged test data between DGI and AGD using the actual system configuration and the new web portal.

SNAPSHOT

NEW ONLINE PLATFORM IMPROVES GOVERNMENT EFFICIENCY, DATA SECURITY

In the rapidly advancing field of online information-sharing, governments worldwide are seeking tools to ensure data security while maximizing efficiency.



Government officials eagerly watch as an instructor demonstrates the data-sharing program's features.

PHOTO: IFMS project

As part of a long-term strategy to build government capacity, USAID's IFMS project partnered with Cybernetica, a world-renowned Estonian information and communications technology agency, to introduce Haiti's government agencies to UXP, a government data-exchange platform developed in Estonia. Governments around the world are using UXP to efficiently and securely exchange high volumes of data between ministries and government institutions.

This budding partnership began with an IFMS-led study tour to Estonia, where Haitian government officials were introduced to the software for the first time. Tax Authority IT Director Serge Rosental noted this trip was the catalyst for partnership: "The actual trip pushed this forward. People could see first-hand what Estonians were doing and how everything was interconnected."

Following this successful introduction, IFMS installed UXP equipment at 13 government agencies. Cybernetica's top experts then conducted a one-week training in Haiti for IT officials from each of the agencies on the program's architecture and the functionality of its various components.

Employing a participatory approach, instructors used these sessions to teach software skills and run test scenarios so trainees could explore ways to use the software in their everyday work. By the end of the week, participants were able to focus on their assigned test cases and required minimal assistance from trainers. The introductory program clearly demonstrated that information-sharing that previously took weeks of back-and-forth communication could now be done in minutes through an online network.

As a result of the IFMS pilot program, online information-sharing is progressively becoming the norm for Haiti's government agencies, increasing efficiency, data security, and overall government productivity nationwide.

EXCHANGE OF LOCAL GOVERNMENT TAX DATA

UXP's second major data-exchange application involved exchanging municipal tax data between DGI and the Ministère de l'Intérieur et des Collectivités Territoriales. While municipalities assess municipal taxes, regional tax offices receive the tax payments.

Accordingly, the Ministère de l'Intérieur et des Collectivités Territoriales, which supervises municipalities, needs current tax payment data to verify whether assessed taxes are being collected from each taxpayer.

Previously, an inefficient tax collection system was rone to inaccuracies and leakage. CIVITAX is a software designed to improve municipalities' financial management capabilities and to allow CSC/CA's regional branches to improve their oversight mission. This software was developed and rolled out by USAID's LOKAL+ project. The IFMS project provided equipment (computers and network capabilities) to nine municipal town halls and four CSC/CA offices supporting them to use CIVITAX (see box). In parallel, the project

installed a server at the Ministère de l'Intérieur et des Collectivités Territoriales (MICT) and developed a web service to facilitate data exchanges between nine municipalities and DGI. The project also developed a second web service to share data among municipalities, DGI, and the Ministère de l'Intérieur et des Collectivités Territoriales. Currently, the largest municipalities in the country, the municipal town halls of Delmas, Carrefour, and Kenscoff are exchanging CIVITAX data. The MICT is working on connection incompatibility issues to enable access for the other six municipalities.

EQUIPMENT UPGRADES TO MODERNIZE TAX SERVICES

The project procured, delivered, and installed computers and network equipment in nine municipalities (below) and one provincial court (CSC/CA in Fort Liberte):

- Mairie de Delmas
- Mairie de Carrefour
- Mairie de Kenscoff
- Mairie de Saint Marc
- Mairie de Cap Haitien
- Mairie de l'Acul du Nord
- Mairie de Ouanaminthe
- Mairie de Caracol
- Mairie de Limonade

KEY OUTCOME 5: CAPABILITIES TO PROPERLY DOCUMENT AND IMPLEMENT GOVERNANCE POLICIES AND PROCEDURES ENHANCED

IFMS CAPACITY BUILDING

As part of its commitment to sustainability and protecting USG investments in Haiti, during its last two years, the IFMS project focused on building counterparts' capacity to take full ownership of newly introduced technologies and processes. The project implemented a series of classroom and on-the-job training sessions across a broad spectrum of Haitian government institutions. Through targeted program design and training materials, such as manuals, presentations, videos, policies, and procedures, the team trained government employees in the specific skills necessary to operate and maintain the procured tools. Without these skills and documentation, IFMS initiatives would not be able to survive past the project's close.

The project hired a curriculum developer, who worked closely with the IFMS IT team to develop specialized training materials (e.g., syllabus and course content, participant manuals, trainer manuals, visual presentations, exercises, tests, and case studies) on

database administration, IT project management, network administration, and IT security. See the text box below for a list of project-developed manuals.

Training-of-trainers manuals used a scenario-based learning methodology, which is a compelling way to present skills-based training. Instead of reading books or attending lectures, learners take part in situations — or scenarios — in which they can clearly see how the new skills and knowledge will benefit them in the long run. The training-of-trainers manuals also incorporated adult learning and instructional systems design, which involve determining the learner’s needs, defining the end goal of instruction, and creating tailored materials to assist the learning experience. This process makes acquiring knowledge and skills more efficient, effective, and appealing. Both methodologies helped to keep participants engaged throughout training.

EDUCATING FUTURE IT STAFF

IFMS PROVIDED THE FOLLOWING DOCUMENTS TO THE MEF TO SUPPORT TRAINING FUTURE IT STAFF:

- Syllabus for the IT security course
- Syllabus for the network administration course
- Syllabus for the database administration course
- Syllabus for the IT project management course
- Training manual for the IT security course
- Training manual for the network administration course
- Training manual for the database administration course
- Training manual for the IT project management course
- Training-of-trainers manuals for the IT security course
- Training-of-trainers manuals for the network administration course
- Training-of-trainers manuals for the database administration course
- Training-of-trainers manuals for the IT project management course

The training-of-trainers manuals will serve as the project’s legacy to Haitian training institutions, such as the École Nationale d’Administration Financière, the Ministère de l’Economie et des Finances’ training and management development center, and the École Nationale d’Administration et de Politiques Publiques, which will include the materials in their new courses for civil servants.

DEVELOPMENT OF POLICIES AND PROCEDURES FOR GOVERNANCE AND MANAGEMENT

The IFMS team developed and disseminated 12 policies and procedures to support the Ministère de l’Economie et des Finances’ IT governance and management capabilities, including operating and maintaining the NOC. The project trained six ministry staff members on procedures and provided technical support on their use. Policies and procedures included:

UPGRADES FOR IMPROVED INTERNET ACCESS

At project start, the team received a request to investigate why Internet access at the minister of finance’s office was not continuously available. Project staff quickly discovered that the Ministère de l’Economie et des Finances’ IT department did not have control of its operating environment and lacked adequate means of controlling or monitoring internal network and Internet use. Working with ministry IT staff, the project initiated an upgrade of the ministry’s local area network/wide area network (LAN/WAN). They installed an active directory that listed the 350 users of the ministry’s LAN/WAN so that IT staff could identify, authorize, and control users’ access. This resolved the issue and allowed the minister regular access to the internet.

- Active directory infrastructure and design
- Backup, update, and maintenance procedures
- Security against malware, acceptable use, intrusion detection, password security, and standard nomenclature of computer network equipment policies
- Procedures to access the NOC
- Data migration
- Secondary domain implementation
- Technical specifications of ministry servers

DEVELOPMENT OF IT MAINTENANCE PLAN

The IFMS project developed an IT maintenance plan to ensure IT equipment sustainability. The IFMS plan will serve as a roadmap to empower the Haitian government to properly budget and allocate funds for equipment upkeep. In addition, the plan encouraged the government to be proactive in maintaining IT equipment, thereby ensuring longer equipment life and minimizing failures and repairs.

The budget for maintaining IT equipment included allowances for purchasing spare parts, provisions for a preventive maintenance contract with regular equipment and software checks, and provisions for Internet connection and renewing software licenses. Now, the Government of Haiti should include these items in its budget.

SNAPSHOT

INTRODUCING NETWORK STRUCTURE IMPROVES FINANCE DATA SECURITY

Access controls provide data security by restricting who can view information within a network and monitoring their usage. For governments, this is critical because their networks house both national and personal confidential data.



After successful implementation of IT policies, the IFMS project installed equipment to strengthen the networks of the 51 institutions and agencies working with the Ministère de l'Economie et des Finances.

PHOTO: IFMS project

A 2015 audit of Haiti's Ministère de l'Economie et des Finances found that there was no structure to its network server. This meant that any of its 350 employees could access the entire system without entering a unique username and password, making it impossible to track individual use. The ministry decided to address this security concern by partnering with the IFMS project to introduce new IT policies.

IFMS began by creating an active directory and teaching ministry IT staff how to generate unique usernames for each employee. Next, they instituted strong password policies, requiring complexity and regular updating. Users were then grouped into categories based on their role in the process to provide additional control and opportunity for management oversight through a permanent log.

With an active directory and categories for users in place, IFMS further improved data security by creating policies that allowed groups to access only the information relevant to their job function. IFMS tailored policies to each group, allowing the ministry to restrict online usage by blocking websites that were an unnecessary strain on the system due to streaming or downloading. Installing a secondary server provided an additional level of data security in case the primary one was destroyed during an unexpected event, such as an earthquake or hurricane.

As a result of these network improvements, the ministry saw significant increases in its network speed. Through thoughtful policy creation in collaboration with counterparts, the IFMS project established strong controls to ensure that Haiti's financial data remains secure — yet accessible — to the pertinent government agencies.

SECTION 3. PROBLEMS ENCOUNTERED: SOLUTIONS AND LESSONS LEARNED

A project like IFMS requires strong political will as well as close coordination with partner government institutions and their active participation, in addition to appropriate resources. These requirements underpinned most of the IFMS project's implementation challenges, and addressing them required flexibility. The major challenges the project faced are described below, along with lessons learned for future programs with similar objectives.

CHALLENGES AND HOW TO ADDRESS THEM

Progress toward IFMS objectives depended heavily on the ability of Haitian government institutions to fulfill their responsibilities as counterparts. The evolving political environment created an ongoing challenge in keeping activities moving forward on the project's timeline. Additionally, a lack of staff at the Ministère de l'Economie et des Finances resulted in delayed decision-making on things like IFMS network communication equipment.

During project implementation, Chemonics adapted and remained flexible as much as possible, but activities were often hampered by delays in government decision-making at critical periods. Significantly, the main project counterpart at the Ministère de l'Economie et des Finances went on extended medical leave in 2015 and did not name a replacement who would be empowered to make decisions on his behalf. Another lengthy period of delay was prompted by the prolonged interim government in Haiti and 12 months the country waited to hold delayed presidential elections. This absence of a senior government meant that senior decision-makers were not able or willing to make commitments that affected project issues. Similarly, although IFMS initially had a very supportive OMRH coordonnateur general, the project experienced significant difficulty securing buy-in from his successor after the new government was formed, despite repeated efforts both by the IFMS team and USAID.

Although the public reform commission held coordination meetings, that body did not demonstrate a pragmatic approach. For example, IFMS requested its approval to move forward with key features to pilot-test the SIGRH, but the commission insisted that the entire system be validated first (rather than rolling it out "piece by piece") and continued to request new features that were not part of IFMS' scope of work. Eventually, despite advocacy by the project and by senior USAID staff, OMRH (part of

the prime minister's office) decided not to roll out the SIGRH 2.0 platform, which it had worked for years with the project to develop. This demonstrates the critical nature of strong political will at the most senior levels to ensure the most sensitive reforms such as human resource system streamlining are pushed forward. In Haiti, this political will to push SIGRH roll out was unfortunately not present in part due to constant changes at the most senior (prime ministerial) level and the reality that there were significant disincentives for change, given that substantive human resources management reforms would limit opportunities for corruption. IFMS worked around these challenges which were outside its manageable control by focusing on improvements required regardless of whether advanced software was in use or not, such as documenting OMRH's human resources business processes to serve as a roadmap for the World Bank or another international donor to develop the next iteration of SIGRH.

As the project approached closeout, the IFMS team responded by focusing on activities it could advance (e.g., capacity building for Ministère de l'Economie et des Finances IT staff) and seeking support from ministry staff when available. Political instability throughout the life of the project made it difficult for the IFMS team to actively engage the prime minister's office and discuss government policies that affect IFMS processes. However, near the project's end, the IFMS team made inroads by establishing a relationship with the prime minister's IT advisor and had the opportunity to present and exchange on project activities and progress.

In addition, activities that began as simple technology procurement tasks turned into greater efforts in cases where the government lacked the necessary infrastructure, such as a secure environment or network access, to support the new technology. In many cases, the project carried out infrastructure upgrades and built staff capacity to operate and maintain the new equipment. Future initiatives operating in this space should ensure that proper infrastructure needs analyses are conducted prior to developing project scopes of work and budgets.

Government counterparts often did not have staff with the necessary technical backgrounds to fully benefit from IFMS training or to manage the implemented technologies. The project team recognizes that counterpart staff participated as best they could but they would benefit from more basic IT training and/or hiring additional staff with complementary profiles.

LESSONS LEARNED FOR FUTURE PROGRAMS

Effective collaboration, buy-in, and accountability. In the long term, it is the counterparts' responsibility to maintain the physical equipment, the space in which it is housed, and the conditions that allow it to function optimally. Developing counterpart engagement, commitment, and accountability to ensure effective collaboration and sustainability is necessary for projects like IFMS to succeed. To this end, Chemonics developed MOUs with government counterparts (however, they were not signed); trained Ministère de l'Economie et des Finances staff on NOC policies and procedures; developed an IT

maintenance plan with checklists to help the ministry plan and budget for needed upkeep; and included language that committed counterparts to these responsibilities in the Acts of Acceptance when formally disposing equipment. Chemonics emphasized the need for counterparts to commit budgets for Internet connectivity, reliable electrical supply, and climate control to guarantee the sustainability of installed IFMS IT systems.

The project team recommends these actions to ensure the IFMS system's continued optimal function:

- A multi-counterpart government project would benefit from forming a high-level steering committee with representatives from each major stakeholder. The steering committee should facilitate presentation of the project plan and regular updates to the highest authorities of the government.
- The primary government institutions involved with the IFMS (Ministère de l'Economie et des Finances, OMRH, and DGI) should commit to renewing high-speed Internet licenses with appropriate providers and maintaining redundant systems (e.g., generators and inverters) to ensure a continuous electricity supply.
- The Haitian government should commit to implementing recommendations in the IFMS maintenance plan and reserving the necessary resources to do so.
- Any future project working with the IFMS system should carefully review its policies, procedures, and maintenance plan and include measures to ensure they are followed.

Partnerships with other programs. The IFMS project actively coordinated with two other USAID projects to implement and synchronize activities. The LOKAL+ project worked with the Ministère de l'Intérieur et des Collectivités Territoriales and DGI to develop application tools for municipalities to improve service delivery at the local level. The IFMS project provided IT equipment to six municipalities, enabling them to use a tax management software (CIVITAX) to exchange data securely with DGI and automate tax collection. The KONESans E Konpetans TEknik (KONEKTE) project worked with OMRH to foster interministry collaboration and support OMRH's mandate to reform the Haitian civil service. IFMS and KONEKTE enjoyed a fruitful collaboration during the requirements assessment and software development stages of SIGRH 2.0. KONEKTE provided input during testing of the software functionalities developed by IFMS.

ANNEX A. SUMMARY OF PERFORMANCE INDICATORS

#	INDICATOR NAME	FY2015	FY2016	FY2017	FY2018	FY2019	LIFE OF PROJECT		COMMENTS
		ACTUAL	ACTUAL	ACTUAL	ACTUAL	ACTUAL, (Q1-Q3)	ACTUAL	TARGET	
1	Level of comprehensiveness of information included in budget documentation; PEFA indicator PI-6	N/A	N/A	N/A	N/A	N/A	B	B	PEFA Indicator PI-6 is reported at the end of the project. This is a qualitative indicator reviewed once all corresponding activities have been completed.
2	Degree of integration & reconciliation between personnel records & payroll data; PEFA indicator PI-18(i)	N/A	N/A	N/A	N/A	N/A	C	C	PEFA Indicator PI-18(i) is also reported at the end of the project. This is a qualitative indicator reviewed once all corresponding activities have been completed.

#	INDICATOR NAME	FY2015	FY2016	FY2017	FY2018	FY2019	LIFE OF PROJECT		COMMENTS
		ACTUAL	ACTUAL	ACTUAL	ACTUAL	ACTUAL, (Q1-Q3)	ACTUAL	TARGET	
3	Timeliness of financial reporting by Treasury and Budget office (KO1)	0	0	0	N/A	N/A	2 days	15 Days	IFMS exceeded its target for this indicator as it reduced the time required to produce financial reports from 30 days to 2 days. The unit of measure is based on the average number of days it takes to generate financial reports.
4	Number of GOH institutions using IFMS for financial reporting and auditing (KO2)	0	0	0	0	0	0	2	GOH institutions use the IFMS for financial reporting, but not auditing.
5	Number of training days provided to executive branch personnel with USG assistance	0	15 days for men; 11 days for women;	56 days for men; 46 days for women	30 days for Men, 14 days for women	53 days for Men, 25 days for Women	154 Days for Men, 96 Days for women	160 days for Men, 110 days for Women	IFMS achieved 93% of its target for men and 83% for women.
6	Number of GOH IT staff trained (disaggregated by gender and GOH entities) (KO2)	0	67 men; 4 women	93 men; 20 women	38 Men, 5 Women	111 Men, 31 Women	309 Men, 60 Women	75 men, 9 Women	LOP result exceeded LOP target by end of project.

#	INDICATOR NAME	FY2015	FY2016	FY2017	FY2018	FY2019	LIFE OF PROJECT		COMMENTS
		ACTUAL	ACTUAL	ACTUAL	ACTUAL	ACTUAL, (Q1-Q3)	ACTUAL	TARGET	
7	Number of audit reports produced by ULCC, MICT, and CSCCA using IFMS (KO3)	0	0	0	0	0	0	10	IFMS has enabled counterparts to use financial reporting tools through the UXP. However, partners have not begun formal audit reporting through the system.
8	Number of ministries using GOH human resource management system on IFMS network (KO3)	0	0	0	0	0	0	5	GoH made decision not to roll out SIGRH 2.0 despite advocacy efforts from IFMS and USAID.
9	Number of GOH insItitutions connected and able to exchange data through the unified exchange platform (UXP) (KO04)	0	9	4	13	13	13	13	IFMS achieved its target for this indicator through connecting all participating institutions to the UXP.

#	INDICATOR NAME	FY2015	FY2016	FY2017	FY2018	FY2019	LIFE OF PROJECT		COMMENTS
		ACTUAL	ACTUAL	ACTUAL	ACTUAL	ACTUAL, (Q1-Q3)	ACTUAL	TARGET	
10	Number of data exchange transactions monthly using the UXP (KO4) including test data	0	0	33132	0	12656	45,788	1000	Traffic on data exchange between DGI AGD, MEF and ULCC from January to May 2019. Protocols for exchange have been defined and developed and UXP portal is operational.
11	Number of procedure manuals and internal processes developed (KO4)	0	6	6	0	6	18	18	IFMS developed and shared procedure manuals on technologies such as VxRail, UXP, and network monitoring tools etc.
12	Number of DGI offices connected to the network and able to use Tax Solutions (KO4)	0	10	12	0	2	24	10	IFMS exceeded its LOP targets for this indicator; GoH to fund internet to maintain onnectivity of all 26 sites where IFMS delivered equipment.

#	INDICATOR NAME	FY2015	FY2016	FY2017	FY2018	FY2019	LIFE OF PROJECT		COMMENTS
		ACTUAL	ACTUAL	ACTUAL	ACTUAL	ACTUAL, (Q1-Q3)	ACTUAL	TARGET	
13	Number of municipalities using CIVITAX and able to receive data from DGI in order to monitor daily tax collection for the Commune level	0	0	3	3	3	3	5	IFMS encountered issues related to internet compatibility at some sites, which prevented exchanges.
14	Number of municipalities using the new version of CIVITAX with improved functionality (KO4)	0	0	3	3	3	3	10	IFMS encountered issues related to internet compatibility at some sites, which prevented exchanges.
15	Number of CSCCA offices connected to IFMS and able to use CIVITAX (KO4)	0	0	0	0	0	0	5	CSCCA opted not to receive support from IFMS.
16	Number of GOH offices using Decision Support Systems	0	0	0	0	0	0	5	This indicator is linked with the SIGRH software which was not rolled out based on a decision by the OMRH, for reasons outside IFMS' manageable control.

#	INDICATOR NAME	FY2015	FY2016	FY2017	FY2018	FY2019	LIFE OF PROJECT		COMMENTS
		ACTUAL	ACTUAL	ACTUAL	ACTUAL	ACTUAL, (Q1-Q3)	ACTUAL	TARGET	
17	Number of USG-Supported Anti- Corruption Measures Implemented (F-indicator: 2.2.4-7) (KO5)	0	0	2	0	3	5	10	IFMS implemented 5 anti-corruption measures through UXP deployment and installation of network monitoring tools and web services for IFMS.
18	Number of MEF offices using BI software	0	0	0	0	0	0	3	BI software is operational but data must be input by GOH in order to be useful.

ANNEX B. SUMMARY OF TRAINING SESSIONS THROUGH QUARTER 4 OF FISCAL Year 2017

TRAINING #	TRAINING PERIOD	THEMES	INSTITUTION	# OF PARTICIPANTS		# OF TRAINING DAYS		TRAINING LOCATION	TYPE OF TRAINING
				MEN	WOMEN	MEN	WOMEN		
1	October 5, 2015 to October 8, 2015	Linux Administration UXP	OMRH, DGI, MEF, AGD, MICT, CSCCA, ULCC, MENFP, MPCE, MSPP, OAVCT	11	0	4	0	Estonia	Class
2	March 14, 2016, to Marc 18 2016	UXP Administration	OMRH, DGI, MEF, AGD, MICT, CSCCA, ULCC, MENFP, MPCE, MSPP, OAVCT, ONI, MTPTC	41	1	5	5	Informatique d'Haiti	Class
3	May 30, 2016 to June 1, 2016	UXP Administration	OMRH, DGI	6	1	3	3	IFMS Office	Class
4	May to September 2016	UXP Administration	MTPTC, OAVCT, OMRH, MSPP, DGI, AGD, MPCE	9	2	3	3	At different sites	On Site
5	December 7, 2016 to Decmber 9 2016	UXP Administration	MTPTC, OAVCT	5	1	3	3	IFMS Office	Class
6	December 23, 2016	NOC Maintenance procedures	MEF, Telematica	10	0	1	0	IFMS Office	Class

TRAINING #	TRAINING PERIOD	THEMES	INSTITUTION	# OF PARTICIPANTS		# OF TRAINING DAYS		TRAINING LOCATION	TYPE OF TRAINING
				MEN	WOMEN	MEN	WOMEN		
7	March 21, 2107 to March 23 2017	UXP Administration	MEF, ULCC	2	1	3	3	IFMS Office	Class
8	April 25, 2017 to May 4, 2017	Windows Server 2012R	DGI, ULCC, OAVC, MEF	4	4	7	7	IFMS Office	Class
9	May 15, 2017	Portail UXP	MENFP	6	1	1	1	IFMS Office	Class
10	May 23, 2017 to May 26, 2017	UXP & Portail UXP	DGI, MPCE, CSCA	6	1	4	4	IFMS Office	Class
11	June 21, 2017 to June 27, 2017	VXRAIL	MEF, DGI	8	2	4	4	MEF Office	On Site
12	June 26, 2017 to June 30 2017	UXP & Portail UXP	MSPP, ONI	5	1	5	5	IFMS Office	Class
13	April to June 2017	UXP Administration	ONI, CSCCA, ULCC, MENFP	4	0	2	0	Different GOH sites	
14	July 12, 2017 to July 14, 2017	Windows Server 2012R	DGI, ULCC, OAVCT, MSPPP, MEF	8	4	3	3	IFMS Office	Class
15	July 25, 2017 to July 28, 2017	GLPI	OMRH, DGI, MPCE, MEF/DSI, OAVCT	5	1	4	4	IFMS Office	Class
16	August 16, 2017 to August 22, 2017	Business Intelligence for ADM	MEF, DGI, AGD, IHSI	7	2	3	3	MEF office	On site
17	August 24, 2017 to August 30, 2017	Business Intelligence for	MEF, DGI, AGD, IHSI	16	1	5	5	MEF office	On site

TRAINING #	TRAINING PERIOD	THEMES	INSTITUTION	# OF PARTICIPANTS		# OF TRAINING DAYS		TRAINING LOCATION	TYPE OF TRAINING
				MEN	WOMEN	MEN	WOMEN		
18	September 24, 2017	CIVITAX	DGI, CSCCA, MICT,	3	1	1	1	IFMS Office	Class
19	November 5, 2017 to Nvember 8	SIGRH by Softline	OMRH, MEF, MPCE, MHAVE,	17	15	5	5	Informatique d'Haiti	Class
20	July to Nvember 2017	UXP Administration	MSSP, MEFONI, CSCCA, ULCC,	4	0	6	0	Different GOH sites	On site
IFMS EXTENSION PERIOD (MAY 25, 2018 TO JULY 25, 2019)									
21	October 22, 2018 to October 26,	Linux Administration	MTPTC, OAVCT, MSPP	7	1	5	5	Banj Delmas	Class
22	October 22, 2018 to October 26,	Webservices on UXP	MPCE, ULCC, CSCCA	6	0	5	0	Banj Delmas	Class
23	November 12, 2018 to November	Webservices on UXP	MTPTC, OAVCT, MSPP	6	3	5	0	Banj Delmas	Class
24	November 12, 2018 to November	Linux Administration	MPCE, ULCC, CSCCA	6	0	5	5	Banj Delmas	Class
25	December 17, 2018 to December	Webservices on UXP	MENFP, MEF, DGI	6	1	5	4	Banj Delmas	Class
26	December 17, 2018 to December	Linux Administration	MENFP, MEF, DGI AGD, MICT	7	0	5	0	Banj Delmas	Class
27	January 28, 2019 to February 1, 2019	VMWARE/Dell	MEF, DGI	12	0	5	0	MEF office	On Site
28	February 25, 2019 to March 1, 2019	UXP, Training of trainers	DGI, AGD, MEF	6	2	5	5	DGI Office	On Site
29	March 18, 2019 to March 20 2019	UXP, Training of users	DGI, AGD, MEF	16	6	3	3	MEF Office	On Site
30	March 29, 2019	Procedures	MEF	2	0	1	0	MEF Office	On Site
31	April 2, 2019	Procedures	MEF	2	0	1	0	MEF office	On Site
32	April 1, 2019 to April 5, 2019	UXP Birt	DGI, ADG, MENFP, MEF	11	1	5	5	DGI Office	On Site
33	April 8, 2019 to April 11, 2019	Data Domain/Dell	MEF, DGI	6	0	4	0	MEF Office	Online class
34	April 12, 2019	Procedures	MEF	2	0	1	0	MEF Office	On Site

TRAINING #	TRAINING PERIOD	THEMES	INSTITUTION	# OF PARTICIPANTS		# OF TRAINING DAYS		TRAINING LOCATION	TYPE OF TRAINING
				MEN	WOMEN	MEN	WOMEN		
35	April 22, 2019 to April 30, 2019	CISCO	MSPP, MTPTC, DGI, AGD, MEF	14	3	7	7	Telematica Office	Class
36	May 6, 2019 to May 8, 2019	VSAN/Dell	MEF, DGI	6	0	3	0	MEF Office	Online class
37	May 15, 2019 to May 17, 2019	AVAMAR	MEF, DGI	6	0	3	0	MEF Office	Online class
38	April 16, 2019 to May 29, 2019	UXP Hands on	AGD, MEF	3	0	5	0	MEF and AGD Office	On Site
39	June 5, 2019 to June 7, 2019	UXP Workshop	MEF	4	4	3	3	MEF Office	On Site
40	June 12, 2019 to June 27, 2019	VXRAIL Hands on	MEF	4		6		MEF Office	On Site
TOTAL				309	60	154	96		

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