Thematic Performance Evaluation

USDOL ILAB-supported Labor Administration Electronic Case Management Systems

in

Colombia, Honduras, Paraguay, Peru, Philippines, Sri Lanka and Vietnam

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ACRONYM LIST

CHS	Capital Humano y Social Alternativo / Human and Social Capital
DOL	Department of Labor
DOLE	Department of Labor and Employment of the Philippines
ECMS	Electronic Case Management System
FOACB	Freedom of Association and Collective Bargaining
ICT	Information and Communication Technology
ILAB	USDOL Bureau of International Labor Affairs
ILO	International Labor Organization
ILS	International Labor Standards
IT	Information Technology
KII	Key Informant Interview
LI-CMS/SISINFO	Labor Inspection Case Management System (Colombia)
LI-MIS	Labor Inspection Management Information System (the Philippines)
LISA	Labor Inspection System Application (Sri Lanka)
M&E	Monitoring and Evaluation
MOLISA	Ministry of Labor - Invalids and Social Affairs
MOU	Memorandum of Understanding
NIRF	Improving Labor Laws and Labor Administration within the New Industrial Relations Framework Project
OCFT	USDOL Office of Child Labor, Forced Labor and Human Trafficking
OSH	Occupational Safety and Health
OTLA	USDOL ILAB Office of Trade and Labor Affairs
PLADES	Programa Laboral de Desarollo / Program of Labor Development
SAMO	System of Alerts and Monitoring (Peru)
SFS	Sistemas, Familias y Sociedad / Systems, Families and Society
SIIT	Sistema Informático de Inspección del Trabajo (Peru)
SUNAFIL	Superintendencia Nacional de Fiscalización Laboral / National Superintendence of Labor Inspection
TOR	Terms of Reference
TPP	Technology, People and Processes Framework
USDOL	United States Department of Labor

EXECUTIVE SUMMARY

The United States Department of Labor (USDOL), through its Bureau for International Labor Affairs (ILAB) Office of Trade and Labor Affairs (OTLA), contracted Sistemas, Familia y Sociedad (SFS) to conduct a thematic performance evaluation of the Electronic Case Management System (ECMS) components of five OTLA-funded projects in Colombia, Peru, the Philippines, Sri Lanka, and Vietnam along with two Office of Child Labor, Forced Labor and Human Trafficking (OCFT)-funded projects in Honduras and Paraguay. In these seven countries, past and current USDOL-supported projects collaborated with national labor administrations to develop and/or improve ECMS for the operation and management of labor inspection cases. This evaluation assesses the achievements, challenges, and sustainability to date of the projects' ECMS components in these seven countries.

The evaluation team's research methodology used a qualitative design. Evaluation findings were based on information extracted from three main sources: document review, key informant interviews and group interviews. Due to the ongoing coronavirus pandemic, the team was unable to conduct in-country fieldwork, relying instead on online conferencing and telephone to communicate with key informants.

Instead of organizing the evaluation findings using the traditional evaluation criteria of relevance, coherence, effectiveness, efficiency and sustainability, the evaluation team decided to adopt the Technology, People, and Processes framework. This framework is often used in Information Technology (IT) circles to plan, implement and evaluate IT-driven organizational transformation initiatives, with applications in both the private and public sector. The framework hypothesizes that successful initiatives to improve organizational effectiveness and efficiency balance and align these three dimensions of organizational change.

FINDINGS AND CONCLUSIONS

ECMS Status in Seven Countries

Of the seven projects with an ECMS subcomponent, four projects were closed (Colombia, Peru, Philippines, and Sri Lanka) and three were still ongoing. In the three active projects, two out of three ECMS (Honduras and Vietnam) are still in the software development phase. In the case of Paraguay, the deployment of the first version of ECMS was interrupted by the Covid-19 pandemic. The International Labor Organization (ILO) implemented four projects and Partners of the Americas, Program of Labor Development (Programa Laboral de Desarollo, PLADES) and World Vision each implemented one of the seven projects that were covered in the evaluation.

Although ECMS are a complex intervention with many challenges, project investments in this area are producing positive results that have been largely sustained in countries with mature systems. Among the closed projects, three out of four ECMS are still functioning and evolving in ways that are likely to have growing positive effects on the labor inspectorate's effectiveness and efficiency (Colombia, Peru, and the Philippines). Even in Sri Lanka, where the ECMS is, for the most part, no longer used due to both technical and user acceptance issues, the labor administration reported plans to redevelop a new system, building on the lessons learned from the USDOL-funded project.

Although the most-accepted ECMS use still appears to be for recording initial labor inspection results, in all seven evaluation countries, demand from labor officials for more advanced features and uses has grown over time. Increased demand for more automation of administrative tasks, sharing data between public sector and other information systems, client-facing services, and advanced data analytics suggested that decision-makers increasingly understood the potential benefits of ECMS. Indeed, labor administrations' interest and capacity to continually adjust and improve the ECMS appears to be a key factor in keeping ECMS in use, given changing laws, the inspectorates' evolving requirements, and the need for ECMS maintenance and upgrades.

ECMS Implementation Challenges and Ways Forward

Based on the experiences in the seven countries covered by this evaluation, there is no "one size fits all" ECMS blueprint that can be replicated across countries that are either currently implementing ECMS or considering it in the future. The seven countries covered by this evaluation experienced unique growing pains and obstacles based on their context. Nevertheless, there were some common pitfalls as well as good practices that were effective to mitigate or overcome challenges that are worth sharing.

ECMS intervention/software design: Grantee and labor administration IT expertise and time limitations resulted in project-contracted IT service providers shouldering significant, and in some cases excessive, responsibility for ECMS design and implementation. Extensive outsourcing by grantees of ECMS software development, deployment, and change management strategies (user training, communication, and promotion) to IT contractors incurred risks including lack of effective oversight, design errors and delays due to the software development team's lack of subject-matter expertise and their challenges getting adequate input or cooperation from labor administration stakeholders, among others. In the early software development stages, labor officials often were not able to anticipate their needs or provide adequate input on software design, necessitating changes after the initial software development contract had been awarded and, for the mature systems, after the contract was completed and the ECMS deployed. In addition, decision-makers were often unable to fully grasp the potential benefits of ECMS prior to its deployment, which limited their motivation and capacity to provide guidance to IT contractors.

Some emerging good practices to anticipate labor administration needs more effectively, to better highlight potential ECMS benefits to decision-makers, and to avoid or mitigate the need for costly design changes that were demonstrated in the evaluation countries included:

- Reviewing other countries' ECMS design and deployment experiences through document review and/or exchanges with countries with mature systems, which informed decision-makers' understanding and vision for ECMS use. (Philippines, Vietnam, and Paraguay)
- Involving grantee's in-house IT specialists and personnel with previous ECMS implementation experience to provide inputs for the design and implementation of ECMS. (Colombia, Philippines, and Vietnam)
- Conducting preliminary feasibility studies and needs assessments to inform design decisions. (Colombia and Vietnam)

- Developing ECMS incrementally (using the Agile method of software development), which included processes for getting user feedback at regular intervals in the development process to correct flaws and adapt software features to meet user needs. (Colombia and Vietnam)

Digitization challenges: In the initial ECMS deployment stages, countries suffered some common challenges related to the labor administration's readiness for digitization. The absence of adequate Information Communication Technology (ICT) infrastructure (hardware, internet access and bandwidth), especially in sub-national field offices, limited effective system use in all countries. In addition, inadequate ECMS hosting solutions resulted in slow data upload speeds and frequent system outages, which incurred user frustration and constrained ECMS acceptance, especially by labor inspectors. Limitations in legal frameworks for e-government, such as recognition of e-signatures and digital files and archives, limited the ECMS' potential effects on reducing paperwork and increasing inspector efficiency, since manual processes could not be abandoned completely.

Poorly defined or nonstandard labor administration procedures were also a challenge for ECMS designers, whose work often extended beyond digitization to standardizing the procedures themselves. Deficiencies in some existing labor inspection processes likewise raised issues about if/how ECMS designers should align with these and suggested that broader technical assistance on labor administration reforms were needed to complement the ECMS intervention.

Some useful actions taken by grantees and/or the labor administration to mitigate digitization constraints included:

- In collaboration with labor administration IT departments, assessing ICT needs early in ECMS implementation and agreeing among the donor, the grantee, and the labor administration about which party will be responsible for acquiring needed hardware, software, and other infrastructure, which was in some cases formally documented in Memoranda of Understanding (MOU). (Colombia, Honduras, Paraguay, Philippines, and Sri Lanka)
- Upgrading the labor administration data center servers, increasing bandwidth, and improving server maintenance or outsourcing software hosting to professional service providers to overcome slow data-upload and server downtime problems. (Colombia and the Philippines)
- Providing training to labor administration IT teams on ECMS and related infrastructure maintenance. (Philippines and Sri Lanka)
- Documenting the country's laws and regulations on inspection and labor violation sanctions to guide ECMS software development so that it aligns with individual countries' legal requirements and specific timelines.
- Mapping and harmonizing existing labor office inspection practices and workflows.
- Developing specific ECMS modules to manage processes related to a specific industry, sector, or inspection area (e.g., occupational safety and health).

ECMS adoption and acceptance by users: Labor inspector acceptance of ECMS was a major challenge facing ECMS proponents in all evaluation countries. Common sources of labor inspector reluctance were the system's real or perceived negative effects on inspector workloads and routines, technical

glitches, and unfamiliarity with ECMS hardware or software; factors which were especially important early in ECMS roll-out. Fear of increased surveillance by supervisors, including possible adverse effects on their performance evaluation, also hindered some labor inspector acceptance and use.

To greater and lesser degrees, projects anticipated and implemented strategies to foster labor inspector acceptance. Some effective strategies included:

- Involving labor inspectors and other sub-national users in software development and testing stages.
- Supporting IT literacy and system use training programs.
- Providing user support through peer-to-peer and helpdesk mechanisms.
- Implementing targeted communication activities highlighting ECMS benefits and dispelling myths.
- Requiring labor inspectors to use ECMS through administrative orders or including the requirement in job descriptions.
- Tracking labor administration key performance indicators in ECMS reports and dashboards and using incentives to reward inspectors or inspection units that meet their targets.

Systemic issues like corruption and governments' slow progress toward improving labor inspectors' status and working conditions, although not directly related to ECMS, also affected their willingness to adopt ECMS in several countries. These issues were largely outside a project's control, although some grantees' advocacy and support for broader labor administration reforms created opportunities for dialogue on needed changes.

ECMS Outcomes on Labor Administration Decision-making, Labor Violation Case Management, Enforcement of Sanctions, and Transparency

In countries with mature systems, USDOL-supported ECMS were to differing degrees influencing decision and policy making, labor administration follow-up on labor violations, and had promoted greater transparency on issues related to labor law compliance. Peru stood out for having developed analytical tools to use data to predict compliance problems. The Philippines used ECMS data for performance evaluation and assessing training needs, inspection planning, and orienting labor policies, among other uses. Although improvements were still needed, labor officials in mature ECMS countries found that the ECMS had been useful to improve follow-up on labor violation cases. Most countries claimed they had or would be sharing ECMS data with stakeholders outside the labor administration, increasing the capacity of "outsiders" to see and advocate for compliance improvements. For example, respondents in Colombia and the Philippines reported that educating workers' organization representatives and tripartite bodies on their right to ask for ECMS-generated reports was useful to inform their advocacy and social dialogue activities.

Despite progress, the practice of using data to drive labor administration planning and policy decisions was still in its early stages in most of the seven evaluation countries, suggesting the need for better data analysis tools as well as additional project assistance to develop labor administrations' capacity to use data for performance management and strategic planning. In addition, countries with mature systems highlighted that although it was useful to have access to data on labor violations, political will, and not data, often still drove enforcement decisions. Similarly, despite increasing case management efficiency, prosecuting cases and imposing sanctions were also impeded by limited legal

expertise among labor personnel as well as labor court and other dispute resolution mechanism limitations. Finally, systemic challenges (too few and inadequately trained and motivated inspectors, inspectorates' limited power to impose sanctions, and corruption) negatively affected labor administration follow-up on labor violations and their effectiveness in enforcing sanctions.

ECMS Sustainability in Seven Evaluation Countries

Currently, Colombia, Peru, and the Philippines, within certain limits, have adequate technical capacity within the labor administration to sustain and improve their ECMS without significant donor or grantee support. Their systems have been in use long enough to overcome the most important technical issues as well as to demonstrate to decision-makers the benefits of having the system. The governments have allocated personnel and regular budget resources to cover ECMS maintenance and running costs (Colombia and the Philippines) and for future upgrades (Peru). Paraguay and Vietnam are facing the end of project assistance relatively soon after the initial deployment of their systems. Based on other evaluation country experiences, many software design problems and technical glitches, as well as user acceptance challenges, occur in the first year after the initial deployment. Ending project assistance too soon after deployment may put system sustainability at risk. The ECMS in Honduras, where software development is ongoing, will likely benefit from the additional time afforded by the three-year extension of the Futuros Brillantes project.

Issues that affect ECMS sustainability include the extent of buy-in for system use by labor administration decision-makers, the capacity of the labor administration to support and maintain the system, the availability of state budget allocations post-project, and IT capacity to adapt the ECMS software to evolving laws, regulations, and procedures. Evaluation findings suggest it is difficult to anticipate and resolve all ECMS sustainability risks in one project cycle. Colombia was fortunate to benefit from additional USDOL assistance through a subsequent project to overcome its ECMS technical challenges and align the software with procedural changes. Similarly, the Philippines received USDOL assistance to rebuild their ECMS to overcome the failings of their first system and develop internal capacity to update the software. In contrast, ILO and USDOL support for Sri Lanka's ECMS was relatively limited post project, which although not the only factor, was certainly an important cause of the system's eventual collapse.

Most projects also funded short software warranties and trained or planned to train labor administration personnel on system maintenance, which was useful for fostering sustainability but with limitations. Overall, grantees appear to have underestimated the time and level of IT expertise required to resolve post-deployment software design issues and maintain ECMS software and related infrastructure. Stakeholders in several countries with mature systems (Colombia, Philippines, and Sri Lanka) indicated that longer term post-deployment support from the IT specialists who developed the system was important, even when the labor administration had their own in-house expertise. External support was often needed to correct software bugs, address new user requirements, update forms, as well as for routine software and server maintenance.

Most projects were effective in gaining buy-in from labor administration decision-makers, including securing their commitment to maintain ECMS with government funding post-project. Frequent labor administration leadership changes as well as high levels of personnel turnover negatively affected progress and posed sustainability risks. A few projects documented high-level commitments in formal MOUs (Colombia and Paraguay), a strategy that helped to ensure institutional memory and

promote sustained commitment from labor administration officials. Making ECMS implementation part of trade agreement commitments was likewise useful to sustain political will (Colombia and Honduras).

RECOMMENDATIONS

1. **Conduct readiness assessments prior to ECMS software development:** Grantees, in collaboration with labor administration officials, should review third countries' experience and carry out studies assessing ECMS readiness. Assessments should examine a variety of issues, including: ICT infrastructure availability; government IT standards and e-government readiness; computer literacy and aptitudes for technology applications among labor administration personnel; labor inspection process and legal requirements; human resource structures and limitations; and information systems in other labor administration departments as well as institutions outside the labor administration for potential data sharing. Based on assessment results, grantees should develop strategies to capitalize on good practices, address identified gaps and mitigate risks. USDOL and grantees should also assess political will to overcome challenges and take needed actions based on assessment results and, assuming government willingness, develop clear MOUs outlining the roles and commitments of the donor, grantee and the government.

2. **Use more adaptive management approaches:** With grantee support, labor administrations should develop ECMS software in phases, taking into account the time required to address system design errors, incorporate new features to meet emerging needs, resolve technical bugs, train users, and overcome their reluctance to ECMS use. As part of this approach, grantees and labor administrations should pilot the system before expanding countrywide and/or developing all planned ECMS modules, recognizing the limits of how quickly technology can drive organizational development. Projects may consider drawing on the results of pre-implementation assessments to identify which procedures and/or in which geographic zones institutional readiness is the greatest and start there. Achieving early success, even on a limited scale, is more likely to foster sustained government buy-in than early failures.

    - USDOL should plan additional support (for overcoming system technical flaws, implementing change management strategies, and adding new features if needed) for ECMS development in Vietnam following the end of the current project. Depending on the status of progress at the end of the project, USDOL should consider providing support to scale the ECMS in Vietnam through a future project.

    - USDOL should monitor ECMS deployment in Paraguay post-pandemic and consider providing additional support (to address technical flaws, implement change management strategies and potentially add new features if needed) during the initial redeployment phase.

    - In the project extension phase, World Vision should provide support to deploy the ECMS in Honduras in phases (geographic and/or by system module), providing support to correct problems before attempting countrywide deployment.

3. **Address hardware, software, and software hosting solution requirements:** To promote usability, projects and/or labor administrations should allocate enough resources to ensure the

ICT infrastructure available to users is adequate. This means ensuring that labor inspectors have access to computer hardware (which may include mobile phones, tablets, laptops, and/or desktop computers in labor offices, depending on the context) and when possible, high-speed internet access. Proper attention should be paid to ECMS software hosting solutions (server processing speeds, memory and bandwidth, server maintenance).

4. **Outsource at least part of software maintenance to the software development company following deployment:** In addition to building the capacity of a ministry's internal IT support and maintenance teams, projects and/or labor administrations should acquire software maintenance contracts after the software is deployed for at least two to three years (or longer, depending on in-house IT expertise availability and capacity). The contracts should include clear level-of-service agreements.[1]

5. **Design and implement comprehensive change management strategies:** These include clearly specifying ECMS use requirements in job descriptions and administrative orders, user training, involving labor inspectors and other users in "continuous improvement" processes to identify and correct system bugs and identify other needed improvements, creating user support systems, and developing communication activities aimed at fostering ECMS acceptance and adoption. Training should include basic IT literacy (if needed) and system use training, and for decision-makers, training on using data for labor inspection system monitoring and strategic planning.[2]

    - Grantees in Honduras, Vietnam and Paraguay should help ministries to develop and implement a change management strategy that includes user consultations to define how ECMS software can be improved to align with their needs, identify system bugs, training, user support systems and targeted communication activities on ECMS benefits.

6. **Advocate for and assist with overcoming systemic issues affecting labor administration effectiveness:** To the extent that they have leverage, USDOL and grantee personnel should advocate for and support labor administration officials to address systemic issues affecting the efficacy of labor inspection in parallel with ECMS development. Systemic issues include the limited number of labor inspectors, their status and access to training, as well as broader issues such as national leaders' commitment to enforcing labor laws and fighting corruption. Sources of leverage may include trade agreements, and USDOL, ILO and other international and national

[1] The agreements should describe covered services and service levels, the metrics by which the services are measured (such as response times), the duties and responsibilities of each party (such as what software components are covered by whom, frequency and type of preventative maintenance, remote access to the system), the remedies or penalties for breach, and a protocol for adding and removing metrics. Project managers may need to consult with IT experts within their organization on the elaboration of the service contract.

[2] Variables to consider when evaluating training needs and budgets include the number of labor inspectors and labor offices, the users' baseline IT competencies, the complexity of the ECMS and the users' role as well as the training strategy (whether a training of trainers approach will be used, or end users will be trained directly by the project).

stakeholders' advocacy and technical cooperation activities that highlight countries' areas of noncompliance with international labor standards, including Convention 81 on labor inspection.

7. **Ensure software developers are guided by government and grantee labor inspection specialists:** Project labor inspection specialists and labor administration officials should allocate adequate time and human resources to accompany software developers during the "business processes" engineering phase of ECMS design and development. How much time and access to technical expertise is required will vary from country to country depending on the extent that labor inspection processes and procedures have already been elaborated and standardized across the labor administration, including sub-regional offices, and whether the former account for the most recent labor law reforms.

8. **Orient ECMS data collection forms and reporting tools to facilitate measurement of labor inspection key performance indicators and other required reporting:** ECMS development should consider the labor administration's strategic plans and key performance indicators and adapt system database structures and reporting features so that, to the extent possible, the ECMS produces data to measure progress against indicators. In the absence of key performance indicators, projects should consider providing technical advisory services and training from labor inspection specialists on the development and use of key performance indicators.

9. **Capitalize on lessons learned from past ECMS interventions:** USDOL and grantees which currently provide support for ECMS development in many countries (ILO), or may do so in the future, should systematize and document good practices and lessons learned supporting ECMS development in practical formats, such as an ECMS toolkit, business cases, or implementation guidelines. Given the specialized and varied knowledge required for ECMS development, USDOL or the grantee should consider creating a multi-disciplinary team(s) that may provide support for future ECMS interventions.

1. PURPOSE AND SCOPE

The United States Department of Labor (USDOL), through its Bureau for International Labor Affairs (ILAB) Office of Trade and Labor Affairs (OTLA), has contracted Sistemas, Familia y Sociedad (SFS) to conduct a thematic performance evaluation of the Electronic Case Management System (ECMS) components of OTLA- and Office of Child Labor, Forced Labor and Human Trafficking (OCFT)-funded projects in Colombia, Honduras, Paraguay, Peru, the Philippines, Sri Lanka, and Vietnam. In these seven countries, past and current USDOL-supported projects collaborated with national labor administrations to develop and/or improve ECMS for the operation and management of labor inspection cases. This evaluation assesses the achievements, challenges, and sustainability to date of the projects' ECMS components in these seven countries.

1.1 Performance Evaluation Context

The mission of OTLA is to work to ensure that US trade agreements are fair for American workers and workers around the world. OTLA's Technical Assistance and Cooperation Division manages and funds technical assistance projects that build the capacity of governments, workers, and employers to enforce and improve labor protections. The Division oversees technical cooperation projects across the globe that provide technical assistance to improve worker rights, livelihoods, and labor law compliance. Since 1995, OTLA has developed programs in more than 72 countries that address a wide range of labor issues and help to make sure that trade partner countries have the tools to enforce their labor laws and comply with a trade agreement's or preference program's labor obligations.[3]

OCFT combats child labor, forced labor, and human trafficking. It has formed partnerships with 97 governments and 80 organizations to strengthen laws, enforcement, policies, and social programs to end child labor. Its various projects across the globe have trained 60,000 labor inspectors and law enforcement officials.[4]

Many past and current OTLA and OCFT projects aim to build the capacity of labor inspectorates in partner countries to ensure national labor legislation and International Labor Standards (ILS) are applied in the workplace. According to the International Labor Organization (ILO), labor inspection is among the state's most important instruments to promote understanding and ensure compliance with national and international labor standards and laws in areas including industrial relations, wages, general conditions of work, occupational safety and health (OSH), and issues related to employment and social security. However, in many countries, labor inspectorates lack access to adequate human, financial and material resources, which diminishes their effectiveness and efficiency. For example, a 2009 ILO audit of the labor inspectorate in the Philippines highlighted that with the limited number of labor inspectors available, it would take on average 16 years to inspect

[3] https://www.dol.gov/agencies/ilab/about-us/mission

[4] https://www.dol.gov/agencies/ilab/our-work/child-forced-labor-trafficking

"As the universe of establishments as per Philippine Statistics Authority data back then [2009] is around 784,000 vis-à-vis close to 200 labor inspectors, disparity is great … This divergence illustrates low coverage and limited capacities of the labor inspection system, thus the need for reform and further support in terms of policy, human resource and technological intervention.

- Philippines Labor Inspection Audit, ILO, LAB/ADMIN, 2009

The OTLA has concerns about (1) the lack of capacity of the Labor Inspectorate, in particular with regard to inspectors' difficulty traveling to rural areas, high staff turnover, lack of a consistent national strategy, and failure to implement a national case management system; (2) delays in the MOL's inspection process; and (3) delays and lack of systematic collection of certain fines related to the rights to freedom of association and collective bargaining.

- Public Report Review of U.S. Submission 2016-02 (Colombia)

all workplaces in the country at least once.[5] Similarly, US monitoring of its trade agreement conditions with Colombia in 2016 expressed significant concerns about the labor inspectorate's capacity to enforce the labor component of the agreement.

As part of its broader technical assistance efforts to bolster the labor inspectorates' capacity, OTLA and OCFT have funded information technology (IT) applications to enhance partner states' capacity to plan, organize, administer, and follow-up on labor inspection activities. Its assumption has been that by shifting from manual, paper-based to more automated, digital systems for labor inspection and labor law violation case management, labor inspection will become more effective, efficient, and strategic. ECMS design, development and deployment, or improvement of existing systems, has been a component in many projects. For some, the intervention was part of the original project design and in other cases the intervention strategy was added in response to emerging needs. The projects that have contributed to these systems have faced or are facing many similar challenges and opportunities, justifying a multi-country, thematic evaluation of ECMS.

1.2. Research Objective and Intended Audience

The overall objective of this thematic performance evaluation was to assess the achievements, challenges, and sustainability to date of the ECMS components in seven OTLA- and OCFT-funded projects. The evaluation examined the effectiveness of projects' ECMS implementation strategies, including both strengths and weaknesses. The evaluation identified system design, development and deployment strategies that appeared to be successful as well as those in need of improvement, endeavoring to identify key factors influencing outcomes. The evaluation assessed stakeholders' perspectives on the systems' contributions to facilitating improvements in existing labor inspection processes and labor law violation case management systems. Finally, the evaluation examined what factors make ECMS more or less likely to become sustainable when projects end.

The primary users of this thematic performance evaluation are USDOL staff who may consider the evaluation findings, conclusions, and recommendations to guide the development and oversight of current and future OTLA or OCFT support for labor administration ECMS. Secondary users include past and present grantees and participating country labor administration officials who may use

[5] Technical Memorandum, Philippines Labor Inspection Audit, ILO, LAB/ADMIN, 2009. https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---lab_admin/documents/publication/wcms_240182.pdf

evaluation inputs to improve their existing systems or orient ongoing ECMS-related activities, as well as other stakeholders who would like to implement ECMS.

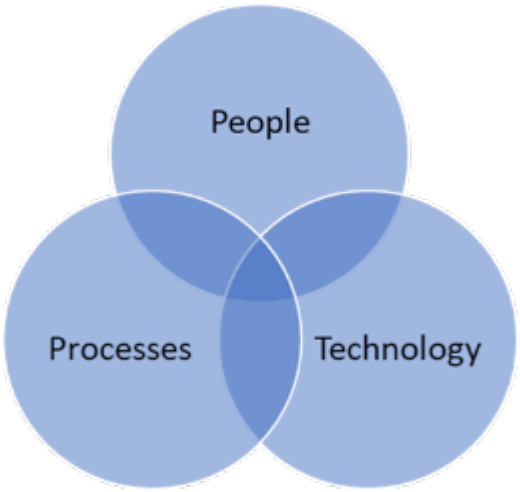
1.3. Evaluation Questions

This report addressed the main research questions and sub questions presented in table one. These questions were outlined in the evaluation terms of reference (TOR) developed and tendered by OTLA. The full TOR is included in Annex B. It includes a long list of specific illustrative sub-questions related to these overarching research questions, which the evaluation team sought to answer as relevant for each country.

Table 1. Main Research Questions

Research Question	Sub Questions
Question 1: What level of ECMS functionality has been achieved/maintained among the ECMS project components in projects that are still active?	▪ Which of the active project ECMS components show the greatest likelihood of being sustained after external support has ended, and why? ▪ What adjustments could be made to enhance the ECMS functionality or sustainability within the active projects?
Question 2: What level of ECMS functionality has been achieved/maintained since the inactive projects have closed?	▪ Which of the closed ECMS components/projects exhibit the strongest sustainability and functionality post-hoc? ▪ What were the factors that limited or facilitated ECMS sustainability and functionality? ▪ What adjustments should be made for future ECMS?
Question 3: How does the organizational capacity of project implementers, target institutions, and implementing partners limit or facilitate the effectiveness, functionality and sustainability of project-based ECMS interventions?	▪ Are project designs adequately accounting for differences in capacity?
Question 4: What effect(s) have the projects' ECMS interventions had (positive, negative, or neutral) on labor inspectorate operation (from case inception to final disposition)?	▪ What were the factors that limited or facilitated ECMS results?

1.4. Report Organization



The evaluation team presents the thematic evaluation methodology in section two, with information data sources, sampling methods, and evaluation limitations. Section three provides a general overview of the seven OTLA and OCFT projects covered by the evaluation as well as an overview of the ECMS in each country, including information on each system's features, its status at the end of the project (for closed projects) and its current status (for all seven projects). The next five sections examine in greater depth the contextual and other factors that affected ECMS design, development, deployment, sustainability, and impact. Instead of organizing the evaluation findings using the traditional evaluation criteria of relevance, coherence, effectiveness, efficiency and sustainability, the evaluation team decided to adopt the Technology, People and Processes (TPP) framework.[6] The TPP framework is often used in IT circles to plan, implement and evaluate IT-driven organizational transformation initiatives, with applications in both the private and public sector. The framework hypothesizes that successful initiatives to improve organizational effectiveness and efficiency balance and align these three dimensions of organizational change.

How Key Evaluation Questions Related to Technology, People and Process Dimensions

Evaluation questions one and two are largely focused on the technology dimension. How far advanced is ECMS design, development, and deployment in the seven evaluation countries? To what extent and how do planned/actual ECMS technical functionalities support key stages in the inspection process (inspection planning, compliance assessment, and case management from inception to disposition)? Are ECMS adequately aligning with other, related IT systems? Did the seven projects identify and mitigate potential technology-related system use and sustainability challenges, such as ECMS maintenance and the availability and ongoing cost of internet, hardware, and software updates?

Question three is focused on the people and process dimensions of ECMS interventions in the seven countries. Included in the "people" dimension is an analysis of the extent that the seven projects implemented strategies to foster technology acceptance and adoption by system users, taking into consideration the organizational capacity of labor administration counterparts. Under "processes,"

[6] This model grew out of Harold Leavitt's diamond organizational model first published in 1965 and has been adapted and applied in various settings in the field of organizational transformation, both in the private and public sector. The model's usefulness in IT-focused interventions is its holistic approach (not focused only on technology, but also users and the organizational processes that affect technology's effectiveness to contribute to desired changes). The evaluation team drew from online resources on the model including "Everything You Need to Know about the People, Process, Technology Framework" https://www.smartsheet.com/content/people-process-technology#:~:text=As%20a%20term%2C%20people%2C%20process,streamline%20and%20improve%20these%20processes .

the evaluation team examined the extent and how the system functions aligned with and facilitated adherence to each countries' labor administration's legal and regulatory framework and procedures.

Under question four, the evaluation team explored the interaction of all three dimensions, looking at the extent project ECMS interventions have to-date contributed to relevant project outcomes in the seven evaluation countries.

Based on the evaluation key findings, the evaluation team draws conclusions, identifies good practices and lessons learned and proposes key considerations and recommendations to guide the design and implementation of ECMS components in ongoing and future projects.

2. EVALUATION METHODOLOGY

The evaluation research methodology used a qualitative design. Evaluation findings were based on information extracted from three main sources: document review, key informant interviews and group interviews. The evaluation team collected data on each of the seven countries selected by OTLA for this evaluation. Due to the ongoing coronavirus pandemic, the team was unable to conduct in-country fieldwork, relying instead on online conferencing and telephone to communicate with key informants.

2.1 Document Review

The evaluation team reviewed project documents to understand the overall and ECMS component design and implementation, extract findings relevant to the evaluation questions, and inform data collection protocols. The evaluation team reviewed the following categories of documents (see Annex D for a full listing):

- Grantee progress reports and website articles
- Project independent interim and final evaluations
- ECMS design documents and technical terms of reference
- Labor administration reports and website articles
- Other secondary research and reports

2.2 Key Informant and Group Interviews

The evaluation team collected data on the perspectives and experiences of key stakeholders involved in the implementation of project ECMS components in each of the seven evaluation countries, using a purposeful sampling technique (see list of persons consulted in Annex E). Key stakeholder groups included: OTLA and OCFT officials, past and present grantee personnel, ECMS software developers, and past and present counterpart country labor officials (senior decision-makers, ECMS technical and support team members, and other ECMS users such as labor inspectors and administrative support personnel).

OTLA and OCFT officials provided an initial list of key informants which the evaluation team supplemented using snowball sampling. Grantee and government counterpart personnel provided the names and, in some cases, facilitated setting up meetings with additional key informants in the

stakeholder categories referenced above. Overall, the final informant sampling allowed the evaluation team to compare the perspectives of different key stakeholder groups and cross-check and fill gaps in project reporting and other available ECMS documentation in each evaluation country.

The evaluation team interviewed 67 individuals (38 women and 29 men) from various stakeholder groups. The team interviewed key informants individually or in small groups of up to three similarly ranked individuals. Table 3 shows the distribution of interviews by country, key stakeholder group and sex. Each interview followed an interview protocol adjusted for different respondent types and was conducted in English, Spanish, Sinhala, or Vietnamese, depending on the key informant's preference.

Table 2. Distribution of Stakeholders by Country and Stakeholder Category

Grantee Personnel	Labor Officials	USDOL Officials	IT Service Providers	ILO Labor Specialists	Total	Male	Female
Colombia							
4	5	2			11	5	6
Honduras							
2	6	2			10	4	6
Paraguay							
2	4	1	2		9	4	5
Peru							
2	6				8	5	3
Philippines							
1	13			1	15	6	9
Sri Lanka							
3	8		1		12	6	6
Vietnam							
3	2		2		7	2	5
17	43	5	5	1	72	32	40

2.3 Limitations

Contact with current and former officials: Establishing contact with key stakeholders was complicated by factors including the remote format of the evaluation, the closure of four out of seven projects, and turnover among key personnel within the labor administrations. With support from USDOL officials, grantee personnel and helpful labor officials, the team was able to interview many of the most well-informed officials in each of the target countries. The loss of institutional memory both within the grantee organization and the Department of Labor was the greatest in Sri Lanka. Nevertheless, the team was able to interview a few key stakeholders with historical knowledge and in addition, benefited from the perspectives and first-hand knowledge of the current ECMS status of a wide selection of current labor officials.

Remote evaluation communication and other challenges: In the current pandemic conditions, it was not possible for the evaluators to conduct data collection in-country and so they relied entirely on remote data collection methods. It was relatively more difficult to establish rapport with respondents, clarify responses and understand the overall country context via online platforms than might have been the case if face-to-face interviews had been possible. To mitigate the effects of this limitation, the team used the respondents' preferred communication platforms, including regular telephone when necessary and requested additional information when needed via follow-up email communication.

Lack of direct access to the ECMS: The evaluation TOR and proposed methodology foresaw the evaluation team directly manipulating those ECMS which were operational, which was only possible in Paraguay. This approach would have allowed the team to validate that the features described in technical documents and by key informants had in fact been integrated into the system. Because of the challenges of conducting the evaluation remotely and the level of cooperation received from participating labor administrations, the team did not in fact manipulate the systems directly in most cases, relying exclusively on documentation, including screen shots of software interfaces and user feedback. While a limitation, the team believes that it would not have been able to fully test all system features with the time and resources allocated to the evaluation. However, the combination of technical documentation and user feedback gave the team an adequate picture of the "level of functionality" of each system. In the context of this evaluation, the team defined functionality as a combination of what features were integrated into the system plus the extent and ways these features were being capitalized by system users.

Limitations in available ECMS monitoring data: Few projects developed indicators and systematically gathered qualitative and quantitative data to measure the success of the ECMS interventions. The team had hoped to mitigate this by carrying out its own user survey or system analysis, but this proved overly ambitious in light of the level of cooperation it received from labor administrations with mature systems. Instead, the team relied on data available from past evaluations and its own mainly qualitative data collection and analysis.

Bias: The evaluation team was aware of several bias risks in data collection and analysis, and developed mitigation strategies to overcome these.

Selection bias: While the evaluators provided guidance on stakeholder selection criteria (mainly the categories of stakeholder to be interviewed), many of the evaluation key informants were chosen by the grantee or by labor administration officials. As a result, it is possible that grantees and labor officials selected stakeholders with mainly positive views or experiences with ECMS. The team mitigated this limitation by getting advice from USDOL officials on key informants as well as using the snowball method to identify individuals in addition to the list provided by the project and/or the labor administration.

Response and recall bias: Response bias is common in qualitative evaluations. It can occur when key informants respond in ways they perceive socially acceptable, that might be beneficial for receiving future support, or to avoid potential blame for intervention shortcomings. For example, people involved in the design and development of the software may not have wanted to describe their own mistakes, preferring to impute difficulties somewhere else. To mitigate this potential bias, the evaluation team used a clear informed consent protocol that, among other things, highlighted the

team's independence from USDOL and emphasized the main purpose of the evaluation was to generate knowledge and lessons learned. Recall bias may also have been a limiting factor, especially in countries with mature systems that were developed several years ago. To overcome both response and recall bias, the team endeavored to interview a cross section of stakeholders including former and current grantee and labor officials involved in ECMS development, and consulted available documentation which enabled it to triangulate responses with other sources of information.

3. PROJECT AND ECMS OVERVIEW

The first part of this chapter provides a general overview of the seven projects covered in this evaluation. The second part provides an overview of the ECMS in each evaluation country, including a brief description of when it was developed as well as the system's status at the time of the evaluation (January/February 2021).

3.1 Project Goals, Geographic and Sector Targets, and Implementing Partners

The projects included in this thematic evaluation all have/had a component dedicated to designing, developing and deployinging an ECMS within the target countries' labor administration. Table 3 shows the seven projects with ECMS components that OTLA selected for inclusion in this thematic evaluation.

Project objectives: All seven projects broadly aimed to promote improved application of national and international labor laws and standards in the target countries. OTLA developed and oversaw five projects, and OCFT the remaining two. OTLA projects, some of which were closely related to trade agreements, focused on strengthening national counterparts' capacity to protect and promote workers' rights through the application and enforcement of international labor standards such as Freedom of Association and Collective Bargaining (FOACB). OCFT projects in Honduras and Paraguay were largely focused on combatting child labor using integrated strategies (education, livelihoods, awareness raising and monitoring) with sub-components on labor administration capacity building.

Geographic distribution, grantee and project status: Four out of seven projects were in Latin American countries while the remaining three were in Asia. The International Labor Organization (ILO) implemented four of the projects and nongovernmental organizations implemented the three others, all of them in Latin America. Three of the seven projects (Honduras, Paraguay, and Vietnam) are ongoing while the remaining four are closed (Colombia, Peru, Philippines, and Sri Lanka). The projects in Colombia and Sri Lanka have been closed the longest, with the final evaluations taking place in late 2016 and 2017, respectively. The projects in Peru and the Philippines both finished in 2019.

Table 3. Overview of Projects covered by the Thematic Evaluation

Country	Name of Project	Grantee	Project Status	Long-term Objective to which the ECMS component contributed
Colombia	Promoting Compliance with International Labor Standards in Colombia	International Labor Organization (ILO)	Closed (2011–2017)	
Honduras	Futuros Brillantes: Project to Reduce Child Labor and Improve Labor Rights and Working Conditions in Honduras	World Vision	Active (2014-2023)	Strengthen the Department of Labor and Social Security capacities and competencies.
Paraguay	Paraguay Okakuaa: Project to Reduce the Worst Forms of Child Labor and Improve Labor Law Enforcement and Working Conditions in Paraguay	Partners of the Americas	Active (2015-2021)	Improve labor law inspectors' knowledge and technical capacity through improved inspector training programs, and by assisting the Ministry of Labor, Employment and Social Security with strategic planning, annual operational planning, human resource management, and monitoring and evaluation of labor inspections.
Peru	Building the Capacity of the Peruvian Labor Inspectorate	Capital Humano y Social (CHS)/ Programa Laboral de Desarollo (PLADES)	Closed (2014–2019)	Strengthen the National Superintendence of Labor Inspection's (SUNAFIL's) capacity to transition to a newly legislated centralized labor inspection system with focus on improving enforcement of laws, regulations, and other legal instruments governing subcontracting/outsourcing and the use of short-term employment contracts, especially in the nontraditional export sectors (e.g., mining, agriculture, fishing, and textiles).
Philippines	Building the Capacity of the Philippines Labor Inspectorate	ILO	Closed (2014–2019)	Improve the effectiveness of labor inspection conducted by labor law compliance officers
Sri Lanka	Promoting Fundamental Principles and Rights at Work in Sri Lanka – Phase III	ILO	Closed (2009–2016)	Strengthen labor administration for its effective intervention to promote sound labor-management relations, prevent and solve disputes and ensure compliance with labor regulations.
Vietnam	Improving Labor Laws and Labor Administration within the New Industrial Relations Framework (NIRF)	ILO	Active (2016–2022)	Strengthen the labor inspection system at the national and local/provincial levels

Projects' sector and thematic focus: Some of the projects included in this thematic evaluation focused on specific areas of labor law compliance and/or were sector focused.

- The projects in Colombia and Sri Lanka aimed to improve the application of fundamental principles and rights at work with particular focus on freedom of association and collective bargaining. In Colombia, the project aimed to enhance protection measures for trade union leaders and activities and strengthen social dialogue institutions. In Sri Lanka, the project focused specifically on strengthening industrial relations in the country's export processing zones. The project in Vietnam, while broadly aiming to reinforce the capacity of the labor inspectorate, also has a strong focus on improving industrial relations.
- The project in Peru supported the Ministry of Labor and Employment Promotion's newly formed *Superintendencia Nacional de Fiscalización Laboral* (SUNAFIL) to transition the labor administration from a decentralized to a more centralized labor law enforcement system. The project included specific interventions to combat illegal subcontracting/outsourcing practices and short-term employment contracts, especially in four export sectors/industries (e.g., mining, agriculture, fishing, and textiles).
- In the Philippines, the project aimed to support implementation of the Department of Labor and Employment (DOLE)'s reformed Labor Law Compliance System. The compliance system aimed to promote a culture of voluntary compliance on labor and OSH standards among companies, where employers and workers carried out joint compliance assessments.
- In Honduras and Paraguay, the projects mainly focused on combatting child labor. Both projects included a component on strengthening the capacity of the labor inspectorate.

3.2 ECMS Overview by Country

This sub-section describes the various ECMS developed, or in the process of development, in the selected seven countries. In the four closed projects, this section describes the extent the systems were developed and deployed during the life of the project and their status since the project closed. Annex A provides an ECMS fact sheet for each country summarizing the features of each ECMS.

> Part of what we are doing with the ECMS in Colombia is related to institution building and professionalizing the inspectorate. So that some of the abusive practices can be policed.
> **– USDOL official**

Colombia: Colombia developed a Labor Inspection Case Management System (LI-CMS or SISINFO in Spanish) under ILO's "Promoting Compliance with International Labor Standards in Colombia project (2011-2017)." The project was closely associated with the US-Colombia trade policy agenda following the 2011 free trade agreement. Among its other commitments to improve labor rights, the Government of Colombia committed to strengthening labor inspection, which included ECMS implementation. When the project started, the Colombian Ministry of Labor had independently contracted for a comprehensive labor administration information system but was facing significant implementation challenges. The Ministry of Labor eventually cancelled the contract and in 2014, the ILO (the grantee) stepped in to provide technical assistance and funding for the LI-CMS in collaboration with the Directorate for Territorial Surveillance, Control and Management. The ILO ECMS support covered software development as well user training and awareness-raising on ECMS benefits.

The LI-CMS is an online information system to assist, compile and follow-up on labor inspection processes. The Colombian ECMS includes tools enabling the inspection and sanctioning processes. The system includes alerts to prompt needed follow-up actions based on the country's legal procedures and case management requirements. It also includes statistical and reporting features to be used for decision-making, performance evaluation and periodic reporting. As part of the LI-CMS, the project systematized and digitized five years of inspection reports (2011-2015) which were subsequently integrated into the system to provide a historical inspection record by the establishment.

The development of the system began in 2013 and was largely completed in 2017. A follow-on USDOL project "Measurement, Awareness-Raising and Policy Engagement Project on Child Labor and Forced Labor" (MAP 16) supported additional work on the ECMS to address the identified technical bugs, which were reported to be mostly overcome by 2021 in the third version of the ECMS software. In early 2021, the LI-CMS was deployed by the labor administration nationwide (33 district offices, three special offices and 119 municipal offices). To date, the adoption by inspectors in the capital city of Bogota, the center of economic activity in Colombia, is an ongoing challenge. Labor inspector ECMS acceptance and adoption has been uneven throughout the country due to high levels of turnover among labor inspectors, resistance from inspector unions which have fought the use of the ECMS for inspector performance evaluations, as well as initial technical glitches affecting system use.

> "We are trying to address inefficiencies in labor inspection and corruption. We had a government with an interest in using technology. When we got the request [for an ECMS] it was a pretty easy 'yes' because they had a clear idea about the possible use of technology."
> **- USDOL official**

Honduras: "Futuros Brillantes," a World Vision-managed project initiated in 2014 and recently extended to 2023, provided technical assistance to the Ministry of Labor to develop its ECMS. USDOL funded Futuros Brillantes in the context of the Dominican Republic-Central America Free Trade Agreement and to respond to the Government of Honduras' commitment to address significant shortcomings in labor law enforcement.

ECMS development began later than expected after World Vision's partner in charge of the workers' rights sub-component pulled out of the project. The project likewise waited to initiate software development until after the Government of Honduras approved implementing regulations for the 2015 labor code reform, which were passed in 2017. Beginning in 2018, the project and software developer undertook a long assessment process to design the software, during which it reportedly faced many challenges due to the absence of uniform and documented inspection processes.

At the time of the evaluation (February 2021), although the software development was largely completed, the system had not yet been deployed. Unfinished modules include modules covering traceability and audit features for transparency purposes, the human resources/performance evaluation module, and the statistical reporting module. Additional development is also needed to integrate information on the timeframes required to complete some case management processes. Currently system testing and validation as well as user training is ongoing, although the latter has been negatively affected by higher-than-expected levels of IT illiteracy among labor inspectors and the effects of the Covid-19 pandemic on face-to-face training activities. In addition, one evaluation key informant reported that strong reluctance from within the labor administration was also negatively affecting ECMS deployment.

The Honduran ECMS is a complex, process-oriented system covering inspection (general and OSH), complaints management, case follow-up processes including court proceedings and fine imposition. The design includes 27 modules, 18 of which the project reported as completed. The system includes administrative, security and reporting modules, as well as a database of employers, which is accessible by employers themselves and may be used to register and update company information. The project trained the Ministry of Labor's eight-person IT department to manage the system, although IT unit personnel reported that the training was not sufficient for them to manage the ECMS. Software completion, additional user training and deployment is now planned in the second phase of the recently extended project.

Paraguay: The ECMS in Paraguay was developed by "Paraguay Okakuaa" (Project to Reduce the Worst Forms of Child Labor and Improve Labor Law Enforcement and Working Conditions) implemented by Partners of the Americas. Prior to ECMS development, the Ministry of Labor, Employment and Social Security reported that it digitized labor inspection reports going back to 2015, which were later integrated into the ECMS to form a historical record. Design work on the system began in March 2017 and lasted approximately one and a half years. The project deployed the ECMS on a limited pilot basis in 2019, starting in three sites. Shortly after the initial deployment, a new Labor Minister took office and requested additional changes to the system, which labor officials indicated may be financed with government funds.

The Paraguay ECMS is designed to monitor all phases of the labor inspection and provides information about the fines, recommendations given, preventive and corrective measures, and process deadlines. It covers the general procedure from the request for inspection, visits and the preparation of minutes until the closing of the procedure. An alert system informs users regarding the deadlines for each stage of the process, according to legal requirements. The system is designed to be used with or without an internet connection and each case can be viewed by all the officials involved.

Currently, the system is not in use. It has faced reluctance from labor inspectors which was reported to have been largely related to inadequate Information Communication Technology (ICT) infrastructure (insufficient access to computers, printers, and internet). According to the Ministry of Labor, during the pilot phase the Labor Inspection and Monitoring modules were the most used, while the occupational health module was not used at all, reportedly because inspectors lack awareness in this area, as well as because health inspectors operate under another division of the Ministry. With the onset of the pandemic, general labor inspections have been suspended and with that, use of the ECMS has largely ceased. Labor inspectors, who currently number in the twenties, have been charged with implementing the government's safe work protocols rather than carrying out inspections. One labor official indicated that the ECMS did not have a function for reporting on employee layoffs and furloughs, a key issue during the Covid-19 pandemic.

Peru: The Ministry of Labor established the Sistema Informático de Inspección del Trabajo (SIIT) in 2007. Until the system redesign, labor inspectors mainly used the SIIT to carry out inspections and house inspection data. In 2014, the Peruvian government transferred labor inspection and sanctioning powers from the regional governments to SUNAFIL, a semi-autonomous agency under the direction of the Ministry of Labor. With this shift, SIIT management also was given to SUNAFIL.

Beginning in 2014, the USDOL-funded project "Building the Capacity of the Peruvian Labor Inspectorate" provided technical assistance and budget resources to assess requirements and improve the SIIT. SUNIFIL funded other aspects of the SIIT upgrade, including training and hardware, with its own resources. Project-supported improvements reinforced SIIT's case management, reporting, and strategic planning capabilities and included digitizing inspection orders and infraction reports and adding new reporting templates. The SIIT allows labor inspectors, which number 830 (50% of them in the capitol city Lima), to access historical inspection data and enter new data into the system using tablets.

Labor officials reported that adoption of the improved system by labor inspectors was initially slow but has increased in the context of the Covid-19 pandemic. The need to address an increase in the cases of involuntary job termination reportedly led to a boost in the use of the SIIT and the design of a new module. The new module enabled employers to upload their payroll and other information into a designated "e-box," allowing inspectors to conduct some inspection activities remotely.

According to SUNAFIL officials, despite the project-supported improvements, the agency has decided to redevelop and update the ECMS for technical reasons. The SIIT platform no longer supports new technologies such as responsive forms for mobile apps, up-to-date internet browsers, and lacks features for data mining, among others. To meet the new needs of the inspection process, the government approved a business architecture project which includes the development of a new SIIT. The government is expecting funding from the Interamerican Development Bank to execute the project.

> We have professionalized and systematized our inspection. There is more to be done but there is a process there. We are committed to change and adapt.
> **- DOLE official, Philippines**

Philippines: Shortly after Sri Lanka's DOL launched its ECMS, the Philippines Department of Labor and Employment (DOLE) began developing its own Sri Lanka-inspired system known as the Labor Law Compliance Management Information System with funding from the US Department of State, Bureau of Democracy, Human Rights and Labor (2013). The State Department-funded, ILO-implemented project did not provide adequate capacity building for DOLE to administer, manage and modify the system.[7] To overcome the original system's limitations, the project "Building the Capacity of the Philippines Labor Inspectorate (December 2014 - August 2018)" supported DOLE's Bureau for Working Conditions to design, develop and deploy a new version, called the Labor Inspection Management Information System (LI-MIS).

The LI-MIS is an online, web-based application used to transmit inspection targets and lists of establishments for inspection to labor offices and officers. Labor inspectors use the system to process and transmit real-time labor inspection data collected from the field using an electronic checklist filled in with a tablet. The system, which has been deployed across the Philippines and is still in use, has progressively added new features including dashboard and reporting features for central office officials. In the next phase of development, the Bureau for Working Conditions plans to add tools for following up on and managing labor violation cases. A team of five Manila-based labor officers

[7] Midterm Evaluation, Building the Capacity of the Philippines Labor Inspectorate

manage the LI-MIS, which is hosted on DOLE's IT network. In 2020, the LI-MIS was one of the finalists in the Government Best Practices Recognition program, an annual selection of outstanding and innovative practices in the public sector.

> I see the LISA as a very good concept but with problems in the implementation.
> **– Sri Lankan labor official**
>
> In the last two years, we have not been using LISA. We used it until Sept 2018 and then we gave up.
> **– Sri Lankan labor official**

Sri Lanka: In April 2013, the Sri Lanka's Department of Labor (DOL) launched the Labor Inspection System Application (LISA) with support from the ILO's USDOL-funded "Promoting Fundamental Principles and Rights at Work in Sri Lanka" project. LISA, a mobile application and web-based information system, was Sri Lanka's first effort to computerize labor inspection processes. The system features online checklists for carrying out inspections, including specific checklists for general labor inspections and OSH assessments. LISA also includes tools for registering and managing worker complaints, legal/prosecution case management, and related labor inspector work planning/scheduling. LISA included reporting functions for producing statistics and enabling management oversight in addition to including a digital documentation library. In 2018, under the "Country Level Engagement and Assistance to Reduce Child Labor II" project, LISA added an additional module to track child labor cases. Before ILO handed over the system, it trained Department of Labor IT managers to maintain the application, which is hosted on the Department's network.

According to the Sri Lankan Department of Labor officials, the LISA system was deployed to 11 zonal offices, 40 district offices, 17 sub-offices and 10 engineering offices which employ approximately 300 labor officers. It has also been used in the head office branches such as the women and children division, industrial division, enforcement division and planning research publication division. LISA includes a database of factories, which includes approximately 9,000 of an estimated 31,000 factories eligible for inspection.

Although deployed island-wide, LISA has never been fully operational. Although Sri Lanka's system enabled mobile data collection, and the government purchased and distributed 400 tablets to labor inspectors, labor inspectors refused to use the tablets. Sri Lankan inspectors reportedly feared that the tablet's Geographic Positioning System would be used by the labor administration hierarchy to track their movements. As a result, clerical personnel entered inspection data into the system using paper-based reports submitted by labor inspectors within eight days of the inspection.

LISA has been promoted by ILAB and ILO as an example of an innovative and comprehensive labor inspection case management software package when it was first developed. However, since it was deployed in 2013, the system's limitations grew as the software and hardware on which it was hosted became more outdated. Sri Lanka Department of Labor personnel indicated that some LISA features, mainly the complaints management module, were still being used by some labor offices at the time of this evaluation (January/February 2021) but that most processes were being handled manually. In 2021, with its own budget resources and reportedly inspired by the lessons learned from the USDOL-funded ECMS, the Department of Labor embarked on a new "digital transformation" project which includes the design and development of a new information system. When operational, this new system will replace LISA.

Vietnam: The ILO is supporting the development of the Ministry of Labor - Invalids and Social Affairs (MOLISA) ECMS as part the USDOL-funded New Industrial Relations Framework (NIRF) project. Implementation of the ECMS began in 2016 with a feasibility study which briefly reviewed lessons learned from other ILO-supported ECMS (Colombia, Philippines, and Sri Lanka) and included preliminary consultations and surveys assessing Ministry needs and ICT infrastructure. The project paused ECMS work until after the Government of Vietnam passed labor law reforms in 2018. In 2019 and 2020, the project developed a mockup version of the system, tendered and selected the IT service provider. At the time of the evaluation (January/February 2021), ECMS development was ongoing.

Planned modules include the following: (1) a management module, which will be used by system administrators for tasks such as managing user rights; (2) an enterprise management module where the database of establishments will be located; (3) an inspection management module where inspection check lists/fields will be found; (4) a campaign management module which will be used to organize inspection campaigns; (5) a violations management module which will used to manage labor violations cases and sanction processes; and (6) a data analytics and reporting module which will produce various types of reports.

Before NIRF closes in 2022, the project plans to support MOLISA and three provincial labor departments in Hanoi, Dong Nai, and Ho Chi Minh City to pilot the ECMS. The project is providing funds to the IT contractor to train users in the pilot regions and to do a feasibility study to expand ECMS to other regions. The project is also supporting the MOLISA's IT department, which will host the ECMS in its data center and be responsible for system maintenance and support. Ministry officials indicated they hope to quickly expand ECMS to new regions but highlighted that scaling the system will depend on the success of the pilot phase and resource availability.

4. TECHNOLOGY – KEY RESULTS

This section provides additional information on the key features and functionalities of the ECMS included in this evaluation. To evaluate the relevance and effectiveness of the ECMS software features, the evaluation team referred to research on ECMS for the court system written by E.J. Rooze.[8] In this section, the evaluation team also highlights how technology-related issues, such as the target countries' ICT enabling environment, limited or facilitated the effectiveness, functionality and sustainability of project-based ECMS interventions.

4.1 ECMS Features – Strengths and Limitations

In the seven evaluation countries, ECMS are evolving from being used as mainly repositories of inspection data to systems that automate labor inspection and labor violation case management processes. ECMS include a variety of features to promote data collection

[8] Rooze, Erwin J., Differentiated Use of Electronic Case Management Systems, in: International Journal for Court Administration, November 2010; ISSN 2156-7964. Much of the criteria used to describe and analyze ECMS' features drew from Rooze's analysis of ECMS administrative, logistic, procedural and content management, requirements.

efficiency, improve data quality/reliability, secure data, and enable reporting and data analysis.

Evolution from database to case management system: Grantees and labor officials in most evaluation countries with mature systems highlighted that ECMS are evolving from being primarily a centralized database/repository that collects and enables inspection data reporting, to becoming a tool designed to make labor administration workflow and case management more effective and efficient. In the words of a labor official in the Philippines, "*At the beginning, the LI-MIS was just encoding results of inspection. Later we saw that we could automate."* The evolution likewise reflects ILO lessons learned based on ECMS development experiences in various countries. According to one ILO specialist, *"Over time, we've discovered in the ILO that while data is a key part of the systems, to keep track of performance, help with planning, and identify trends, data alone is a weak version of what is possible."*

> In the LISA system, we are only able to do three things – enter the data, transfer the complaint, and close the case. We would like the system to support the production of letters and notifications to the enterprises. Currently, we have to do this all manually.
> **– Sri Lankan labor official**

All USDOL-supported ECMS systems included in this evaluation incorporated features for inspection data collection and analysis as well as case handling and workflow management.[9] Currently, the active systems vary in the extent that they capture and help to digitize the entire inspection workflow. On one end of the spectrum is the Philippines, which in addition to being used to collect and analyze inspection data, has included inspection planning but not yet post-inspection follow-up. In a labor inspector's words, *"It could be better if the system could also track the status of labor violation cases. We believe the inspection doesn't end with the inspection itself but how the inspection affects the compliance of the company. So we need to track and generate reports on the after-inspection process."* The ECMS in Colombia, Peru and Sri Lanka feature many other case management tools. According to grantees and labor officials, the ECMS in Colombia and Peru are modular, reflecting most labor inspection process phases. The grantee in Colombia explained, "*The way I see it, you have the workflow… We developed templates for each of the steps. In our system, we have 400+ templates. Not every template is used for every case. For a basic case, there are probably 10 steps and there is a form for each step*." According to a SUNAFIL official, the system in Peru captures the inspection and sanctioning processes, the latter of which includes three sub-processes: investigation, sanctioning, and hearings. However, it is worth noting that the effectiveness of integrating case management tools into the ECMS was largely dependent on their use. One USDOL official remarked, *"There were a lot of issues in Colombia – number one was making sure that the labor inspectors were using the system. There*

[9] In Rooze's framework, he differentiates between basic, medium and advanced ECMS. Basic systems register and record events and information. More advanced systems ("medium") are adapted to a greater extent to the administration's case management workflow and includes tools for standardizing documents using drop down lists, autofill features, and templates and procedures (with scheduling and alert systems). Automation is a key characteristic of advanced systems. Useful case management applications for automation suggested in Rooze's framework include documents that are automatically generated and archived, automatic alert systems and automated file transfers.

were a lot of cases that were never updated." Additional analysis on system use is provided in the next section.

ECMS software development costs and features: The ECMS designs in the seven evaluation countries addressed many of the same core functional requirements. These functional requirements responded to common challenges facing the seven evaluation countries' labor administrations:

- *Efficiency:* the need to make the labor inspection process more efficient by automating some aspects of their work and eliminating paperwork.
- *Standardization:* the need to move away from each sub-office doing things their own way to the use of standardized templates and procedures.
- *Data Analysis:* the need for current, easy-to-access data on compliance trends by establishment, geographic or administrative zone, industry, sector, etc.
- *Performance monitoring:* the need to track performance of individual labor inspectors, administrative units, and the labor administration against common sets of key performance indicators, including indicators on labor code violation cases.

The cost of developing ECMS software varied widely by country, likely due to market differences (software developers' fees varied), differences in the features initially requested and later added on, the extent labor administration personnel contributed human resources, as well as what other services were bundled in with the software development contract. Software development costs included a warranty period.[10] Table 4 provides an overview of ECMS software development costs as well as what was included.

Table 4. Cost of ECMS Software Development and Related Services by Country

Country	Estimated Expenditures in USD	What was Included
Colombia	577,300	Consultant fees for the design and development of ECMS software
Honduras	135,000	IT service provider fees for Phase I ECMS software development
Paraguay	97,900	· Preparation of labor inspection procedures manual and a "Manual of Functions of the General Directorate of Labor Inspection and Supervision" · Design, development, and testing of ECMS software, including a mobile application, software administration and user manuals · Training for software administrators · User training (up to 40 inspectors)

[10] The evaluation team was not able to obtain detailed information about what was included in and the length of software warranties, except for Vietnam.

Country	Estimated Expenditures in USD	What was Included
		· Digitization of inspection records carried out from 2013 to the start of the software (approximately 6,900 records)
Peru	66,100	Consultant fees for the design and improvement of existing ECMS software
Philippines	124,850	IT service provider fees for ECMS software development and core team training and mentoring
Sri Lanka	282,554	IT consultants' fees for software design and development, training of trainers in sub-regional offices, training IT support team, and post-deployment support
Vietnam	138,092	Software development and testing, user training, support during pilot phase, development of an ECMS scale-up plan and six months software warranty

The key ECMS features to address these requirements are summarized by country in tables five through twelve below. The information provided is based on ECMS technical documentation and key stakeholder feedback. As highlighted in the ECMS overview by country, the systems are in different stages of deployment and use.[11]

Data entry features: The most common ECMS feature, and the starting point for nearly all systems, was an interface for entering and registering inspection data. Systems in the Philippines, Sri Lanka and Vietnam digitized inspection checklists, creating fields for nearly every component of the inspection form. Some featured differentiated modules for entering complaints, managing child labor related violations, and for assessing OSH regulations. The Philippines included sector-specific checklists for maritime and fishing vessels, buses, and construction. These systems were designed (or are being designed in Vietnam's and Honduras' case) for remote data entry using tablets or laptops and most include online/offline date entry features.[12] In older systems, such as those used in Peru, the Philippines, and Sri Lanka, labor inspectors reported that the data entry form was not available as a mobile phone application.

[11] As highlighted in the overview of ECMS in the seven evaluation countries, the ECMS system in Sri Lanka is currently largely out of use. ECMS in Colombia, Peru and the Philippines are fully deployed. The deployment of the ECMS in Paraguay was halted at an early stage because of the Covid-19 pandemic, while ECMS software in Honduras and Vietnam are still being developed.

[12] Online/offline features allow data to be stored on the device until an internet connection is available and data can be uploaded to the centralized database. In Colombia and Honduras, the ECMS is only designed to store a small amount of temporary data for cases of temporary connection losses while in other systems, the inspector can fill in an entire form(s) offline, store the data on the device's hard drive and synchronize with the server later, when internet is available.

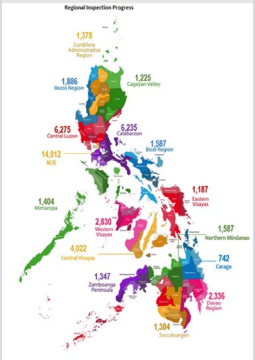
In Colombia, Peru, and Honduras, the ECMS featured templates rather than one long checklist. According to a grantee representative, the ECMS in Colombia includes standardized data fields for information that is required to generate statistical reports, while other types of information are entered in narrative formats using templates. In Honduras, according to one user, the templates are not easy to manage because the forms cannot be modified or the content updated.

Most systems use drop-down lists and auto fill features to speed up and standardize data entry. Users in Sri Lanka indicated that more could have been done to generate inspection reports using data on establishments already in the system. In Vietnam, the system design plans to go further, using a database of suggested penalties corresponding to labor violations to prompt labor inspectors to apply standard penalties. A DOLE official indicated that such a feature would be useful in the Philippines: *"It would be better if the system provided built-in guidance so that there is more consistency in the way that violations are determined and also with clear guidance on how to comply."*

Other related basic features included in all systems was the ability to print out the inspection report, and to upload support documents related to the inspection report (photographs, registers, etc.) and which might be used as evidence in a court case. Users in Sri Lanka and the Philippines reported that the document upload feature was subject to technical glitches, most likely due to slow processer speeds.

Table 5. Data Entry Features by Country

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
1. Stores data in centralized database accessible in real-time to all authorized users	✓	✓	✓	✓	✓	✓	Planned
2. Includes online/offline data collection capability	✗	✗	✓	✓	✓	✓	Planned



LI-MIS dashboard element, the Philippines

Analytical reporting and monitoring features: Most ECMS also featured reporting functionalities, although they differed depending on the types of data available in the system and in the number and extent of automatically generated reports. All ECMS included, or planned to include, features such as dashboards to monitor progress against quantitative performance targets, most commonly the number of inspections carried out by individual inspectors and/or sub-national offices. According to a labor official in the Philippines, *"There is a clear monitoring system to see how the inspectors do their work. We can see if they are meeting their targets and if their inspections are lacking information."* The ECMS in Paraguay likewise features reports on the number of inspections per inspector by zone. In Colombia, labor officials indicated the system can produce complex statistical reports based on over one hundred variables. In Honduras, labor officials indicated work on the reporting module is ongoing and noted that the first version lacked information they

considered important for inspector performance evaluation. Development of the reporting module in Honduras was pending feedback from the labor administration on the report types and formats when the first phase of software development ended in December 2020. The grantee indicated that the reporting module will be completed in the second phase of software development.

In the Philippines, sub-national and national system administrators produced most reports by exporting data to excel spreadsheets and then filtering the data. The Philippines' project reported training inspection focal points and communication officers on how to analyze data and translate them into reports using infographics to facilitate data reporting. One DOLE labor official reported, "*If we want to know about how many minimum wage violations, it can be done but it requires manipulation. I would like a preformatted report."* Similarly, labor officials in Peru also hoped the next version of their system would produce a greater number of preset reports. Peru's current ECMS produces a small number of standard statistical reports, while for more complex reports, support personnel extract data from the database and filter. While the labor office reported that its support personnel produced useful reports on the types of infractions by economic sector or violations for which fines had been imposed, the process of building the reports was time consuming.

ECMS users in Sri Lanka complained of LISA's limitations for statistical analysis, especially labor administrators who wanted to access LISA data for reporting and decision-making purposes. Although the system featured a reporting module, a Sri Lanka DOL official reported, *"The graphs and charts has only dummy data. They are not updated and we cannot easily export to Excel."* Sri Lankan officials reported the only way to get data out of the system was to export the entire dataset and then filter.

Table 6. Monitoring and Reporting Features by Country

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
3. Aggregates labor law violation data by geographic area or type of violation	✓	✓	✓	Partial	✓	Module not functioning	Planned
4. Tracks key performance indicators such as number of inspections carried out	✓	✓	✓	✓	✓	Module not functioning	Planned
5. Integrates data visualization tools such as dashboards	✓	✓	✓	Partial	✓	Module not functioning	Planned

> The system allows you to keep the cases up to date. It has alarms and shows everything that has happened on each case so that when you are assigned the case, you can see where everything stands.
> **– Labor inspector, Colombia**

Case management and monitoring features: All seven ECMS include at least some features to automate inspection management processes, but to date, the ECMS in Latin America have integrated a greater number of tools to facilitate follow-up on labor violations. Labor officials from Colombia described the ECMS as a good platform because it incorporated relevant indicators to facilitate monitoring of ongoing cases, which could be consulted online in any administrative department. Labor officials in the Philippines described the absence of case management features as one of the greatest LI-MIS shortcomings and indicated they plan to develop new module soon. A DOLE labor official recounted, *"Now the system only includes information about the inspection but not how the case is progressing."* In both the Philippines and Sri Lanka, labor officials reported that case status information was unreliable, limiting the power of the system to facilitate timely follow-up. A labor official in Sri Lanka reported, "*If a worker wants to know the status of the case, there is no information in the system*."

Alerts systems to prompt follow-up actions are featured in some countries' case management modules (Colombia, Paraguay, Peru, Philippines, and Sri Lanka). The ECMS system in Sri Lanka informs labor inspectors when they had been assigned a worker complaint and when the preliminary hearings had been scheduled. In Peru and Colombia, the ECMS includes a traffic light feature showing the status of each case and generates alerts when follow-up actions are required. For example, an alert informs labor inspectors when a violation report has reached the sanctioning stage. According to a Peruvian labor official, before there were alerts, many infractions reached the sanctioning procedure without effect since there was no follow-up. The systems under development in Honduras, Paraguay, and Vietnam also plan alert features. Completion of the alert application in Honduras is pending information from the Ministry about legally required timeframes for follow-up action.

Besides flagging follow-up actions on labor violations, some systems also use alerts to flag serious labor violations. For example, in the Philippines, if an inspection reveals a child labor case, it is flagged at higher levels so that existing protocols can be activated, according to one DOLE official. The system also flags establishments that refuse inspector access to their premises. In Sri Lanka, a child labor module was added to the system in 2018. Far from speeding up response time to child labor violations, a labor official in Sri Lanka reported, *"In my division, we don't use LISA anymore to handle child labor complaints. It was too tedious. It had to be quicker. We developed a google sheet."* S/he explained that system slowness was the main factor in making the tool unusable.

Table 7. Case Management and Monitoring Features by Country

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
6. Forms and workflow reflect current labor administration procedural requirements	✓	Partial	Partial	Partial	✓	Out-of-date	Planned

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
7. Registers worker complaints, industrial accidents	✓	Partial	Partial	Partial	✓	Partial	Planned
8. Tracks the status labor violation cases through hearings and sanctioning stages	✓	✓	✓	✓	Partial	Partial	Planned
9. Sends alerts to inspectors when follow-up actions are required	✓	✓	Partial	✓	Partial	Partial	Planned
10. Generates the inspection report as well as letters and notices used at different stages of the inspection process	✓	✓	✓	Partial	Partial	Partial	Planned

Assigning responsibilities/authorizing inspections: Most ECMS included a feature that allows labor administrators to establish lists of establishments to be inspected and assigns them to a labor office and/or to individual or labor inspector teams. System administrators reported this feature in Colombia, Peru, Paraguay, Honduras, and Sri Lanka. The planned ECMS in Vietnam likewise includes a module on the organization of labor inspection campaigns, which will provide tools to assign establishments to groups of inspectors and enable supervisors to oversee their progress.

Evaluation key informants explained that in addition to automating aspects of inspection planning, the use of the ECMS to assign inspection duties was intended to fight corruption. A grantee representative in Paraguay reported, *"Considering the culture of corruption… the random assignment [of inspection duties] option was developed to prevent inspectors from assigning themselves to cases."* In Paraguay, only the Ministry of Labor is authorized to assign inspection duties, and the ECMS has integrated use of the Minister's digital signature for this purpose. Some key informants in Paraguay viewed the role of the Minister positively while others saw it as a source of dependency and potential bias. An inspector in Colombia indicated that the LI-CMS assigns the personnel who are responsible for each case based on set criteria, "*which is transparent*," and a measure to allow more oversight of the process. In the Philippines, the LI-MIS is also used to send the "authority for inspection" to regional offices in charge of managing inspection and is issued by the Secretary of Labor and Employment or his/her duly authorized representative.

Table 8. Inspection Assigning and Scheduling Features by Country

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
11. Assigns inspection duties to individual and/or groups of inspectors	✓	✓	Partial	Partial	✓	Partial	Planned

Database security, access rights and traceability features: All ECMS applied or planned to apply role-based user rights, meaning access to ECMS features were restricted depending on the users' needs and rights. In Peru, system improvements made under the project corrected a flaw which allowed any labor inspector to view the case files of any other officer, regardless of whether it was his/her case or not. A SUNAFIL official explained, *"In terms of transparency, there is an application that allows you to follow up on the complaint that you have registered, there are controls, and access is restricted for other people. The principle of confidentiality is maintained."* In Paraguay, the Minister's role includes the sole authority to activate an inspection process and allows him to see all actions taken on an inspection case by each inspector.

> You have traceability of the entire system at a detailed level and on each of the interactions.
> **– Labor official, Colombia**

In Colombia and Paraguay, labor officials reported the ECMS allowed them to detect and identify the source of changes in system files, a feature designed to fight corruption. One labor official in Paraguay indicated that even with the system's traceability features aimed at fighting corruption, the lack of organization within the Ministry and politics remained an ongoing challenge to achieving full transparency. A similar feature was planned but not yet implemented in Honduras and was reported by one key informant to be a source of reluctance from some users. Inspectors in the Philippines also complained they could not correct a report after submission, a feature also meant to discourage corruption, but some labor officials said this prevented correcting legitimate errors after the fact without special authorization.

In the Philippines and Sri Lanka, some labor officials perceived some role-base exclusions to be too strict. For example, in the Philippines, labor officers reported they could not consult the establishment's labor violation history. One inspector remarked, *"For me the system is useful, but it could be more useful if I could see what happened in the past. Which industries had the highest compliance rate? What were the main problems*?" In Sri Lanka, LISA was reported to authorize only one labor officer to consult a case file at a time, a feature which constrained access by other officers who may have needed it. The last two points (users' feedback that it was difficult to make corrections and that more access to historical inspection data was needed) suggest that there have been tensions between the need for anti-corruption tools and controls, and ECMS user-friendliness and access to useful information.

Little information was shared by key informants about how system managers managed passwords and login rights. In Sri Lanka, two different key informants reported a potentially serious security flaw. Current administrators reported they were not able to remove registered users so that several hundred former labor officials apparently still had access to LISA.

Table 9. ECMS Security Features by Country

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
12. Role-based security features that restrict access to some kinds of data/ECMS module	✓	✓	✓	Partial	✓	✓	Planned

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
13. Data modifications controlled or traced to users	✓	✓	✓	✓	✓	✓	Planned

> Because the LISA does not have any linkages with other systems, labor inspectors must write letters requesting information and send it through the post. All these processes create delays in legal action.
> **- Sri Lankan labor official**

Data sharing with other information systems: Most ECMS did not feature automated data sharing with other public information systems. Several grantees and labor officials highlighted that information on employers, on establishment compliance with social security regulations, and on industrial relations issues were compiled in separate systems that did not "talk" to each other. A grantee representative in the Philippines reported, *"One thing that could have been done during the life of the project was ensure greater interoperability between the different department systems."* For example, s/he highlighted that DOLE currently has separate information systems to handle conciliation of worker complaints and labor court processes. Similarly, labor officials in Sri Lanka highlighted that the system for monitoring contributions to the Employees' Provident Fund is separate from LISA and as a result, labor officers must enter data into both systems separately.

The system in Peru appears exceptional in terms of its data sharing capabilities. In 2017, the SIIT connected to the Electronic Payroll System (registry of company workers) within the module covering inspection orders. The SIIT also connected with the Work Accident System (registry of notifications of work accidents, fatal accidents, and occupational illness). In Paraguay, the labor inspection module was integrated with a system used for OSH monitoring as well as payroll systems, but it has not yet been tested in a real-life situation. In Vietnam, the IT service provider reported having suggested automatically importing enterprise data from the Ministry of Planning and Commerce, which holds a database of Vietnamese companies. The government's decision is pending. One USDOL official reported that the grantee in Honduras had attempted to sign an agreement allowing data sharing on employers with the property registration agency, which has an employers' database, but that they were unsuccessful.

Grantees and labor officials reported that sensitivities as well as data privacy laws hindered the sharing of data between different branches of government or departments with differing mandates within the Ministry of Labor. In Colombia, the grantee highlighted the challenge of including information about labor violation fines payment because, *"There has always been a disconnect between the part of the Ministry in charge of inspection and the part that was in charge of collecting fees."* The latter problem impeded labor officials' ability to follow-up and/or use the information to support decisions on issues such as re-licensing establishments. Key informants likewise indicated that system and database structure issues also constrained the linking of the systems.

Table 10. ECMS Data Sharing Features by Country

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
14. Data sharing with other information systems	✓	✗	✓	✓	✗	✗	✗

Data mining: Projects in Colombia, Honduras, Paraguay, and Sri Lanka reported digitizing and entering past compliance records into the ECMS to enable labor officials to target inspections better. A grantee in Colombia explained, *"We went back five years and digitized paper records. We wanted them [labor officials] to be able to see trends in sanctions."* According to the project, having access to historical data proved less useful than had been hoped due to a change of government which resulted in diminished interest in preventative inspection.[13] In Sri Lanka, a labor official reported that data on 9,000 of 30,000 factories had been entered into LISA. However, s/he and several other officials indicated that data was not complete even for those factories in the system because of data entry problems. Labor inspectors in the Philippines did not carry out an exercise to upload inspection data predating the system but reported the volume of information on establishments was increasing year-on-year. One labor official reported, *"We can see which establishments have already been inspected and if there have been inspection follow-up visits… When we receive a complaint, we check in the system to see if the complaint is consistent with inspection records."*

To date, only Peru has attempted to use advanced data analytics to predict which enterprises should be inspected based on past compliance and other indicators found in public information systems. According to labor officials in Peru, although the current SIIT does not have advanced features for data analysis or exploitation of information integrated in the system, the IT team is working on a separate data analytics component which exploits SIIT records from 2009 onwards. In 2019, after the USDOL project finished, SUNAFIL developed the "System of Alerts and Monitoring (SAMO),"[14] a data mining tool that uses information collected by inspectors and other government agencies to predict which establishments may be violating labor laws. The evaluation team was not able to assess to what extent this system is operational and being used to determine inspection priorities during the pandemic.

Table 11. ECMS Advance Data Analytics Features by Country

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
15. Advanced data analytics for	✗	✗	✗	Partial	✗	✗	✗

[13] The project had been advocating for proactive planning of inspections versus responding to complaints.

[14] According to the Ministerial Resolution that created SAMO, the system uses information in government databases to predict potential labor violations such as the proportion of workers to employers recorded in the establishment's official list of workers and the relationship between the company sales revenue registered with the National Customs and Tax Administration Office and the number of workers recorded in the establishments' employee registry.

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
predicting labor violations							

External stakeholder ECMS interfaces: In some countries, like Colombia, Honduras, Peru, and the Philippines, labor administrators are moving towards features that enable stakeholders outside the labor administration to share data with the ECMS. To date, although stakeholders in these countries may submit documents virtually, submission is through separate systems. For example, in Peru and the Philippines, external stakeholders can submit documents online, such as OSH administrative and accident investigation reports and building and equipment plans/specifications. In Peru, establishments have been allocated an "electronic box" through which they are required to submit documents for virtual labor inspection. Labor officials in Peru reported that establishments initially resisted using the e-box but since the pandemic, usage has increased significantly because of tighter enforcement.

Although not yet deployed, the ECMS in Honduras plans to allow access by employers, who will enter information about the enterprises directly into the system. In the testing phase, users experienced difficulties uploading some files and finalization was postponed to the second phase. Similarly, a labor official in Sri Lanka hoped their new ECMS would have features open to external users: *"Outside industries should also be able to enter accident details into the system. When they need information about the registration, they should be able to request details through the system. During a period like this (COVID-19) a system like that will be really useful."*

Table 12. Direct Access to ECMS Interfaces by External Stakeholders by Country

Functionality	Colombia	Honduras	Paraguay	Peru	Philippines	Sri Lanka	Vietnam
16. Enables direct access by users outside the labor administration	✕	✕	✕	✕	✕	✕	✕

Annex A provides an ECMS fact sheet for each country, summarizing these features.

4.2 Software Design and Development Challenges

In the early design phase, labor officials were often unable to anticipate what they expected from ECMS in terms of key features, which complicated the tender and initial software development. As awareness grew within the labor administration about the potential of ECMS, officials often asked for new features and design changes, which made the systems more relevant to their needs but also increased costs and lengthened implementation timeframes. Limited IT expertise among the grantees and labor administrations challenged managers' capacity to effectively oversee IT service providers. In some cases, these limitations were mitigated by calling on government IT agencies and grantee IT experts.

Software was designed and developed in phases to meet emerging needs: The software development phase in Vietnam was illustrative of the challenges experienced by all evaluation countries during the design phase. In Vietnam, both the grantee and the IT service provider highlighted that adjustments were needed immediately after the system procurement was completed because the TOR specifications and the Inspectorate's actual needs were not well-aligned. According to those involved, the TOR and the system mock-up showed the system being used by labor inspectors to upload their inspection reports, making the system more of a document repository than a case management system. Once the contract was awarded and after initial discussions with ILO and MOLISA, the IT service provider proposed changes in the system design so that data could be entered through fields, an important requirement to enable data analytics and case management features. Later, the IT service provider needed to make additional design changes when the MOLISA's IT center requested that the software be built on a Microsoft platform rather than the open-source platform as originally proposed.[15] These changes engendered delays and cost increases, but the stakeholders involved believed making the changes was necessary to improve the software design and ensure the IT department would be able to take charge of system maintenance.

> We couldn't identify clearly our partners' expectations because they could not visualize their needs.
> **– Grantee, Vietnam**
>
> New needs emerged, and other administrative units were integrated. As a result, the analysis that was planned to be carried out in four months was carried out in 13.
> **– Grantee, Honduras**

According to a member of the software development team in Vietnam, early-stage design changes were not that unusual in the software development business, especially when the client lacked internal technical expertise to develop IT system specifications. Interestingly, the project in Vietnam had tried to facilitate understanding of system requirements among both MOLISA counterparts and potential IT contractors by hiring a consultant to conduct a feasibility study and even engaging an IT firm to build a "wireframe" mock-up of the future system. Despite the project's proactive efforts to assess needs and constraints and define requirements, the project did not have a sufficiently clear idea of how the system should function, did not examine examples of already developed systems in other countries closely enough, and was not helped by the IT consultant who developed the wireframe to define system features better. On the positive side, the IT service provider credited the ILO for agreeing to revise its initial specifications based on their advice, which is an excellent example of adaptive management in action.

The project in Vietnam was not alone in experiencing challenges assessing needs and defining ECMS specifications. In Honduras, the project hired the IT contractor to develop 14 processes, which later became 27 according to a grantee representative. In Paraguay, a change in Minister prompted requests for last minute design changes after the initial system had already been approved. An IT service provider representative in Sri Lanka likewise indicated that it was not until s/he had

[15] A labor official from Paraguay also expressed regret that its ECMS used software that is different from the development framework used by the Ministry of Labor, which made it more difficult for the IT team to make needed changes to the software internally.

developed a prototype (after having been awarded the contract) that labor officials were able to articulate their needs effectively.

> Although it is hard given procurement requirements and project implementation schedules, it is critical to break up [ECMS design and development] into incremental implementation phases.
> **- Grantee representative, Colombia**

Because of the difficulty identifying needs all at once, a grantee representative in Colombia strongly recommended developing ECMS in stages to avoid costly mistakes. A Colombian labor official indicated that the phased development of the ECMS had delivered good results: *"From the beginning of implementation to the present, the system has improved substantially, taking into consideration our suggestions for improvement in the different phases."* Another Colombian official reported, *"On a technical level the system has grown dynamically; there are always changes in the field that the system supports."*

The grantee's recommendation in Colombia in fact reflects what many software developers have learned and integrated in their methodologies. IT developers in Vietnam and the Philippines reported applying the Agile method[16] of software development, an iterative approach that divides the software development process into phases and seeks user feedback at the end of each phase. Use of a phased approach appears to require time, often stretching beyond the project implementation period. The LI-MIS in the Philippines is still evolving, driven by DOLE resources rather than one project's timeline. Agreeing that it took time to identify and overcome initial challenges, the grantee in Vietnam expressed concern that ECMS software development and initial deployment was only occurring in the final months of the project. S/he hoped subsequent projects would be able to continue to provide technical support and oversight for system improvements and expansion beyond the three initial pilot zones.

In several evaluation countries (Honduras, Peru, and the Philippines), the labor administration had an existing system that the USDOL project was mandated to improve. A few labor administrators reported that mistakes and limitations of the first ECMS helped inform decisions regarding the development of the second system. Similarly, stakeholders in Sri Lanka planned to use lessons learned from LISA's eventual failure to build a new system, which they hoped would be more user friendly and easier to maintain by the Department's IT support unit.

Grantee and labor administration IT expertise limitations challenged system development: Grantee and labor administration ECMS component managers indicated they felt their lack of specialized IT expertise put them at a disadvantage when developing ECMS technical specifications, evaluating costs, and assessing system quality and compliance with contract requirements. Because of limited in-house information system expertise, several grantee and labor administration managers largely relied on guidance from the IT service provider, which made some fear they were overly dependent on the contractor who may (or may not) have had self-interested reasons for proposing one technical solution or another. After committing to one technical solution and/or a given IT service provider, some grantees and labor officials reported they felt they had limited capacity to negotiate effectively with the service provider.

16 https://en.wikipedia.org/wiki/Agile_software_development

Where they existed, several grantee or labor administration personnel (Honduras, Philippines, Vietnam, and Sri Lanka for ECMS redevelopment) reported getting advice from Ministry IT departments or national IT agencies in determining and/or reviewing ECMS specifications. The MOLISA's IT department in Vietnam reported its involvement was key so that the ECMS aligned with the hardware and software platforms and human expertise available within the government. A Sri Lankan labor department cited two advantages for developing the new system, which were either not available or not capitalized when LISA was first developed: the 2016 appointment of an ICT officer to the Department and their plan to involve the national ICT Agency in project oversight from the very beginning. In contrast, one key informant in Honduras perceived the project's collaboration with the IT department to be more of a hindrance than a help because of the IT departments' weak capacity.

ILO specialists with experience overseeing ECMS development diverged on how best to mitigate the technical expertise limitations facing project managers. Projects in the Philippines and Vietnam reported taking advice from the grantee's (ILO) IT department when developing system specifications, with satisfactory results. One ILO specialist expressed the opinion that while the ILO can offer technical assistance to the ECMS host institutions from labor inspection specialists (some with previous ECMS experience), its IT expertise was still quite limited outside the management of its own information systems. The specialist hypothesized that a centralized multi-disciplinary ECMS team, including IT expertise and even an out-of-the box software package, could prevent the same software development mistakes from being made over and over. While not disagreeing on the value of capitalizing on past experiences supporting ECMS development across countries, another specialist underscored that each ECMS needed to adapt to the context and IT systems that were in use in each country, which ultimately justified the process of trial and error experienced by many projects. In the recommendation section of this report, the evaluation team recommends the creation of a centralized multi-disciplinary team but not an out-of-the box software package because of the challenges adapting the latter to the specific needs of each country.

4.3 Hardware and Internet Access Constraints Affecting Deployment Effectiveness and Efficiency

The absence of adequate ICT infrastructure (hardware, internet access), especially in sub-national field offices, was an impediment to effective system adoption in some countries.

Grantee and labor officials reported they had experienced or, in the case of systems not yet deployed, anticipated challenges related to ICT infrastructure. In all countries, stakeholders reported limitations in the availability of computers and hand-held devices as well as internet connections, especially for use by labor officials in sub-national offices.

> In Colombo we have all the facilities, so the engineers were able to enter the data, but others who were outside the capital were not able to enter the data.
> **– Labor official, Sri Lanka**
>
> Regarding connectivity, the ministry has greatly improved. Hardware has also been improved in the centers where the system operates.
> **– Labor official, Colombia**

Some projects provided funding for hardware while others did not. In Paraguay and Honduras, based on requests from the labor administration, the project provided a budget to acquire needed hardware. One USDOL official overseeing Honduras recounted, "*We thought there*

was only so much we could do without building the capacity of the Ministry of Labor…Our support was not only building the ECMS; we provided servers, tablets, and other infrastructure." In Colombia, Peru, the Philippines and Sri Lanka, the government allocated resources for needed hardware and software while project resources were mainly used for ECMS software development. In the recommendation section of this report, the evaluation team highlights the need for ICT readiness assessments and that USDOL and/or the grantee should establish Memoranda of Understanding (MOU) that determine responsibilities and commitments for addressing gaps, which may differ from country to country based on available resources and ECMS implementation timeframes.

Most ECMS were designed to enable data entry in the field. However, labor officials in all countries where the system was deployed highlighted that parts of the country remained without adequate internet access to allow data entry at the inspection site. One labor inspector in the Philippines noted, *"with LI-MIS, the main challenge in using the system was the internet connection – there are some areas that have dead spots."* To manage this barrier, most systems enabled temporary data storage on the inspectors' device which was later uploaded when an internet connection was available.

> In the beginning, there were server problems such as inadequate bandwidth and problems loading data by the departments. But that was overcome little by little.
> **- Grantee in Peru**

Beside office hardware and Internet access issues, poorly dimensioned servers (servers without sufficient processor speeds, memory) and/or insufficient bandwidth slowed systems in several evaluation countries (Colombia, Peru, Philippines, and Sri Lanka), with negative consequences on ECMS user-friendliness. LISA users in Sri Lanka reported, *"When everyone accessed the system at the same time, there was a huge traffic in the system server. Some days people were not able to enter the data quickly."* Similarly, in the Philippines, an official reported, *"There was a time when the server was frequently down but now it seldom happens. Before it happened a lot. Maybe they have adjusted and made some improvement."* In Colombia, Peru, and the Philippines, labor officials reported that server problems either had been resolved by acquiring new services (Colombia and the Philippines) or were in the process of being addressed (Peru). A labor official in Paraguay reported that the Ministry recently outsourced its information systems hosting to a professional service provider, which improved server performance. Although deemed sufficient for the ECMS pilot phase, the IT service provider and MOLISA personnel flagged potential problems with server capacity in Vietnam if/when the system is scaled countrywide. Labor officials in Paraguay also flagged server capacity and requested project assistance to acquire a new server.

5. PEOPLE – KEY RESULTS

This section highlights how human and organizational capacity issues limited or facilitated the effectiveness, functionality and sustainability of project-based ECMS interventions.

5.1 Stakeholder Perceptions of ECMS' Real and Potential Usefulness

ECMS adoption by labor inspectors has presented the biggest challenge in evaluation countries where the system has been deployed.

Factors affecting labor inspector adoption: In all countries where the ECMS has been deployed, acceptance and adoption by labor inspectors has been a challenge. Many reported sources of reluctance were the same across all evaluation countries where the ECMS has already been deployed:

> Even though we had the buy in from the administration, we did not necessarily have the buy in from the inspectors themselves. They did not perceive that it was saving them time.
> **– USDOL official, Colombia**

> To get inspectors to properly track their caseload – say they have 200 cases…They need to scan 200 pages of files. In Colombia, labor inspectors are not just principally doing inspection duties. They often have a range of duties that impinge on their inspector work.
> **– USDOL official, Colombia**

Inspectors' perceptions of ECMS' effects on their workload: Stakeholders in nearly all evaluation countries highlighted that high demand on labor inspector time also affected system adoption, especially when it was perceived to increase rather than diminish inspectors' workload. Across evaluation countries where the ECMS has been deployed, the transition from one system to another often increased the inspector's workload, sometimes because of temporary technical issues and other times because the new procedures increase demands on labor inspectors' time. One US labor official recounted Colombia's experience, *"During 2018 and 2019, there were a lot of technical bugs. The Ministry had to invest in a lot of servers and other IT infrastructure. There have been a whole series of growing pains as the Ministry put in place the conditions so that the system could be adopted across the board."* Although LI-CMS adoption in Bogota remains limited, in other parts of the country, a Colombian labor official reported that labor inspectors now see the benefits of the LI-CMS: *"In the end, the users realized that continuing to do their work outside the system was tedious, whereas with the system, they saved time."* Labor officials in Peru and the Philippines likewise reported that inspector reluctance due to efficiency issues diminished over time, as system flaws were corrected. According to the final evaluation of the project in Sri Lanka, in 2016, both the manual and computerized systems were still being used at the field level, creating more work for those involved. In Sri Lanka, as the system's technical glitches increased, a current Department official indicated, *"We cannot force them [labor inspectors] to stop manual paper-based work and use only LISA, because there are technical issues, bugs and changes in the system."*

Inspectors' poor status and working conditions: Grantees in several evaluation countries reported that the status of labor inspectors within the civil service affected ECMS adoption. In Colombia, Honduras and Paraguay, many labor inspectors were not part of the national civil service and some were working on temporary contracts, which led to high turnover rates and the need for frequent re-training on system use. A US labor official reported in Colombia, *"While we were trying to fix the system, we were also trying to sort out other issues, like the turnover issue. We were tackling a lot of issues at the same time."*

> When we started at least, there were about 32 inspectors total who were hired with temporary contracts. That already created a lot of vulnerability and limited their empowerment.
> **– Grantee representative, Paraguay**

In Sri Lanka, the labor inspectors' union tried to use the adoption of LISA as a bargaining chip in exchange for improved working conditions. The final evaluation of the project in Sri Lanka highlighted, "*One of the project's lessons learned is that computerization of labor inspection processes should not be taken up in isolation from other issues influencing labor inspector performance and*

motivation, such as their level of training, professional status, salary and related allocations." Some projects have tried to address broader issues related to the status of labor inspectors, alongside introducing the ECMS. For example, in the framework of the US-Colombia free trade agreement, the parties agreed that labor inspectors' employment status would be upgraded by integrating the position into the civil service. In the Philippines, DOLE supervisory personnel reported they reviewed inspector reports to identify capacity building needs and organized training and coaching sessions to try to overcome these.

> The system was about rocking the boat and some people did not want it rocked.
> **– Grantee representative, Sri Lanka**
>
> The ease of monitoring by superiors with this tool can generate fear in other officials that it will be easy to determine their performance.
> **– Colombia Change Management Plan**

Inspectors and other labor officials' fear of ECMS use to strengthen oversight and accountability: Labor inspector oversight and performance evaluation has been a common use of ECMS data and was a source of initial, and in some cases prolonged, labor inspector reluctance in several countries. With increased oversight, system backers hoped to reduce corruption: *"One of our goals is making sure that records can't be tampered with... There are a lot of allegations of corruption."* A grantee representative perceived the ECMS' potential to increase transparency was a source of reluctance among labor inspectors in Honduras: *"the worst thing is that they asked that the system be adapted to the way they currently work, that is, without controls and monitoring."* Similarly, a grantee representative in Paraguay noted that the use of the ECMS to strengthen monitoring was among the reasons for labor inspectors' reluctance.

In most evaluation countries, national and regional labor officials charged with supervision perceived increased labor inspector accountability to be among the key ECMS benefits. Supervisors' real-time access to inspection data and reporting functions enabled them to see to what extent labor inspectors were meeting their inspection targets. However, increased scrutiny was not always welcome by labor inspectors. In several evaluation countries, grantee and labor administrators reported that labor inspectors falsely believed the tablets they received for data entry were being used to track their physical whereabouts.

> One of the challenges that prevents the labor inspectors from fully adopting the ECMS is that is only focuses on a narrow range of their functions as inspectors. It is only tracking certain kinds of duties.
> **– USDOL official**

Some labor inspectors consulted by the evaluation team were uncomfortable with how ECMS data was being used to monitor their performance, noting that quantitative indicators were overemphasized and did not capture inspectors' full range of responsibilities and activities. One labor inspector in the Philippines said, *"Efficiency could be number of inspections realized. But we experience challenges when the targets are too high; too high targets can affect our effectiveness."* A former official explained that s/he perceived the labor inspector's job was also to educate employers, especially in small and micro enterprises who might not be aware of labor laws and regulation, and this required time.

Labor inspectors were not the only stakeholder in the labor administration to be under increased scrutiny – systems also increased the visibility of sub-national labor office outputs. A grantee representative in the Philippines reported that shining a light on regional office performance yielded

positive results: *"What DOLE has done – they have regular meetings among senior officials. How much each region is using the system was on the agenda. I think also that some regions realized that the system facilitated reporting. There was an environment of competition that helped to generate support."*

Labor officials' lack of basic IT literacy: In its ECMS change management strategy, the project in Colombia highlighted, *"It is important to bear in mind that the officials who will access the system are people belonging to different ages and abilities related to the access and management of technology. Based on this, we imagine there will be groups of people who grasp the system faster than others."* Limited IT literacy, especially among older inspectors, impeded effective ECMS deployment in most countries. In Sri Lanka, the IT service provider reported that it was necessary to deliver unplanned initial training on basic computer skills for many labor officers because of deficits in their IT literacy. In Honduras, USDOL officials reported that the need for basic IT literacy training for inspectors was significant, an issue that was not assessed and addressed earlier in the implementation process and which has since delayed system deployment.

5.2 Project Change Management Strategies – Strengths and Limitations

Grantees and labor officials in the evaluation countries recognized the threat of ECMS rejection by its intended users and, to varying to degrees, planned and implemented interventions to overcome sources of user reluctance.

> We had a huge emphasis on change management or institutional readiness.
> **- Grantee representative, Colombia**

Grantee strategies to foster ECMS acceptance and use:

One DOLE labor official (the Philippines) declared, *"It was not hard to convince labor inspectors to use the system because it was a requirement. But to get them to embrace the system is another thing. You need to inspire labor inspectors to use the system."* To help inspectors "embrace" the ECMS, the official reported engaging inspectors on their difficulties, both those related to how to use the system as well as on broader topics affecting inspection quality, such as their understanding of the labor code. In addition, the officials reported using incentives: *"We give awards at the end of the year. In our region, most inspectors are meeting or surpassing their targets."* Colombia also stands out among evaluation countries for its efforts to design and implement a comprehensive change management strategy which, in addition to training and technical support, included communication and awareness-raising activities aimed at overcoming negative perceptions of the system.

Despite project and labor administration efforts to foster user acceptance, reluctance to change was, and remains, a challenge in most evaluation countries. Evaluation stakeholders reported that they used a variety of intervention strategies to facilitate ECMS acceptance within the labor administrations:

User consultations on design and software testing/improvement: Labor officials and grantees in all evaluation countries reported using participatory processes to identify user needs (including both inspectors and labor administrators) during the design phase, and to gather feedback on needed improvements in countries where the ECMS had been deployed. The scope of

> One of the frequent complaints was that LISA was not developed with our involvement. There must have been some involvement, but the general sentiment is that it was not done by the department for the department.
> **– Labor official, Sri Lanka**

consultations appears to have varied from country to country, from small meetings with decision-makers in the central and sub-regional offices to larger group consultations including labor inspectors outside the capital city. In Paraguay, after the software developer completed the system design with a small team from the Ministry, all labor inspectors (40 inspectors at that time) were consulted to validate the workflow analysis and design document. In Colombia and the Philippines, grantees and labor officials reported organizing extensive consultations with labor inspectors in sub-national offices. One Colombian labor official indicated that their consultations included labor inspectors from the territories, lawyers with different specialties, and the ILO team. Similarly, the official reported that consultations continued in subsequent deployment and development phases, during which different points of view were considered and resulted in improvements being made in system features, according to grantees and labor officials in Colombia, Peru, and the Philippines. A USDOL official indicated that consultations in Honduras also included employers, workers' representatives and other government agencies outside the Labor Ministry, a strategy not reported elsewhere. The official reported, *"I had confidence that these stakeholders would hold the Ministry accountable."*

> Training worked well to ensure users' acceptance of the system... Although for the IT department, training almost 400 people was a lot of work, but the result was positive since users could already see their alerts and pending orders.
> **– Labor official, Peru**

Training: All evaluation country stakeholders recognized the importance of building ECMS users' technical capacity through training, but differed in the extent that project resources were invested in training and in the training modalities used. The Colombia project invested significant resources in training. The grantee recounted, *"We had a massive training program; not all projects have the budget for that. We put them in front of terminals so they could see how it worked."* In Sri Lanka, the project reported, *"between January 2015 and May 2016, 756 Labor Department personnel were trained on various aspects of LISA use. Training comprehensively covered various categories of Labor Department personnel including district commissioners, assistant district commissioners."* In Peru, although funded with its own resources, large-scale training was also reported to reach over 400 labor inspectors.

User Support: In all countries with a mature ECMS, the project and/or the labor administration created user support systems. In Colombia, Peru, the Philippines and Sri Lanka, the labor administration formally and informally capitalized on first adopters (individuals who were quick to embrace the ECMS) to support their peers by training trainers and empowering them to support their colleagues. In Colombia, the Ministry appointed "monitors," individuals who accepted to promote the ECMS use among their colleagues, provide technical support to resolve concerns, as well as flag more serious issues to central-level managers. The project provided the monitors with extra training and special t-shirts. One monitor underlined the importance of his/her role, *"The process of setting up monitors was key to giving sustainability to the use of the system. It was very interesting to see that people with little knowledge of technology managed to use the system well."* In the Philippines and Sri Lanka, labor officials indicated that the first line of support was with specially appointed and

In the video developed in Colombia, an animated labor inspector explained the benefits of ECMS use. Source: https://www.youtube.com/watch?v=II88PsT3pbo&t=15s

trained individuals in the district offices. Issues requiring higher-level support were forwarded to the Manila- or Colombo-based support teams. A labor official in the Philippines reported that some inspectors created virtual peer support groups using Viber. Also in the Philippines, supervisory personnel reported that they reviewed information on system use by individual labor inspectors; when they remarked delays in uploading reports, the supervisors reported they reached out to provide support.

Targeted Communication Activities: In Colombia, the project developed communication tools describing the potential benefits of using the LI-MIS. The video, which compared how things were before to the way they would be after, attracted over 14,000 views as of February 2021.

6. PROCESSES – KEY RESULTS

This section examines the extent and ways that ECMS have aligned with the legal framework, regulations and procedures that govern labor inspection and labor violation case resolution in the seven evaluation countries.[17]

6.1 Extent Projects Adapted ECMS to the Labor Administration Legal Framework and Procedures

During the ECMS design phase, all evaluation projects assessed the legal and procedural framework as well as the counterpart country labor administration practices and workflows, and attempted to align ECMS forms and workflow to them.

> We looked at the legal steps and the steps done in practice. This can take a long time, especially if you go down to the inspectors.
> **- Grantee in Colombia**

Several grantee managers from different countries highlighted that mapping labor administration processes was time consuming and required consultations with both legal experts and future system users. In the Philippines, the Ministry formed a working group with participants from all relevant departments to design their LI-MIS. With inputs from various departments, the grantee reported the working group *"made sure the system followed the current procedures and that the process and the system were legally sufficient and captured OSH standards."*

Grantees in Colombia, Paraguay and Honduras noted that their counterpart labor administrations were relatively young institutions and that laws, regulations and/or procedures were still being defined as the ECMS component got underway. For example, in Honduras, one USDOL officer indicated that although the government passed labor law reforms in 2017, there were no regulations describing how reforms should be applied. The project conditioned the start of ECMS development on passage of labor inspection regulations. According to the official, *"Even though it took a long time, it was a good thing that we made sure the ECMS reflected both the law and regulations."* Similarly, the

[17] ECMS alignment with national legal frameworks was highlighted in the Rooze article on *Differentiated Use of Electronic Case Management Systems* as a critical component of effective ECMS.

grantee in Vietnam noted that the project held up ECMS development until after the country had completed its latest labor code reform, which was one of the reasons system development began relatively late in the project implementation period.

Limited standardization of labor inspectorate practices was a common starting point in several evaluation countries, which was both an opportunity and a challenge for system designers trying to map procedures. One USDOL official described the grantee's process in Honduras, "*It was the first time that the processes were written down. My understanding is they had lengthy consultations… Because it was the first time that people thought through the full process, they found they had to go back and redo things several times. When they were revising the ECMS design, they realized they had forgotten a step."* The IT developer in Sri Lanka described the situation when the first ECMS assessment was carried out, *"Let me say that none of the processes had been evaluated or checked to see if they were running properly… Each office had their own processes to manage inspection. When violations were found, each office had their own way of following up… Through the computerization process, the department wanted to standardize everything."*

In some countries, such as Honduras, the Philippines, Sri Lanka and Vietnam, the grantee delegated significant responsibility to labor administration officials to work with the software development team on how to standardize the processes, with limited direct input from the project. A labor official in the Philippines accepted the responsibility gladly, indicating that *"ILO's strength was to provide us with the technical people. After that it was our team and the developer*." In Honduras, Sri Lanka, and Vietnam, both the grantee and software development team noted that although there was strong political will from the labor administration leadership, getting needed input from busy labor officials was a challenge. One IT service provider recounted, *"As for getting the information, the Ministry is not always available. We have had to dig through the decrees and circulars."*

Despite the challenges, ECMS stakeholders in countries with mature systems noted that the ECMS was contributing effectively to greater consistency in labor inspection processes. For example, a grantee representative in the Philippines said, *"The LI-MIS turned out to be really useful to enable inspection to adapt to changes in legislation. With all the changes in the labor law, if inspectors continued using the manual system they would be lost. The system integrated changes to the check lists directly and allowed for standardization."* A grantee representative in Colombia likewise said, *"We did before and after studies on labor violation case management efficiency and effectiveness. The number one improvement was the standardization of procedures."* The previous testimony notwithstanding, the grantee also reported resistance to using the new standardized practices, especially among labor inspectors in Bogota who felt that the new procedures created additional work, whereas their workload was already very high.

6.2 Challenges ensuring ECMS Relevance to Legal Framework, Inspection Processes and User Needs

In most evaluation countries, legal frameworks are not yet fully adapted to digitalization, which has been an obstacle to abandoning manual and/or paper-based systems completely. To cover all legal and regulatory issues, some ECMS created very long checklists, with potentially negative consequences on inspector efficiency.

Legal hurdles to digitization: Although labor administrators in most evaluation countries cited reduction of paperwork as one of their key objectives for the ECMS, country legal standards have been a barrier to a complete digital transformation. In some countries, the need for both a digital and paper record has created extra work for labor inspectors, a factor negatively affecting system adoption. For example, to be accepted in a court of law, Colombian laws require labor inspectors to constitute a paper file with labor violation evidence. According to one US labor official, *"the ECMS is really a case tracking system in the electronic domain that kind of represents what goes on in the paper-based file domain."*

> In Colombia, a paper file is required. The system can send the file, but it has to be printed out and filed. This is the law, not just for labor inspectors.
> **- USDOL official**

Laws in Vietnam likewise require paper files be presented for legal procedures. According to the software developer, *"We encouraged them to keep the approvals in the system, but this was not possible because the government doesn't recognize digital signatures."* While the planned ECMS in Vietnam aims to facilitate producing the inspection report, it must still be printed, signed and stamped to have legal value. In the Philippines, by law, inspectors are required to leave a paper copy of the inspection report with the establishment. Consequently, labor inspectors must carry and fill out paper forms and in addition, enter the same data into the system.

> I am concerned about collecting so much information rather than having a targeted list for specific sectors and on specific issues.
> **– ILO Specialist**

Outmoded procedures reflected in ECMS: Deficiencies in the labor inspection process, such as the inspectorate's use of long checklists, raised questions about if/how ECMS designers should reflect needed improvements in inspection processes. For example, one IT service provider believed that the grantee should have worked with the labor administration to streamline the inspection checklists to improve system utility: *"The inspection report was a 15-page report. That was one of the Department's complaints – the ILO did not improve the report. If it had been simplified, things might have been different."* The ECMS labor inspection module in the Philippines also featured a very long checklist. National labor officials and ILO labor inspection specialists indicated that translating the inspection process into long checklists could be counterproductive to effective inspection and that more differentiation based on industries should be integrated. An official in the Philippines remarked, *"Right now there is just one long checklist. In general, if you leave something blank, you cannot proceed. It should be more industry specific. For example, if it is a sugar industry, there should be a different checklist."* An ILO specialist concurred, "*One of the aspects of the inspection checklists that is surprising to me – they seem to be very, very long. It takes more 4-5 hours to complete it…"* The grantee in Colombia proposed a different method. Its ECMS included mandatory fields that were necessary for generating dashboards or producing statistical and other reports, but otherwise used templates designed for various types of operations and steps in the case management workflow.

An ILO specialist indicated that ECMS implementation offered opportunities to improve inspection processes in the partner country but that ultimately the system should reflect actual practices: *"During the mapping process – gaps are revealed, steps and processes that are missing. That is useful from a labor inspection policy point of view. But the systems need to follow what is there, warts and all. The power of the tailored systems is that they replicate the actual systems – anything less, labor officials would not use it. It would become a parallel system."* While randomly introducing new forms into ECMS

is probably unwise, many ECMS interventions were part of larger projects with other labor administration capacity building activities, which may have been and in some instances were (Colombia and past projects in the Philippines) capitalized to improve inspection forms and processes.

> I think this is one of the most concrete things we are doing in our project. Even though there are many challenges, I feel most optimistic about this (ECMS) component.
> **– Grantee representative, Vietnam**
>
> The SIIT is a powerful information tool and contributes to decision making.
> **- Grantee representative, Peru**

7. IMPACT – KEY RESULTS

This section discusses possible effects of project ECMS on labor administration decision-making, employers' labor law enforcement and compliance as well as transparency within the labor administration.

Despite highlighting numerous systemic challenges, many evaluation key informants in countries with mature systems perceived that USDOL-supported ECMS was having real, positive impact on improving labor administration use of data for decision- and policy-making, increasing follow-up on labor violations, and promoting greater transparency on issues related to labor law compliance.

Evaluation participants across all stakeholder categories reported systemic weaknesses that limit labor administration effectiveness in the seven evaluation countries. These include corruption, limited human and logistical resources for labor inspection, inspectors' lack of training and experience, as well as weaknesses in the laws and institutions responsible for imposing sanctions for labor law violations (little or no sanctioning power accorded to labor administration, limited capacity for labor dispute mediation and conciliation, backed-up labor courts). Evaluation respondents reported that these same factors likewise limited ECMS effectiveness. For example, when asked why the LI-CMS is still not being used in Bogotá, one labor official pointed to the extreme demands being put on labor inspectors, *"When you start on the job, immediately you are given up to 500 files, and you face the system without having received training, with outdated cases and you're supposed to update everything at an incredible speed. …There are only two support staff for 50 people."* In Paraguay, the grantee reported there are currently less than 25 labor inspectors for the whole country and that because of the pandemic, only a handful of inspections have been conducted in 2021. More broadly, in Peru, the grantee reported that in addition to insufficient numbers of inspectors and logistical support for inspection, the main challenge was lack of political will to control compliance.

While acknowledging these and other systemic challenges, various grantees and labor officials reported that ECMS had or would likely contribute to improvements in labor inspection effectiveness, efficiency, and transparency. In the absence of project quantitative data on ECMS impact, the evaluation team used mainly qualitative information such as stakeholder feedback to assess ECMS outcomes.

ECMS outcomes on decision-making: USDOL officials and grantees highlighted their hopes that information produced through the ECMS would contribute to labor officials' capacity to make evidence-based decisions on issues such as how and where to use the labor inspectorates' limited resources to promote and improve compliance with national labor laws.

Grantee representatives indicated that using data for decision making was an area requiring labor administration capacity building. For example, a grantee representative in Sri Lanka recounted, *"I discussed with labor officials about how you could use the data. But I don't think people were that ready at that time."* Grantees' representatives in Honduras and Vietnam reported that gathering needed information to design reports was difficult and was one of the reasons for the delayed development of the reporting module in Honduras. The grantee in Vietnam pointed out that at this early stage in ECMS development, many labor officials have found it "*hard to imagine how they will use the data"* because they have not had systematic access to data before. The grantee in Vietnam reported working with MOLISA to analyze reporting requirements and as a result, their appetite for information had increased over time. Testimony from one MOLISA official suggests the project was making some headway: *"We expect a lot from this software. These days we are facing difficulties collecting, synthesizing, and analyzing inspection data. This data is needed for our planning, for carrying out inspections as well as to provide a clear picture on labor law compliance to our Government and National Assembly for improving our legal framework."*

Several labor administration officials requested improvements in the ECMS reporting function after the software was completed and deployed, suggesting their increased awareness of the usefulness of having data for decision-making after ECMS deployment. Likewise, labor inspectors and regional labor officials in the Philippines indicated they would like to have greater access to ECMS data to support their activities, and labor officials in Peru were using their own funds to develop complementary tools for data analysis.

One US labor official assessed it was too early to know the effect of the LI-CMS on Ministry of Labor decision-making in Colombia: *"In terms of the effectiveness of ECMS, we are just at the beginning. The value-added is the information provided by the ECMS: the number and types of violations. What the Ministry does with the information is still a question."* A grantee in Colombia highlighted how the inspectorate's emphasis on preventative inspection versus responding to complaints shifted under different leaders, a fact which affected the appetite for and use of information to guide inspection planning. The reported challenges getting labor inspectors to use the system in Bogota, with its large concentration of economic activity, would likewise affect the ECMS's utility to guide decision-making in the capital region. Nevertheless, a stakeholder within the Inspectorate reported, *"There are many reports that are being used heavily in the system..."*

> Because of the data available from the MIS, policy makers now have consolidated workplace-level information to build robust compliance plans and ensure more targeted inspections.
> **– DOLE labor official (the Philippines)**

The Philippines stands out for the number of ways labor officials reported using their LI-MIS for decision making. Labor officials in the Philippines reported the ECMS had strengthened their decision-making capacity in various ways, including choosing which inspectors to deploy where, evaluating inspector and inspection office performance, deciding on where to focus capacity building activities, analyzing labor violation trends, deciding on inspection priorities, making establishment licensing decisions and recommending policy priorities. A labor official in the Philippines reported, "*We use it [the LI-MIS] for policy guidance, for planning, for deployment of inspectors. You can see the strengths and weaknesses of inspectors and use that when you deploy inspectors…There are some things that need improvement but overall, we are satisfied with how the system works. As a management tool, it provides good insights."* Both DOLE and grantee

personnel reported ECMS data shaped the development of OSH standards and laws since data was already available at the time the country was developing new laws and policies. Evaluation team observation of the DOLE website content showed the Department sets key performance indicators by which it measures its own performance, a factor that may heighten ECMS utility for decision-making.

ECMS outcomes on labor violation case follow-up and enforcement capacity of labor administration: ILO and USDOL labor specialists highlighted that one of their key objectives for ECMS was facilitating follow-up on labor violations cases. According to one ILO labor inspection specialist, *"When you look and ask about inspection work – sometimes inspections just don't have a conclusion. There is no follow-up, let alone sanctions."* In countries with operational ECMS, national-level officials claimed that the system features which automated case management, especially the sanctioning phase, had increased the labor administration's capacity to follow-up on violations and enforce labor laws. A labor official in Sri Lanka noted, *"Before computerization, we had a big complaints logbook in which we recorded complaints. No one knew the status of anything anywhere."* Although current labor officials reported the module is no longer serving its purpose because of technical issues, at the time of the project final evaluation, users reported LISA's feature for scheduling hearings had increased the Department's ability to ensure and track follow-on actions.

In Colombia, a labor official reported the LI-CMS was speeding up case management: *"There are 81,000 cases in the system. The agility that has been achieved is immense, since the case is sent digitally and progresses faster than when doing it manually. Before it took eight days, now it comes the same day."* Nevertheless, a US labor official reported that keeping case information up to date has continued to be a challenge in Colombia: *"The fact is that vast majority of cases in some of the regional offices have exceeded their legal timeframe for follow-up action. If the data is not up to date, then the ECMS may not be able to show trends accurately."*

Based on feedback from labor officials in countries with mature ECMS, there has not been a direct correlation between the ECMS benefits for strengthening case management processes and the actual imposition of sanctions, the latter reportedly being negatively affected by human resource limitations, labor court or alternative dispute resolution system inefficiencies as well as political priorities.

> The problem is in the sanctioning process, where there are many inspectors but no resolution personnel. Cases from 5 years ago are still being handled.
> **– Labor official in Peru**

In the Philippines and Peru, labor officials report that an unexpected consequence of increased inspection efficiency has been higher demands on the time of personnel in charge of managing legal and other activities to resolve cases. Labor officials reported that the limited numbers of qualified personnel to manage cases diminished the effects of the system on strengthening compliance enforcement. One grantee representative in the Philippines recounted, *"one thing that we did anticipate that is taking DOLE longer to adjust to – the impact of the LI-MIS on other support staff. We flagged this when we did a workflow analysis. If you had greater efficiency, what about those inspections that mature into cases? There was not enough people to handle the additional cases."* Similarly, in Peru, a labor official reported the backlog of cases was growing. The same official reported that SUNAFIL had made progress managing certain types of cases, specifically Covid-19 related employee furloughs, thanks to greater adoption of virtual inspection tools by labor inspectors. However, the

backlogs in other types of cases remained. At the time of the final evaluation in Sri Lanka, in parallel with its work on LISA, the project was also helping the Department of Labor to develop alternative labor dispute resolution mechanisms due to the huge backlog of cases in the labor courts. The evaluation report indicated limited progress had been made by the end of the project.

Grantees and labor officials reported that despite improvements in tracking labor violation cases, political will was still a significant factor affecting whether sanctions were applied. In Colombia, one grantee representative reported the responsibility for collecting fines was outside the Inspectorate and that there was limited political will to follow-up and ensure payment. The same was flagged as a potential problem in Honduras. Where political will was strong, the ECMS was reported to be very useful for strengthening enforcement. For example, labor officials in the Philippines reported that the LI-MIS had enabled DOLE to respond to the current Government's priorities to crack down on the use of illegal subcontractors to evade labor laws. Labor officials reported DOLE used the ECMS to link lead firms with their subcontractors and used this information to ensure inspection processes considered the compliance of all relevant employers.

ECMS outcomes on labor administration transparency: Grantees and labor officials reported positive ECMS effects on transparency within labor administrations, by reenforcing labor inspection processes to reduce corruption as well as facilitating more open sharing of labor law compliance information with stakeholders outside the inspectorate.

The grantee in Paraguay reported, *"The system includes aspects regarding transparency, control and accountability. There has been reluctance of course but as an experience for the institution I think it will be an important part of the daily management."* Another grantee representative in Paraguay described increasing transparency within the Inspectorate as a "work-in-progress."

> There are various tripartite committees and industry councils that have requested and received compliance data. When they meet, they discuss the data. The source of that was the LI-MIS.
> **– DOLE labor official (the Philippines)**

Various labor officials in countries with active ECMS reported sharing system-generated data in ways that increased transparency. Labor officials in the Philippines reported providing ECMS-generated information to tripartite bodies, other regulatory bodies, lawmakers within Congress, various specialized national agencies as well as international partners. The official reported that data from the LI-MIS has contributed to the DOLE's capacity to submit required and voluntary reports to the ILO and US Embassy with *"information and statistics pertinent to addressing exploitative and forced child labor, including trafficking of children. Data for regular reporting on ratified international Conventions are likewise generated from the LI-MIS."* A DOLE official reported they cannot provide detailed information on individual establishments' compliance record because of data privacy laws, but they can deliver statistical reports informing users on compliance trends related to specific labor laws, industries, and geographic regions. In Peru, labor officials also reported that it uses the SIIT to produce the annual report on labor inspection which is required by the ILO.

In Colombia, the grantee reported working with the Ministry to develop an information bulletin on labor compliance issues using LI-CMS data as one key source of information. The grantee representative suggested that the Ministry will be able to report the number and types of sanctions, the value of the penalties imposed, as well as economic sectors impacted: *"The interesting thing is*

that there is a greater analysis, typologies, types of sanctions, georeferencing, etc. How many of the notifications correspond to gender or ethnic group related violations can also be answered." One grantee representative reported that the project educated workers' organizations representatives on their right to ask for LI-CMS reports on outstanding sanctions to inform their advocacy activities.

8. SUSTAINABILITY – KEY RESULTS

This section analyzes technology, people and process-related factors that may affect ECMS sustainability in the seven evaluation countries.

8.1 Technology-related Sustainability Considerations and Challenges

Stakeholders in several countries with mature systems (Colombia, Peru, Philippines, and Sri Lanka) indicated that post-deployment support from the IT specialists who developed the system was important for sustainability, even when the labor administration had their own in-house expertise. While several projects have funded software warranties for limited time periods, none financed software maintenance contracts, reportedly a factor in the failure of at least one system. Beyond routine maintenance and support, evidence from countries with mature systems suggests ECMS may need to be periodically redeveloped to maintain optimal functionality.

> By the time the LISA program was completed, its technology was outdated and had to be redesigned under the new technology. Although discussions were held, there was no way to obtain the necessary funds.
> **- Former labor official, Sri Lanka**

Various ECMS grantees reported including actions to ensure maintenance of the ECMS software and associated hardware as part of their exit strategy to foster system sustainability. Most grantees reported integrating a short-term software warranty into the IT service providers' contract, but none of the projects purchased a full-fledged software maintenance and support contract. The grantee in Colombia reported the Ministry has procured a support contract from an IT service provider for system maintenance since project close.

LISA's demise in Sri Lanka is an example of what can happen when software maintenance measures are not enough. The final evaluation of the project in Sri Lanka noted, *"There currently is no strategy for assuring system maintenance and support after the ILO contract with the IT service provider ends. Consideration needs to be given to outsourcing at least part of the application and hosting maintenance and to establishing capacity for IT support within the Ministry of Labor."* Based on labor official accounts, no maintenance contract was established and, although an IT support team was formed, they did not have the capacity to maintain the system. In the years following the final evaluation, user frustration grew with system limitations. Problems cited by officials included browser compatibility issues, lack of mobile responsive user interfaces, server slowness, and out-of-date back-up and web security systems, as well as other software limitations not pinpointed while the project was still active. Labor officials and the ECMS developer agreed there was lack of clarity on the extent and limitations of the IT service provider's responsibilities to fix bugs, to respond to user requests for system improvements, and to update and maintain the software. The developer reported responding

to Department support requests at no cost for months after ECMS delivery, but felt this was beyond the scope of his contract and unsustainable over the long-term.

Officials in the Philippines described a similar scenario with the first version of their LI-MIS, which they overcame by starting over with a new system, a new IT service provider, and developing more in-house ECMS maintenance capacity. System administrators reported that they still called upon the IT service provider for assistance, even though no formal maintenance contract was in place. However, several labor officials reported that the team was able to update forms and had created new IT tools to manage emerging needs during the pandemic without outside assistance.

In Colombia, the grantee reported high levels of confidence in the Ministry's IT team, noting IT resources were expanding, the team had successfully developed and incorporated new modules into the system, and an in-house LI-CMS helpdesk was planned. The grantee and labor officials highlighted that many needed software improvements were possible because of follow-on assistance from the MAP-16 project, which increased the overall ECMS stability.

Like Vietnam, ECMS in Honduras and Paraguay[18] will likely still be in the early deployment stage when the project ends. The IT service providers reported, *"Since its delivery two years ago, we have not been notified of incidents that must be resolved, therefore we assume that everything has worked well."* A labor official in Paraguay reported the Ministry is considering hiring the project-contracted IT service provider using government funds to make changes to the ECMS software, a task that s/he did not think the Ministry's four-person IT department had the capacity to undertake given its other responsibilities.

According to the IT service provider in Vietnam, *"On the technical side, you always need maintenance. Even when we work with banks that have their own IT team, we sign maintenance contracts with them. It is easier for the client."* One reason that projects do not procure maintenance contracts may be the cost. According to the IT company in Vietnam, they usually estimate 30% of the software development price for maintaining the system. At this time, the project in Vietnam foresees a warranty period that stretches into 2022 but has not foreseen investing project funds in a maintenance contract based on the assumption that MOLISA's IT center will have the capacity to maintain the system.

> The IT team was appointed to carry out deployment, but their reluctance has been very strong, especially because they have also openly stated that they are not capable of handling it.
> **- Grantee representative, Honduras**

While collaboration with government IT professionals was generally viewed by the grantee and labor officials as a proactive means to ensure their effective involvement in the system maintenance stages, several key informants highlighted that labor ministries often struggled to keep highly qualified IT talent. One official overseeing a project in Latin America remarked, *"One of the challenges is the young, well-trained guys leave public service to work for the private sector."* Nevertheless, DOLE

[18] In Paraguay, although the ECMS has been deployed, because of the Covid-19 pandemic, labor inspections have been halted.

(Philippines) reported being able to keep their IT support team with the Ministry by giving them professional growth opportunities including access to training.

One Filipino labor official opined that it was important for the developers to hand over the source code and a data dictionary to the labor administration: "*if we have the complete material to be used for enhancement, and if ILO is no longer available to help us, the DOLE can make the needed changes.*" In addition to the Philippines, grantees in Colombia, Honduras, Paraguay, and Sri Lanka likewise reported that the developer handed over the software source code after the end of the contract as part of their exit strategy.

> The Ministry of Labor in Colombia does not have resources to develop new ECMS features but will maintain the existing system, given its commitments to USDOL.
> **– Labor official, Colombia**

Labor officials and grantees reported government budget allocations for ECMS software, hardware, support, and maintenance were important sustainability considerations, and grantees incorporated efforts to foster government resource allocations in their efforts to ensure political buy-in and facilitate their exit strategy. In Colombia, Honduras and Paraguay, Memoranda of Understanding (MOU) signed with partner governments made government resource allocations for ECMS a condition for project support. In Colombia, the project waited until the government had purchased key equipment such as servers before starting software development, while in other evaluation countries (Honduras, Paraguay, and Vietnam) there was no such condition. Labor officials in the Philippines reported that they had so far been successful in getting budget allocations for ECMS equipment and maintenance and were optimistic about future allocations. After several years of use, a labor official in the Philippines highlighted that it was time to renew the tablets: *"Replacement is our concern now. We need to negotiate with the central office."* In Vietnam, a grantee representative reported s/he expected MOLISA would try to raise donor funds to scale the ECMS beyond the three pilot regions after project assistance. MOLISA officials indicated that once the ECMS had proved its utility, they might be able to get supplementary resources from the government but mostly likely not before.

Beyond routine maintenance and support, evidence in Peru, Honduras and Sri Lanka suggests that ECMS may need to be periodically redeveloped to maintain optimal functionality. In Peru, the SIIT system was first developed in 2007. According to the grantee, although the USDOL-funded project has supported many needed improvements, the aging software platform required updating to be compatible with more modern technologies such as the use of mobile applications. In addition, the redevelopment is seen as an opportunity to match the system to current labor administration practices and processes, which have evolved. One labor official indicated, *"The SIIT has already given its useful life, which should not exceed 10 years."* The same official reported that the budget for the first stage of ECMS redevelopment is already approved and would be subject to a public tender in Spring 2021. In Sri Lanka, labor officials reported the Department had allocated resources from its regular budget to redevelop LISA because it was a priority initiative, a positive outcome of earlier USDOL investments.

8.2 People-related Sustainability Considerations and Challenges

In all evaluation countries, institutional decision-makers' buy-in for computerization was overall high and relatively consistent. However, frequent turnover in the higher ranks of the

labor administration affected progress and sustainability in some countries. In most evaluation countries, the labor administration has formally required ECMS use in labor inspection, although with mixed results.

> The success of computer systems does not only lie in their quality, but also at the level of appropriation of the users of the benefited institutions.
> **– Grantee, Paraguay**

USDOL officials and grantees reported regularly conferring with high-level officials in the labor administration during the ECMS design phase to assess their expectations for the system and update them on progress. Past project evaluations highlighted strong political will as a promising indicator of ECMS sustainability. In the current evaluation, labor officials and grantees also reported high levels of buy-in from decision-makers for the ECMS within the seven evaluation countries' labor administrations. For example, a MOLISA official in Vietnam affirmed, "*I think this activity is very important. It is in line with Government directives to enhance the use of IT applications to reduce paperwork and increase efficiency."* A high-level DOLE official likewise affirmed, *"The system is something we are really proud of*," and recounted that the LI-MIS had recently received recognition from the government agency promoting innovation in e-government. The grantee in Paraguay reported, *"There is very strong political will. That is very important in the sense that the current authorities support the system."* In Paraguay, the Ministry of Labor outlined its commitments to ensure the sustainability of the system in a detailed letter to the grantee when the ECMS was handed over in August 2019. In Peru, labor officials reaffirmed their commitment to ECMS by allocating new resources to update and improve the current SIIT.

Grantees and USDOL officials involved in Colombia, Honduras, Paraguay and Sri Lanka also affirmed that ECMS development benefited from high level buy-in from labor officials, but noted turnover within the leadership created uncertainty at times. In Colombia, a grantee representative reported that between 2013 and early 2021, four labor ministers and officials had changed throughout the country, creating instability within the labor administration. During the software development and deployment periods, a former Sri Lankan labor official reported that, *"Progress was discussed monthly before the Commissioner and the Secretary,"* but subsequent administrations were less engaged. In addition, turn-over in the ILO country office was significant in Sri Lanka; all personnel with intimate knowledge of the system were working elsewhere by the time this evaluation took place (February 2021). In Honduras, an evaluation key informant reported that the Minister of Labor, who had been a key ECMS champion, had recently been promoted, potentially affecting ECMS leadership within the Ministry.

> Once the system was concluded, Resolution 1400 was promulgated, which made using the ECMS an official part of the labor inspection process.
> **– Paraguay labor official**

In Colombia, Paraguay, Peru, the Philippines, and Sri Lanka, the labor administration issued circulars to institutionalize use of the ECMS. The effectiveness of making ECMS obligatory on sustained system use varied from country to country. The powerful labor inspector union in Sri Lanka boycotted LISA despite its use as an administrative requirement as per a Department circular. Similarly, a grantee representative in Colombia reported that when the labor administration moved to make LI-CMS use mandatory, six labor inspector unions banded together to reject the requirement, demanding the requirement be lifted, which it was.

8.3 Process-related Sustainability Considerations and Challenges

> The Ministry of Labor was growing as the system was being developed. Developing the ECMS was like trying to build the airplane and fly it at the same time.
> **– USDOL official, Colombia**

> The inspection process is based on resolutions, and these are constantly changing, and by that, I mean monthly.
> **- IT Service Provider, Paraguay**

Updating ECMS with evolving laws and procedures: Stakeholders from all seven evaluation countries highlighted the challenge of keeping the ECMS up to date, with changing laws and procedures as a threat to system sustainability. Labor administration officials from several evaluation countries cited difficulty updating ECMS forms and workflows when laws, regulations and/or procedures changed. One grantee representative in the Philippines recounted challenges with the first LI-MIS system: *"DOLE had little flexibility on changing the compliance indicators – they were dependent on the developers."* Sri Lankan labor department officials cited similar problems with the labor inspection module of its ECMS. One labor inspector noted, "*When a new circular comes, there is no provision to update the checklist."* Similarly, in Peru, the grantee reported the inspectorate's processes had evolved in line with reforms, which was one of the factors that prompted a planned redevelopment of the system. In Peru, the project was tasked with updating and improving the existing ECMS to reflect new legislation centralizing labor inspection in SUNAFIL, which it did partially, but the current administration is planning additional updates using its own resources.

The IT service provider developing the ECMS in Vietnam recognized the need to build in features enabling updates in the design phase and proposed a solution: *"The checklists change every year. We are giving the option for inspectors to create their own questionnaire. They can easily go to the template module and delete or add questions."* The Vietnam ECMS has yet to be deployed, so it remains to be seen whether MOLISA personnel will be able to use this template-building feature effectively.

As part of their exit strategy, project managers and labor administration officials in some countries mitigated the risk that their systems would quickly become obsolete by building in-house capacity to modify the ECMS. One grantee in Colombia described his/her strategy, "*What we did is provide specialized training on how to modify the system. When it got hardcore IT, we brought in the [external] IT people... We know that it worked since they have built on three more modules."* In the Philippines, the grantee reported supporting DOLE to establish an ECMS support team with capacity to update inspection checklists.

In addition to modifying the ECMS, labor departments reported adding new modules or complementary applications to meet emerging needs. For example, in the Philippines and Peru, labor administration technical teams developed systems that enabled employers to submit required information about worker layoffs online in response to Covid-19 related requirements. While the in-house development may pose risks to ECMS coherence, these actions were initiatives taken by IT teams to keep the ECMS relevant.

9. PROMISING PRACTICES AND LESSONS LEARNED

Other sections of this report highlight a variety of promising practices and lessons learned.

9.1 Lessons Learned

To foster system sustainability, ECMS institutional owners need help from grantees to understand the total cost of ECMS ownership as well as the benefits of fully implementing and maintaining the system.

In the same way that the cost of owning a car is more than the vehicle's purchase price, so owning an information system is more than the cost of developing the application. Based on the experiences in countries with mature ECMS, system running costs include hosting the application, employing qualified personnel and/or external service providers to maintain the system and undertake periodic system upgrades, renewing hardware (both system servers and user devices), training and retraining users, providing user support, and paying for internet access. To encourage needed investments from high level decision-makers, grantees need to clearly communicate ECMS benefits (for example, time saving features, better access to information and analysis, increased oversight, greater standardization of processes).

Given its important role in ECMS implementation and post-project support, the choice of IT service provider is important.

Based on feedback from various grantees and labor officials in evaluation countries, the choice of IT service provider was important. In Vietnam, input from the IT service provider was important to reorient the ECMS design. Labor officials in the Philippines and Sri Lanka perceived project IT service provider choices had negative consequences post-implementation. In the Philippines, the first service provider was based outside the country. In Sri Lanka, the project contracted an individual rather than an established company to provide services. Labor officials perceived working with a local, well-established company was better assurance of high-quality post-ECMS deployment service quality. Characteristics of well-established companies include those that have worked with public sector clients in the past, have developed and deployed similar databases/applications, employ several team members, and can provide references from past clients.

Development and deployment of ECMS software requires a multi-disciplinary team and sufficient time for pre-software development assessments.

The challenges faced by projects and labor administrations during ECMS software development and change management processes suggest that implementing ECMS requires a team approach, with members who master different aspects of the project (technology, user training, communication, labor administration legal frameworks and business processes), with at least some members that have a deep understanding of the workings of labor administration in the country. Moreover, the number of variables that affect success or failure suggests the need to allocate time and resources for feasibility assessments and strategy development to identify and propose interventions to fill gaps in available ICT infrastructure, inspection procedures and their standardization, as well as system users' IT and other critical competencies, among other issues.

9.2 Promising Practices

The evaluation highlighted many good practices in the previous sections. These included:

- Conducting in-depth preliminary feasibility studies and needs assessments to inform design decisions.
- Coordinating planning and implementation with Ministry of Labor IT departments and/or national e-government initiatives.
- Using the Agile method [19] of software development to collect user feedback at regular intervals in the development process to correct flaws and adapt software features to meet user needs.
- Integrating alerts in ECMS software to signal needed follow-up on cases by labor inspectors and others, facilitating data sharing between information systems to reduce duplication of efforts, enabling external stakeholders to submit inspection information online (especially useful during the Covid-19 pandemic) and using advanced data analytics features to predict labor violations.
- Tracking labor administration key performance indicators in ECMS reports and dashboards and using incentives to reward inspectors or inspection units that meet their targets.
- Designing and implementing a comprehensive change management strategy which, in addition to training and technical support, included communication and awareness-raising activities aimed at overcoming negative perceptions of the ECMS.
- Developing labor administration capacity to analyze information requirements and use data for decision-making.
- Educating workers' organization representatives and tripartite bodies on their right to ask for ECMS-generated reports on outstanding sanctions to inform their advocacy and social dialogue activities.
- Providing professional development opportunities to labor administration IT support teams with incentives to stay in public service.

The evaluators also identified the following additional good practices.

Capitalization of ECMS expertise and knowledge from past projects to improve implementation in new ECMS project countries.

Evaluation key informants reported that having the opportunity to see an ECMS in use and learn about other countries' experiences were useful to help grantees and labor officials understand and plan the development of their ECMS. Some recent ILO projects with an ECMS component, such as the system under development in Vietnam, obtained technical advice from regional labor inspection specialists with experience implementing similar projects in other countries. In Latin America, the

[19] https://en.wikipedia.org/wiki/Agile_software_development

ILO published a 179-page report on the use of ICT for Labor Inspection, documenting and comparing the experiences of various Latin American countries.[20] Another example of knowledge-sharing, Partners of the Americas in Paraguay used project funds to support a south-south exchange between labor administrations, enabling labor officials from Paraguay to learn from Colombia's experience developing an ECMS. Similarly, the grantee in Vietnam supported MOLISA officials to visit the Philippines to learn from DOLE's experiences developing and managing an ECMS.

Signing MOUs with partner governments and leveraging trade agreements to promote needed government investments in labor inspection, including the ECMS.

Projects in three out of four Latin American countries (Colombia, Honduras, and Peru) developed ECMS in the context of policy dialogues related to trade agreements between the US and the partner country. These formal agreements clarified and likely strengthened counterpart government commitments to ECMS implementation and incentivized follow-on actions. One US labor official remarked, *"I think that this being in the context of a trade agreement allowed us to push and nudge on a lot of things in this project, not just the ECMS but especially the ECMS. There were a lot of issues that they hadn't solved over a long time. We were in a position to get things done on a policy level."*

10. CONCLUSIONS

Based on the findings presented in the previous sections, this chapter presents the evaluation team's main conclusions.

Overall Conclusions

Although a complex intervention with many challenges, project investments in ECMS are producing positive results that have been largely sustained in countries with mature systems. Among the closed projects, three out of four ECMS are still functioning and evolving in ways likely to have growing positive effects on the labor inspectorate's effectiveness and efficiency (Colombia, Peru and the Philippines). Even in Sri Lanka, where the ECMS is, for the most part, no longer used due to both technical and user acceptance issues, the labor administration reported plans to redevelop a new system, building on the lessons learned from the USDOL-funded project.

Although the most-accepted ECMS use still appears to be for recording initial labor inspection results, in all seven evaluation countries, demand from labor officials for more advanced features and uses had grown over time. Increased demand for more automation of administrative tasks, sharing data between public sector and other information systems, client-facing services, and advanced data analytics suggested decision-makers increasingly understood the potential benefits of ECMS. Indeed, labor administrations' interest and capacity to continually adjust and improve the ECMS appears to

[20] Utilización de tecnologías de la información y de la comunicación en las inspecciones del trabajo. Una visión comparada en torno a países seleccionados. Oficina de la OIT para el Cono Sur de América Latina, 2017 (Informes Técnicos OIT Cono Sur, N°2) https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---sro-santiago/documents/publication/wcms_614905.pdf

be a key factor in keeping ECMS in use, given changing laws, the inspectorates' evolving requirements, and the need for ECMS maintenance and upgrades.

ECMS Implementation Challenges and Ways Forward

Based on the experiences in the seven countries covered by this evaluation, there is no "one size fits all" ECMS blueprint that can be replicated across countries currently implementing ECMS or considering it in the future. The seven countries covered by this evaluation experienced unique growing pains and obstacles to overcome based on their context. Nevertheless, there were some common pitfalls as well as good practices that were effective to mitigate or overcome challenges that are worth sharing.

ECMS intervention/software design: Grantee and the labor administration IT expertise and time limitations resulted in project-contracted IT service providers shouldering significant, and in some cases excessive, responsibility for ECMS design and implementation. Extensive outsourcing by grantees of ECMS software development, deployment, and change management strategies (user training, communication, and promotion) to IT contractors incurred risks including lack of effective oversight, design errors, and delays due to the software development team's lack of subject-matter expertise and their challenges getting adequate input or cooperation from labor administration stakeholders, among others. In the early software development stages, labor officials often were not able to anticipate their needs and provide adequate input on software design, necessitating changes after the initial software development contract had been awarded and, for the mature systems, after the contract was completed and the ECMS deployed. In addition, decision-makers often were not able to fully grasp the potential benefits of ECMS prior to its deployment, which limited their motivation and capacity to provide guidance to IT contractors.

Some emerging good practices to anticipate labor administration needs more effectively, highlight potential ECMS benefits to decision-makers better, and avoid or mitigate the need for costly design changes that were demonstrated in the evaluation countries included:

- Reviewing other countries' ECMS design and deployment experiences through document review and/or exchanges with countries with mature systems, which informed decision-makers' understanding and vision for ECMS use. (Philippines, Vietnam, and Paraguay)
- Involving grantee's in-house IT specialists and personnel with previous ECMS implementation experience to provide inputs for the design and implementation of ECMS. (Colombia, Philippines, and Vietnam)
- Conducting preliminary feasibility studies and needs assessments to inform design decisions. (Colombia and Vietnam)
- Developing ECMS incrementally (using the Agile method of software development), which included processes for getting user feedback at regular intervals in the development process to correct flaws and adapt software features to meet user needs. (Colombia and Vietnam)

Digitization challenges: In the initial ECMS deployment stages, countries suffered some common challenges related to the labor administration's readiness for digitization. The absence of adequate ICT infrastructure (hardware, internet access and bandwidth), especially in sub-national field offices, limited effective system use in all countries. In addition, inadequate ECMS hosting solutions resulted

in slow data upload speeds and frequent system outages, which incurred user frustration and constrained ECMS acceptance, especially by labor inspectors. Limitations in legal frameworks for e-government, such as recognition of e-signatures and digital files and archives, limited the effects of the ECMS on reducing paperwork and increasing inspector efficiency since manual processes could not be abandoned completely.

Poorly defined or nonstandard labor administration procedures were also a challenge for ECMS designers, whose work often extended beyond digitization to standardizing the procedures themselves. Deficiencies in some existing labor inspection processes likewise raised issues about if/how ECMS designers should align with these and suggested that broader technical assistance on labor administration reforms were needed to complement the ECMS intervention.

Some useful actions taken by grantees and/or the labor administration to mitigate digitization constraints included:

- In collaboration with labor administration IT departments, assessing ICT needs early in ECMS implementation and agreeing among the donor, the grantee, and the labor administration which party will be responsible for acquiring needed hardware, software, and other infrastructure, which was in some cases formally documented in MOUs. (Colombia, Honduras, Paraguay, Philippines, and Sri Lanka)
- Upgrading the labor administration data center servers, increasing bandwidth, and improving server maintenance or outsourcing software hosting to professional service providers to overcome slow data-upload and server downtime problems. (Colombia and the Philippines)
- Providing training to labor administration IT teams on ECMS and related infrastructure maintenance. (Philippines and Sri Lanka)
- Documenting the country's laws and regulations on inspection and labor violation sanctions to guide ECMS software development so that it aligns with individual countries' legal requirements and specific timelines.
- Mapping and harmonizing existing labor office inspection practices and workflows.
- Developing customized ECMS forms to manage specific industry, sector or inspection area activities (for example OSH, unfair labor practice related complaints).

ECMS adoption and acceptance by users: Labor inspector acceptance of ECMS was a major challenge facing ECMS proponents in all evaluation countries. Common sources of labor inspector reluctance were the system's perceived or real negative effects on inspector workloads and routines, technical glitches, and unfamiliarity with ECMS hardware or software, factors which were especially important early in ECMS roll-out. Fear of increased surveillance by supervisors, including possible adverse effects on their performance evaluation, also hindered some labor inspector acceptance and use.

To greater and lesser degrees, projects anticipated and implemented strategies to foster labor inspector acceptance. Some effective strategies included:

- Involving labor inspectors and other sub-national users in software development and testing stages.

- Supporting IT literacy and system use training programs.
- Providing user support through peer-to-peer and helpdesk mechanisms.
- Implementing targeted communication activities highlighting ECMS benefits and dispelling myths.
- Requiring labor inspectors to use ECMS through administrative orders or including the requirement in job descriptions.
- Tracking labor administration key performance indicators in ECMS reports and dashboards and using incentives to reward inspectors or inspection units that meet their targets.

Systemic issues like corruption and governments' slow progress toward improving labor inspectors' status and working conditions, which although not directly related to ECMS, also affected their willingness to adopt ECMS in several countries. These issues were largely outside a project's control, although some grantees' advocacy and support for broader labor administration reforms created opportunities for dialogue on needed changes.

ECMS Outcomes on Labor Administration Decision-making, Labor Violation Case Management, Enforcement of Sanctions, and Transparency

In countries with mature systems, USDOL-supported ECMS were to differing degrees influencing decision- and policy-making, labor administration follow-up on labor violations, and had promoted greater transparency on issues related to labor law compliance. Peru stood out for having developed analytical tools to use data to predict compliance problems. The Philippines used ECMS data for performance evaluation and assessing training needs, inspection planning, and orienting labor policies, among other uses. Although improvements were still needed, labor officials in mature ECMS countries found that the ECMS had been useful to improve follow-up on labor violation cases. Most countries claimed they had or would be sharing ECMS data with stakeholders outside the labor administration, increasing the capacity of "outsiders" to see and advocate for compliance improvements. For example, Colombia and the Philippines reported that educating workers' organization representatives and tripartite bodies on their right to ask for ECMS-generated reports was useful to inform their advocacy and social dialogue activities.

Despite progress, the practice of using data to drive labor administration planning and policy decisions was still in its early stages in most of the seven evaluation countries, suggesting the need for better data analysis tools as well as additional project assistance to develop labor administration capacity to use data for performance management and strategic planning. In addition, countries with mature systems highlighted that although having access to data on labor violations was useful, political will, and not data, often still drove enforcement decisions. Similarly, despite increasing case management efficiency, prosecuting cases and imposing sanctions were also impeded by limited legal expertise among labor personnel as well as labor court and other dispute resolution mechanism limitations. Finally, systemic challenges (too few and inadequately trained and motivated inspectors, inspectorates' limited power to impose sanctions, and corruption) negatively affected labor administration follow-up on labor violations and their effectiveness in enforcing sanctions.

ECMS Sustainability in Seven Evaluation Countries

Currently, Colombia, Peru, and the Philippines, within certain limits, have adequate technical capacity within the labor administration to sustain and improve their ECMS without significant donor or grantee support. Their systems have been in use long enough to overcome the most important technical issues as well as to demonstrate to decision-makers the benefits of having the system. The government has allocated personnel and regular budget resources to cover ECMS maintenance and running costs (Colombia and the Philippines) and for future upgrades (Peru). Paraguay and Vietnam are facing the end of project assistance relatively soon after the initial deployment of their systems. Based on other evaluation country experiences, many software design problems and technical glitches, as well as user acceptance challenges, occur in the first year after the initial deployment. Ending project assistance too soon after deployment may put system sustainability at risk. The ECMS in Honduras, where software development is ongoing, will likely benefit from the additional time afforded by the three-year extension of the Futuros Brillantes project.

Issues that affect ECMS sustainability include extent of buy-in for system use by labor administration decision-makers, the capacity of the labor administration to support and maintain the system, the availability of state budget allocations post-project, and IT capacity to adapt the ECMS software to evolving laws, regulations, and procedures. Evaluation findings suggest it is difficult to anticipate and resolve all ECMS sustainability risks in one project cycle. Colombia was fortunate to benefit from additional USDOL assistance through a subsequent project to overcome its LI-CMS technical challenges and align the software with procedural changes. Similarly, the Philippines received USDOL assistance to rebuild their ECMS to overcome the failings of their first system and develop internal capacity to update the software. In contrast, ILO and USDOL support for Sri Lanka's LISA was relatively limited post-project, which although not the only factor, was certainly an important cause of the system's eventual collapse.

Most projects also funded short software warranties and trained or planned to train labor administration personnel on system maintenance, which was useful for fostering sustainability but with limitations. Overall, grantees appear to have underestimated the time and level of IT expertise required to resolve post-deployment software design issues and maintain ECMS software and related infrastructure. Stakeholders in several countries with mature systems (Colombia, Philippines, and Sri Lanka) indicated that longer term post-deployment support from the IT specialists who developed the system was important, even when the labor administration had their own in-house expertise. External support was often needed to correct software bugs, address new user requirements, update forms, as well as for routine software and server maintenance.

Most projects were effective in gaining buy-in from labor administration decision-makers, including securing their commitment to maintain ECMS with government funding post-project. Frequent labor administration leadership changes as well as high levels of personnel turnover negatively affected progress and posed sustainability risks. A few projects documented high-level commitments in formal MOUs (Colombia and Paraguay), a strategy that helped to ensure institutional memory and promote sustained commitment from labor administration officials. Making ECMS implementation part of trade agreement commitments was likewise useful to sustain political will (Colombia and Honduras).

11. RECOMMENDATIONS

This section presents the evaluation team's recommendations for current and future projects with an ECMS component, based on its findings and conclusions.

1. **Conduct readiness assessments prior to ECMS software development**: Grantees, in collaboration with labor administration officials, should review third countries' experience and carry out studies assessing ECMS readiness. Assessments should examine a variety of issues, including: ICT infrastructure availability; government IT standards and e-government readiness; labor administration personnel computer literacy and aptitudes for technology applications; labor inspection process and legal requirements; human resource structures and limitations; and information systems in other labor administration departments, as well as institutions outside the labor administration for potential data sharing. Based on assessment results, grantees should develop strategies to capitalize on good practices, address identified gaps and mitigate risks. USDOL and grantees should also assess political will to overcome challenges and take needed actions based on assessment results and, assuming government willingness, develop clear MOUs, outlining the roles and commitments of the donor, grantee and the government.

2. **Use more adaptive management approaches:** With grantee support, labor administrations should develop ECMS software in phases, taking into account the time required to address system design errors, incorporate new features to meet emerging needs, resolve technical bugs, train users, and overcome their reluctance to ECMS use. As part of this approach, grantees and labor administrations should pilot the system before expanding countrywide and/or developing all planned ECMS modules, recognizing the limits of how quickly technology can drive organizational development. Projects may consider drawing on the results of pre-implementation assessments to identify which procedures and/or in which geographic zones institutional readiness is the greatest and start there. Achieving early success, even on a limited scale, is more likely to foster sustained government buy-in than early failures.

    - USDOL should plan additional support (for overcoming system technical flaws, implementing change management strategies, and adding new features if needed) for ECMS development in Vietnam following the end of the current NIRF project. Depending on the status of progress at the end of the NIRF project, USDOL should consider providing support to scale the ECMS in Vietnam through a future project.

    - USDOL should monitor ECMS deployment in Paraguay post-pandemic and consider providing additional support (to address technical flaws, implement change management strategies and potentially add new features if needed) during the initial redeployment phase.

    - In the project extension phase, World Vision should provide support to deploy the ECMS in Honduras in phases (geographic and/or by system module), providing support to correct problems before attempting countrywide deployment.

3. **Address hardware, software, and software hosting solution requirements:** To promote usability, projects and/or labor administrations should allocate enough resources to ensure the ICT infrastructure available to users is adequate. This means ensuring that labor inspectors have

access to computer hardware (which may include mobile phones, tablets, laptops, and/or desktop computers in labor offices, depending on the context) and when possible, high-speed internet access. Proper attention should be paid to ECMS software hosting solutions (server processing speeds, memory and bandwidth, server maintenance).

4. **Outsource at least part of software maintenance to the software development company following deployment:** In addition to building the capacity of a Ministry's internal IT support and maintenance teams, projects and/or labor administrations should acquire software maintenance contracts after the software is deployed for at least two to three years (or longer, depending on in-house IT expertise availability and capacity). The contracts should include clear level-of-service agreements.[21]

5. **Design and implement comprehensive change management strategies:** These include clearly specifying ECMS use requirements in job descriptions and administrative orders, user training, involving labor inspectors and other users in "continuous improvement" processes to identify and correct system bugs and identify other needed improvements, creating user support systems, and developing communication activities aimed at fostering ECMS acceptance and adoption. Training should include basic IT literacy training (if needed) and system use training, and for decision-makers, training on using data for labor inspection system monitoring and strategic planning.[22]

    - Grantees in Honduras, Vietnam and Paraguay should help the Ministry to develop and implement a change management strategy that includes user consultations to define how ECMS software can be improved to align with their needs, identify system bugs, training, user support systems and targeted communication activities on ECMS benefits.

6. **Advocate for and assist with overcoming systemic issues affecting labor administration effectiveness:** To the extent that they have leverage, USDOL and grantee personnel should advocate for and support labor administration officials to address systemic issues affecting the efficacy of labor inspection in parallel with ECMS development. Systemic issues include the limited number of labor inspectors, their status and access to training as well as broader issues such as national leaders' commitment to enforcing labor laws and fighting corruption. Sources of leverage may include trade agreements, and USDOL, ILO and other international and national stakeholders' advocacy and technical cooperation activities that highlight countries' areas of noncompliance with international labor standards, including Convention 81 on labor inspection.

[21] The agreements should describe covered services and service levels, the metrics by which the services are measured (such as response times), the duties and responsibilities of each party (such as what software components are covered by whom, frequency and type of preventative maintenance, remote access to the system), the remedies or penalties for breach, and a protocol for adding and removing metrics. Project managers may need to consult with IT experts within their organization on the elaboration of the service contract.

[22] Variables to consider when evaluating training needs and budgets include the number of labor inspectors and labor offices, the users' baseline IT competencies, the complexity of the ECMS and the users' role as well as the training strategy (whether a training of trainers approach will be used, or end users will be trained directly by the project).

7. **Ensure software developers are guided by government and grantee labor inspection specialists:** Project labor inspection specialists and labor administration officials should allocate adequate time and human resources to accompany software developers during the "business processes" engineering phase of ECMS design and development. How much time and access to technical expertise is required will vary from country to country depending on the extent labor inspection processes and procedures have already been elaborated and standardized across the labor administration, including sub-regional offices, and whether the former account for the most recent labor law reforms.

8. **Orient ECMS data collection forms and reporting tools to facilitate measurement of labor inspection key performance indicators and other required reporting:** ECMS development should consider the labor administration's strategic plans and key performance indicators and adapt system database structures and reporting features so that, to the extent possible, the ECMS produces data to measure progress against indicators. In the absence of key performance indicators, projects should consider providing technical advisory services and training from labor inspection specialists on the development and use of key performance indicators.

9. **Capitalize on lessons learned from past ECMS interventions:** USDOL and grantees that currently provide support for ECMS development in many countries (ILO), or may do so in the future, should systematize and document good practices and lessons learned supporting ECMS development in practical formats, such as an ECMS toolkit, business cases, or implementation guidelines. Given the specialized and varied knowledge required in ECMS development, USDOL or the grantee should consider creating a multi-disciplinary team(s) that may provide support for future ECMS interventions.

ANNEXES

A. ECMS Country Fact Sheets

COLOMBIA:
ECMS Fact Sheet I
- System Overview -

System Title

Sistema de Información de Inspección, Vigilancia y Control (SISINFO)

ECMS Status

Active

Principal Institutional Owner

Ministry of Labor

Implementation Stage Reached

Full Deployment

Secondary Institutional Users

- Ministry of Health
- National Directorate of Taxes and Customs (DIAN)
- Network of Chambers of Commerce (CONFECAMARAS)
- National Planning Department, Ministry of Finance (DANE)

Components Currently Used

All modules, with regular updates

Geographic Extent of Deployment

- In all regions/offices (32 geographic departments and 4 special labor offices)
- The Ministry of Labor also has (municipal) labor inspectorates and, according to recent reports, approximately 100 have included cases in SISINFO

Number of Enterprises Registered

Approximately 52,400

Sector Focus

SISINFO includes over 400 templates to record inspection/labor violation information. Some templates are adapted for specific sectors/industries

Description of Main Components/Modules

- Labor Inspection Module
- Planning and Reporting
- Complaints Management
- Establishment Licensing
- Reports
- Inspection Follow-up and Tracking

COLOMBIA: ECMS Fact Sheet II

- Key Software Features and Gaps -

Functionality	Colombia	Comments
1. Stores data in centralized database accessible in real-time to all authorized users	✓	
2. Includes online/offline data collection capability	✗	The system is not designed for offline data collection.
3. Aggregates labor law violation data by geographic area or type of violation	✓	These types of reports can be produced by exporting and filtering data.
4. Tracks key performance indicators such as number of inspections carried out	✓	The team and supervisor can generate dashboard which tracks several KPI.
5. Integrates data visualization tools such as dashboards	✓	The dashboard included data visualization tools.
6. Forms and workflow reflect current labor administration procedural requirement	✓	SISINFO contains a comprehensive and robust workflow based on labor laws and regulations. It has more than 140 variables and 400 formats.
7. Registers worker complaints, industrial accidents	✓	Included in a labor inspection checklist.
8. Tracks the status labor violation cases through hearings and sanctioning stages	✓	SISINFO has a process to track labor cases. It is tracking more than 80,000 cases.
9. Sends alerts to inspectors when follow-up actions are required	✓	SISINFO has system alerts for each follow-up action.
10. Generates the inspection report as well as letters and notices used at different stages of the inspection process	✓	
11. Assigns inspection duties to individual and/or groups of inspectors	✓	
12. Role-based security features that restrict access to some kinds of data/ECMS module	✓	
13. Data modifications controlled or traced to users	✓	
14. Data sharing with other information systems	✓	SISINFO made interoperations with other systems as a service (SOAP / REST).
15. Advanced data analytics for predicting labor violations	✗	

COLOMBIA: ECMS Fact Sheet III

- Technical Characteristics and Overall Assessment -

Software Type

Proprietary: Oracle DB 12. (Licensed)
Opensource: PrimeFaces, Subversion, Tomcat, Sprint Roo, Java JEE, HTML5, CSS3

User Categories

- Labor Inspectors, Assistants and Technicians, and Coordinators
- Directors and Vice Ministry of Labor Relations
- Approximately 1,000 registered users

System Maintenance

Ministry of Labor has a support contract with the IT service provider to maintain the system

System Hosting

Hosted on Ministry infrastructure and network

ECMS Costs (Grantee Expenditures, self-reported)

All expenditures are for the period 2013-2017:

- Consultant contracts for software development: US$577,300
- Scanning and uploading cases that predated ECMS development: US$ 477,200
- Training, consultation meetings and communication activities: US$ 424,300
- TOTAL: US$ 1,479,400

Evaluation Team Assessment of ECMS (based on February 2021 status)

Framework Area	Evaluation Criteria	Rating
Technology	Extent software is fully developed, the number of types of features, level of adaption to ICT enabling environment	★★★★★
People	Extent the labor administration is effectively addressing the constraints affecting user ECMS adoption through training, support, other capacity building activities	★★★★[23]
Processes	Extent software has been adapted to the labor administration's legal framework and procedures and facilitates inspection systems workflow	★★★★★

[23] Inspectors in Bogotá were reported not to have fully adopted the system.

HONDURAS:
ECMS Fact Sheet I
- System Overview -

System Title

ECMS

ECMS Status

Under Development

Principal Institutional Owner

Ministry of Labor

Implementation Stage Reached

Software partially developed but not accepted by the Ministry of Labor

Secondary Institutional Users

- Ministry of Health
- Office of the Attorney General of the Republic: Institution receives the case when the file cannot close the second instance in the Office of the Attorney General of Labor

Geographic Extent of Deployment

- System not yet deployed
- Based on current plans, ECMS will be deployed country-wide

Components Currently Used

None

Number of Enterprises Registered

N/A

Sector Focus

N/A

Description of Main Components/Modules

The ECMS includes 27 modules; of these, MOL has validated 18 modules. Specifically, the modules cover:

- System Administration and Security
- Labor Inspection Planning and Reporting
- Establishment Registration
- Complaint Management
- Judicial and Conciliation Hearings Management
- Labor Violation Fine Management
- Occupational Health and Safety
- Occupational Medical Visits
- Statistical and Indicator Reports
- Inspection Follow-up and Tracking
- Trade Union Registration

HONDURAS: ECMS Fact Sheet II

- Key Software Features and Gaps -

Functionality	Honduras	Comments
1. Stores data in centralized database accessible in real-time to all authorized users	✓	
2. Includes online/offline data collection capability	✗	The system is not currently designed for offline data entry. When the internet connection drops, the ECMS finishes the current entry, which remains in memory and is synchronized when the connection returns. After the transaction is completed, it does not allow one to continue working offline.
3. Aggregates labor law violation data by geographic area or type of violation	✓	The dynamic reporting module allows users to sort information by geographic area.
4. Tracks key performance indicators such as number of inspections carried out	✓	
5. Integrates data visualization tools such as dashboards	✓	
6. Forms and workflow reflect current labor administration procedural requirement	Partial	The Ministry has withheld validation on some ECMS modules, pending modification. The IT contractor reported that it needed additional information to adapt the reports to Ministry requirements.
7. Registers worker complaints, industrial accidents	✗	The Ministry did not request a complaints registration module. Ministry personnel indicated there are no personnel to follow up on these complaints.
8. Tracks the status labor violation cases through hearings and sanctioning stages	Partial	Users can obtain information about the status of cases by extracting data from the dynamic reporting module and predefined reports.
9. Sends alerts to inspectors when follow-up actions are required	✓	
10. Generates the inspection report as well as letters and notices used at different stages of the inspection process	✓	
11. Assigns inspection duties to individual and/or groups of inspectors	Partial	In the first version of ECMS, administrators can manually assign cases to individual inspectors. The Minister has requested that the next version of ECMS integrate a feature that randomly assigns inspectors to cases.
12. Role-based security features that restrict access to some kinds of data/ECMS module	✓	The ECMS limits access by user roles. However, the grantee suggests a study is needed to better define how role-based restrictions should be defined.
13. Data modifications controlled or traced to users	✓	There is a transaction log to record what users did when they were logged into the system.
14. Data sharing with other information systems	✗	The grantee and the Ministry discussed data-sharing applications in the design phase but decided against implementation.
15. Advanced data analytics for predicting labor violations	✗	

HONDURAS: ECMS Fact Sheet III

- Technical Characteristics and Overall Assessment -

Software Type

Opensource, Microsoft SQL Server

User Categories

ECMS will be used for almost 470 users from the following categories:

- Labor inspectors
- Labor administrators
- Occupational physicians
- Workers and worker representatives
- Employers

System Maintenance

Ministry of Labor is composed of 7 persons who support daily operations and projects

System Hosting

Hosted on Ministry of Labor Network

ECMS Costs (Grantee Expenditures, self-reported)

- IT service provider contract for software development: US$ 135,000
- ECMS project manager/consultant: US$ 35,000
- Development of online training modules for labor inspectors: US$ 18,000
- ECMS modifications/upgrades and content development for training: US$ 65,000
- Computer equipment for labor inspectors: US$ 98,000
- Servers (2): US$ 20,000
- Meetings: US$ 8,000
- TOTAL: US$ 379,000

Evaluation Team Assessment of ECMS (based on March 2021 status)

Framework Area	Evaluation Criteria	Rating
Technology	Extent software is fully developed, the number of types of features, level of adaption to ICT enabling environment	★★[24]
People	Extent the labor administration is effectively addressing the constraints affecting user ECMS adoption through training, support, other capacity building activities	★
Processes	Extent software has been adapted to the labor administration's legal framework and procedures and facilitates inspection systems workflow	★★★

[24] The software design is advanced, but many modules have not yet been validated and none have been used in the field. There may be various technical glitches and other adjustments that will be required before the software meets the labor administration needs.

PARAGUAY:

ECMS Fact Sheet I

- System Overview -

System Title

ECMS or Sistema de Inspección del Trabajo (SIS)

ECMS Status

Inactive

Principal Institutional Owner

Ministry of Labor, Employment and Social Security

Implementation Stage Reached

Beta Version Completed
Partially Deployed and then Suspended due to Covid-19

Secondary Institutional Users

Ministry of Health

Components Currently Used

None

Geographic Extent of Deployment

Expected to be deployed in all 16 regions

Number of Enterprises Registered

N/A

Sector Focus

N/A

Description of Main Components/Modules

- Labor Inspection Planning and Reporting
- Complaints Management
- Establishment Licensing
- Reporting
- Occupational Health and Safety Risks
- Inspection Follow-up and Tracking

PARAGUAY: ECMS Fact Sheet II

- Key Software Features and Gaps -

Functionality	Paraguay	Comments
1. Stores data in centralized database accessible in real-time to all authorized users	✓	
2. Includes online/offline data collection capability	✓	
3. Aggregates labor law violation data by geographic area or type of violation	✓	
4. Tracks key performance indicators such as number of inspections carried out	✓	
5. Integrates data visualization tools such as dashboards	✓	
6. Forms and workflow reflect current labor administration procedural requirement	Partial	The first version was validated by the labor administration as meeting their procedural requirements. Later, following a change in Minister, the Minister requested modification to adapt to new requirements.
7. Registers worker complaints, industrial accidents	Partial	The first version of ECMS included a module on OSH and complaints management but revisions have been requested.
8. Tracks the status labor violation cases through hearings and sanctioning stages	✓	
9. Sends alerts to inspectors when follow-up actions are required	✓	
10. Generates the inspection report as well as letters and notices used at different stages of the inspection process	✓	
11. Assigns inspection duties to individual and/or groups of inspectors	✓	
12. Role-based security features that restrict access to some kinds of data/ECMS module	✓	
13. Data modifications controlled or traced to users	✓	
14. Data sharing with other information systems	✓	
15. Advanced data analytics for predicting labor violations	✗	

PARAGUAY: ECMS Fact Sheet III

- Technical Characteristics and Overall Assessment -

Software Type

Opensource language (PHP) with BD (Postgree)

User Categories

- Labor Inspectors (numbering approximately 23 in March 2021)
- Labor Administrators

System Maintenance

IT Department composed of 5 persons, who will support daily operations and oversee revisions in existing ECMS software

System Hosting

Hosted on Ministry of Labor infrastructure, network and hardware

ECMS Costs (Grantee Expenditures, self-reported)

US$ 97,924 Subcontract for ECMS, which included:

- Preparation of labor inspection procedures manual and a "Manual of Functions of the General Directorate of Labor Inspection and Supervision (DGIFT)"
- Design, development, and testing of ECMS software, including a mobile application, software administration and user manuals
- Training for software administrators
- User training
- Digitization of inspection records carried out from 2013 to the start of the software (approximately 6,900 records)

Evaluation Team Assessment of ECMS (based on March 2021 status)

Framework Area	Evaluation Criteria	Rating
Technology	Extent software is fully developed, the number of types of features, level of adaption to ICT enabling environment	★★[25]
People	Extent the labor administration is effectively addressing the constraints affecting user ECMS adoption through training, support, other capacity building activities	★
Processes	Extent software has been adapted to the labor administration's legal framework and procedures and facilitates inspection systems workflow	★

[25] The software design is relatively advanced, but many modules have not yet been fully validated or used in the field. There may be various technical glitches and other adjustments that will be required before the software meets the labor administration needs.

PERÚ:
ECMS Fact Sheet I
- System Overview -

System Title

Sistema de Informático de la Inspección de Trabajo (SIIT)

ECMS Status

Active

Principal Institutional Owner

National Superintendency of Labor Inspection (SUNAFIL)

Implementation Stage Reached

Full Deployment

Secondary Institutional Users

- Ministry of Labor and Employment Promotion
- Ministry of Health
- National Customs and Tax Administration (SUNAT)

Components Currently Used

All Modules

Geographic Extent of Deployment

In all regions/offices (26 geographic regions)

Number of Enterprises Registered

Approximately 17,000

Sector Focus

Includes forms for use in specific sectors and industries

Description of Main Components/Modules

- Labor Inspection Planning and Reporting
- Complaints Management
- Establishment Licensing
- Reporting
- Occupational Health and Safety Risks
- Inspection Follow-up and Tracking

In addition, SUNAFIL developed two complementary modules, not integrated into the SIIT:

- Electronic mailbox that allows registered enterprises to submit payroll and other information for remote inspection
- The System of Alerts and Monitoring (SAMO) which used ECMS and other data drawn from other government information systems for advanced analytics to help predict labor violations[26]

[26] See https://busquedas.elperuano.pe/normaslegales/aprueban-la-implementacion-del-sistema-de-alertas-y-monitor-resolucion-ministerial-n-291-2019-tr-1831812-1/

PERÚ: ECMS Fact Sheet II

- Key Software Features and Gaps -

Functionality	Perú	Comments
1. Stores data in centralized database accessible in real-time to all authorized users	✓	
2. Includes online/offline data collection capability	✓	
3. Aggregates labor law violation data by geographic area or type of violation	Partial	Reports are developed by extracting data from the SIIT and creating the report using Excel or a similar tool. They are not automatically or consistently generated and reviewed. Some regional offices generate their own reports.
4. Tracks key performance indicators such as number of inspections carried out	✓	The SIIT team can generate the dashboard indicators using ECMS data, but they are not dynamically generated.
5. Integrates data visualization tools such as dashboards	Partial	The SIIT dashboard includes data visualization tools, but they are currently being improved by SUNAFIL's IT Department.
6. Forms and workflow reflect current labor administration procedural requirement	Partial	SIIT contains standardized forms based on labor laws and regulations. It is composed of 80 tables and 13 views to analyze information. However, the IT Department has had to develop some separate applications for procedures not currently part of SIIT.
7. Registers worker complaints, industrial accidents	Partial	
8. Tracks the status labor violation cases through hearings and sanctioning stages	✓	The SIIT has forms to track the outcomes the progression of labor violation cases.
9. Sends alerts to inspectors when follow-up actions are required	✓	
10. Generates the inspection report as well as letters and notices used at different stages of the inspection process	Partial	SIIT generates a basic inspection report. Letters and notices are created outside the system.
11. Assigns inspection duties to individual and/or groups of inspectors	Partial	SIIT can be used to assign some duties to individual inspectors, but it neither fully automates the process nor is the feature available for all kinds of duties performed by inspectors.
12. Role-based security features that restrict access to some kinds of data/ECMS module	Partial	There are some parts of the system that are not effectively restricted based on assigned access rights.
13. Data modifications controlled or traced to users	✓	
14. Data sharing with other information systems	Partial	In 2017, the SIIT connected to the Electronic Payroll System (registry of company workers) within the module covering inspection orders. The SIIT also connected with the Work Accident System (registry of notifications of work accidents, fatal accidents, and occupational illness).
15. Advanced data analytics for predicting labor violations	✓	The SIIT developed SAMO in 2019. It uses information in the SIIT and other government databases to predict potential labor violations.

PERÚ: ECMS Fact Sheet III

- Technical Characteristics and Overall Assessment -

Software Type

Opensource language (Java) with Oracle database

User Categories

- Labor Inspectors (numbering 800)
- Labor Administrators

System Maintenance

SUNAFIL has a 5 person IT Department, composed to support daily operations and new projects

System Hosting

Hosted on Ministry of Labor network. SUNAFIL is acquiring his own datacenter.

ECMS Costs (expenditures reported in final evaluation report)

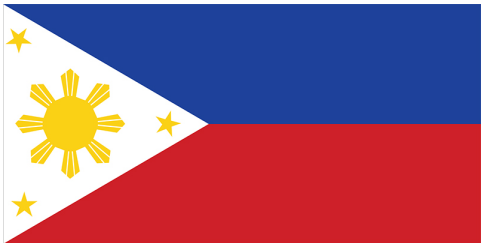
- Budget for preliminary assessment to define redevelopment needs: US$ 1,500
- Software development costs: US$ 64,600

SUNAFIL covered labor inspector training costs from its own budget (no cost information available)

Evaluation Team Assessment of ECMS (February/March 2021 status)

Framework Area	Evaluation Criteria	Rating
Technology	Extent software is fully developed, the number of types of features, level of adaption to ICT enabling environment	★★★
People	Extent the labor administration is effectively addressing the constraints affecting user ECMS adoption through training, support, other capacity building activities	★★★
Processes	Extent software has been adapted to the labor administration's legal framework and procedures and facilitates inspection systems workflow	★★★

PHILIPPINES:
ECMS Fact Sheet I
- System Overview -



System Title

Labor Inspection Management Information System (LI-MIS)

ECMS Status

Active

Principal Institutional Owner

Ministry of Labor

Implementation Stage Reached

Full Deployment

Secondary Institutional Users

- Bureau of Local Employment
- Bureau of Workers with Special Concerns
- Bureau of Labor Relations
- National Conciliation Mediation Board
- Philippines Overseas Employment Administration
- Tripartite Committees
- Congress

Number of Enterprises Registered

196,670

Geographic Extent of Deployment

In all regions/offices

Sector Focus

Includes one generic inspection checklist and specific checklists for maritime and fishing vessels, buses, and construction sites

Description of Main Components/Modules

- Labor Inspection Module with checklists for general labor standards, occupational safety and health, and illegal contracting and subcontracting
- Auto-notification system for serious issues, such as child labor and refusing labor inspector access to the workplace premises

In addition, BWC developed two complementary modules, not integrated into the LI-MIS:

- Establishment Report System (ERS), deployed in July 2020, for online submission of reports to notify DOLE of the implementation of flexible work or alternative work arrangements, temporary and permanent closure, and the retrenchment of workers
- Joint Monitoring System (JMS), developed in early 2020, to monitor compliance with Covid-19 safety protocols. As of late 2020, almost 7,000 establishments were registered online and around 3,200 reports had been received.

PHILIPPINES: ECMS Fact Sheet II

- Key Software Features and Gaps -

Functionality	Philippines	Comments
1. Stores data in centralized database accessible in real-time to all authorized users	✓	
2. Includes online/offline data collection capability	✓	
3. Aggregates labor law violation data by geographic area or type of violation	Partial	These types of reports can be produced by exporting and filtering data but are not automatically generated reports.
4. Tracks key performance indicators such as number of inspections carried out	✓	The team received a screen shot of the dashboard which tracks several KPIs. The dashboard is not generated in real time, however.
5. Integrates data visualization tools such as dashboards	✓	The dashboard included data visualization tools such as a map and graphs.
6. Forms and workflow reflect current labor administration procedural requirement	✓	LI-MIS contains a comprehensive electronic checklist which is based on labor laws and regulations.
7. Registers worker complaints, industrial accidents	✓	Included in a labor inspection checklist but not as a separate module.
8. Tracks the status labor violation cases through hearings and sanctioning stages	Partial	This was highlighted as a key gap in the system. LI-MIS labor inspection module has fields to enter information about how cases were followed up and if restitution was paid but they are not regularly updated, which diminishes its use for case management.
9. Sends alerts to inspectors when follow-up actions are required	Partial	The system has an automatic alert system if an inspector indicates child labor or refusal to entry, but not to follow-up on case management steps.
10. Generates the inspection report as well as letters and notices used at different stages of the inspection process	Partial	LI-MIS generates the inspection report but no other letters and notices. Laws require a paper inspection report to be left with the enterprise.
11. Assigns inspection duties to individual and/or groups of inspectors	✓	
12. Role-based security features that restrict access to some kinds of data/ECMS module	✓	
13. Data modifications controlled or traced to users	✓	
14. Data sharing with other information systems	✗	
15. Advanced data analytics for predicting labor violations	✗	

PHILIPPINES: ECMS Fact Sheet III

- Technical Characteristics and Overall Assessment -

Software Type

Opensource

User Categories

LI-MIS is reported to be utilized by over 1,000 users nationwide, including Labor Inspectors, Technical Services Support Division Chiefs, BWC Sub-national Focal Persons, Field Office and Regional Office Directors and Key Senior Officials of the Department of Labor and Employment

System Maintenance

System is maintained by a 5-person team within the BWC.
BWC does not currently have a support contract with the IT service provider.

System Hosting

Hosted on DOLE's internal network

Hardware Used for Data Entry

Labor inspectors are issued tablets with 4G internet connections

ECMS Costs (Grantee Expenditures, self-reported)

IT service provider contract for software development and system documentation: US$ 124,850

According to ILO, although there was no contract specifying the limits of these services, the amount stated above included management services, security testing and troubleshooting, software upgrades, security patches and bug fixes. The IT contractor also provided training and mentoring to DOLE MIS staff and the MIS focal points from the regions, for every module delivered. Payments were made after delivery of each module, the completion of training and mentoring, and the submission of a progress report.

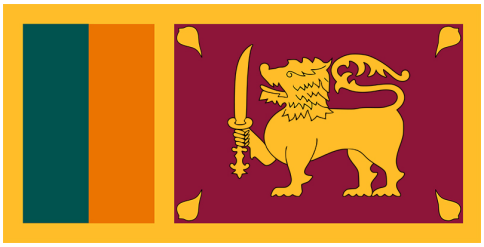
Evaluation Team Assessment of ECMS (February 2021 status)

Framework Area	Evaluation Criteria	Rating
Technology	Extent software is fully developed, the number of types of features, level of adaption to ICT enabling environment	★★★
People	Extent the labor administration is effectively addressing the constraints affecting user ECMS adoption through training, support, other capacity building activities	★★★★★
Processes	Extent software has been adapted to the labor administration's legal framework and procedures and facilitates inspection systems workflow	★★★

SRI LANKA:

ECMS Fact Sheet I

- System Overview -



System Title

Labor Information System Application (LISA)

ECMS Status

Still accessible on the DOL network, but the DOL reported that LISA was only used in a few sub-offices as of January/February 2021

Principal Institutional Owner

Department of Labor (DOL), Ministry of Labor

Implementation Stage Reached

Full Deployment

Secondary Institutional Users

N/A

Components Currently Used

- Inspection module
- Complaints & Disputes Management

Use was reported as limited, even for these modules. Users reported having reverted to manual systems and/or Microsoft Office tools like Excel.

Geographic Extent of Deployment

11 zonal offices, 40 district offices, 17 sub-offices and 10 engineering offices which employ approximately 300 labor officers.

Number of Enterprises Registered

9,000 of 30,000 factories

Sector Focus

N/A

Description of Main Components/Modules

- Inspections and Follow-up Inspections
- Complaints and Disputes Management
- Legal/Prosecution Management
- Work Planning/Scheduling
- Digital Documentation Library
- Statistical Module
- OSH Module
- Child Labor Module
- Dedicated Windows/Android tablet application for field use (no internet connectivity required)
- Management Oversight Module

SRI LANKA: ECMS Fact Sheet II

- Key Software Features and Gaps -

Functionality	Sri Lanka	Comments
1. Stores data in centralized database accessible in real-time to all authorized users	✓	
2. Includes online/offline data collection capability	✓	
3. Aggregates labor law violation data by geographic area or type of violation	Yes, but not currently functional	The DOL reported that the statistical module was not functioning and to get data out of the system, the entire dataset needed to be extracted and then filtered in Excel.
4. Tracks key performance indicators such as number of inspections carried out	Yes, but not currently functional	The DOL reported the statistical module was not functioning and to get data out of the system, the entire dataset needed to be extracted and then filtered in Excel.
5. Integrates data visualization tools such as dashboards	Yes, but not currently functional	The DOL reported there was a dashboard feature, but it used only "dummy" data.
6. Forms and workflow reflect current labor administration procedural requirement	✗	When LISA was first developed, it reflected procedural requirements but has not been updated to match current regulations and checklists. DOL reported that their inability to modify forms was an important challenge of using the system.
7. Registers worker complaints, industrial accidents	Yes, partially functional	LISA has a dedicated module for complaints management and OSH, but the DOL reported that it is only partially in use. Users reported specific challenges with the case transfer function.
8. Tracks the status labor violation cases through hearings and sanctioning stages	Yes, partially functional	LISA has a dedicated module for complaints management that includes tracking features, but the DOL reported that it is only partially in use; most offices have reverted to manual systems.
9. Sends alerts to inspectors when follow-up actions are required	Yes, partially functional	LISA includes tracking and scheduling features with alerts, but the DOL reported that it is only partially in use; most offices have reverted to manual systems.
10. Generates the inspection report as well as letters and notices used at different stages of the inspection process	Yes, partially functional	DOL officials reported that the letters are part in English and part in Sinhalese, which they found problematic.
11. Assigns inspection duties to individual and/or groups of inspectors	Yes, partially functional	LISA includes tracking and scheduling features with alerts, but the DOL reported that it is only partially in use; most offices have reverted to manual systems.
12. Role-based security features that restrict access to some kinds of data/ECMS module	✓	Labor officials reported it was not possible to remove users from the system.
13. Data modifications controlled or traced to users	✓	
14. Data sharing with other information systems	✗	
15. Advanced data analytics for predicting labor violations	✗	

SRI LANKA: ECMS Fact Sheet III

- Technical Characteristics and Overall Assessment -

Software Type

Opensource, Microsoft SQL server

User Categories

- Labor Administration Officials
- Labor Inspectors
- OSH Engineers
- Child Labor Officers
- Field Office and Regional Office Directors
- Senior Officials of the Department of Labor
- Prosecution Unit Personnel
- Industrial Relations Unit Personnel
- System Administrator(s)
- Clerical Personnel

When fully deployed, LISA was operating in 82 locations staffed by 300 labor officers.

System Maintenance

In 2016, the Department of Labor established a 5-member team for the management and day-to-day operations of LISA: 1 Labor Officer and 4 IT graduates. In February 2021, evaluation stakeholders reported the team was 3-4 members. BWC does not currently have a support contract with the IT service provider.

System Hosting

Hosted on Ministry network. DOL described problems with server and bandwidth capacity, resulting in slow response time, inadequate back-up systems, and back-up data was not encrypted.

Hardware Used for Data Entry

Labor inspectors were issued with tablets but refused to use them for data entry.
OSH engineers also received tablets, which they used.

Approximate ECMS Implementation Costs

Software development, training, and launch: US$ 282,554
Government reported contributing over US$ 300,000 for tablets, other hardware and Internet connections

Evaluation Team Assessment of ECMS (based on February 2021 status)

Framework Area	Evaluation Criteria	Rating
Technology	Extent software is fully developed, the number of types of features, level of adaption to ICT enabling environment	★[27]
People	Extent the labor administration is effectively addressing the constraints affecting user ECMS adoption through training, support, other capacity building activities	★
Processes	Extent software has been adapted to the labor administration's legal framework and procedures and facilitates inspection systems workflow	★

[27] The software design is relatively advanced but is still in the early development stages.

VIETNAM:
ECMS Fact Sheet I
- System Overview -

System Title

Not yet named. Currently called "ECMS"

ECMS Status

Not Operational

Principal Institutional Owner

Ministry of Labor, Invalids and Social Affairs (MOLISA)

Implementation Stage Reached

- Software design completed
- Software development still in progress
- User training and deployment not yet started

Secondary Institutional Users

N/A

Components Currently Used

First module was in test phase as of February 2021

Geographic Extent of Deployment

Not yet deployed.
Will be piloted in three provinces: Hanoi, Dong Nai, and Ho Chi Minh City

Number of Enterprises Registered

N/A

Sector Focus

N/A

Description of Main Components/Modules

- System Administration Module
- Enterprise Management Module
- Inspection Management Module
- Labor Inspection Campaign Module
- Violations and Sanctions Management Module
- Data Analytics and Reporting Module

VIETNAM: ECMS Fact Sheet II

- Key Software Features and Gaps -

Functionality	Vietnam (planned features)	Comments
1. Stores data in centralized database accessible in real-time to all authorized users	✓	
2. Includes online/offline data collection capability	✓	
3. Aggregates labor law violation data by geographic area or type of violation	✓	
4. Tracks key performance indicators such as number of inspections carried out	✓	
5. Integrates data visualization tools such as dashboards	✓	
6. Forms and workflow reflect current labor administration procedural requirement	✓	
7. Registers worker complaints, industrial accidents	✓	
8. Tracks the status labor violation cases through hearings and sanctioning stages	✓	
9. Sends alerts to inspectors when follow-up actions are required	✓	
10. Generates the inspection report as well as letters and notices used at different stages of the inspection process	✓	
11. Assigns inspection duties to individual and/or groups of inspectors	✓	
12. Role-based security features that restrict access to some kinds of data/ECMS module	✓	
13. Data modifications controlled or traced to users	✓	
14. Data sharing with other information systems	✗	
15. Advanced data analytics for predicting labor violations	✗	

VIETNAM: ECMS Fact Sheet III

- Technical Characteristics and Overall Assessment -

Software Type

Opensource, Microsoft SQL server

Planned User Categories

- Labor Inspectors
- Provincial Office Directors
- Senior Labor Administration Officials

Planned System Maintenance

System will be maintained by MOLISA IT department known as LASIK or the "IT Center"
Two staff will be assigned to the project: a Software and an IT Engineer

Planned System Hosting

To be hosted on MOLISA Network

Hardware Used for Data Entry

To Be Determined

ECMS Costs (Grantee Expenditures, self-reported)

IT service provider contract: US$ 138,092

Includes software development and testing, user training, support during pilot phase, development of an ECMS scale-up plan and six months software warranty

Evaluation Team Assessment of ECMS (based on February 2021 status)

Framework Area	Evaluation Criteria	Rating
Technology	Extent software is fully developed, the number of types of features, level of adaption to ICT enabling environment	★
People	Extent the labor administration is effectively addressing the constraints affecting user ECMS adoption through training, support, other capacity building activities	★
Processes	Extent software has been adapted to the labor administration's legal framework and procedures and facilitates inspection systems workflow	★

B. Evaluation Terms of Reference

TERMS OF REFERENCE

Thematic Performance Evaluation

Electronic Case Management System Components

of

Seven ILAB-funded Projects

Financing Agency:	U.S. Department of Labor
Grantee Organizations:	ILO, POA, World Vision, CHS/PLADES
Dates of Project Implementation:	Various
Type of Evaluation:	Thematic Performance Evaluation
Evaluation Field Work Dates:	January 4 – February 12, 2021
Evaluation Order Number:	1605C2-20-F-00026

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INTRODUCTION

The United States Department of Labor (USDOL), through its Bureau for International Labor Affairs (ILAB) Office of Trade and Labor Affairs (OTLA), has contracted with Sistemas, Familia y Sociedad (SFS) to conduct this thematic performance evaluation of the electronic case management system components of 7 ILAB-funded projects, including 5 OTLA-funded projects (Colombia, Perú, Philippines, Sri Lanka, Vietnam) and 2 OCFT-funded projects (Honduras, Paraguay). A thematic evaluation is a review of a specific aspect of quality standards, focusing on an experience, practice or resource that cuts across programs, institutions or sectors. Thus, this assessment of the effectiveness, functionality and sustainability of the ECMS implemented in these 7 ILAB-funded projects falls within the definition of a thematic evaluation. This Terms of Reference (TOR) document serves as the framework and guidelines for the evaluation. It is organized into the following sections:

1. Background
2. Purpose, Scope, and Audience
3. Evaluation Questions
4. Evaluation Design and Methodology
5. Evaluation Team, Management, and Support
6. Roles and Responsibilities
7. Evaluation Milestones and Timeline
8. Deliverables and Deliverable Schedule
9. Evaluation Report

I. BACKGROUND

"Case management" is the effort by courts and other judicial or enforcement institutions to handle cases in such a manner that they are resolved fairly and as promptly and economically as is reasonable in the circumstances of the case. It consists of four components: administrative management; logistics management; procedural management; and content management.[28]

Shifting from a paper-based to an electronic case management system (ECMS) for Labor Administration cases facilitates access to information and retrieval of data, reduces backlogs, and enables labor officers to more easily monitor and follow up on cases. Yet countries often lack the resources to develop these systems and to train labor inspectors on its use. Thus, ECMS is a commonly implemented component in ILAB-funded projects; for some, this was part of the original project design and in other cases this arose from needs that became apparent during the project's implementation. The following 7 ILAB-funded projects have implemented ECMS and were chosen for inclusion in this thematic evaluation.

[28] OTLA Request for Quote 1605C2-20-Q-00017 Thematic Performance Evaluation

Country	Name of Project	Grantee	Project Status	Long-term Objective to which the ECMS component contributed
Colombia	Promoting Compliance with International Labor Standards in Colombia	International Labor Organization (ILO)	Closed (2011–2017)	Strengthen the institutional capacity of the Ministry of Labor, especially the labor inspectorate, to effectively enforce Colombian labor laws and guarantee fundamental rights at work as they relate to freedom of association, collective bargaining and conflict resolution in accordance with international labor standards
Honduras	Futuros Brillantes – Reducing Child Labor and Improving Labor Rights in Honduras	World Vision	Closed (2014-Dec 2020)	Labor rights enforcement agencies improve their services to resolve complaints and labor rights issues
Paraguay	Paraguay Okakuaa ("Paraguay Progresses")	Partners of the Americas (POA)	Active (2015-May 2021)	Improved application of labor laws that protect children and adolescents in CL through the development of specific products (manuals, curricula, procedures, studies) and software in support of the same
Peru	Building the Capacity of the Peruvian Labor Inspectorate (PLIP)	Capital Humano y Social (CHS)/ Programa Laboral de Desarollo (PLADES)	Closed (2014–2019)	Strengthen the National Superintendence of Labor Inspection's (SUNAFIL's) capacity to transition to a newly legislated centralized system
Philippines	Building the Capacity of the Philippines Labor Inspectorate	ILO	Closed (2014–2019)	Effectiveness of labor inspection conducted by labor law compliance officers (LLCOs) is improved
Sri Lanka	Promoting Fundamental Principles and Rights at Work in Sri Lanka – Phase III	ILO	Closed (2009–2016)	Strengthen labor administration for its effective intervention to promote sound labor-management relations, prevent and solve disputes and ensure compliance with labor regulations
Vietnam	Improving Labor Laws and Labor Administration within the New Industrial Relations Framework (NIRF)	ILO	Active (2016–2022)	Strengthen the labor inspection system at the national and local/provincial levels

II. PURPOSE, SCOPE AND AUDIENCE

The overall objective of this thematic performance evaluation will be to assess the achievements, challenges and sustainability to date of the ECMS components in seven ILAB-funded projects, as well to identify those factors that contribute to or hamper institutional delivery capacity. The evaluation will assess the effectiveness of projects' ECMS implementation strategies, as well as their strengths and weaknesses. The evaluation will identify areas in need of improvement as well as those components that may be less likely to become sustainable after end of life of project (LOP).

The primary audience of the evaluation includes ILAB and the broader international community working toward implementing ECMS for the improvement of labor rights in accordance with international labor standards. The findings of the evaluation will advance ILAB's institutional learning related to ECMS and provide evidence to inform decision-making, understanding of lessons learned, and recommendations for future projects. The evaluation team will assess the project through the perspectives of a diverse range of stakeholders who participated in and were intended to benefit from this type of project intervention. The evaluation findings, conclusions, lessons learned and recommendations will serve to inform ILAB, ILO and other stakeholders and ECMS users in the design and implementation of ongoing and subsequent ECMS projects.

The scope of the evaluation includes the seven ILAB-funded projects in Colombia, Honduras, Paraguay, Perú, Philippines, Sri Lanka, and Vietnam. Evidence for the evaluation will include both quantitative and qualitative data. Data collected will be predominately qualitative, drawing on the perceptions of a range of identified stakeholders regarding the design, effectiveness, functionality and sustainability of ECMS interventions in ILAB-funded projects and their impact on labor administration systems. The evaluation team will also draw findings from quantitative data from the projects' monitoring and evaluation (M&E) data system as well as primary data gathered through user surveys and direct observation checklists.

III. EVALUATION QUESTIONS

Following discussions with ILAB and in response to the Request for Quotes (RFQ), the evaluation team developed key questions for this evaluation in accordance with the Organization for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) criteria: Relevance/Validity of ECMS design, Coherence, Effectiveness, Efficiency, Impact, and Sustainability.[29] Additionally, the evaluation will assess some comparable ECMS performance metrics for all projects, along with features of the ECMS rollout process.

The following core evaluation questions will serve as the overall guiding framework for the evaluation, in accordance with the RFP:

1a. How does the organizational capacity of project implementers, target institutions, and implementing partners limit or facilitate the effectiveness, functionality and sustainability of project-based ECMS interventions?

[29] Note that the OECD/DAC criteria have been revised as of January 2020: https://www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf

1b. Are project designs adequately accounting for differences in capacity?
2a. What effect(s) have the projects' ECMS interventions had (positive, negative, or neutral) on labor inspectorate operation (from case inception to final disposition)? 2b. What were the factors that limited or facilitated ECMS results?
3a. What level of ECMS functionality has been achieved/maintained among the ECMS project components that are still active? 3b. Which of the active ECMS components show the greatest likelihood of being sustained after external support has ended, and why? 3c. What adjustments could be made to enhance the ECMS functionality or sustainability within the active projects?
4a. What level of ECMS functionality has been achieved/maintained since the inactive projects have closed? 4b. Which of the closed ECMS components/projects exhibit the strongest sustainability and functionality post-hoc? 4c. What were the factors that limited or facilitated ECMS sustainability and functionality? 4d. What adjustments should be made for future ECMS projects or project-based interventions in order to increase the likelihood of sustainability and achieve optimal functionality?

Answering these ten evaluation questions stated above will require the evaluation team to collect extensive information on the diverse features of each country ECMS. The following issues have been identified as relevant features to be review in-depth in each ECMS/country. These issues have been reflected in the evaluation matrix included as Appendix A of this document.

A. Relevance/Validity of ECMS Project Design:

Key Issues
Is the ECMS component relevant to the cultural, economic, and political context of each host country?
Is the ECMS component suited to the priorities and policies of the host country?
Does the ECMS design respond to the needs of both labor administration decision makers and regular users (e.g. labor inspectors, judges)?
Were relevant stakeholders (decision makers, regular users) involved in the design of the ECMS? and later, in the implementation process?
Were relevant stakeholders (decision makers, regular users) involved in the pilot implementation of the ECMS?
Do authorities in the hosting institution support the development and further expansion of the ECMS?
Which are the main design-related gaps that limit the ECMS' delivery capacity?

B. Coherence:

Key Issues
Is the ECMS aligned with other institutional initiatives to improve labor law enforcement?
Is the ECMS linked to the wider information and communication technology (ICT) architecture of the institution?
Is labor inspection a priority for the agency hosting the ECMS?
Are labor inspectors availed other necessary resources to carry out their duties in an efficient manner? (e.g. training, technical support, transport to carry out inspection activities, etc.)

C. Effectiveness:

ECMS effectiveness will be assessed in the following four areas: administrative management, logistics management, procedural management and content management. Based on the features highlighted below and the resulting level of sophistication of each system/pilot country, ECMS functionality will be rated according to three tiers, following the criteria set in Rooze, E.J., 2010, p.5:[30]

- Basic
- Medium
- Advanced

i. Administrative Management

Key Features
Is there a centralized database where information is stored in one central repository that is safe, secure, and searchable?
Does the ECMS allow track the status of cases throughout the administrative process, including parties' ulterior compliance with labor inspection or court decisions?
Does the ECMS support multi-user access to information in real-time, according to the level of authority of the stakeholders?
Are records available for remote access by all relevant stakeholders -labor inspectors (LI), LI supervisors, judges, court clerks, etc. at all time?
Does the ECMS facilitate information sharing and encourage collaboration among stakeholders, speeding up case progress?
Does the ECMS possess role-based capabilities? (e.g. does the platform have built-in rules for each role -administrator, LI supervisor, labor inspector, etc.- dictating what the person can see and do with the recorded information)

ii. Logistics Management

Key Features
Does the ECMS take in account the flow of information among relevant stakeholders and the

[30] ROOZE, Erwin J., Differentiated Use of Electronic Case Management Systems, in: International Journal for Court Administration, November 2010; ISSN 2156-7964. Information on the criteria used to rate ECMS' functionality as "basic", "medium" or "advanced", following the sophistication of its administrative, logistic, procedural and content management, are described in this publication.

sequence of activities and events from the start of a labor inspection case to the final decision on the same?
Does the ECMS include good milestone planning and capacity allocation features?
Does the ECMS include real-time tracking and tracing features?
Do data entry forms, case records and report production take in account the steps to be performed by different parties?
Does the ECMS incorporate case alerts regarding the legal timeframe to perform remaining actions?
In those countries where investigative and sanctioning functions are exercised by different bodies (e.g. labor inspection and labor court), does the ECMS reflect the entirety of the labor administration process?

iii. Procedural Management

Key Features
Does the ECMS take in account/reflect the procedural requirements of the country's labor administration? (e.g. jurisdiction, legal representation of parties, prescribed timeframe for action -submission, appeals, electronic signatures, fees, etc.).[31]
Does the ECMS have built-in procedural checkpoints to ensure compliance with formal requirements?
Are data entry routines and forms adapted to the needs of the different stakeholders involved in the system? (labor inspectors, supervisors, judges, clerks)
Milestone signaling: Does the ECMS remind users about tracking requirements, reporting deadlines and other legal obligations?
Is the quality of the data entered verified/verifiable by supervisors? Do supervisors carry out random verification of the completeness and procedural compliance of casefiles?
Does the ECMS perform automated administrative activities?

iv. Content Management

Key Features
Does the ECMS allow for/ support the creation of tracks for specific case flows, standardization of text blocks or automatization of text?
Does the ECMS offer workflow and scheduling capabilities customized to the labor administration process (e.g. pre-set answers in input fields, standardization of data collection to best practices, etc.)?
Does the ECMS allow for a differentiated case management?
Does the ECMS do inspector case assignment by region, expertise, existing case load and other risk based investigative functions. For instance risk based inspection targeting.
Is archiving and recording based on a digital repository?
Case-linking tools/capabilities: Does the ECMS provide an artificial intelligence case-linking feature? (e.g. is the ECMS able to automatically flag links between cases based on preset criteria?) Alternatively, does the ECMS allow to do manual search with keywords? (e.g. person's or employer's name, incident category, repeated complaints and hazards, location, etc.) Is the user

[31] This aspect will vary from one country to another, following differences in procedures and authority: E.g., while in some countries labor justice (sanctioning) is administered by Courts, separate from the investigative bodies/ labor inspection, in other countries, the labor inspection specialized agency (often placed under the MOL) has authority to impose sanctions.

able to filter through similar cases?
Does the ECMS contain built-in data analysis tools that allow users to track and display metrics on caseload, so to identify trends and make informed decisions?
Does the ECMS allow create such metrics (e.g. dashboards, charts, graphs, etc.) in real-time, without needing to import files or switch between screens?
Are the type of reports/ information generated by the ECMS consistent with the needs of the Labor Courts and other users?
Transparency: What kind of information can be easily accessed by external users (plaintiffs, workers, employers, other interested parties)

D. Efficiency:

Key Features
Was the ECMS built from scratch or was it based on/ incorporated an existent ICT system?
What is the degree of **accessibility** offered by the ECMS? Is it a web-based system, accessible from any location or is it based in a separate network only accessible from a specific server? Can users easily introduce and access data from anywhere as long there is an internet connection?
Are Labor Administration regional offices connected to the central database in real-time? If not, what means are used to input data from regional offices into the central database? How often does this happen?
Has migration of information from manual to digital format, been completed? What is the ratio of cases that continue being handled through manual systems/ separate spread sheets/ forms?
Configurability: Is the ECMS flexible enough to incorporate additional, customized functions, according to evolving institutional needs?
Scalability: Can the ECMS expand according to institutional needs? Can it be easily modified to meet the needs of new geographic areas, users or processes?
Security Standards: Does the ECMS offer world-class security standards?
Are the platform and existent hardware performant to users' needs or do they start to seem obsolete?
Is hardware replaced as needed when it becomes non performant?
What are the main limitations of the software currently being employed?
Is the ECMS **storage capacity** adequate to the institutional needs/ system's development foreseen for the next 5 years?
Is the ECMS **processing speed** capacity adequate to regular users' needs?
Does the ECMS offer adequate **connectivity with other national information systems**? Does it allow for employers' administrative, economic to be easily retrieved/ consulted by users? Does it allow to display relevant labor law information for users' review?[32]
Is the ECMS **user-friendly**? Are the data-entry outlay and standard contents adapted to the needs of the system primary users? Which improvement could be made to make the system more user-friendly/ adapted to their needs?
Coverage: Does the ECMS cover the entirety of regions/ provinces in the country where labor inspection/ labor court activities are performed? What is the ratio of ECMS coverage in the country?
If not, what are the main limitations that impede national coverage?
What is the number of workstations (at national/ regional level)? Is the number of workstations sufficient for labor administration needs?

[32] E.g. Online access to complementary resources, such as a library on local labor regulations and international standards.

What kind of date entry/ intake hardware is used by the system? (PC, laptops, tablets, smartphones). Does the system need to scan documents to digitalize information?
Were there any relevant updates of the ECMS during the past two years? Which?
Technical Support: How many staff has been trained to administer the system, ensure day-to-day technical support/ troubleshooting, or provide maintenance to the same?
Is the hosting institution (internal) troubleshooting capacity sufficient for primary users' needs?
Are the resources invested in ECMS administration and maintenance sufficient to ensure its adequate functioning?
Are maintenance and technical support services outsourced? What are the features and quality of the technical support provided by contractors? What is the average response time? Is response available 24/7 or only during business hours?

E. Impact:

Key Issues
Which are the main improvements in labor administration to which the ECMS has contributed?
Has the ECMS helped improve the compliance and enforcement capacity of labor administration? How?
Has the ECMS contributed to improve compliance behavior by employers? How?
Which are the critical challenges faced by ECMS that may affect country's labor administration in the future, if any? What are the main driving factors for these challenges?

F. Sustainability:

Sustainability will be assessed based on the sustainability success factors outlined in the OTLA Sustainability Guide, as follows:

Key Issues
Which are the main risks in terms of sustainability of the ECMS?
Is there a clear sustainability strategy or plan in place that addresses the ECMS component?
Does the sustainability plan address relevant success factors for the ECMS such as: Ownership and commitment, replacement of resources, development/ maintenance of institutional capacities (human resources, equipment, and training), integration with existing structures and systems, institutional linkages and duration of the disengagement process.
Is there evidence that the sustainability strategy/ plan is being effectively applied?
Which institutional structures and regulations support the operation of the ECMS?
Was the disengagement process long enough to ensure an adequate transfer of responsibility to key stakeholders for the independent operation of the ECMS by end of the project?
Are there strategies in place to build/maintain the management and technical capacity required for ECMS sustainability?
Are ECMS implementation and sustainability easily affected by turnover of staff?
What critical external or internal, institutional linkages support the sustainability of the ECMS?
From interviews with authorities, administrators, labor inspectors and other staff: Do key stakeholders show ownership of the ECMS and willingness to improve its use?
How may the willingness and interest of relevant stakeholders affect, in a positive or negative way, the sustainability of the ECMS? (e.g. stakeholders' analysis, in terms of power and interest)
Which ECMS outcomes or outputs in closed projects remain sustainable? What factors have contributed to this?

For active projects, what steps can be taken to enhance ECMS sustainability?

G. Performance Metrics:

Key Features
What are the Key Performance Indicators of the institution hosting the ECMS (Labor Inspectorate, Labor Court, other)? How does the ECMS contribute to the same?
What has been the labor inspection/ labor court's caseload per year during the past 5 years? Where possible, disaggregate by type of cases/ topics/ labor administration level (inspectorate, court)
What is the workload (ratio of cases) per inspector/judge?
What is the average productivity of ECMS users (number of cases with complete information, ratio of cases where a decision is reached, in the corresponding authority level, in the following 6 months/one year of being recorded under the same)?
Which are the systems main bottlenecks?
What is the backlog of cases that is not included in the ECMS, if any?
Was a date cutoff threshold established for uploading historic inspection data into the ECMS in order to grandfather old cases or only accept new ones?
What is the ratio of expected primary users (e.g. labor inspectors, supervisors, judges, etc.) that have been trained to use the system?
What is the ratio of expected primary users (e.g. labor inspectors, supervisor, judges, etc.) that effectively use the system on a regular basis?
What is the ratio of labor inspectors that are not computer literate?
How often do primary users receive a refresher training?
What kind of reports is the ECMS able to generate?
Can the ECMS automatically generate the ILO convention 81annual inspection report?
Which kind of reports are used more frequently by the institution?
How is ECMS-generated data used for institutional planning and decision-making?

H. Features of the ECMS Rollout Process:

Key Features
Did the project develop a study to prepare the design of the ECMS? Which where the main features highlighted in the same?
Was the design of the ECMS outsourced or was it carried out by the agency hosting the same? (MoL, DoL, etc.)
Which were the main challenges in implementing the ECMS?
Which stakeholders favored or opposed the implementation of the ECMS?
Was a design readiness plan established prior to implementation?
Was there a pilot implementation of the system? What were the main characteristics, scope, and outcome of the pilot implementation? How many regional offices were included in the pilot implementation of the ECMS?
How many primary ECMS users were trained during the pilot implementation?
Which were the main characteristics and outcome of the national rollout?
Were all primary users trained by the implementing firm or was a training-of-trainers scheme applied for the national rollout?

IV. EVALUATION DESIGN AND METHODOLOGY

An evaluation team composed by a Lead Evaluator (LE) and an Information and Communications Technology (ICT)/ ECMS Expert will be responsible for this evaluation. The evaluation team will address the evaluation questions using multiple sources of evidence, combining primary qualitative data with secondary quantitative data. This includes:

- A document review (both project documents and secondary material)
- Projects' M&E data and past evaluations (if applicable)
- Online/telephone interviews with stakeholders
- Online surveys
- Direct observation of ECMS through remote means

The evaluation is taking place during the COVID-19 pandemic. The evaluation team has adapted its data collection methods to be entirely remote, in keeping with current travel and meeting restrictions. Below please find a description of these methods.

4.1 Document Review

Data will be drawn from project narrative and financial progress reports, project-commissioned studies, and other written deliverables such as ECMS specifications, user manuals, training documents, and related contracts. Evaluation findings may also draw upon secondary research. The team will rigorously document the source of findings drawn from primary and secondary research.

4.2 Key Informant and Group Interviews

The evaluators will conduct semi-structured key informant interviews (KII) or focus group discussions (FGD) with a cross section of key stakeholder groups, including:

- Grantee personnel
  - Technical Specialists (ex. ILO/ILAB Admin, Decent Work [DW] team)
  - Grantee project managers (COP, CTA, other relevant program managers)

- Government counterpart personnel
  - Ministry of Labor decision makers (past and present, if possible)
  - Labor Inspectorate senior managers (past and present, if possible)
  - ECMS Technical and Support team (if applicable)
  - ECMS users (labor inspectors, others)
  - Other government agency personnel that use system (for example labor court officers, if applicable)

- Information Technology (IT) Service Providers involved in ECMS development and maintenance

- Employers and Workers' Organizations (in cases in which they have had an active implementation role or are ECMS users)

- Other Donors (if applicable)

The team will interview representatives of these stakeholder groups individually or in small groups in one to one and a half hour interviews.

4.3 Identification of Stakeholders

The evaluation team will rely on USDOL/ILAB and project grantee assistance to coordinate interviews with stakeholders from ongoing projects. For projects that have already closed, the team will seek the cooperation from former grantees to identify and coordinate interviews when possible. When not possible, the team will use contact information provided by ILAB to contact known key informants and use the snowball method to identify and contact other key informants. When required, the team will request assistance from ILAB personnel.

Not every evaluation question will be relevant to every country or stakeholder group. Once the stakeholders are identified, the evaluation team will create a matrix, based on the level by which the ECMS is developed in each country (e.g. the ECMS in Sri Lanka, Colombia and Peru have been presumably operational for some time, while the system is in the design phase for Vietnam), which can be used to identify which questions will be relevant for which stakeholders in each country. This will help to ensure that the evaluation collects equivalent information for countries with similar levels of ECMS development.

4.4 Sampling

The number of key informants with direct ECMS implementation knowledge in most stakeholder categories is most likely relatively small. In these cases, the team will attempt to interview all available key informants in the specified categories. In the categories where the key informant numbers are too large and require sampling (for example, participants in user training), the team will try to use scalable data collection techniques (for example, an online survey shared through email or a Facebook group) complemented by small group discussions with participants with various user experiences (headquarters vs field office, different geographic zones, different functions within the ECMS host institution).

4.5 Organization of Remote Individual and Group Interviews

The evaluation team will conduct individual and group interviews remotely, mainly using Skype, Skype Meet Now, Zoom, Whatsapp or conventional telephone. Several of these communication applications allow several participants to take part in a call simultaneously and may be used to facilitate small group discussions. To minimize the challenges of connecting with many participants at once, the evaluator proposes to limit the number of participants in group discussions to no more than five participants. In case some key informants/ users have direct access to the ECMS and are able to share access online, separate sessions will be organized to allow them to share their screen with the evaluators' in real time and walk them through the user interface and functionality of the ECMS in a synchronous manner. The team will prepare interview/discussion group guidelines for each stakeholder type. The evaluation team will conduct the interviews in either English or Spanish, based on the key informant's preference. The team will take detailed notes of interviews for later review and coding during the data analysis phase.

4.6 Program M&E Indicator and Financial Data (if available)

The evaluation team will review log frame indicator data as recorded in the project's M&E system if relevant. Examples of relevant data might be numbers of registered users, numbers of users trained by the project, and numbers of cases recorded in the ECMS. Preliminary exchanges between the evaluation team and USDOL/ILAB suggests such data may be limited given the sometimes-ad hoc nature of the ECMS interventions in some selected project. Alternatively, the team may also obtain similar types of quantitative data from the ECMS system administrator.

The evaluation team will also request and review financial data on system development and maintenance costs and related hardware procurements from either the grantee and/or host institution. If received, the team will use this data to compare implementation costs across target countries.

4.7 Online Surveys

The evaluation team will develop at least one online survey(s) to gather complementary qualitative and quantitative data from ECMS users in target countries where the ECMS is already deployed. To encourage participation, the survey instrument will be relatively short (10-15 questions), use both closed and open answer questions and be anonymous. The team will request grantee or ECMS host institution support to send out the instrument by email to relevant users.

4.8 Direct Observation

For operational ECMS, the evaluation team will request to access the system remotely to run system functions tests and assess them against international best practices and standards. Appendix E includes a draft assessment tool. The team will also request and assess system outputs (sample reports, sample case records, sample scheduling documents) to evaluate the variety and types of system outputs.

In cases where direct remote access may not be possible for some institutions, the evaluation team may set up a video call through Microsoft Teams, Google Meet or Skype chat where the respondents can share their screen with the evaluators in real time, walking them through the user interface and functionality of the ECMS in a synchronous manner. In cases where this is not possible, the interviewees may take screen shots and send them to the evaluators asynchronously via email, redacting the names of specific employers or workers if this information is confidential.

4.9 Limitations

Contact with former officials: Some officials with first-hand knowledge of ECMS design and early implementation may no longer be in office, given high levels of turnover within labor administrations. The team will request interviews from former officials, but they may not accept given norms within public administrations. To mitigate this limitation, the team will also plan on interviewing officials who change positions less often.

Access to project data: The evaluation team will base its findings on information collected from background documents, KIIs, FGDs, and secondary quantitative data. The evaluation team will assess the integrity of this information to determine the accuracy of the evaluation findings. The quality of the data will affect the accuracy of the analysis.

4.10 Ethical Considerations

The evaluation team will observe utmost confidentiality related to sensitive information and feedback elicited during the KIIs and FGDs. The evaluation team will respect the rights and safety of participants in this evaluation. During this study, the evaluation team will take several precautions to ensure the protection of respondents' rights:

- No interview will begin without a verbal informed consent from each respondent.
- The evaluation team will encourage respondents to conduct KIIs and FGDs in a confidential setting.
- The evaluation team will be in control of its written notes at all times.
- The evaluation team will transmit data electronically using secure measures.
- The evaluation team will talk with respondents to assess their ability to make autonomous decisions and their understanding of informed consent. Participants will understand that they have the right to skip any question with which they are not comfortable or to stop at any time.

4.11 Presentation of Evaluation Results and Data Collection Debriefing

If deemed relevant, after data collection has been completed for each country the Lead Evaluator will hold an informal validation meeting with key stakeholders and informants to review initial findings, collect any clarifying information to improve evaluation accuracy, and obtain input on recommendations of the evaluation. The date and format of the meeting(s) will be determined in consultation with ILAB.

When fieldwork is complete for all projects, the evaluation team will provide a debriefing by video call to relevant ILAB staff to share findings and will carry out a PowerPoint presentation, and to seek any clarifying guidance needed to prepare the report.

Once the evaluation report is developed, SFS will work with ILAB to organize a presentation (or series of presentations per relevant stakeholder group) to share the learning from the evaluation with audiences who may be interested in hearing more about ECMS development through the lens of the evaluation findings and recommendations.

V. EVALUATION TEAM, MANAGEMENT AND SUPPORT

Ms. Sandra Wark will serve as Lead Evaluator. She is an American evaluator based in Rabat, with relevant experience in international labor standards, labor administration and RBM. She is a senior monitoring and evaluation and information communication technology specialist (ICT4D) with over 25 years working in Africa, Asia, the Middle East, and the Caribbean. Ms. Wark has designed numerous online management information systems, data bases, and assessment tools for various international donor-funded activities. She has led large ICT4D components of international development programs in the areas of education, economic growth, and civil society capacity building. Ms. Wark has carried out several project evaluations for USDOL, including the evaluation of the II and III phases of the Sri Lanka project that is part of this evaluation.

Mr. Ernesto Olivares will serve as ICT/ECMS Specialist. He is a Nicaraguan certified ICT Manager with wide experience as data analyst, building and assessing data bases, developing IT projects, and providing technical solutions and IT support in the industrial, trade, health, and social sector. Between 2005 – 2010 Mr. Olivares worked as M&E Specialist for Macro International/ DevTech Child Labor eradication Project funded by USDOL. Mr. Olivares is fluent in Spanish and has provided services to clients in Nicaragua, Honduras, Costa Rica, Colombia, and Guatemala.

The evaluation team will promote transparency and dialogue with a clear dissemination strategy. This process includes:

- Developing and sharing with ILAB an explicit plan that details how the data collected will be used.
- Providing a draft report in a timely fashion that gives ILAB enough time for a thorough review.
- Producing a professional, complete report, along with a utilization-focused executive summary that support dissemination and publication.

SFS' monitoring and evaluation experts and management personnel will provide logistical, administrative, and technical support to the evaluation team, including all materials needed to provide the deliverables specified in the TOR. SFS staff will also be responsible for providing technical oversight necessary to ensure consistency of methods and technical standards.

VI. ROLES AND RESPONSIBILITIES

The evaluation team will conduct the evaluation according to the TOR. SFS (the Evaluator) is responsible for accomplishing the following items:

- Receiving and responding to or incorporating input from ILAB on the TOR draft
- Finalizing and submitting the TOR and sharing concurrently with ILAB
- Reviewing project background documents
- Reviewing the evaluation questions and refining them as necessary
- Developing and implementing an evaluation methodology, including document review, remote KIIs and FGDs, and secondary data analysis, to answer the evaluation questions
- Conducting planning meetings or calls, as necessary, with ILAB, including monthly status updates during evaluation planning and data collection stages
- Deciding the composition of KII and FGD participants to ensure the objectivity of the evaluation
- Ensuring that appropriate informed consent, ethics and do no harm protocols are understood and followed throughout the evaluation process
- Presenting preliminary findings verbally to ILAB and other stakeholders as determined in consultation with ILAB
- Preparing an initial draft of the evaluation report for 48-hour and a second draft for two-week review and sharing it with ILAB
- Preparing and submitting the final report and infographics

ILAB (the Donor) is responsible for the following items:

- Reviewing the TOR, providing input to SFS as necessary, and agreeing on final draft
- Providing project background documents to SFS
- Reviewing and providing comments on the draft evaluation report and infographics
- Approving the final draft of the evaluation report and infographics
- Participating in the pre- and post-trip debriefing and interviews
- Including the ILAB evaluation contracting officer's representative (COR) on all communication with SFS

VII. EVALUATION MILESTONES AND TIMELINE

Activity	Date[33]
Evaluation launch call	Sep 29, 2020
Evaluation team submits data collection methodology and evaluation matrix	Oct 27
Draft TOR submitted to ILAB	Nov 6
ILAB feedback on draft TOR due to SFS	Nov 13
Final TOR and draft list of stakeholders submitted to ILAB	Dec 1
Submission of final interview schedule and data collection instruments to ILAB	Dec 15
Contact with stakeholders in each country	Dec 1 - 15
Monthly check-in call with ILAB and SFS	Dec 29
Submission of matrix identifying the relevant stakeholders/countries for the evaluation questions	Jan 15
Data Collection	January 4 – February 19, 2021
Monthly check-in call with ILAB and SFS	Jan 29
Post-evaluation debriefing with ILAB	Feb 26
Initial draft report for 48-hour review submitted to ILAB	Mar 12
48-hour review comments due to SFS	Mar 16
Disseminate draft report and executive summary to ILAB and other key stakeholders for 2-week review	Mar 18
2-week review comments due to SFS	Apr 2
Final draft report and draft 1-page infographic summary submitted to	Apr 9

[33] The above timeline may be subject to revision due to changes in the dates/ period in which respondents will be effectively available for interview.

Activity	Date[33]
ILAB	
Final copy edited, 508-compliant report and final 1-page infographic summary submitted to ILAB	Apr 23
Presentation(s) of evaluation results	Date(s) TBD

VIII. DELIVERABLES AND DELIVERABLE SCHEDULE

A. Draft TOR: November 6, 2020

B. Final TOR, field itinerary, and draft list of stakeholders: December 1, 2020

C. Final schedule and data collection instruments: December 15, 2020

D. Initial draft report for 48-hour review: March 12, 2021

E. Draft report for 2-week review: March 18, 2021

F. Final draft report and draft 1-page infographic summary: April 9, 2021

G. Final 508-compliant report and final 1-page infographic summary: April 23, 2021

IX. EVALUATION REPORT

Within 3 weeks after data collection is completed for all countries, the Lead Evaluator will complete a draft report of the evaluation following the outline below and SFS will share it with the ILAB COR and ILAB Project Manager(s) for an initial 48-hour review. Once the Lead Evaluator receives comments, they will make the necessary changes and submit a revised report. ILAB will then have 2 weeks (10 business days) to provide comments on the revised draft report. The Lead Evaluator will respond to comments from ILAB and provide a final version within 2 weeks of ILAB acceptance of the revised draft evaluation report. The evaluation team will also produce a one-page summary using data visualization techniques and infographics to facilitate dissemination of major findings.

A quality report is an "action-oriented evaluation report" meaning that its content is focused, concise, and geared toward a particular audience, calling their attention to important findings. It outlines possible next steps, through the use of a variety of media, including data visualization. The final version of the report will follow the format below, be no more than 40 pages in length, excluding the annexes, and will be Section 508 compliant:

1. Table of Contents
2. List of Acronyms
3. Executive Summary (providing an overview of the evaluation, summary of main findings/lessons learned/good practices and key recommendations, not to exceed five pages)
4. Evaluation Objectives and Methodology

5. Project Context and Description
6. Findings (answers to evaluation questions with supporting evidence)
7. Lessons Learned and Promising Practices
8. Conclusions (interpretation of facts including criteria for judgements)
9. Recommendations (specific actions the evaluation team proposes be taken by ILAB and/or other stakeholders that would like to implement ECMS, which are based on findings and conclusions and critical for successfully meeting project objectives; as well as judgements on what changes need to be made for future programs)
10. Annexes, including: TOR; List of documents reviewed; Stakeholder validation session agenda and participants; List of Meetings and Interviews; Matrix identifying relevant stakeholders/countries for the evaluation questions; Any other relevant documents.

The electronic submission will include 2 versions: one version, complete with all appendices, including personally identifiable information (PII) and a second version that does not include PII such as names and/or titles of individuals interviewed.

C. Evaluation Matrix

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
How does the organizational capacity of project implementers, target institutions, and implementing partners limit or facilitate the effectiveness, functionality and sustainability of project based ECMS interventions? Are project designs adequately accounting for differences in capacity?	Document review: -Project document -Technical Progress Reports (TPRs) -ECMS documents (call for proposals, technical proposal, presentations) -Mid-term and final evaluation reports -Any other relevant documents KII: USDOL, Grantee, Government counterparts, IT service providers FGD: ECMS users Survey: ECMS users	**Relevance/ Design Validity** What are the main challenges that affect each country's labor inspectorate's capacity to effectively promote compliance with national labor laws and international labor standards? In what ways do these challenges affect the relevance and/or efficacy of the ECMS tool (positive: ways the ECMS is useful to overcome challenges, negative: ways the utility/effectiveness of the tool is (all countries) What challenges affect public sector use of ICT applications in each country? (availability of infrastructure, internet access, technical expertise, modernization budgets, national strategy/program on digitization) In what ways, if any, did ECMS design/implementation strategy take these challenges into account? (all countries) In what ways did the ECMS design/implementation strategy take the economic and political context of each host country? (all countries) To what extent did ECMS obtain buy in from institutional owner and other high-level national decision-makers? What factors facilitated and/or hindered buy in? (all countries)	Grantee personnel • Technical Specialists (ex. ILO/LAB Admin, DW team) • Grantee project managers (COP, CTA, other relevant program managers) Government counterpart personnel • Ministry of Labor decision makers (past and present, if possible) • Labor Inspectorate senior managers (past and present, if possible) • ECMS Technical and Support team (if applicable) • ECMS users (labor inspectors, others) • Other government agency personnel that use system Information Technology (IT) Service Providers Employers and Workers' Organizations

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
		To what extent did ECMS obtain buy in from other intended users (labor department leadership, labor inspectors, clerical personnel)? What factors facilitated and/or hindered buy in? (all countries) **Coherence** In what ways is the ECMS aligned with other institutional initiatives to improve labor law enforcement in the host country? (all countries) To what extent and in what ways is the ECMS compatible the wider ICT architecture of the host institution? (Interoperability) (all countries) In what ways, if at all, did various users provide input into ECMS design? (all countries) In what ways, if at all, were users involved in testing/proposing improvements in system functionalities? If so, which users? What are examples of suggestions? (Sri Lanka, Philippines, Colombia, Peru) To what extent did the project implement user suggestions? What are some examples? (Sri Lanka, Philippines, Colombia, Peru) **Effectiveness** To what extent were IT service provider services satisfactory? What, if anything, could have been done to improve service? (Sri Lanka, Philippines, Colombia, Peru, Vietnam (services to date)) To what extent has the ECMS been developed and deployed? (all countries) To what extent were user training activities effective and adequate? What, if anything, could have been/be improved? (Sri Lanka, Philippines, Colombia, Peru)	Other Donors (if applicable)

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
		To what extent did user training differentiate between the needs and capabilities of different user groups (for example labor inspectors vs. labor administration decision-makers) (Sri Lanka, Philippines, Colombia, Peru) To what extent were user support systems adequate? What, if anything, could have been/be improved? (Sri Lanka, Philippines, Colombia, Peru) To what extent were user hardware/connectivity needs adequately addressed? What, if anything, could have been/be improved? (Sri Lanka, Philippines, Colombia, Peru)	
What effect(s) have the projects' ECMS interventions had (positive, negative, or neutral) on labor inspectorate operation (from case inception to final disposition)? What were the factors that limited or facilitated ECMS results?	Document review: -Technical Progress Reports (TPRs) -ECMS documents (call for proposals, technical proposal, presentations) -Mid-term and final evaluation reports -Any other relevant documents KII: USDOL, Grantee, Government counterparts, IT service providers FGD: ECMS users	**Effectiveness/Efficiency** In which labor administration work areas, if any, has the ECMS contributed to efficiency or effectiveness improvements? In what ways? · Inspection planning/scheduling · Worker Complaints management · Establishment licensing · Accidents reporting · Assessing occupational health and safety risks/violations · Assessing areas of specific concern to women workers (maternity benefits, sexual harassment, etc.) · Assessing wage and benefits compliance issues · Managing inspection follow-up visits/tracking remediation · Labor court hearing scheduling/planning · Other? (Sri Lanka, Philippines, Colombia, Peru) To what extent does the ECMS facilitate collection of accurate and high-quality data (on factories, on inspections, on issues requiring remediation,	Grantee personnel • Technical Specialists (ex. ILO/LAB Admin, DW team) • Grantee project managers (COP, CTA, other relevant program managers) Government counterpart personnel • Ministry of Labor decision makers (past and present, if possible) • Labor Inspectorate senior managers (past and present, if possible) • ECMS Technical and Support team (if applicable) • ECMS users (labor inspectors, others) • Other government agency personnel that use system

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
	Survey: ECMS users	etc)? What factors facilitated or hindered obtaining accurate and high-quality data? What might be done to make the ECMS more effective contributing to the collection of high-quality data? (Sri Lanka, Philippines, Colombia, Peru) In what ways, if any, has ECMS data been used to identify and report on national labor law/international labor standards compliance trends? What factors facilitated or hindered analysis of ECMS data? What might be done to make the ECMS more effective contributing to identify and report on compliance trends? In what ways, if any, has ECMS data been used for labor inspection strategic planning? What factors facilitated or hindered use of ECMS data and analysis for strategic planning? What might be done to make the ECMS more effective contributing to strategic planning? (Sri Lanka, Philippines, Colombia, Peru) **Impact** In what ways has the ECMS contributed to making the labor administration more effective and efficient in its enforcement function? What might be done to make the ECMS more effective contributing to increased labor administration effectiveness and efficiency? (Sri Lanka, Philippines, Colombia, Peru) In what ways, if at all, has the ECMS contributed to improving compliance with national labor laws and international labor standards? What factors facilitated or hindered compliance improvements? What might be done to make the ECMS more effective contributing to increased transparency in the labor administration? (Sri Lanka, Philippines, Colombia, Peru)	Information Technology (IT) Service Providers

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
		In what ways, if at all, has ECMS use affected labor inspection transparency. What factors facilitated or hindered transparency improvements? What might be done to make the ECMS more effective contributing to increasing transparency in the labor administration? (Sri Lanka, Philippines, Colombia, Peru)	
What level of ECMS functionality has been achieved/maintained among the ECMS project components that are still active? Which of the active ECMS components show the greatest likelihood of being sustained after external support has ended, and why? What adjustments could be made to enhance the ECMS functionality or sustainability within the active projects?	KII: USDOL, Grantee, Government counterparts, IT service providers FGD: ECMS users Survey: ECMS users	**Coherence** To what extent and how do the planned ECMS functions align with the business processes of the labor administration? • Does the ECMS design take in account/reflect the procedural requirements of the country's labor administration? (e.g. jurisdiction, legal representation of parties, prescribed timeframe for action -submission, appeals-, electronic signatures, fees, etc.). • Does the ECMS design offer workflow and scheduling capabilities customized to the labor administration process? Does the ECMS take in account the flow of information among relevant stakeholders and the sequence of activities and events from the start of a labor inspection case to the final decision on the same? (Vietnam, Honduras, Paraguay) **Effectiveness/Efficiency** In what ways did the design process collect relevant information so that the case records, types of reports/dashboards generated by the ECMS will be consistent with the needs of the labor administration? With the labor courts? Other users? (Vietnam, Honduras, Paraguay)	Grantee personnel • Technical Specialists (ex. ILO/LAB Admin, DW team) • Grantee project managers (COP, CTA, other relevant program managers) Government counterpart personnel • Ministry of Labor decision makers (past and present, if possible) • Labor Inspectorate senior managers (past and present, if possible) • ECMS Technical and Support team (if applicable) • ECMS users (labor inspectors, others) • Other government agency personnel that use system Information Technology (IT) Service Providers

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
		Will the ECMS track the status of cases throughout the administrative process, including parties' ulterior compliance with labor inspection or court decisions? (Vietnam, Honduras, Paraguay) To what extent is the planned application/data hosting solutions adequate to enable efficient/secure access to the ECMS? (Vietnam, Honduras, Paraguay) **Sustainability** Does the grantee have a sustainability plan/exit strategy? (all countries) To what extent does the sustainability plan/exit strategy address relevant success factors for the ECMS such as: Ownership and commitment, replacement of resources, development/ maintenance of institutional capacities (human resources, equipment, training), integration with existing structures and systems, institutional linkages and duration of the disengagement process. (Vietnam, Honduras, Paraguay) What factors may affect the host institution's capacity to sustain the system? To what extent and how has the project considered and mitigated potential system maintenance challenges at this stage in implementation? To what extent has the institutional owner made provisions to ensure there will be adequately trained/skilled human resources to maintain/update the ECMS? Allocated budget resources for system running costs, equipment and software maintenance, etc.? What factors may help or hinder getting appropriate resource allocation for ECMS? (Vietnam, Honduras, Paraguay)	
What level of ECMS functionality has been achieved/maintained since the inactive projects	KII: USDOL, Grantee, Government counterparts, IT service providers	**Coherence**	Government counterpart personnel • Ministry of Labor decision makers (past and present, if possible)

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
have closed? Which of the closed ECMS components/projects exhibit the strongest sustainability and functionality post-hoc? What were the factors that limited or facilitated ECMS sustainability and functionality? What adjustments should be made for future ECMS	FGD: ECMS users Survey: ECMS users	To what extent and how do the ECMS functions align with the business processes of the labor administration? (Sri Lanka, Philippines, Colombia, Peru) • Does the ECMS take in account/reflect the procedural requirements of the country's labor administration? (e.g., jurisdiction, legal representation of parties, prescribed timeframe for action - submission, appeals-, electronic signatures, fees, etc.). (Sri Lanka, Philippines, Colombia, Peru) • Does the ECMS offer workflow and scheduling capabilities customized to the labor administration process? (Sri Lanka, Philippines, Colombia, Peru) Does the ECMS take in account the flow of information among relevant stakeholders and the sequence of activities and events from the start of a labor inspection case to the final decision on the same? (Sri Lanka, Philippines, Colombia, Peru) **Effectiveness/Efficiency** How many active ECMS users are there? About what percentage of potential users does this represent? (Sri Lanka, Philippines, Colombia, Peru) Which ECMS components are currently operational? Which components are the most and least used? What factors affect which components are used and which are not? (Sri Lanka, Philippines, Colombia, Peru) To what extent is the hardware used by ECMS users appropriate to optimize system features? To what extent do users have adequate Internet access to optimize ECMS use? What, if anything, might be done to overcome	• Labor Inspectorate senior managers (past and present, if possible) • ECMS Technical and Support team (if applicable) • ECMS users (labor inspectors, others) • Other government agency personnel that use system Information Technology (IT) Service Providers

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
		hardware/connectivity challenges? (Sri Lanka, Philippines, Colombia, Peru) Has migration of information from manual to digital format, been completed? What is the ratio of cases that continue being handled through manual systems/ separate spread sheets/ forms? (Sri Lanka, Philippines, Colombia, Peru) How do users rate the ease of use? (Sri Lanka, Philippines, Colombia, Peru) How do users rate technical support systems? (Sri Lanka, Philippines, Colombia, Peru) How do users evaluate the effect of the system on their efficiency (time required to carry out specific tasks, other resource expenditures (human resources required, logistics costs, etc.)? In which areas, if any, have improvements been made? In which areas, if any, deteriorated? (Sri Lanka, Philippines, Colombia, Peru) Are data entry routines and forms, case records, reports, and/or dashboards adapted to the needs of the different stakeholders involved in the system? (labor inspectors, supervisors, judges, clerks) (Sri Lanka, Philippines, Colombia, Peru) Are the case records, types of reports/dashboards generated by the ECMS consistent with the needs of the labor administration? With the labor courts? Other users? (Sri Lanka, Philippines, Colombia, Peru) Does the ECMS track the status of cases throughout the administrative process, including parties' ulterior compliance with labor inspection or court decisions? (Sri Lanka, Philippines, Colombia, Peru)	

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
		Does the ECMS host institution have and apply appropriate data security policies to protect confidential information? To secure its network from external attacks? (Sri Lanka, Philippines, Colombia, Peru) To what extent is the application/data hosting solutions adequate to enable efficient/secure access to the ECMS? (Sri Lanka, Philippines, Colombia, Peru) **Sustainability** Did the grantee have a sustainability plan/exit strategy? (all countries) To what extent does the sustainability plan/exit strategy address relevant success factors for the ECMS such as: Ownership and commitment, replacement of resources, development/maintenance of institutional capacities (human resources, equipment, and training), integration with existing structures and systems, institutional linkages and duration of the disengagement process. (Sri Lanka, Philippines, Colombia, Peru) To what extent have ECMS functions/features been routinely maintained? In what ways, if any, have they been updated since initial deployment? What factors affect the host institution's capacity to maintain/update the system? (Sri Lanka, Philippines, Colombia, Peru) What system maintenance and support tasks are currently managed in-house? What system maintenance/support tasks are outsourced? Are current arrangements working? What, if anything, might be improved? (Sri Lanka, Philippines, Colombia, Peru) To what extent has the institutional owner allocated adequately trained/skilled human resources to maintain/update the ECMS? Budget resources? What factors helped or hindered appropriate resource allocation for ECMS? (Sri Lanka, Philippines, Colombia, Peru)	

Evaluation Question	Data Sources	Illustrative Sub-Questions	Key Informants
		Is hardware replaced as needed when it becomes non performant? (Sri Lanka, Philippines, Colombia, Peru) To what extent and in what ways has the ECMS been institutionalized by the institutional owner? Do institution policies require system use? Is system maintenance and development budgeted annually? To what extent have human and budget resources for user training/support services been sustainably allocated? (Sri Lanka, Philippines, Colombia, Peru)	

D. Documents Consulted

Colombia

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E. Persons Interviewed

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