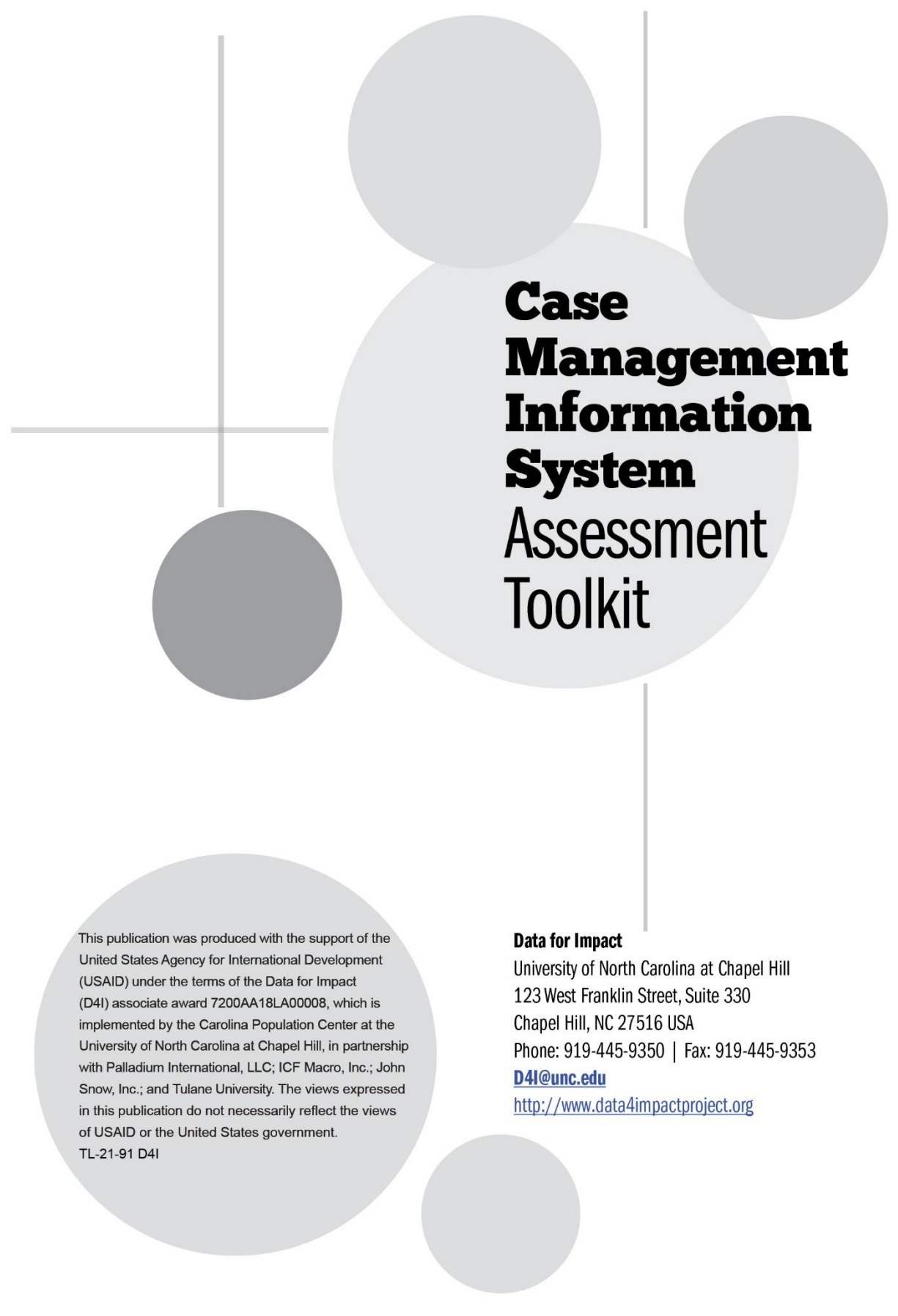# Case Management Information System
Assessment Toolkit

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Assessment Toolkit

Data for Impact
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USAID
FROM THE AMERICAN PEOPLE

DATA FOR impact

Acknowledgments

Contents

Introduction

Government agencies that specialize in child protection require reliable case management data to address the needs of vulnerable children and to support the case management decision-making process. To achieve this end, stakeholders can employ case management information systems (CMIS) to ensure that caseworkers supporting children have the tools and resources needed to perform the case management functions. The CMIS also helps to ensure that children are properly cared for and do not fall through the cracks of the system. A CMIS addresses a range of highly sensitive child protection and care needs, which helps assess the services available and who provides them at what level.

Designing the architecture and selecting the right technology is a critical process in CMIS development. Government agencies and stakeholders interested in deploying CMIS solutions should consider factors such as interoperability, data ownership, privacy and security, devices and access, data standards, and data quality. In some cases, partners and technology providers approach governments with proposed systems that may or may not include all these considerations or meet their requirements but appear attractive because they would improve the current inadequate management of data. Recognizing that there are multiple case management information systems and being able to determine which system to choose can be challenging for government partners who may not be familiar with the functionalities, technology, infrastructure, costing, and operational requirements of such systems.

Understanding how case management works is another critical step in developing a CMIS because such a system needs to reflect the laws, policies, and approved workflows regulating case management, as well as workforce considerations (e.g., who carries out case management at what levels of the system) and internet connectivity capacities and constraints. This informs what technology options ought to be considered, given the country context and set of services to be delivered.

The CMIS Assessment and Planning Toolkit is a comprehensive toolkit designed to improve the capacity of governments to evaluate digital systems to support child protection and care case management activities and assess their potential for scaling up and achieving long-term sustainability. It provides a thorough guide for government agencies to identify the gaps and needs of case management systems through an organizational self-assessment, followed by a set of questionnaires to evaluate solutions. The toolkit provides a starting point for the thinking behind the implementation or selection of a CMIS platform.

The toolkit can also be used by NGOs and donor organizations who would seek to understand the utility and functionality of existing CMIS solutions in a specific context.

The outcomes of the self-assessment process will help project teams to determine if the technology or CMIS platform(s) being evaluated aligns with the country's priorities, resources, and local context in order to plan their next steps.

Background: Data for Impact

The United States Agency for International Development (USAID) works in countries around the world to improve the lives of the most vulnerable children in keeping with the objectives established in the U.S. Government Strategy for Advancing Protection and Care for Children in Adversity (APCCA). In support of country priorities and in line with APCCA objectives, USAID-funded activities advance partner countries on their journey to self-reliance (https://www.usaid.gov/selfreliance) by helping governments build and strengthen their capacities to support, manage, and finance their child protection and care systems, using best available data for decision making and employing research, implementation science, and programmatic learning to design evidence-based and evidence-informed policies, programs, and practices.

The USAID-funded Data for Impact (D4I) project builds on and reinforces current U.S. government support for priority countries to realize the power of data as actionable evidence that can improve policies, programs, and outcomes (https://www.data4impactproject.org).

Under the MEASURE Evaluation Phase IV activity, USAID developed the Information Systems Framework for the Case Management of Child Protection and Care (hereafter, the "CMIS framework") to consolidate lessons learned from those who have developed, implemented, and used such systems and agreed-upon best practices when approaching the design and strengthening of these systems. The CMIS framework presents three perspectives and related processes that should be considered together to ensure a holistic approach to CMIS development. Some of the processes have standardized tools and/or resources for child protection/care, yet for many processes, standards do not exist.

This toolkit builds upon the lessons learned through the CMIS framework. Also, D4I reviewed tools such as the mHealth Assessment and Planning for Scale (MAPS) toolkit and other frameworks used during MEASURE Evaluation Phase IV CMIS assessments.

The toolkit is a product of a participatory design process, through which a technical working group (TWG) validated the tools. The group involved 14 women and 15 men from country governments, USAID country missions, the Office of HIV/AIDS, UNICEF headquarters and field offices, case management experts, monitoring and evaluation (M&E) experts, and digital solution experts. The group included members representing Armenia, Colombia, Ghana, Guatemala, Kenya, Moldova, Rwanda, Uganda, and the United States.

Glossary

API: API stands for Application Programming Interface. An API enables two different programs to communicate with each other by making some parts of the website code available to developers.

Architecture: Architecture is the structure and organization of a software application embodied in its components, their relationships to each other, and to the environment.

Backend: This is the server side of software applications. It refers to any part of a website or software application that users do not see. It contrasts with the frontend, which refers to a program's or website's user interface. Backend development can be broken down into four main components: the server, the database, the operating system, and the software.

Bandwidth: A measure of how much information can be transmitted at once through a communication medium, such as a telephone line, fiber-optic cable, or radio frequency.

Browser: A web browser is a software application for accessing websites on the Internet. Examples of web browsers are Apple Safari, Google Chrome, Internet Explorer, and Microsoft Edge.

Cloud: Cloud computing means that instead of all the computer hardware and software you're using sitting on your desktop, or in a server in your organization, it's provided for you as a service by another company and accessed over the Internet, usually in a completely seamless way.

CSV: A CSV is a comma-separated values file, which allows data to be saved in a tabular format. CSVs look like a spreadsheet but with a csv extension. CSV files can be used with most spreadsheet programs, such as Microsoft Excel or Google Spreadsheets. They are used to share data that can be opened in several software applications.

Dashboard: Dashboards are interactive software tools with data visualizations and charts, which often provide at-a-glance views of indicators relevant to a particular objective or process. Different types of stakeholders can use dashboards to make decisions based on data.

Data backup: A backup or data backup is a copy of computer data taken and stored elsewhere so that it may be used to restore the original after a data loss event.

Data field: A place where data can be stored. This term is commonly used to refer to a column in a database or a field in a data entry form or web form. The field may contain data to be entered as well as data to be displayed.

Data standards: Rules by which data are described and recorded. In order to share, exchange, and understand data, we must standardize the format as well as the meaning. Without data standardization, software applications may interpret data differently.

Database: A set of related data and the way it is organized. Access to this data is usually provided by a database management system (DBMS) consisting of an integrated set of computer software that allows users to interact with one or more databases and provides access to all of the data contained in the database (although restrictions may exist that limit access to particular data). The DBMS provides various functions that allow entry, storage, and retrieval of large quantities of information and provides ways to manage how that information is organized.

Desktop: A personal computer designed for regular use at a single location on or near a desk or table due to its size.

Encryption: Translation of data into a code to keep the information secure from anyone but the intended recipient.

Form-builder: A tool that some software applications offer that allows for the drag and drop of form fields to where you need them to structure your forms. These tools let you accomplish this without writing a single line of code.

Frontend: The frontend of a software application or website, also known as client-side, is what the end user sees and interacts with. Frontend languages include HTML, CSS, and JavaScript, which all contribute to determining the visual output of a website.

Granularity: Data granularity is the level of detail available in a data set or represented in an analysis report. The greater the granularity, the deeper the level of detail.

Help desk: Help desk service for software applications provides support to end-users and other technical staff to troubleshoot and track bugs.

ICT: Information and communications technology (or technologies). Technology involving the development, maintenance, and use of computer systems, software, and networks for the processing and distribution of data.

Interoperability: Allows different software applications to exchange data via a common set of business procedures, and to read and write the same file formats and use the same protocols.

JSON: A lightweight format for storing and transporting data. JSON is often used when data is sent between software applications. JSON is an open standard used commonly in software applications.

Offline: Offline means to be disconnected from a computer network or the Internet. A software has offline capabilities when it can continue working without needing to have constant Internet connection.

Operating system: An operating system (OS) is the program that, after being initially loaded into the computer, manages all of the other application programs in a computer. The application programs make use of the OS by making requests for services. Microsoft Windows is an example of an operating system.

Programming language: A set of instructions and statements that software developers use to give instructions to a computer. It is used to build software applications.

Public good: A resource or commodity provided without profit to all members of society, typically by a government, institution, or company. Open-source software is considered to be a public good.

Server: A computer that provides data or services to other computers over a network. Websites and web applications are hosted on servers, which then are accessed via the Internet through the user's web browser.

Software update: The process of replacing a software product with a newer version of the same product to include enhancements or fixes to bugs. Developers publish regular software updates to ensure that the software application stays relevant to the context, useful, and free of bugs.

Source code: Source code is the part of software that most computer users do not ever see; it is the code computer programmers can manipulate to change how a piece of software—a "program" or "application"—works. Programmers who have access to a computer program's source code can improve that program by adding features to it or fixing parts that do not always work correctly.

Tablet: A mobile device, typically using a mobile operating system with a screen that can be touched to interact with it. Most tablets are slightly smaller and weigh less than the average laptop because they were designed to be portable.

Technology stack: All the technology services used to build and run a software program. This includes both the backend and the frontend.

Usability: The degree to which a software application can be used by its intended users to perform tasks and achieve objectives with effectiveness, efficiency, and satisfaction.

User interface: Similar to the frontend concept, the user interface is the part of a software application that the user sees and interacts with.

Web interface: A web interface allows the user to interact with a website or software application running on a remote server through a web browser.

Wizard: Also called a setup assistant, this is a visual tool that guides the user through a series of steps using dialog boxes, often to set up a new feature or install software.

XML: Text-based markup language. XML tags identify the data and are used to store and organize the data.

The CMIS Assessment Toolkit

What Is the Purpose of This Toolkit?

Because each country, government, and CMIS system is unique, there is no single measure to determine which CMIS is best for a particular context. This assessment toolkit is intended to provide an overarching guide to understand whether a CMIS will be appropriate for a particular context, and to provide insights into what topics will merit further discussion and exploration within a child protection team.

The toolkit is divided into two parts:

1. **An Organizational Self-Assessment**, which guides the user through a preliminary process to map their team's context, stakeholders, needs, and pain points. It also includes a resource availability assessment to determine the constraints in which a CMIS must work. The outputs of this self-assessment will serve as a solid foundation to refer to throughout the next step.

2. **The CMIS Assessment Tool**. Divided into seven themes, the tool guides users through a series of criteria framed as yes-or-no questions, with different weighted points assigned to each criterion. At the end of each section, scores are totaled and rated as "poor," "fair," or "good," and the final set of ratings provides an overarching assessment of the CMIS fit.

Who Is This Toolkit Intended For?

This toolkit was developed primarily for government agencies that specialize in child protection and are looking to digitize their CMIS, or to review and assess their existing CMIS. Other potential audiences include nongovernmental organizations (NGOs) and donor organizations who advise on or utilize CMIS themselves, as well as digital solutions providers who develop case management information systems.

Primary audiences: Government ICT and child protection project managers who are planning to deploy a new CMIS product and need an objective process to analyze potential solutions, or who are seeking to assess their current CMIS. The technical nature of this toolkit will require the involvement of both ICT specialists and child protection specialists on the assessment team.

Secondary audiences: (1) ICT and child protection program managers at NGOs and donor organizations who seek to understand the utility and functionality of existing CMIS solutions; and (2) strategy leads and product managers at digital solutions providers who want to determine the level of maturity of their CMIS and define a development roadmap.

Who Should Be Involved in This Assessment?

This assessment should be conducted not by an individual but by a team that represents the different positions and levels within a child protection system. The team should include at least one person from each of the following roles, with additional input from other stakeholders:

- ICT experts (technical staff)
- National-level child protection specialists
- Regional- and district-level child protection staff

Evaluating Results

Each activity should be conducted as a team with accompanying discussions, because both the Organizational Self-Assessment and the CMIS Assessment Tool are designed more as discussion tools rather than pure diagnostics. This is because evaluating a CMIS—or indeed any technology—is a highly subjective exercise that requires weighing a vast array of factors, any of which may weigh more or less in a particular context. There is no single approach to deciding whether a CMIS is a good fit for your team or not.

In order to balance structure and flexibility, this tool incorporates both subjective and objective evaluation methods. The Organizational Self-Assessment is primarily subjective, providing opportunities for mapping out stakeholders and assessing resource availability. The CMIS Assessment Tool, by contrast, offers a weighted scoring system to allow objective evaluation, along with suggestions for discussion questions to encourage more holistic conversations and rescoring based on your context.

The results of these two assessments will both spark conversations within your team and set the stage for a thoughtful, informed decision around the CMIS. For more information. please see the Evaluating Assessment Results section.

Part I. Organizational Self-Assessment

CMIS Stakeholder Map

What Is a Stakeholder Map?

A stakeholder map is a visualization of all the different stakeholders involved in a particular process, and the links between them. It can include flows of information, relationships, influences, and other aspects as well. These maps also help identify gaps and opportunities, in addition to offering a visual with which to analyze workflows and processes.

A stakeholder map is important for coming to a shared understanding of the context and environment in which a CMIS will be used, which in turn will help determine which features and characteristics will be necessary.

Creating a Stakeholder Map: Teams without a CMIS

For teams that do not yet have a CMIS, but are using this toolkit to select one, this stakeholder map should show all the different stakeholders currently involved in the child protection process, as well as their corresponding data collection, storage, and retrieval processes. The easiest way to approach this task is to start big and map out all the various stakeholders (including the relationships between them), and then start adding detail to this basic map, as shown in the example below.
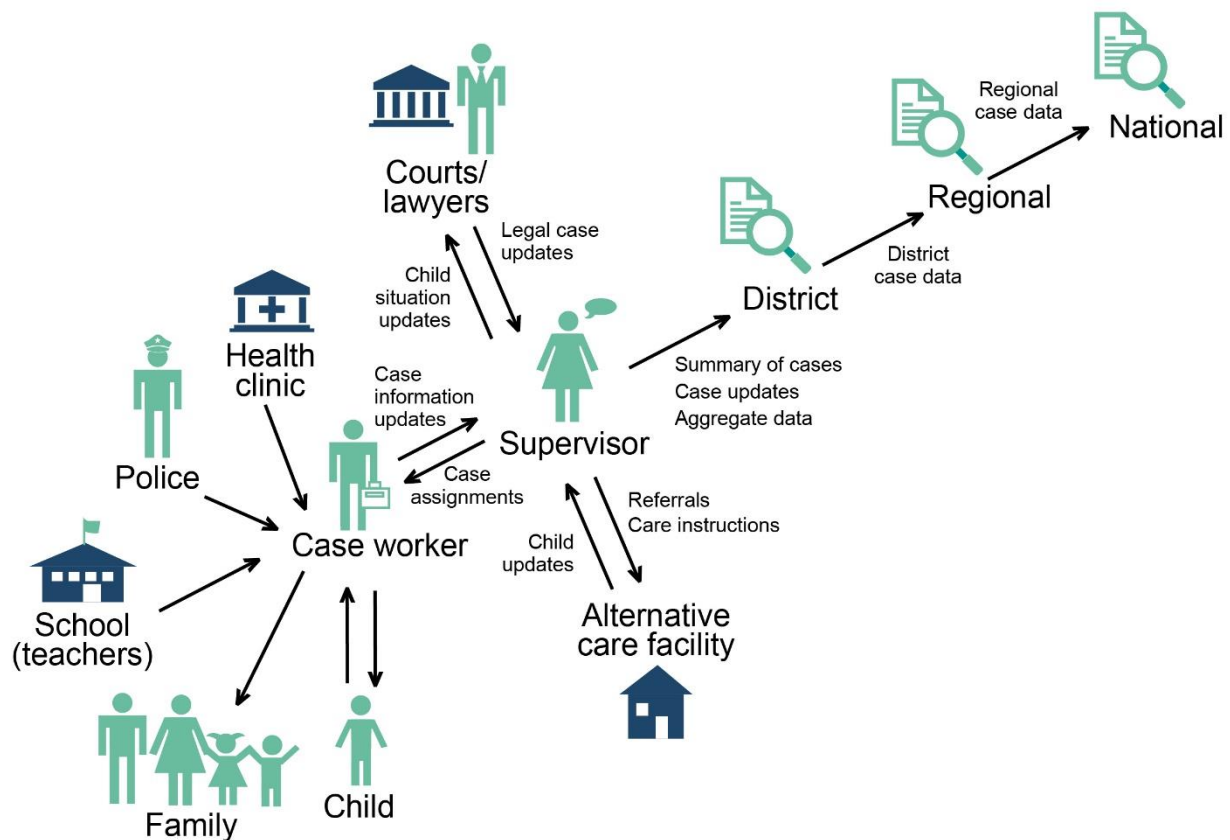
A sample stakeholder map for a child protection system.

The worksheet included in Appendix A offers questions to ask yourselves—as a team—that will help you add more detail to your map. The more detail, the better; at a minimum, your map should include the following:

- All levels of staff who collect or utilize child protection data, from community case workers all the way up to ministry officials who oversee child protection
    - Arrows between stakeholders indicating exactly what types of data are flowing and in what direction
- All parties not directly a part of your team who may still report or retrieve child protection data in your context, such as alternative care facilities, healthcare facilities, judicial system, etc.

The goal of this exercise is to come to a shared understanding of exactly who is involved in the child protection space (at all levels), and what their data needs are.

Creating a Stakeholder Map: Teams with an Existing CMIS

For teams that already have a CMIS in place, this stakeholder map should be created with the existing CMIS—and corresponding data collection and retrieval processes—at its center. The easiest way to approach this task is to start big and map out all the different stakeholders, and then start adding detail to this basic map, as shown in the example below.

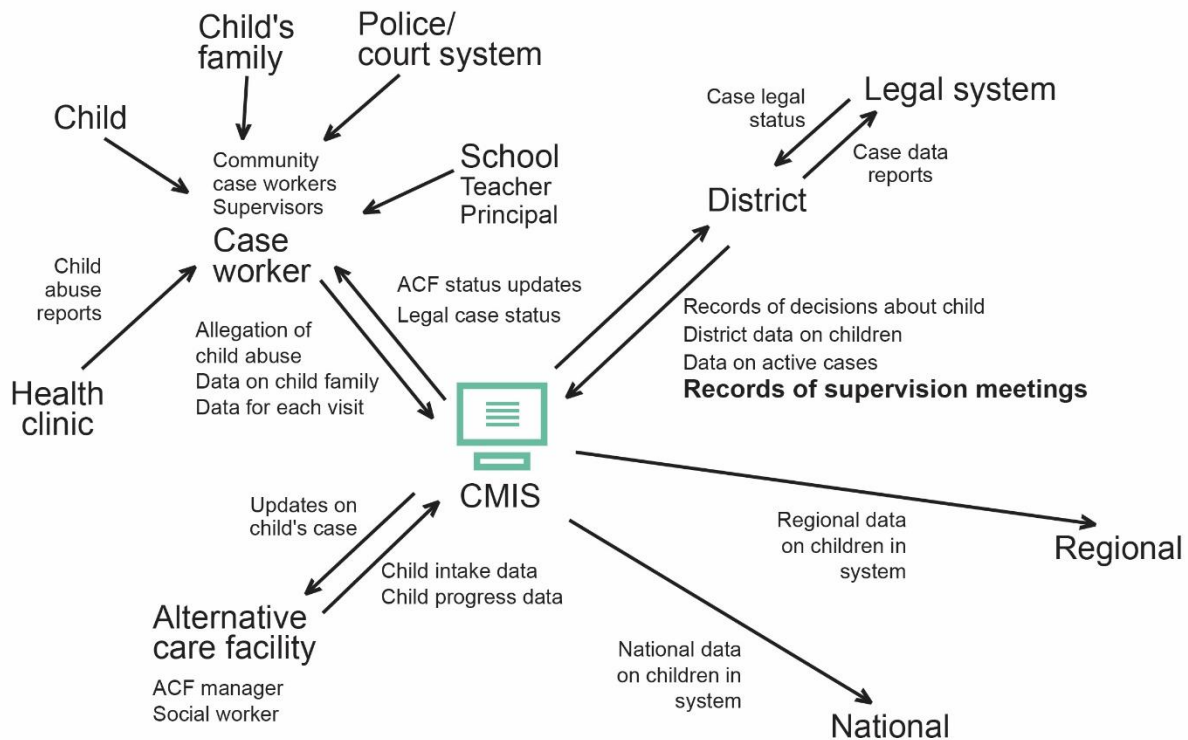**A sample stakeholder map for teams with an existing CMIS**

The worksheet included in Appendix A offers questions to ask yourselves—as a team—that will help you add more detail to your map. The more detail, the better; at a minimum, your map should include the following:

- All levels of staff who provide or utilize data from the CMIS, from community case workers up to ministry officials who receive reports
  - Arrows between stakeholders and entities indicating what types of data are flowing and in what direction
- All parties not directly in child protection who may report or retrieve from the CMIS in your context, such as alternative care facilities, healthcare facilities, courts, etc.

The goal of this exercise is to come to a shared understanding of exactly who is involved in the child protection space (at all levels), and what their data needs are.

Analyzing the Stakeholder Map

Once the map is completed, be sure to discuss its implications for a CMIS as a team. Consider the following questions in your discussion:

- What requirements would each type of stakeholder have for a CMIS? What features and/or characteristics would be important to them?
- What types of restrictions or challenges does each stakeholder face, with regards to child protection data? (Electricity/Internet access, technical literacy, staffing, etc.)
- What data gaps are present in the existing processes? How can they be addressed, with or without a CMIS?
- What are some opportunities for new or improved processes with a CMIS? What would it take to realize these opportunities?

Resource Assessment

When evaluating a CMIS, it is important to know how it will fit into the context and circumstances within which it will function. In some cases, there may even be aspects about the implementation environment that are nonstarters (for example, if there is no budget available for a CMIS).

This is why another important consideration for a CMIS is what resources are available within the context in which the CMIS will be used, since these constraints will help narrow down which CMIS solutions to assess, as well as which ones will be most impactful. The resource assessment worksheet provided in Appendix B is divided into two sections to help your team think through the characterization of your environment.

The first section includes some general considerations, such as:

- Availability of funds and budget for a CMIS
- Internet access and speed across the country
- Availability of desktop computers, laptop computers, tablets, and/or smartphones for users
- Operating system requirements across the country
- Server space availability
- Adequately trained IT staff for CMIS management

The second section introduces the same framework used in the CMIS assessment: a set of seven themes covering the defining aspects of a CMIS. These themes are:

- System specifications
- Decision making
- Interoperability
- Usability
- Documentation and support
- Data and system governance
- Privacy and security

The questions in this section act as a list of prerequisites for each theme, or topics that must be clear before delving deeper into them in the CMIS assessment.

Evaluating Organizational Self-Assessment Results

Now that you have completed the Organizational Self-Assessment, it is time to look through and discuss the outputs together as a team. The Ecosystem Map and Resource Assessment should offer some new and interesting insights for your team to discuss. Consider the following questions:

- Are there any prerequisites that are not being met that will impede your ability to implement a CMIS? (Examples: no funding available, slow/no Internet availability, etc.)

- What considerations will need to be kept in mind as you evaluate a CMIS? (Examples: inconsistent Internet access, staff technical ability, etc.)

- What challenges do you foresee for your team to implement a CMIS? What actions could help mitigate these challenges?

- What opportunities do you see for your team in terms of data collection, use, sharing, and management, both with and without a CMIS?

- Of the sub-themes explored, which do your team consider crucial? Which are less crucial?

Assessment Tool

Now, armed with the results of your Organizational Self-Assessment, you are ready to conduct the CMIS Assessment. The version included in this document is a printable PDF, but there is also an Excel-based version available for download.

As mentioned earlier, this assessment is divided into seven thematic areas. Each sub-theme contains a list of specifications with "yes" and "no" options, and a weighted score for each answer. At the end of each sub-theme section, you will tally up the scores and use the guide to rate the CMIS's fit for that section: as "strong," "moderate," or "weak." The final evaluation will ask you to look at the ratings from each section and use guided discussion questions to determine how to make a final decision about the CMIS.

To gather the information on which to base this assessment, we recommend the following:

- Obtaining a trial version of the software for your team to test out
- Looking through official documentation for the CMIS
- Interviewing members of the CMIS vendor team
- Interviewing existing users of the CMIS, if you know any

Be sure to refer back to your Organizational Self-Assessment often—both the Stakeholder Map and the Resource Assessment—to help accurately answer all the questions.

Remember: this tool is intended to be a guide, not a prescription. You may score a section as a "strong" or "moderate" fit, but ultimately decide to mark it as "weak" because it did not meet criteria that your team determined to be essential. That is why each section should be completed and discussed as a team, rather than by an individual—and the final decision should ultimately be based on your team's better judgement.

Part II. CMIS Assessment

CMIS Assessment Tool

CMIS NAME AND VERSION:

EVALUATION DATE:

EVALUATION TEAM (NAMES AND TITLES):

SYSTEM SPECIFICATIONS

	YES	NO	POINTS EARNED	RATIONALE	NOTES
SOFTWARE					
1. Is there flexibility in the database design to adapt to your country's data needs?	2	0		Since different governments, child protection systems, and contexts all have their own ways of collecting, managing, and organizing data, it is important the CMIS allows for flexibility in database design. This way it can be modified to fit your needs. The database design should allow for adding new data fields without significant structural changes to the database or application source code.	
2. Is the technology stack used by the CMIS familiar to your IT staff?	1	0		Familiarity with the technology stack is useful in terms of understanding the software build, adapting the system to your context, and for any quick fixes. The technology stack is the set of technology components, programming languages, and services used to build the frontend and backend of the software application, as well as the database.	
3. Is the technology stack used by the CMIS still supported by its providers?	1	0		A CMIS should not be built on deprecated technology, not only because you will not have support with technical issues, but also for security reasons (to prevent exploitation of known vulnerabilities).	

4. Are there local IT service providers or human resources in-country available to support the CMIS technology stack?	2	0		There should be local technology service providers or developers available in the market with the required skills to support the technology stack of the CMIS.	
5. Does the CMIS have data backup options built in?	2	0		Backing up your data regularly is crucial to preventing data loss, so the CMIS must have options to do so built in. Backup options could include exporting the data directly from the CMIS or creating automated copies of the database that store the data.	
6. Are the data backup options automatic?	1	0		Automatic data options require little or no human intervention in backing up and storing data from the CMIS. Automating the data backup process saves time and is less complex than doing so manually.	
7. Are software updates available for free?	1	0		Most software license purchases include software updates at no charge, since these are typically maintenance/security updates to fix issues.	

8. Does the CMIS have an open-source license?	1	0		Open-source is software with source code that anyone can view, copy, modify, and share. It will give sustainability to your CMIS because you won't depend on a single vendor or developer to adapt it and it's constantly being reviewed by a global community. The Principles for Digital Development encourage the use of open-source tools, which is why it has been given a point in this assessment.
9. Is this CMIS a digital public good?	1	0		Digital public goods are tools that are not only open-source, but also widely supported by international organizations and adhere to best practices and global standards. Utilizing a digital public good is a measure of a tool's strength and potential for sustainability, in terms of both use and support.
HARDWARE				
10. Does the CMIS offer a variety of access methods: via desktop, browser, tablet, mobile, etc.?	2	0		In your Resource Assessment, you determined what forms of access your staff will primarily depend on. These forms should be supported by the CMIS.
11. Does this CMIS require a reasonable amount of server space?	1	0		Physical server space is required to store data locally, and you must make sure you have enough of it for your CMIS to function in both the near- and long-term. Check your Resource Assessment.
	TOTAL SCORE:			

SCORING

Each specification has been weighted a certain amount based on its relative importance. After you have totaled the score, use the chart below to decide which color + rating to assign to this category.

Be sure to look carefully at the specifications that earned 0 points. Are any of them must-haves, or non-negotiable for your team? **If so, mark the section as a "weak fit" regardless of the score.**

			COLOR + RATING
0–9	WEAK FIT		
10–13	MODERATE FIT	➡	
14–15	STRONG FIT		

DISCUSSING RESULTS

Given that needs and requirements vary across teams, it is important to discuss the results of this scoring with your team. Are there any measures that could be taken to improve the score? If so, could you rescore with these measures in mind? Consider the following, if applicable:

- Paying for additional software customization to meet specifications (Who can do that? How much will it cost? How long will it take?)

- Purchasing additional server space (Where will it be located? How much will it cost?)

- Training team members on the new software stack (Who will train them? How much will it cost?)

DECISION MAKING

	YES	NO	POINTS EARNED	RATIONALE	NOTES
WORKFLOW FIT					
1. Will this CMIS provide value to all levels of the child protection team?	2	0		A good CMIS should offer value to the entire child protection system, from national-level staff to regional and local levels, not only to a certain subset of staff. The definition of "value" will differ depending on the use, staff structures, etc., but referring to your Stakeholder Map and Resource Assessment will help your team discuss this question.	
2. Does this CMIS allow for flexibility to design data processes that fit into your team's workflows?	2	0		A CMIS should be flexible enough to fit your team's needs, and not the other way around. Refer to your Stakeholder Map to determine what your team's needs are, and make sure the CMIS allows you to build data entry and retrieval processes that match.	
3. Does this CMIS offer potential solutions to some of the gaps and opportunities identified in your Stakeholder Map?	2	0		A good CMIS offers support for long-term strategy and change as well as the current set of processes and should allow you to incorporate new solutions as they arise.	

5. Is there a form builder option to customize data entry?	1	0		Form builders expedite the creation of forms greatly, making them a very useful feature for data systems.	
6. Are effective case filtering, sorting, and search features included in the CMIS?	2	0		Being able to effectively sort through tremendous numbers of cases is an essential feature of a CMIS system, going beyond a design feature to a requirement. If only some of these features are included, or they are inadequate, you may want to select "no."	
REPORTING					
7. Does the CMIS include a feature to build data dashboards?	2	0		Dashboards can be useful for quickly viewing up-to-date data, so this feature is an extremely useful one to have.	
8. Does the CMIS include a feature to create and print data reports?	1	0		The ability to create and print reports is key to being able to share data with those who may not have access to the CMIS.	

9. Is the CMIS capable of tracking data longitudinally?	2	0		A core functionality of any system that will track children is to be able to track them across time and across different social services.
10. Are country child protection and care case management indicators able to be included into a dashboard/report?	2	0		Case management indicators also vary by context, and as such should be able to be customized in a CMIS.
11. Is there an appropriate or flexible level of granularity within the data reporting system?	2	0		Indicators and reporting data may also be recorded or needed at various levels of granularity and should be customizable. The CMIS should be able to collect and show data disaggregated by sex to identify potential sex-related patterns.
	TOTAL SCORE:			

SCORING

Each specification has been weighted a certain amount based on its relative importance. After you have totaled the score, use the chart below to decide which color + rating to assign to this category.

Be sure to look carefully at the specifications that earned 0 points. Are any of them must-haves, or non-negotiable for your team? **If so, mark the section as a "weak fit" regardless of the score.**

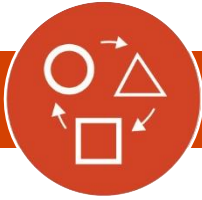|	
0–12	WEAK FIT
13–15	MODERATE FIT
16–18	STRONG FIT

COLOR + RATING

DISCUSSING RESULTS

Given that needs and requirements vary across teams, it is important to discuss the results of this scoring with your team. Are there any measures that could be taken to improve the score? If so, could you rescore with these measures in mind? Consider the following, if applicable:

- Slightly altering your team's workflows to better fit the CMIS (Would this inconvenience anyone? Is it a feasible option?)

- Can alterations be made to the CMIS that would provide value across all levels of stakeholders? (How would that look? How much effort would that require? How much would it cost?)
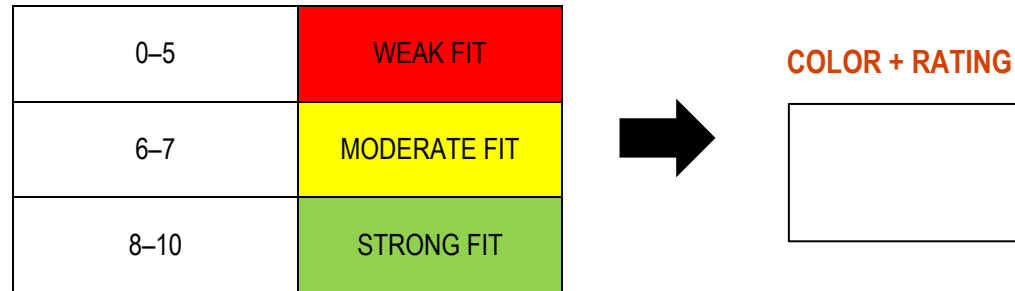
INTEROPERABILITY

	YES	NO	POINTS EARNED	RATIONALE	NOTES
FEASIBILITY					
1. Does the CMIS have an interoperability interface?	2	0		Interoperability with other systems will not be possible without options built into the CMIS for connecting to other APIs. The CMIS may be able to share or receive data through an API or standard formats such as JSON, XML, or CSV.	
2. Does the CMIS have effective data exchange methodologies outlined?	1	0		The CMIS must have a method of data exchange documented that describes the way it will interact with other systems and their APIs.	
DATA EXCHANGE STANDARDS					
3. Does the CMIS support harmonization of its data fields with the agreed national data standards?	2	0		Data formats and standards will depend on the country context and will enable communication between different information systems. An example of these standards is having identifiers assigned to geographic areas. The CMIS should have the flexibility to harmonize the data that is being collected with these identifiers.	

4. Does the CMIS comply with in-country policies on data exchange?	2	0		Some countries have laws or policies regulating data exchange standards or methodologies, so the CMIS's data exchange must be compliant with any such laws.	

IDENTIFIERS

5. Is there a unique ID assignable for every individual referenced in the CMIS?	2	0		Ensuring proper ID assignments ensures that records can be maintained accurately and that there are no mix-ups or duplicates in the system.	
6. Does the CMIS allow for harmonization of unique IDs with other national ID systems?	1	0		Using standardized ID systems ensures that the CMIS can interact efficiently with other systems in government, without needing to match data points.	
TOTAL SCORE:				

SCORING

Each specification has been weighted a certain amount based on its relative importance. After you have totaled the score, use the chart below to decide which color + rating to assign to this category.

Be sure to look carefully at the specifications that earned 0 points. Are any of them must-haves, or non-negotiable for your team? **If so, mark the section as a "weak fit" regardless of the score.**

0–5	WEAK FIT
6–7	MODERATE FIT
8–10	STRONG FIT

COLOR + RATING

DISCUSSING RESULTS

Given that needs and requirements vary across teams, it is important to discuss the results of this scoring with your team. Are there any measures that could be taken to improve the score? If so, could you rescore with these measures in mind? Consider the following, if applicable:

- Paying for additional software customization to build in interoperability (Is this technically feasible? Who would do the customization? How much would it cost?)

USABILITY

	YES	NO	POINTS EARNED	RATIONALE	NOTES
GENERAL					
1. Is the CMIS compatible with your team's operating system?	2	0		A CMIS that is not compatible with your team's primary operating system (Windows, Mac, etc.) will not run on them.	
2. Does the CMIS work in low-bandwidth settings?	2	0		Some areas of your country may have inconsistent or slow Internet, so the CMIS must be designed to also be able to work in those settings.	
3. Does the CMIS have an offline option available?	1	0		Some areas of your country may not have any kind of Internet access, so an option to work offline until an Internet connection can be established (and then syncing) should be offered by the CMIS.	
4. Are there appropriate language options for users in your country's language?	2	0		If the CMIS is in English, but English is not the primary language used by your team, the system must offer either other languages that they speak or the feature to create translations—otherwise nobody will understand!	

NON-TECHNICAL USERS				
5. Does the CMIS have an intuitive user interface (UI) that someone without much training could still figure out how to use?	2	0		An intuitive UI is essential to good software because it lowers the barriers to use and ensures that anyone can learn to use the software without needing a significant amount of training.	
TECHNICAL USERS				
6. Is there a straightforward process to add new indicators to the CMIS, such as a wizard?	1	0		Adding new indicators to a set database structure can be complex and difficult, so having a wizard to take care of it all for a user increases a CMIS's usability greatly. Indicators, in this case, are data points that are managed by the CMIS.	
7. Is there a simple process to edit existing indicators?	1	0		Editing indicators can be just as complicated as adding them, so this is also a very useful feature.	
	TOTAL SCORE:			

SCORING

Each specification has been weighted a certain amount based on its relative importance. After you have totaled the score, use the chart below to decide which color + rating to assign to this category.

Be sure to look carefully at the specifications that earned 0 points. Are any of them must-haves, or non-negotiable for your team? **If so, mark the section as a "weak fit" regardless of the score.**

			COLOR + RATING
0–6	WEAK FIT		
7–9	MODERATE FIT	➡	
10–11	STRONG FIT		

DISCUSSING RESULTS

Given that needs and requirements vary across teams, it is important to discuss the results of this scoring with your team. Are there any measures that could be taken to improve the score? If so, could you rescore with these measures in mind? Consider the following, if applicable:

- Paying for software translation (Who would do that? How long would it take? How well would it work? How much will it cost?)

- If an offline version is not available, can a paper version be used until it is online again? (Is this feasible given your team's workflows? Would it be a reliable method?)

- Could training help overcome any usability issues? (If so, what kind of training? Who would need to be trained, and who would train them? How much would it cost?)

DOCUMENTATION & SUPPORT

	YES	NO	POINTS EARNED	RATIONALE	NOTES
DOCUMENTATION					
1. Is user documentation available?	2	0		User documentation (manuals, user guides, etc.) should be available to help end users to successfully use the CMIS.	
2. Is technical documentation available?	2	0		An information system should have documentation available that describes its handling, functionality, and architecture.	
3. Is a troubleshooting guide available?	1	0		For common problems, troubleshooting guides are helpful for users to solve issues on their own, without outside help.	

4. Is a technical troubleshooting guide available?	1	0		Similar to how a general troubleshooting guide is useful for average users, a more technical troubleshooting guide makes an IT administrator's job easier.	
SUPPORT					
5. Does the CMIS come with some form of technical support?	2	0		Technical support is crucial for a CMIS. This support could come from multiple sources, depending on the type of CMIS it is: from the vendor, an open-source community, a third-party firm that specializes in this CMIS, etc.	
6. Are training modules available for CMIS features?	1			Ready training modules mean that users who want to learn about a particular feature can simply choose to train on that, rather than go through an entire CMIS training.	

7. Are multiple forms of support built in for users: video guides, how-tos, etc.?	1	0		Different forms of help are useful to different users, so having options on hand increases the likelihood that a user can solve their own issues.	
8. Is dedicated technical support available for IT professionals?	1	0		Having a point of contact for technical staff cuts down on the amount of searching and time it would otherwise take to find support from the vendor's help desk.	
	TOTAL SCORE:			

SCORING

Each specification has been weighted a certain amount based on its relative importance. After you have totaled the score, use the chart below to decide which color + rating to assign to this category.

Be sure to look carefully at the specifications that earned 0 points. Are any of them must-haves, or non-negotiable for your team? **If so, mark the section as a "weak fit" regardless of the score.**

0–5	WEAK FIT
6–8	MODERATE FIT
9–11	STRONG FIT

COLOR + RATING

DISCUSSING RESULTS

Given that needs and requirements vary across teams, it is important to discuss the results of this scoring with your team. Are there any measures that could be taken to improve the score? If so, could you re-score with these measures in mind? Consider the following, if applicable:

- Creating documentation for your team's use cases (Is this possible? Who would create the documentation? Would it cost anything?)

- Creating your own troubleshooting guides for your team, based on common use case scenarios for your context (Who would make it? How much time and money would it cost?)

DATA GOVERNANCE

	YES	NO	POINTS EARNED	RATIONALE	NOTES
DATA AND SYSTEM OWNERSHIP					
1. Will the data be stored locally (i.e., not on the cloud or on vendor servers)?	2	0		Since a CMIS deals with potentially sensitive child protection data, it is important to maintain physical and legal ownership of the data. Storing the data locally is the best way to ensure complete governance over the data.	
2. Do you own the source code after purchasing the CMIS (or will you, after purchase)?	2	0		If a tool is open-source, you will own your copy of the source code after "purchase" (which for an open-source tool would be at little to no cost). The Principles of Digital Development encourage the use of open-source technologies, which is why they are given an additional point in this assessment. If the CMIS is proprietary, you would likely mark "No" for this question since the vendor usually continues to own the code (unless your purchase agreement included a copy of the code base).	
3. Can your team export all data from the CMIS if you choose to switch to a different software solution?	1	0		Having the ability to export all data from the CMIS and then import it to a new software solution will avoid being locked to a single vendor and will give you flexibility to migrate to a new platform.	

4. Does the vendor provide access to new versions of software?	1	0		As new versions of the software are released, you should have access to upgrades for at least a certain amount of time, especially since new versions typically include security upgrades.	
DATA ACCESS					
5. Are there different levels of access that can be provided to users? (e.g., admin, local level staff, regional level staff, etc.)	2	0		Not everyone should be allowed unfettered access to data, so it is important to be able to distinguish between different types of users, from those with minimal access to those with complete admin access.	
6. Does the CMIS have the ability to customize dashboards/reports according to user access level?	2	0		In addition to being able to control access, dashboards and reports should also be customizable according to access. This is not only to prevent unauthorized data access, but also to allow greater flexibility and customization for users.	
	TOTAL SCORE:				

SCORING

Each specification has been weighted a certain amount based on its relative importance. After you have totaled the score, use the chart below to decide which color + rating to assign to this category.

Be sure to look carefully at the specifications that earned 0 points. Are any of them must-haves, or non-negotiable for your team? **If so, mark the section as a "weak fit" regardless of the score.**

0–6	WEAK FIT
7–8	MODERATE FIT
8–10	STRONG FIT

COLOR + RATING

DISCUSSING RESULTS

Given that needs and requirements vary across teams, it is important to discuss the results of this scoring with your team. Are there any measures that could be taken to improve the score? If so, could you rescore with these measures in mind? Consider the following, if applicable:

- If the CMIS has yet to be purchased, can the purchase contract be negotiated to allow for local data storage only, even if for a fee?

- Can alterations be made to the software that would cover any specifications not included (data export, custom dashboards, etc.)? (Who would do the software development? How much would it cost?)

PRIVACY & SECURITY

	YES	NO	POINTS EARNED	RATIONALE	NOTES
DATA SECURITY					
1. Is all the CMIS data stored in a secure manner (encrypted)?	2	0		Sensitive data such as passwords, names, personal identification numbers, and medical records should be stored encrypted so that in the event of a data breach, hackers can't access data to do harm. Industry-standard algorithms such as AES or RSA may be used.	
2. Is all the CMIS data transmitted in a secure manner (encrypted)?	2	0		Data transmitted through the Internet in the CMIS should be secured by using encryption methods such as HTTPS in the web interfaces. If the CMIS uses HTTPS, it is using a secured layer to help encrypt the data that is either being provided on the site or entered into the site. This encryption will keep beneficiaries' information safe so that it does not fall into the hands of a hacker.	
3. Is all the data password-protected?	2	0		At minimum, password-protected data adds an extra layer of security to prevent unauthorized access.	

4. Does the CMIS offer multi-factor authentication (MFA)?	1	0		Multi-factor authentication, sometimes referred to as two-factor authentication, is an authentication method that requires the user to provide two or more verification factors to gain access to the CMIS, such as sending a verification code to the user's mobile phone as a SMS to verify identity. MFA enhances the security of the CMIS because users need to identify themselves with more than just a username and password.	
5. Is data strictly accessible only by users granted access to it?	1	0		A basic principle when managing the private information of individuals is that data access should be limited to authorized personnel, based on the need-to-know principle. Users should only access data that will be used for their job functions. Any deviations in strict access protocol should be considered warning flags in a CMIS.	
6. Are all communications between the CMIS and the server encrypted?	1	0		Database connections should all be encrypted and secure to prevent hacks, especially of sensitive personal information.	
7. Does the server infrastructure have a firewall?	2	0		Firewalls are software mechanisms that prevent unauthorized access to something—in this case, to the server where data is located.	

8. Are security audit logs available to administrators?	1	0		All changes made to the system should be clearly documented and available in a security audit log. This ensures transparency around who has accessed the system, and the general security of a CMIS.	
9. Does the CMIS's data storage method comply with all national regulatory frameworks?	2	0		If a CMIS does not comply with your government's regulations, it may not be legally possible to use it.	
DATA PRIVACY					
10. Is sensitive data stored in a de-identified manner?	2	0		All sensitive data should be stored in a manner that prevents anyone who accesses it without authorization to be able to easily identify someone.	
11. Is user access provided according to a protocol?	1	0		Different levels of users should have strictly outlined protocols for access (e.g., admins have full access, data entry can only access forms, etc.)	

12. Is there an efficient and secure way of removing data from the system if requested?	2	0		For privacy reasons, if any record needs to be expunged from the data system, the task should be a simple and doable and the record permanently removed, with no shadow records remaining.	
	TOTAL SCORE:				

SCORING

Each specification has been weighted a certain amount based on its relative importance. After you have totaled the score, use the chart below to decide which color + rating to assign to this category.

Be sure to look carefully at the specifications that earned 0 points. Are any of them must-haves, or non-negotiable for your team?
If so, mark the section as a "weak fit" regardless of the score.

			COLOR + RATING
0–13	WEAK FIT		
14–16	MODERATE FIT	➡	
17–19	STRONG FIT		

DISCUSSING RESULTS

Given that needs and requirements vary across teams, it is important to discuss the results of this scoring with your team. Are there any measures that could be taken to improve the score? If so, could you rescore with these measures in mind? Consider the following, if applicable:

- Can your team add security measures in lieu of any missing specifications? (Who will add them? How will they do it? How much will it cost?)

FINAL RATINGS

SUB-THEME	COLOR RATING	NOTES ON RATING
SYSTEM SPECIFICATIONS		
DECISION MAKING		
INTEROPERABILITY		
USABILITY		
DOCUMENTATION & SUPPORT		
DATA & SYSTEM GOVERNANCE		
PRIVACY & SECURITY		

DISCUSSING RESULTS

Now that you have an approximate measure of how this CMIS would rate for your team, it is important to discuss this result and the reasons for it. Consider the following questions:

- In what aspects did the CMIS fall short? Why did it fall short? What, if anything, could be done to improve inadequate ratings?

- Are there any missing features or usability considerations suggested by your Stakeholder Map and Resource Assessment? How do these additional factors affect the overall rating of the CMIS?

- Does the scoring reflect everything you noted in your Stakeholder Map and Resource Assessment? Are there any special considerations that must be made with the Organizational Self-Assessment results in mind?

- Which, if any, lacking areas could be forgiven? Which are absolutely necessary or could be considered dealbreakers?

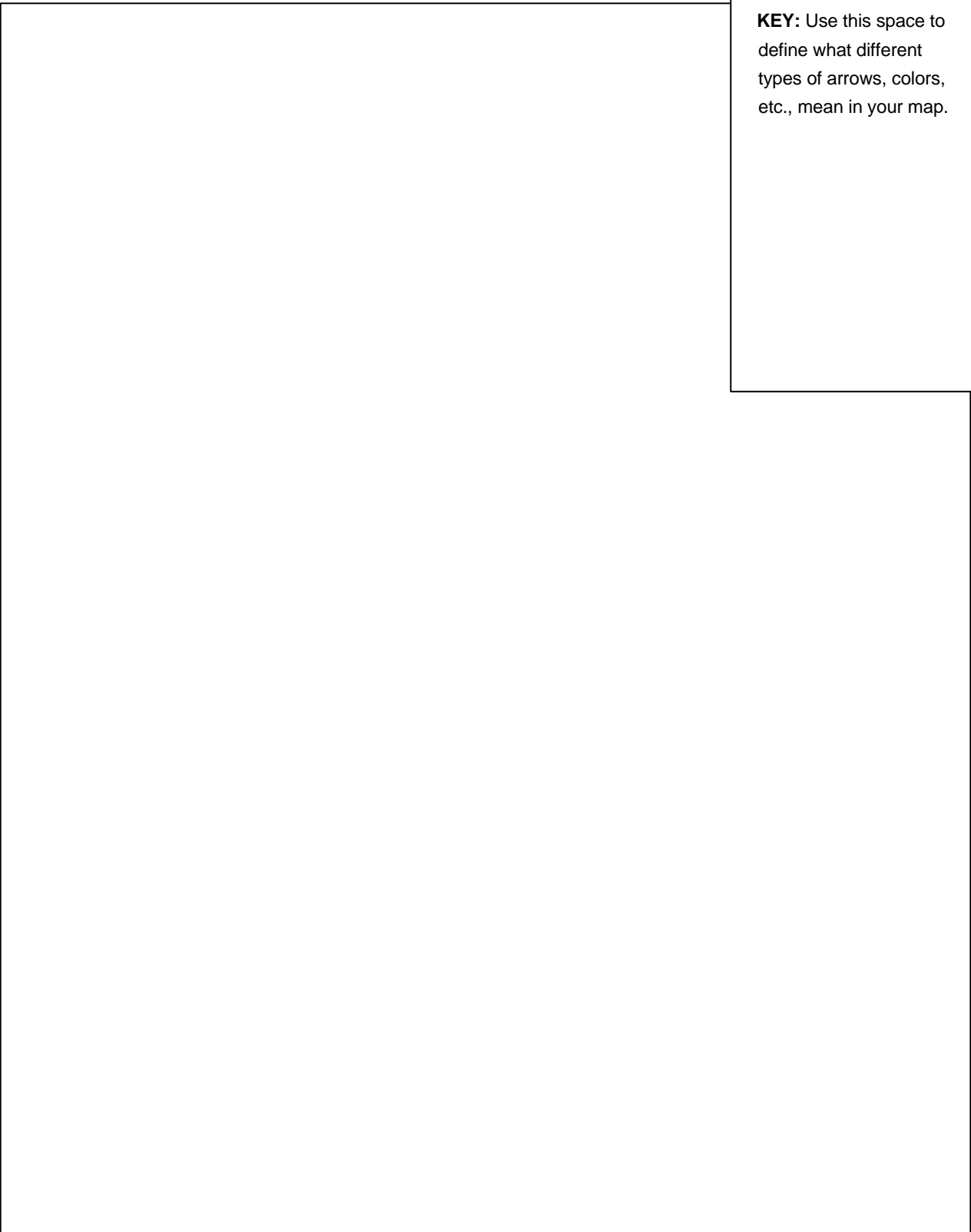## Appendix A. Child Protection Stakeholder Map

Getting Started

1. Use this worksheet as a starting point to guide the development of your stakeholder map. Be sure to consult different perspectives as you develop this map; it is important to get a variety of viewpoints to draw an accurate map. Who are all the different stakeholders involved with child protection in your context? List them here, then map them onto your page by drawing arrows between them to indicate relationships and the flow of data.

2. What are the different data needs of each stakeholder? Complete the table below for each stakeholder, continuing on to another sheet of paper if more space is needed. Then, use arrows, bullet points, and other symbols to map these insights into the corresponding places of your map, as shown in the example.

Stakeholder	Child protection data that they collect	Child protection data that they report	Obstacles, challenges, or special circumstances present

Child Protection Stakeholder Map

KEY: Use this space to define what different types of arrows, colors, etc., mean in your map.

Appendix B. Resource Assessment Worksheet

When evaluating a CMIS, it is important to know how it will fit into the context and circumstances within which it will function. This worksheet will help you think through some different aspects to consider before you select a CMIS suited to your needs. The first section covers general considerations, and the second section covers considerations for the different themes included in the CMIS Assessment framework.

GENERAL

Funding

What does the current data collection/processing budget look like? What will the new budget look like with a CMIS?	
Are there line items in your team's budget to support the purchase, implementation, and support for a CMIS?	
Are there funds available to support training for the CMIS?	

Data Quality

How readily available is the data that the CMIS will track? Are there master lists of staff, etc., to use?	
What barriers exist to collecting child protection data in your country?	
Are the data that will be included in the CMIS already digitized? If not, what efforts will need to be taken before they are available digitally?	

Internet and Power Access

How widely available is Internet access in your country?	

How easily and often is electricity available throughout your country?	
Are all staff able to access the Internet?	
What are the primary ways in which staff access the Internet (mobile, Wi-Fi, etc.)?	
Are Internet speeds adequate across the country for your staff?	

Technology Access

What forms of technology are most commonly used across your staff: desktops, laptops, tablets, smart phones?	
Who is responsible for maintaining the technology?	
What operating system is most commonly used – Windows, Mac, Android, etc.?	

Physical Space Requirements

If the data will be stored locally, where will it be stored? Who is responsible for that server?	
What server specifications will be needed? Does your server space meet these specifications?	
Where will computers, phones, and other equipment be stored? Who will be responsible for them?	

Technical Staff Availability

Does your child protection department have its own IT staff?	
Does it have access to a dedicated IT support team?	
Will the IT staff be able to support the implementation and use of a new CMIS?	

FRAMEWORK

System Specifications

Is the CMIS open-source or proprietary? What ramifications does that have for your software management process?	
Are the technology components included in the CMIS compatible with defined government standards?	

Decision Making

How will this CMIS fit into existing decision-making processes for child protection staff?	
How will the CMIS affect decision making for other stakeholders in your ecosystem map?	
Is there a culture of using data to make decisions within your team? How equipped is your team to conduct analyses on your data?	
Are there cultural factors to consider for collection and use of data to explore gender-related patterns and make decisions accordingly?	

Interoperability

Does an enterprise architecture already exist? If so, what type?	
What other systems will the CMIS need to interact with? Do all of them have APIs?	
Is there a defined and documented information exchange policy that you will need to adhere to?	
Is there a data dictionary or set of data standards that must be adhered to?	

Usability

What languages is the CMIS available in, and are the languages spoken by your staff included?	
What formats is the CMIS available in: desktop, tablet, mobile? Does it line up with the commonly used technologies identified in "Technology Access"?	

Documentation and Support

Is documentation and support available in the primary languages spoken by your staff?	
What level of support will your staff require from the CMIS vendor? Basic, medium, advanced?	

Data and System Governance

What kind of software license is being offered for the CMIS? Will your team own the code after purchase?	
What standards does your government have on child protection data governance?	

Privacy and Security

What privacy and security standards are in place that must be adhered to? Are they all documented?	
What data security policies and SOPs are in place already? What additional data security policies will be needed with the addition of an electronic records system?	
Who are all the different stakeholders who will be utilizing the CMIS? What level of access should each of them have?	

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