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# Management Information Systems for Conditional Cash Transfers and Social Protection Systems in Latin America: A Tool for Improved Program Management and Evidence-Based Decision-Making

By Verónica Silva Villalobos with  
Gastón Blanco and Lucy Bassett



World Bank  
Social Protection Unit  
Human Development Department  
Latin America and the Caribbean Region



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## Introduction

Latin America is home to numerous Conditional Cash Transfer programs (CCTs) and other social protection programs, most of which use a Management Information System (MIS) to manage program data. MIS are considered the backbone of CCT programs because they facilitate good program management, decision-making, and program accountability.

To better understand the scope of these systems and the role they play in program decision-making and management, the World Bank's Social Protection Unit for the Latin America and the Caribbean Region organized a workshop entitled "The Role of Management Information Systems in CCTs and Social Protection Systems in Latin America," held in Washington, DC on January 25 and 26, 2010. In preparation for the workshop, we collected information on the experiences of MIS in ten CCT programs in the region<sup>1</sup> using a survey about the objectives, structure and use of the MIS. The workshop was attended by World Bank staff from the Latin America and Caribbean Region's Social Protection Unit, as well as experts in information systems for social protection programs from other World Bank regions and units. In addition, MIS experts from Mexico and Chile were invited to the workshop to share the progress of the MIS in their respective countries and to help systematize other countries' experiences during the event.

The workshop allowed for a detailed analysis of lessons learned about the design and implementation of MIS in the region, with a focus on good practices in the design and use of these systems for integrated program management. This report presents the main conclusions from the workshop. The main objective of this report is to compile practical experiences in the design, start-up and implementation of MIS for CCT programs to support country staff working in social protection and World Bank staff who offer technical assistance to social protection programs in different stages of implementation. This document does not aim to provide an exhaustive discussion of all topics related to the effective implementation of MIS, but rather to begin to systematize experiences that allow for ongoing learning in the future. The document is divided into three chapters and a conclusions section.

Chapter 1 describes the main contributions that MIS can make during the different phases of a social protection program. In particular, we detail the contributions of MIS during the operation, supervision and evaluation phases. The main objective of this chapter is to identify the value of MIS, including key factors for good design and application.

Chapter 2 gives a detailed description of the structure of an MIS for a conditional cash transfer program. Based on the experience of CCT programs in Latin America and the Caribbean, the chapter analyzes MIS operations in terms of data collection processes and the generation and management of information for the main operating processes of a CCT. This chapter also identifies important elements for the effective design of an MIS for a CCT.

Finally, Chapter 3 analyzes the MIS of the 10 CCT programs presented in the workshop and discusses their main strengths and weaknesses, their level of development, and some challenges in meeting the objectives of the CCTs or social protection systems in each country.

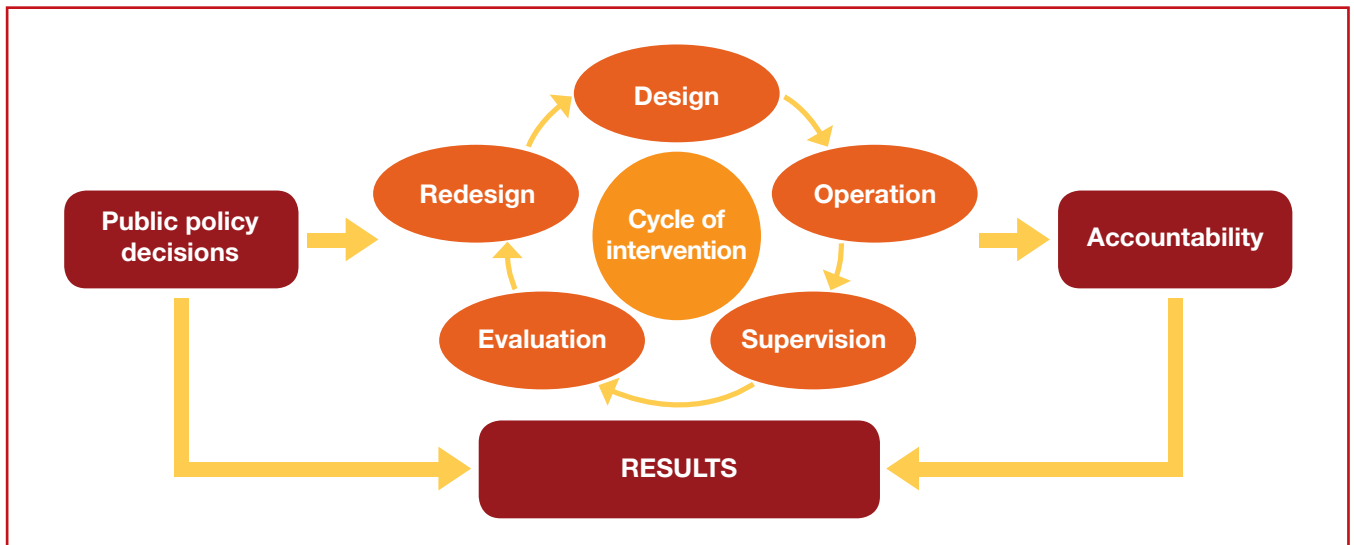
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<sup>1</sup> The 10 countries that responded to the survey are: Bolivia, Brazil, Chile, Colombia, Dominican Republic, Guatemala, Jamaica, Mexico, Panama, and Peru.

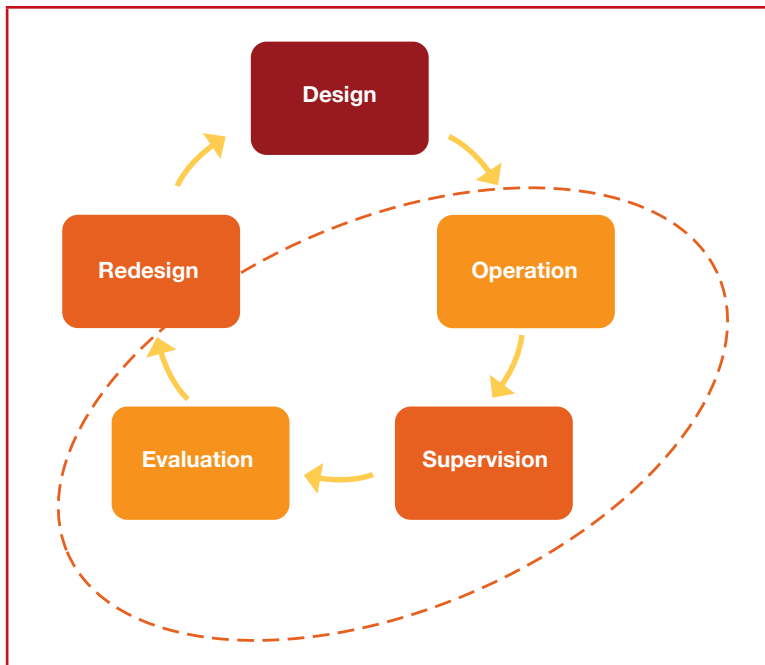


## Chapter 1. Management Information Systems as a Management Tool

Any social program involves a continuous management cycle that includes design, operation, supervision, evaluation, and redesign processes. The implementation of a program reflects a specific political decision that has set of specific objectives and seeks to achieve particular results within a given time frame. This is the framework within which the management of a social program occurs.



While social protection programs, and particularly CCTs, differ depending on the country context, any social program requires a combination of tools that facilitate program management. MIS are a preferred tool for staff in charge of these programs. As shown in the diagram below, program managers focus most of their time on a repeating cycle of operation, supervision, and evaluation, so MIS should support these elements.



### A. Operation

One of the core activities of program operation is the monitoring of program actions. MIS information processing allows for program monitoring and generates inputs for the other program management processes.

#### i. Information for Management

When considering how to manage program information for this stage, it is important to identify the core monitoring issues in a CCT program. The table below outlines the core CCT program processes, differentiating between issues related to processes and those related to results.<sup>2</sup>

<sup>2</sup> The list of issues is not meant to be exhaustive, but instead covers issues that are considered essential to the tasks performed by program managers.

**Identification of beneficiaries:**

	Processes	Outputs
<b>Targeting</b>	<ul style="list-style-type: none"> <li>There is enough information to carry out the targeting process (sufficient – insufficient). Reasons why it is insufficient.</li> </ul>	<ul style="list-style-type: none"> <li>Number of geographical areas that meet the targeting requirements.</li> <li>Number of people/households that meet the targeting requirements.</li> <li>Number of people/households that meet the targeting requirements but cannot be incorporated due to program size restrictions (exclusion due to coverage limitations).</li> <li>Number of people/households that meet the targeting requirements but live in areas not covered by the program (exclusion due to geographical targeting).</li> </ul>
<b>Enrollment</b>	<ul style="list-style-type: none"> <li>The enrollment process is completed by the specified deadlines (meets deadline – does not meet deadline). Reasons for not meeting deadline.</li> </ul>	<ul style="list-style-type: none"> <li>Number of selected beneficiaries that enroll.</li> <li>Number of selected beneficiaries that do not enroll.</li> <li>Number of selected beneficiaries pending enrollment.</li> <li>Reasons for the pending enrollment.</li> <li>Reasons for not enrolling.</li> </ul>
<b>Program exit/ graduation</b>	<ul style="list-style-type: none"> <li>Lists of beneficiaries ending program participation are complete (complete – incomplete – not available). Reasons for being incomplete or unavailable.</li> <li>The information has been validated by the person in charge (yes – no). Reasons for not being validated.</li> </ul>	<ul style="list-style-type: none"> <li>Number of beneficiaries ending their participation in the program.</li> <li>Reasons for ending participation in the program.</li> </ul>

**Registration:**

	Processes	Outputs
<b>Database</b>	<ul style="list-style-type: none"> <li>Registries for all geographical areas where the program operates are available (all – some). Reasons for missing registers.</li> <li>Registries are delivered on the specified deadline (meets deadline – does not meet deadline). Reasons why registries do not meet deadline.</li> <li>Mandatory fields of data registries are complete (complete – incomplete). Reasons for incomplete registries.</li> </ul>	<ul style="list-style-type: none"> <li>Number of geographical areas that have turned in registries.</li> <li>Number of geographical areas that have not turned in registries.</li> <li>Number of complete registries.</li> <li>Number of pending registries.</li> <li>Number of rejected registries.</li> </ul>
<b>Validation</b>	<ul style="list-style-type: none"> <li>There is sufficient information to carry out data validation (sufficient – insufficient – not available). Reasons for being insufficient or unavailable.</li> </ul>	<ul style="list-style-type: none"> <li>Number of validated registries.</li> <li>Number of pending registries.</li> <li>Number of non-validated registries.</li> </ul>
<b>Updating</b>	<ul style="list-style-type: none"> <li>There is sufficient information to update data (sufficient – insufficient). Reasons for being insufficient.</li> </ul>	<ul style="list-style-type: none"> <li>Number of updated registries.</li> <li>Number of registries not updated.</li> </ul>

**Certification of co-responsibilities:<sup>3</sup>**

	Processes	Outputs
<b>Collection</b>	<ul style="list-style-type: none"> <li>Information about compliance with co-responsibilities is available by the specified deadlines (meets the deadline – does not meet the deadline – not available). Reasons for not meeting the deadline or for being unavailable.</li> </ul>	<ul style="list-style-type: none"> <li>Number of geographical areas<sup>4</sup> with complete co-responsibility information.</li> <li>Number of geographical areas with incomplete co-responsibility information.</li> <li>Number of geographical areas with no co-responsibility information.</li> </ul>
<b>Verification</b>	<ul style="list-style-type: none"> <li>Co-responsibility information is verified by the specified deadline (meets the deadline – does not meet the deadline). Reasons for not meeting the deadline.</li> <li>Information about co-responsibilities is complete (complete – incomplete – not available). Reasons for being incomplete or unavailable.</li> <li>Verification of the information is validated by the person in charge of the process (yes – no). Reason for not being validated.</li> </ul>	<ul style="list-style-type: none"> <li>Number of beneficiaries that comply with all co-responsibilities.</li> <li>Number of beneficiaries that partially comply with co-responsibilities.</li> <li>Number of beneficiaries that do not comply with any co-responsibility.</li> <li>Reasons for partial compliance of co-responsibilities.</li> <li>Reasons for non-compliance of co-responsibilities.</li> </ul>
<b>Penalties</b>	<ul style="list-style-type: none"> <li>Information for penalties is complete (complete – incomplete – not available). Reasons for being incomplete or unavailable.</li> <li>Information for penalties are based is valid according to the program rules (it is right to apply penalties) (valid – invalid). Reasons for being invalid.</li> </ul>	<ul style="list-style-type: none"> <li>Number of beneficiaries with suspended or cancelled payments etc.</li> <li>Reasons for the suspension, cancellation, etc.</li> </ul>

**Payments:**

	Processes	Outputs
<b>Eligibility</b>	<ul style="list-style-type: none"> <li>Lists of beneficiaries eligible for payment are available by the specified deadline (meets the deadline – does not meet the deadline). Reasons for not meeting the deadline.</li> <li>Lists of beneficiaries eligible for payment are complete (with the information required for payment) (complete – incomplete). Reasons for being incomplete.</li> </ul>	<ul style="list-style-type: none"> <li>Number of approved payments.</li> <li>Number of uncollected payments that are approved for a future round of payments.</li> </ul>

<sup>3</sup> We use the term “co-responsibilities” instead of “conditionalities” because it reflects the double responsibility involved in compliance with program requirements to use social services. The beneficiary is responsible for using services (demand) and the program is responsible for providing the services (supply). MIS can regulate both aspects of co-responsibility.

<sup>4</sup> A geographical area should be understood as the spatial disaggregation(s) used by the program (regions, provinces, municipalities, localities, communities, etc.).

<b>Payment</b>	<ul style="list-style-type: none"> <li>• Payment lists are available by the specified deadline (meets the deadline – does not meet the deadline).</li> <li>• Payment lists are complete in accordance with the standards (contain all required information) (complete – incomplete). Reasons for not complying with the standards.</li> <li>• Payment lists are validated by the person in charge of the process (yes – no). Reasons for not being validated.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of payments issued.</li> <li>• Number of pending payments.</li> <li>• Reasons for pending payments.</li> </ul>
<b>Reconciliation</b>	<ul style="list-style-type: none"> <li>• Reconciliation is done by the specified deadline (meets the deadline – does not meet the deadline). Reasons for not meeting the deadline.</li> <li>• There is sufficient information for the reconciliation process (sufficient – insufficient). Reasons for insufficient information.</li> <li>• Reconciliation is validated by the person in charge of the process (yes – no). Reasons for not being validated.</li> </ul>	<ul style="list-style-type: none"> <li>• Total amount of payments issued and paid.</li> <li>• Total amount of payments issued and not paid.</li> <li>• Total amount of pending payments.</li> <li>• Total amount of pending payments by reason or cause.</li> </ul>

## ii. Management Indicators

The information generated by program monitoring and presented in the above tables is not useful in and of itself. For management purposes, it must be transformed into specific **indicators** whose correct interpretation by managers will shed light on program performance.

The management indicators must fulfill a variety of conditions in order to be an effective program monitoring tool. These conditions include the following:

- The indicators are clearly expressed.
- The indicators are comprehensible to the various stakeholders.
- The frequency of measurement is known to all stakeholders.
- The indicators are kept up-to-date.
- The indicators have parameters for comparison (baseline and target, ideally with respect to expected results).
- A basic set of indicators are maintained over time in order to generate information series that allow changes to be reflected.
- The indicators have geographical significance (re disaggregated into proper, relevant geographical divisions)
- The indicators are the preferred source for any reports issued.

## iii. Management Indexes

While each indicator will provide valuable information for program management, management indexes that provide an aggregate measurement of program performance at each program process or geographical area will also likely be required.

Management indicators and indexes are used on a daily basis by program managers in each one of their spheres of action and are an important input for the matrix of indicators set out in the program design. In the case of management indexes, the main users are generally supervisors, coordinators, or those in charge of program operation. Program management must ensure consistency and coherence between the program's indicator matrix and the management indexes because they are complementary and interrelated tools.

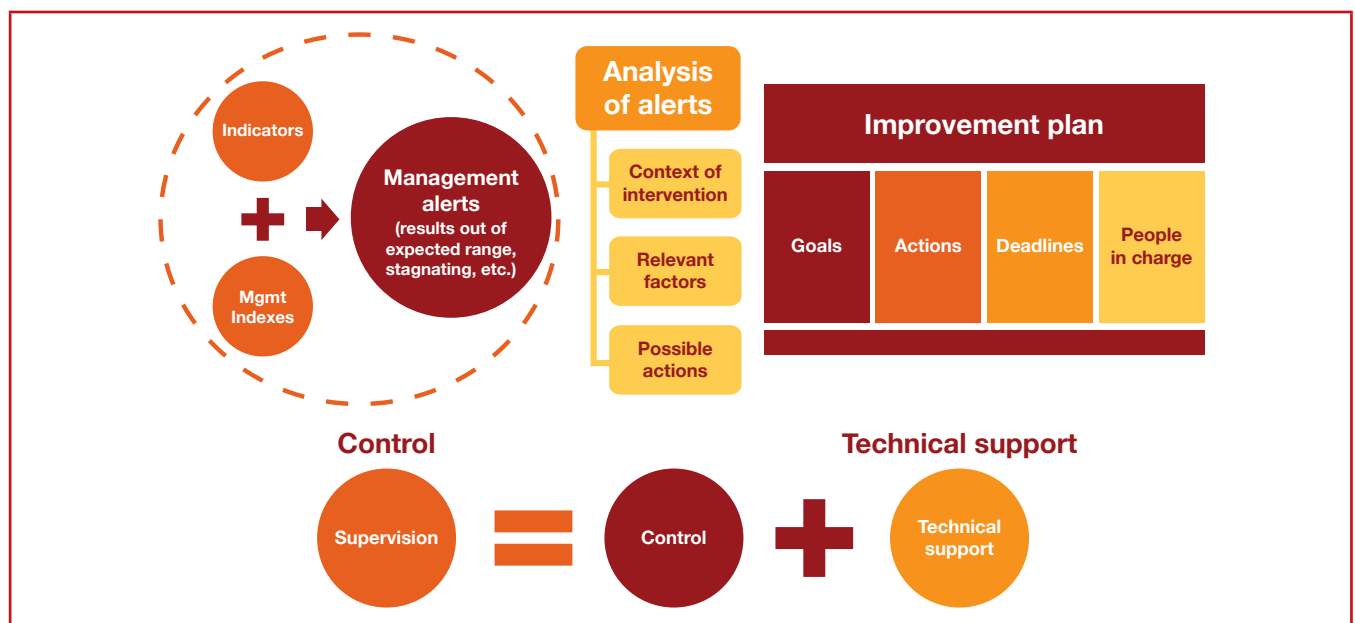
## B. Supervision

Supervision is an indispensable task, which should be based on the analysis and interpretation of the management indicators and indexes discussed above. The task of supervision combines management control with an ongoing process of learning about the program (technical support).

Main Aspects of Supervision
Examination of the context of the intervention that could explain the results shown by the indicators.
Further exploration of factors (of the program itself, of administrative processes, of the performance of human resources, of inter-institutional relations and of the participation of beneficiaries, etc.) that may have an effect on and/or explain the observed outputs.
Analysis of possible courses of action to deal with observed difficulties.
Preparation of an improvement plan that includes differentiated responsibilities for stakeholders, specific goals, and defined deadlines.
Determination of the need for technical support in order to implement the improvement plan by the specified deadline.
Agreement on assistance or technical support activities to be carried out as a part of the management improvement plan.

While each program defines its own supervision model according to its organizational and administrative structure, more important than the model is the supervision content. Management indicators and indexes are very useful, since, among other things, they supply evidence about the course of program implementation at different stages and levels of program supervision.

Management indicators and indexes guide managers about what and where to supervise. The analysis of the results of the management indicators and indexes, together with their correct interpretation, are indispensable practices on the part of program managers. Changes in management indicators and indexes should guide managers as to which aspects are advancing well, which are lagging, and which do not change over time. The geographical disaggregation of the results of management indicators and indexes is also a key aspect of supervision. Management indicators and indexes that do not change or that stagnate, or significant differences among results from different regions of the country, should be the source of “management alerts” that must be addressed in the supervision process. The diagram below shows that management alerts become the core content of the supervision process. These alerts come from the management indicators and indexes regularly measured by the program.



The management alerts must take into account five main sources of concern during the supervision process:

- Indicators that fall outside established parameters.
- Indicators that show no movement over time (neither positive nor negative).<sup>5</sup>
- Indicators that show dramatic changes from one period to another.
- Indicators that do not change over time.
- Indicators that move backwards over time.

It is useful to share the analysis of management alerts with the work teams involved, especially when this can lend insight into the context in which the program intervention occurs. Two geographical areas or work teams that obtain the same results for a particular indicator may find very different explanations for the result obtained. Most of the time, the differences lie in the context in which the program is being executed.

The identification of possible actions, which will be the basis for the management improvement plan, should be done together with the particular work teams that will be involved in this plan. It is important to remember that they, as the subjects of the technical support, will be the ones that will make it possible to continue with the cycle of ongoing program improvement.

The improvement plan must be very specific and concrete in terms of the goals defined (attainable goals), actions required to achieve those goals (sufficient and suitable to the attainment of the goals), specific time frames, and individuals in charge of each of the actions identified. The effectiveness of the improvement plan will be determined by measuring the management indicators and indexes.

In conclusion, the supervision process is a continuous cycle of improvement supported by informed decisions based on the evidence supplied by the management indicators and indexes, and which involves the participation of the teams in charge in order to improve both the program operation and results.

## C. Evaluation

In the cycle identified for social programs, the main purpose of evaluation activities is to guide the program's decision-making process. The main target audience for evaluation activities is program managers; however, broader audiences are important for program accountability.

The *evaluation of processes* conducted by the program, which is often included in the recurrent measurement of management indicators and indexes, should aid program managers in making the necessary adjustments both to operating procedures and to quality standards.

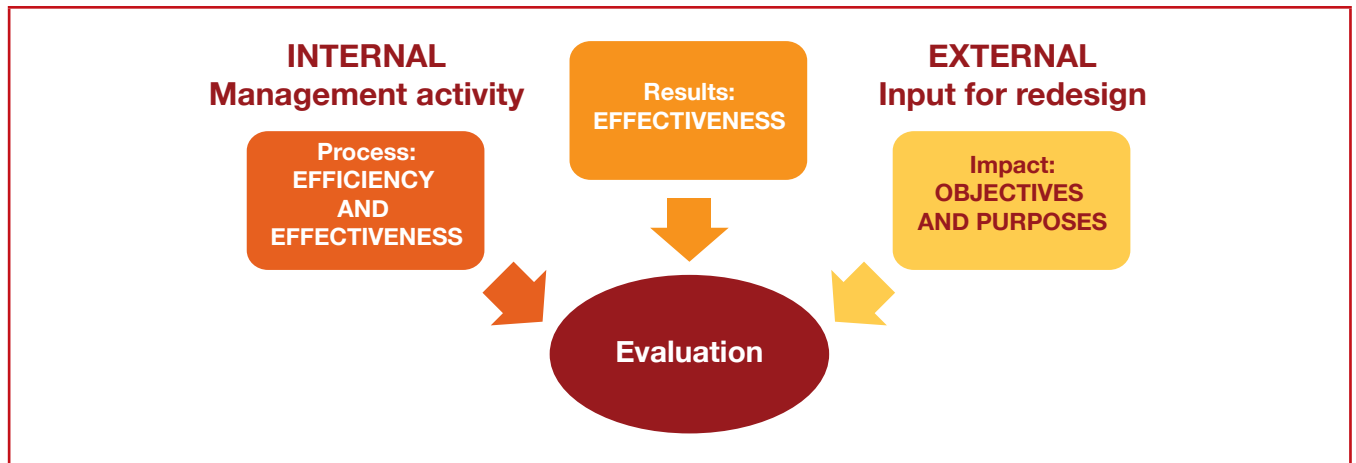
The *evaluation of results*, which also originate from the measurement of indicators, should aid program managers in determining the level of attainment of the program's objectives and goals and to generate any corrective actions required in order to fulfill the public policy commitments assumed by the program.

The administrative data that emerge from the measurement of the management indicator and index matrices are critical to the design of process and results evaluations. This is why the development of the MIS is considered to be an important piece of the program evaluation plan. Results evaluations integrate different information sources such as studies, surveys and focus groups with beneficiaries and stakeholders, among others.

Decisions about corrective actions or program redesign should be based on a rigorous process of ongoing assessment of processes and results. The *impact evaluation* is usually more long-term and is not needed in order to make the required adjustments to improve program effectiveness.

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<sup>5</sup> Experience shows that we should be "suspicious" both of indicators that remain very positive and those that remain very negative over time.



## D. Accountability

The information provided by a program's MIS accountability process is an essential factor for program accountability. The information provided by the MIS in the form of management indicators and indexes should be "translated" according to the different target audiences for the accountability process. The information and the means by which it is delivered should vary and be adapted to the type of stakeholder concerned (within or beyond the program, public opinion, etc.).

Accountability should focus on program results, rather than on processes or means of obtaining those results. The tables below summarize the emphasis of the accountability process according to type of stakeholder in terms of the content provided by the MIS.

WITHIN THE PROGRAM		
STAKEHOLDER	CONTENT EMPHASIS	CORE QUESTIONS TO ANSWER
National and sub-national managers	<ul style="list-style-type: none"> <li>Management indicators and indexes for the corresponding geographical level.</li> </ul>	<ul style="list-style-type: none"> <li>How has the program performed in each of the geographical areas where it has been implemented?</li> <li>What are the areas for improvement?</li> <li>What should be addressed in order to support improved program performance?</li> <li>Is the program meeting its objectives and commitments?</li> </ul>
Intermediaries that coordinate actions at the sub-national level	<ul style="list-style-type: none"> <li>Process and results indicators related to providing services to beneficiaries at the corresponding geographical level.</li> </ul>	<ul style="list-style-type: none"> <li>Are service provision commitments being met in each geographical area?</li> <li>Why are commitments not being met?</li> <li>What are the differences among the different localities in the area?</li> </ul>
Direct operators working in the field	<ul style="list-style-type: none"> <li>Personalized information about the situation of program beneficiaries.</li> <li>Process and results indicators related to providing services to beneficiaries at the corresponding geographical level.</li> </ul>	<ul style="list-style-type: none"> <li>What is the situation of each beneficiary?</li> <li>What are the differences among the different localities in the area?</li> <li>What aspects need to be improved in the provision of services to beneficiaries?</li> </ul>

Beneficiaries	<ul style="list-style-type: none"> <li>Indicators of overall program results, especially in the corresponding geographical areas. Results with respect to program commitments.</li> <li>Use of program resources (ensuring the delivery of information in an easy to understand format).</li> </ul>	<ul style="list-style-type: none"> <li>Is the program meeting its commitments?</li> <li>How many households/people are participating in the program?</li> <li>In which geographical areas is the program being implemented?</li> <li>What are the program resources, what are they used for and how are they distributed?</li> </ul>
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<b>OUTSIDE THE PROGRAM</b>	
<b>STAKEHOLDER</b>	<b>CONTENT EMPHASIS</b>
Other institutions related to the program (not direct implementers)	<ul style="list-style-type: none"> <li>Process and results indicators related to the provision of services to beneficiaries.</li> <li>Overall program result indicators. Results with respect to the program commitments.</li> </ul>
Different levels of government	<ul style="list-style-type: none"> <li>Process and results indicators related to the provision of services to beneficiaries in the corresponding geographical area.</li> <li>Overall program result indicators, particularly in the corresponding geographical areas. Results with respect to program commitments.</li> <li>Resources involved in the corresponding geographical level.</li> </ul>
National Congress (parliamentary authorities)	<ul style="list-style-type: none"> <li>Overall program result indicators, particularly in the corresponding geographical areas. Results with respect to program commitments.</li> <li>Use of program resources.</li> </ul>
President	<ul style="list-style-type: none"> <li>Overall program result indicators, particularly in the corresponding geographical areas. Results with respect to program commitments.</li> <li>Use of program resources.</li> <li>Process and results indicators related to the provision of services to beneficiaries.</li> </ul>

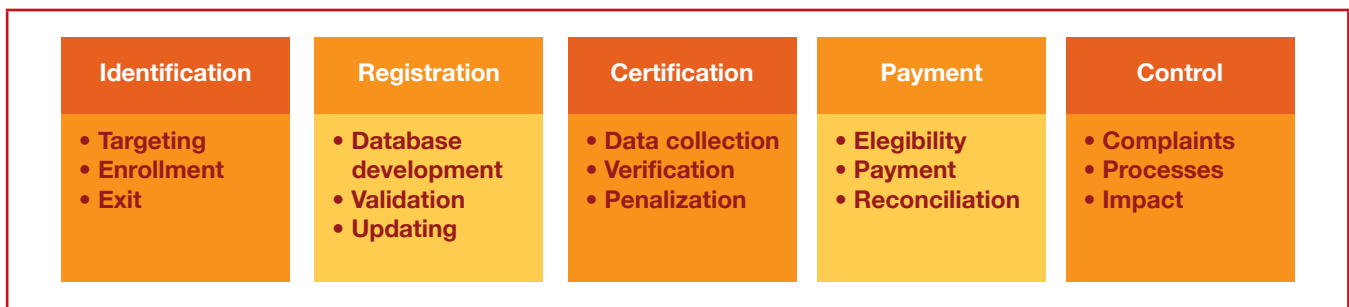
Accountability to the public at large should focus on the overall program results (with more or less detail depending on the stakeholder involved) and on the resources involved and their use. Messages about the changes that have occurred for beneficiaries and for the geographical areas where the program has been implemented are especially important for this type of stakeholder. These messages do not come directly from the MIS management indicators and indexes, but rather from all of the studies, surveys and other evaluation instruments available to the program.

## Chapter 2. Structure of MIS for CCTs

CCTs are social programs with a broad geographical scope and wide coverage of beneficiaries. Their implementation implies the execution of a series of related processes. The following have been identified as key CCT program processes:<sup>6</sup>

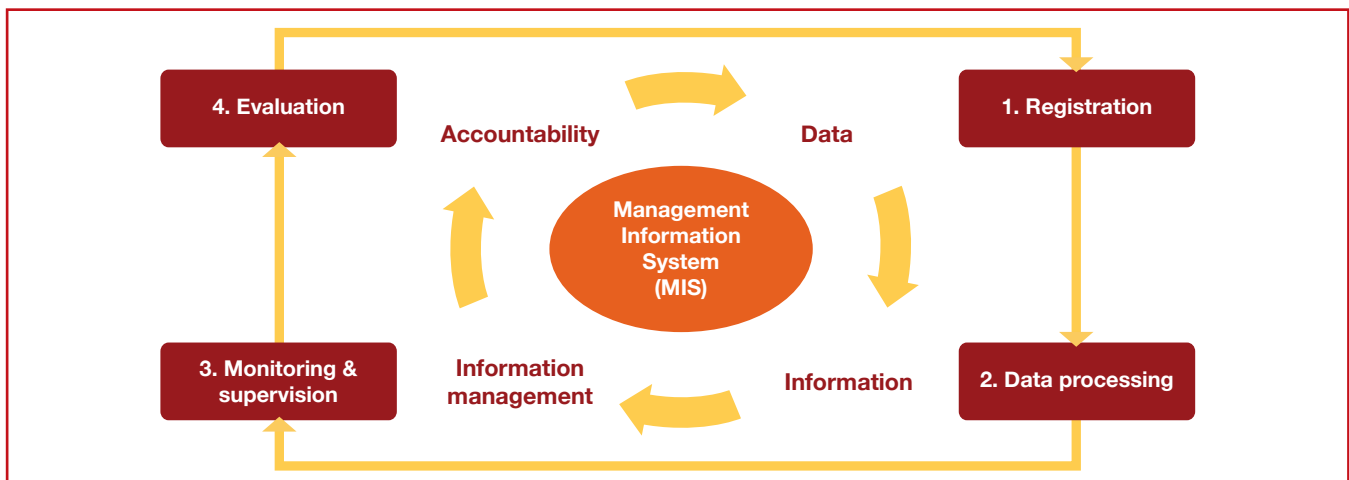
- Identification of beneficiaries
- Registration of beneficiaries
- Certification of co-responsibilities
- Payment of the cash transfer
- Control (monitoring and evaluation and beneficiary services)

The following diagram provides more detail about the activities involved in each process.



MIS for CCTs are relevant to the implementation of the different operating processes and act as a management tool for program administration, operation, monitoring and evaluation. For each of the processes outlined above, the MIS establishes a cycle that transforms the data into relevant information for decision-making and accountability. For example, for the co-responsibilities verification process, the data (registration stage) are generated by health and education service providers. These data are collected and processed, resulting in a co-responsibility compliance report for a specific period, taking into account the features of each beneficiary household. The compliance reports contribute to the program's monitoring process, which can generate alerts about deviations in the behavior of beneficiaries. Finally, the co-responsibility compliance data are made available to the community at large to account for the intermediate results of the program.

The following diagram illustrates the cycle of program processes on the outside and the role of the MIS for each process inside the box:



<sup>6</sup> Baldeon, César and Arribas-Baños, María D. "Management Information Systems in Social Safety Net Programs: a look at accountability and control mechanisms," SP Discussion Paper n° 0819, Social Protection and Labor, The World Bank, August 2008.

## A. Data

The type of data and their quality are central pillars of the MIS, since they determine the degree of support the MIS can offer to program management, monitoring, and evaluation.

Any social program, no matter what the size or issue addressed, has data. The data may be found in the personal notes of the program operators, in the registration records of the beneficiaries (potential and/or current), in data collection instruments designed especially for the program, or in databases structured to store the information used to manage the program. The way in which program data are collected or stored has no bearing on the existence of useful information for program management.

### *i. Data to Be Registered*

It is important that the people in charge of the program identify which data the program needs to register. For this purpose, four key questions should be answered, preferably during the program's design stage: (i) Which data are registered? (ii) What are the data registered for? (iii) How are the registered data used? and (iv) Who uses the data? In the case of a CCT program, at least the following data must be registered:

- Data that accurately identify program participants, including their geographical location (full name, sex, date of birth, complete address, ID card or document number if there is one).
- Data that reflect the expected results of the program. For example, if the program aims to increase household income, then it must register information about the amount and source of household income initially as well as periodically throughout the intervention.
- Data that capture the processes expected to achieve the desired results. For example, the periodic verification of co-responsibilities in a CCT program.

During the design phase of the program, the list of data to be registered for each of the program processes and the recording methods should be defined. There are many experiences in which a program has collected data using its own registration methods, only to find that these methods do not match those of other institutions or associated programs with which information is to be exchanged.

### *ii. Data Collection Mechanisms*

Frequently, more time is spent on defining the means by which data will be collected than on deciding who will collect it. It is true that the data collection method is important, but for the purposes of quality it is more important who collects them. Various CCT programs in the Latin American region have shown that the best registers are those made by the program operators themselves, that is, those in direct contact with the beneficiaries. For this task, local program operators (including program promoters or liaisons, as well as school and health stakeholders) require:

- Training on the use of the data to be collected. Investing in the dissemination of this information and communicating the importance of the data not only for beneficiaries but also for program management has positive effects on data quality. It is important for the operator to know about the use of the data and to be able to explain as clearly as possible to beneficiaries what the data they are providing is for, how it will be used and how they will benefit if the data is recorded correctly. Because of the direct relationship that program operators have with the beneficiaries, it is more likely that beneficiaries will agree to give their personal information and that of their household, which improves the veracity of the information reported by other means.
- Training on the tools to be used for data collection. These may include written surveys or forms, electronic surveys and information entry procedures via the Internet, among others. The tool selected must match the skills and training of the people who will collect the data. The selection of the data collection tool(s) is a crucial process and must be performed with

special care. Sometimes, the selection of the most modern tool is not necessarily appropriate to the technological culture of the operators. This is not to say that the most technologically advanced tools should be avoided, but rather that due precautions should be taken so that this does not end up being a disadvantage and an obstacle to data collection.

- Support mechanisms provided by the program for the data registration process. Training is never enough and many concerns arise once the actual data collection process is started. For this reason, it is essential to provide some type of relevant, appropriate support mechanism for program operators. This will also serve to improve the defined procedures, to the extent that information is collected from the fieldwork itself.

#### Data and Registries: ISSUES TO CONSIDER

Often, more data than needed are collected within the framework of program operation, monitoring, or evaluation. **Once a decision has been made about which data to collect, it is advisable to associate each piece of data with a program process and identify the reason and purpose for selecting the data.**

The selection of data is often clear to those in charge of selecting it but not necessarily to the program operators. **It is important to ensure that the data to be collected are understood by all potential users, especially the operators responsible for data collection.**

Each piece of data has its own response categories. The categories are important because they allow the information to be confirmed with other data sources and also cross-checked with other databases or registers. **It is critical to ensure that the categories chosen are the same as those used by other institutions the program works with.** This guarantees not only data quality, but also the ability to cross-check databases across institutions.

The data collected must be complete. **For both manual and digital registries, it is essential to identify the mandatory fields,** that is, those that totally invalidate the registry if they are not complete. It is very important to be rigorous on this point since it is essential for data quality.

Any new process has the potential to generate resistance and tends to be viewed as more work. Depending on the institutional culture and work practices, some institutions tend to resist the implementation of new processes. These situations are aggravated if the institution has had unsuccessful experiences, for example, with introducing new technology. To prevent this, **it is essential to pay special attention to the institutional culture and provide training on the benefits of the data collection for management.**

A program often works in conjunction with other programs or institutions that lend services to the beneficiaries themselves. In the case of CCTs, there is a close relationship with the **health and education sectors.** The most suitable option is to **have a common registry, independent of who collects the data.** However, there is often resistance to having a shared registry as regular practice in intersectoral management. Program design should incorporate the institutional arrangements required for a shared registry, and the information it contains should be recognized as valid by all institutions involved.

**The data collection processes must guarantee that the beneficiary authorizes the use of his/her data, since the data collected is the property of the beneficiary and not of the institution.** Data collection processes should include beneficiary authorization to use the data. Some countries now have laws on the collection and treatment of sensitive data.

## B. Transforming Data into Information

Even complete, high-quality data have no value unless they can be converted into information that is useful for decision-making and program improvement. This process of transforming data into information requires multiple steps and coordination both at the intra and inter-institutional level.

### *i. Verification*

The data collected by program operators must be subjected to an external verification processes. This is a basic procedure and is important for the subsequent steps in the process of generating information. Verification, depending on the program characteristics, context and resources, may be:

- ***In person:*** A random supervision process, where registries are chosen and the collected data are verified in the field. This should be a regular procedure for programs that use these mechanisms, including clear and explicit courses of action in the case of mismatching or false registries.
- ***Administrative:*** When other registries are available (for example, from health or education) these can be cross-checked with the data collected by the program and can act as an external verifier.
- ***Electronic:*** Ideally this takes place online. This implies having one or more validated database that can be consulted by the program registry to verify the data.

All of the above methods require standardized verification procedures and clarity with respect to who is in charge of the procedures. As mentioned, the people in charge should not be involved in the data collection process.

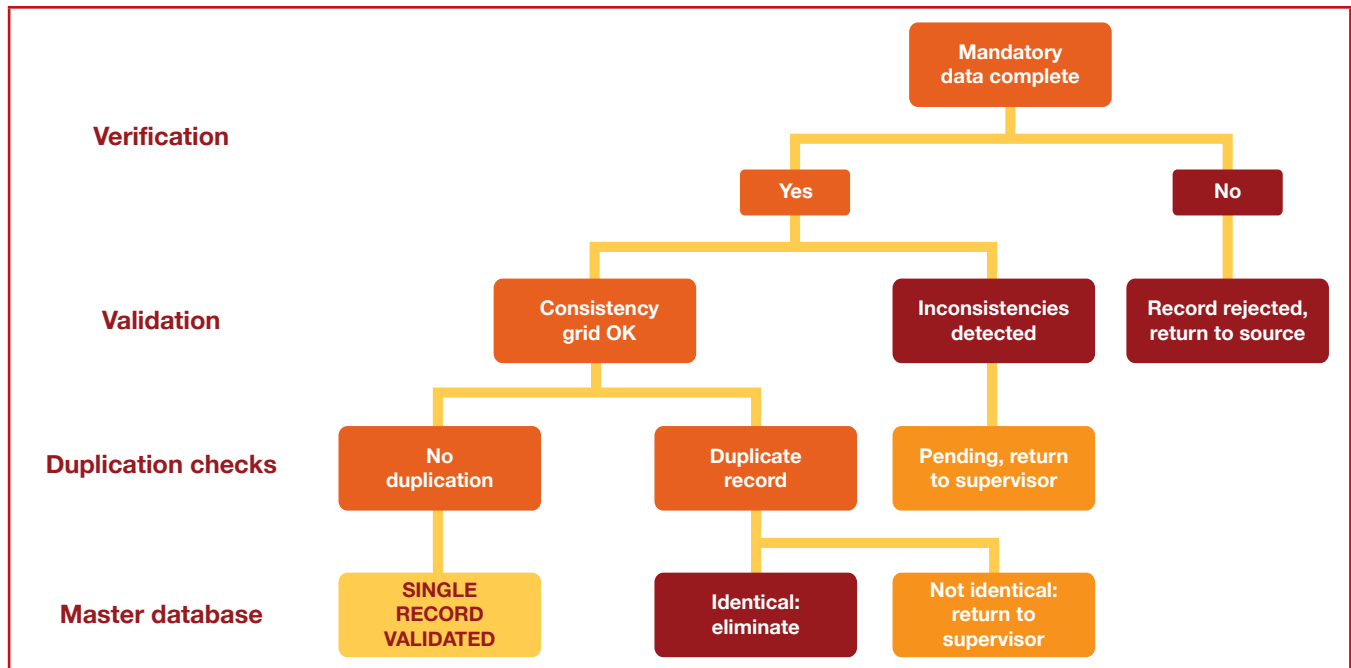
The administrative and electronic methods, in particular, require agreements with other stakeholders who provide the comparison data for verification. These stakeholders may be from: (i) another section or unit of the same program, (ii) another section or unit of the same institution on which the program depends, or else (iii) another institution. No matter what the case, it is highly advisable to have protocols duly agreed upon and signed by the stakeholders involved that regulate the process and the frequency of data verification.

## ***ii. Validation***

The basic validation procedures are as follows:

- Check that the data is complete for each person registered. This involves ensuring that all mandatory fields are completed. In most cases, the record includes members of the same household(s). For this step, the data of all household members must be complete and correctly grouped. If even one piece of mandatory data for one household member is missing, the entire household's data will remain pending.
- Apply internal consistency grids to the registered data. Basic internal consistency grids must be defined as soon as the decision is made to collect the data. For example, it would be impossible to simultaneously indicate male (in the identification data) and pregnant (in the health data), and it would be impossible for a person who is two years of age to have work-related information.
- Check for duplication. For a valid, high-quality database, it is important that there be no duplication, meaning that no one is registered more than once. There must be standardized procedures to detect duplications, including specific responses for each situation. For example, identical duplicate records can be eliminated (registering the elimination of the record and the person who eliminated it) and non-identical duplicate records must go through a supervision process before being validated.
- Once the above steps have been carried out, the “clean” data can be cross-checked with other databases depending on the nature of the program. For example, for CCTs, data can be cross-checked with health and/or education records of compliance with co-responsibilities.
- The validation process should result in a “master database” for the program. This means that it is built once and then corrected, updated or expanded with new data.

The process is shown in the diagram below.



### iii. Updating

A static database is useful at first but prevents the generation of management information inputs. Therefore, it is crucial that the MIS establish and apply procedures required to update the recorded data. Below are some of the aspects that must be taken into account in the data updating process:

- Not all data in the database are subject to updates; instead only certain data must be selected.
- The information source used for the updating must also be identified.
- When the information source(s) fall outside the responsibilities of the database administrator, the institutional information sharing agreements must be formalized for the updating process, as was discussed above for the data verification process.
- Data updating protocols must take into account the frequency of updating for each of the pieces of data concerned. Not all data are updated with the same frequency.
- An agreement must be established outlining the means by which the information will be shared and specifying who will be in charge of the process within each of the institutions or units involved.
- Institutional information sharing agreements must specify the basic conditions under which the data are to be delivered to be considered valid.
- Updating must be done in the “master database.” Out-of-date data will not be replaced, but rather a historical and an up-to-date database will be kept separately, even if only the up-to-date database is used for regular program operations.

### iv. Reporting

One last process to consider in transforming the registered data into management information is the generation of useful reports for the management of the different program administration levels. Having a single up-to-date database for the program provides the ability to generate a wide range of different reports. These include reports on grouped information, such as beneficiary lists according to different characterization or classification variables and statistics, among the most important. The reports that will explain program results must be outlined during the program design phase, especially during the process of selecting the data to be collected. This is a way of ensuring that the selected data are the ones required, not only for program operation, but also for reporting about program performance.

Different reports are prepared according to the target audience and the program’s level of access to information. The important thing is to make sure that two users with the same access profile that prepare a report on the same day using the same data obtain the same

information. It is thus very important to clearly define the frequency with which data are updated and to close the databases on a specific date each month (or other defined period); this will ensure the preparation of valid, stable reports for all users.

#### Transforming Data into Information: ISSUES TO CONSIDER

It is essential that the **data be organized in only one registry**—by person, household or territory— whether with an **identification number unique to the program or with that of another administrative source**. This identification number must be considered valid by all those who exchange information.

It is advisable for **the information sharing agreements to be formalized through protocols, arrangements or other legal-administrative instruments** that make the process sustainable. Information is a key part of program development, and cannot depend solely on the good will of the parties involved.

In order to establish the formal agreements mentioned above, the legal regulations **that ensure the protection of personal or sensitive data** must be understood in detail and taken into account.

There should be **only one person in charge of data processing**, even when more than one operating unit provides the input data required. All those involved should have clear and differentiated information access profiles and responsibilities in the process.

**Data processing decisions are made by those in charge of the program, with specialized technical support from the IT unit.** The institution's or program's IT unit is a key component of management information systems operations, but it does not make decisions about information processing.

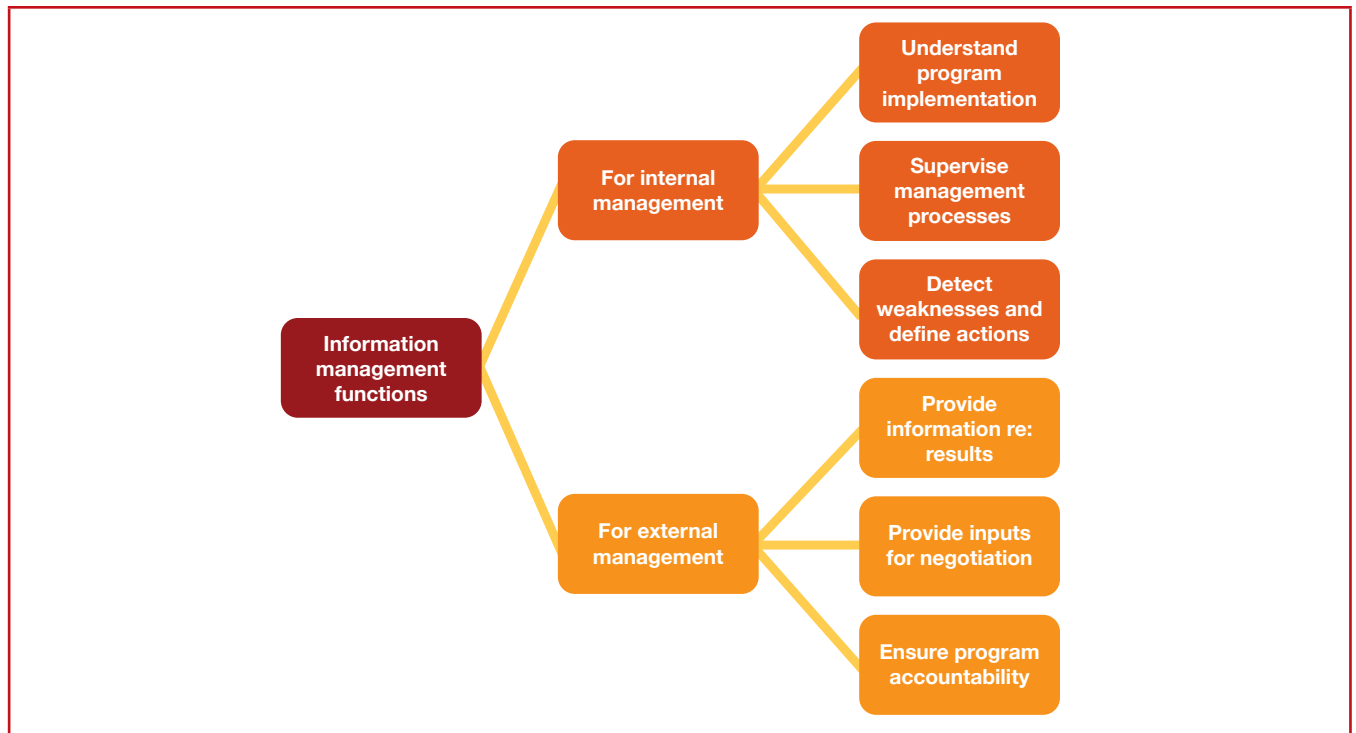
It is critical for **the logical design of the information system to be developed by those in charge of the program rather than delegated to IT experts**. They can only do their programming job well if the logical design is clear and consistent.

## C. Information Management

Program monitoring and supervision is a core task for program managers. A program management team requires valid and high-quality information in order to manage its program. The process used can be called *information management*, and must include at least the following functions:

- ***Providing an understanding of program implementation status and progress with respect to goals.*** The available information should describe the different program implementation processes and progress made in terms of the specified goals. Managers will find it useful to have regular reports organized around program processes that include key aspects of each process with management indicators and time series data in the form of tables or graphs that are easy to read and interpret.
- ***Detecting critical points that must be addressed.*** The interpretation and analysis of information must allow for the identification of critical points or bottlenecks observed in one or more of the program implementation processes.
- ***Providing information on program results.*** One of the main purposes of information management is to describe program results from time to time. This is why both data processing and the content of any reports issued must be oriented towards the expected results in all phases of the program. It is essential to have key results indicators that provide a synthesized analysis not only for program managers, but also for all stakeholders.
- ***Providing useful inputs for negotiations and agreements with different program providers.***<sup>7</sup> One time-consuming task for program managers is coordination with other institutional stakeholders that are involved directly or indirectly in program implementation. Information management should provide inputs that are useful to both managers and other stakeholders. Therefore, the reports delivered to stakeholders outside the program must be organized in such a way as to guide their expected actions.
- ***Ensuring program accountability to the different stakeholders involved.*** A program's accountability process is not carried out only at the end of a pre-determined period, but instead should be an ongoing and continuous process that appropriately informs each type of target audience. Complex and extremely technical reports are only useful for experts and academic purposes.

<sup>7</sup> The term "provider" is used in the broadest sense, including both institutional service providers and suppliers of consumer goods.



### Information Management: ISSUES TO CONSIDER

An excessive number of indicators is not a sign of better monitoring and evaluation mechanisms. Experience shows us that **it is better to have fewer but more substantive indicators** (up-to-date indicators that give a precise account of the key aspects of the program).

**The most useful indicators for program management are those that describe the program's expected results and the processes that have been designed to obtain those results.** Indicators that are not oriented in this way must be taken as auxiliary indicators or must simply be discarded.

**Information management allows the generation of regular program management reports. Greater frequency is not always more useful.** A key aspect here is to agree with the different stakeholders as to what frequency is adequate for their own management. Excessive information can often become a problem or can simply result in the under-utilization of the information available.

Given the same available information, it is highly advisable that the reports be differentiated depending on their target audience. It is worth investing time at the beginning to outline the reports for different stakeholders, since they need different information in order to achieve their objectives. It is a good idea to include this in the discussion of inter-institutional agreements.

There are also different management levels within the program's own institutional framework, from frontline program operators to upper management. The information arising from the program's monitoring and supervision process should be available to all levels of management, but should also be differentiated depending on the focus of the work.

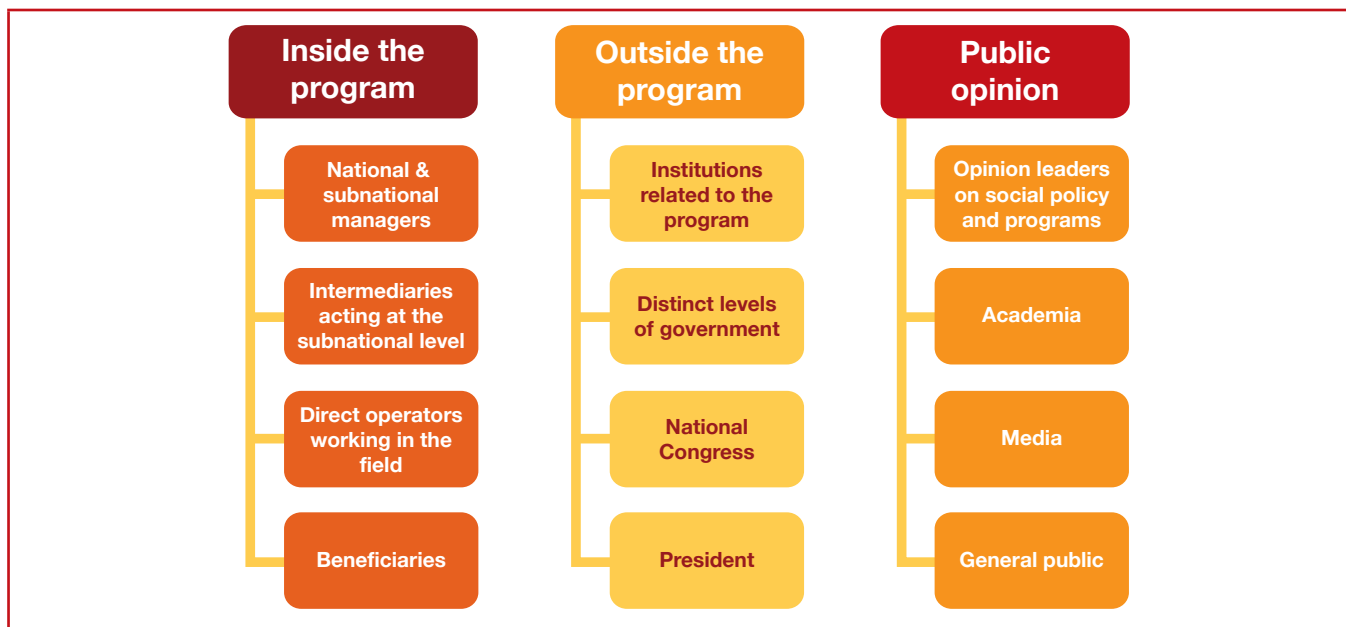
## D. Accountability

Ensuring accountability with regard to a social program is a complex process. Nevertheless, it is an indispensable task not only for the purposes of the transparency expected in these types of interventions, but more importantly because social programs involve public policy commitments made with the resources of society at large. The public, whether they are beneficiaries or not, have the right to be informed of the results obtained by the program.

The accountability process must be based on the management of program information, using any valuable or required input for different stakeholders. One useful task in the design of the procedures and mechanisms to ensure program accountability is to develop a map of target stakeholders of the accountability process. This map is an important tool for program managers, since

it allows the generation of differentiated strategies and reports according to the needs and characteristics of each stakeholder identified. In general terms, three main groups of stakeholders can be identified:

- **Stakeholders inside the Program.** Included in this category are program managers at all geographical levels at which the intervention is carried out; intermediaries between managers and beneficiaries (sub-national organizations that coordinate actions); operators that work directly with the beneficiaries (those belonging to the program itself and those that provide associated services); and the beneficiaries.
- **Stakeholders outside the Program.** This category includes institutions that are related to the program but do not participate directly; different levels of government administration (regional, provincial and local authorities); the national Congress; and the President of the republic, among the most important.
- **Public opinion.** This group includes public opinion leaders on political and social matters, academia, the media, and the public at large.



Each type of stakeholder in the groups identified requires different information since they have different interests and focuses and will use the information for different purposes. Therefore, efforts to design strategies that are relevant to each stakeholder are critical, and must clearly identify their interests and motivations. Programs often have a communications unit that can be of great help in these matters.

#### Accountability: ISSUES TO CONSIDER

The accountability process requires different strategies according to the stakeholder and must be designed and planned accordingly. A report is only one way to provide program accountability information and is aimed at a very limited audience. The challenge is to find other ways depending on the stakeholder concerned.

It is advisable that **program accountability be understood as an integral process in program management** and not as an additional activity to be carried out when problems arise or when the program is subject to criticism.

It is crucial keep in mind the importance of program beneficiaries in the accountability process, not only as source of testimonies about the program but also as stakeholders that must be informed about the program's outcomes and challenges.

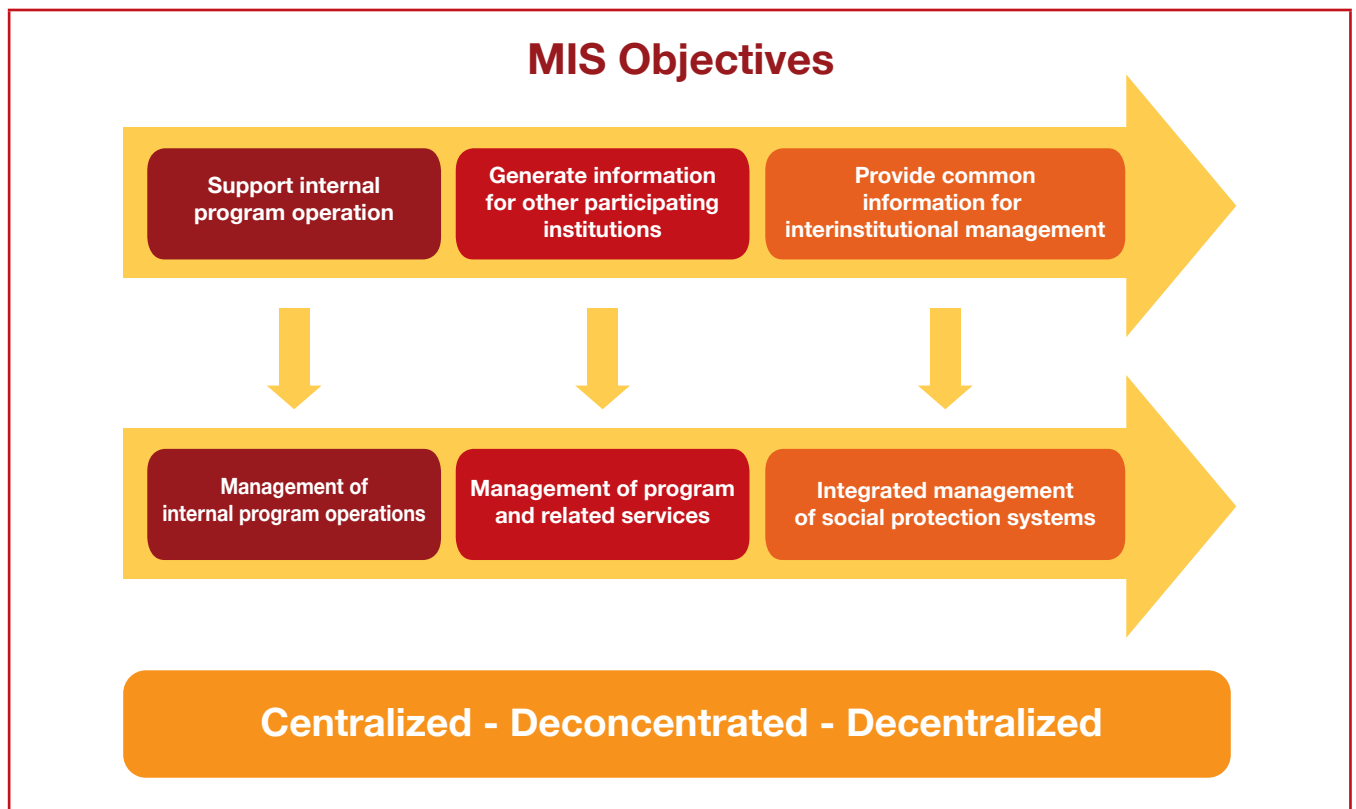
It is good practice as part of the accountability process to provide **mechanisms for different stakeholders to express their opinions** about the information they receive.

## Chapter 3. MIS for CCT Programs in Latin America and the Caribbean

In Latin America and the Caribbean there is a wide range of MIS models. Program and policy objectives define the scope of the MIS and determine its level of complexity and degree of integration with other programs and/or institutions.

### A. MIS Objectives

The objectives formulated by programs for their respective MIS can be categorized into three levels based on how broad a scope the MIS will be given. As shown in the diagram below, the first level corresponds to support for internal program management. The second, in addition to the previous objective, adds the generation of information for other institutions participating in or involved with the program. The third level adds integrated inter-institutional management to the previous two objectives. If well designed and used appropriately, an MIS in any category can be an effective tool for program management. The method used to implement the MIS may be centralized, deconcentrated or decentralized, depending on the program and the country's administrative organization.

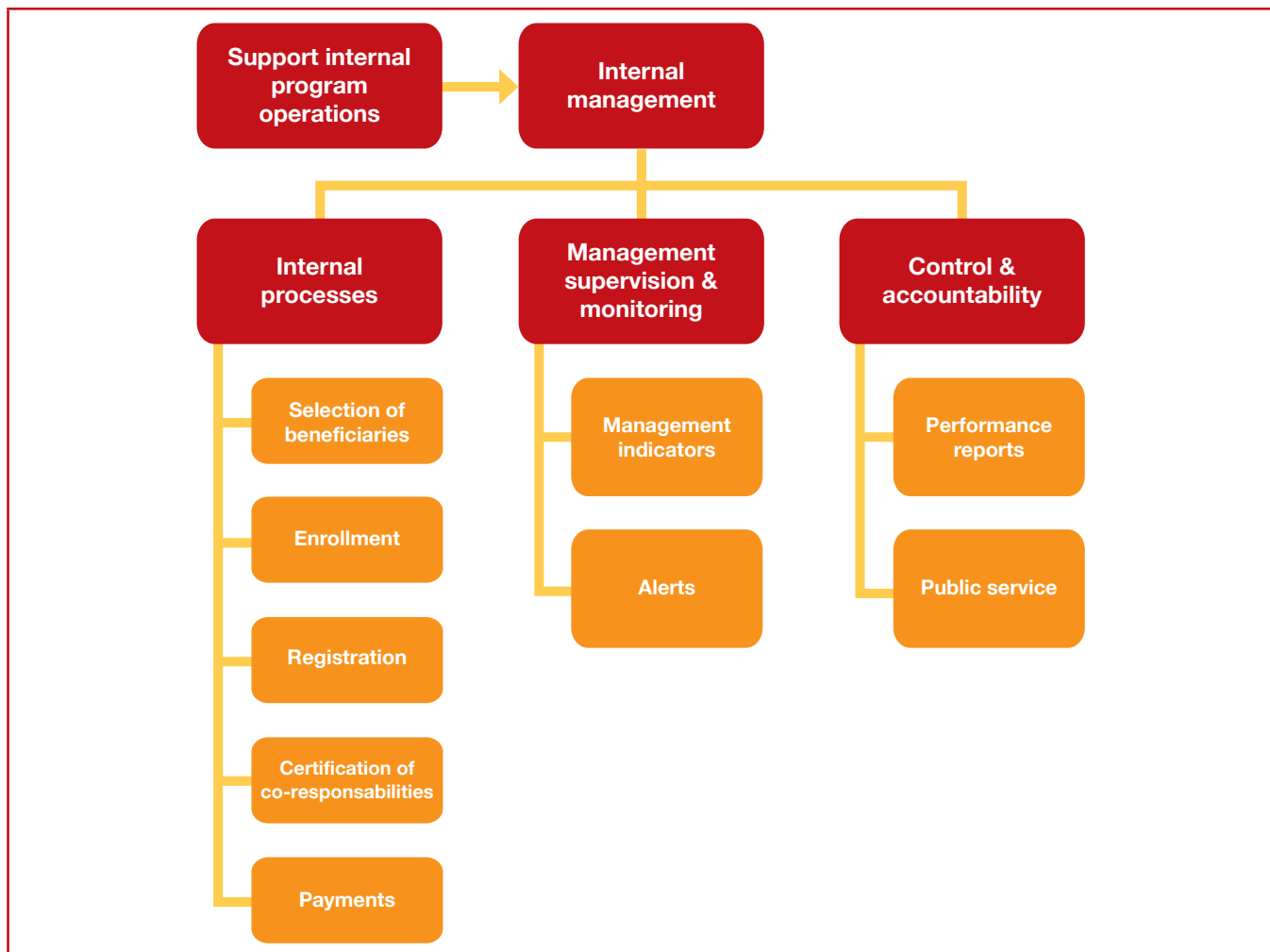


#### *i. Internal Management*

The basic objective of an MIS is to support internal program management. This type of MIS can be thought of as the minimum standard for the tool and contains everything needed to manage information for a CCT. As a part of internal program management, it is important to distinguish between three types of processes for which the MIS should provide services:

- The internal operating processes (selection of beneficiaries, enrollment, registration of beneficiaries, supervision of co-responsibilities, and administration of payments).
- Supervision and monitoring of internal program management (generation of management indicators—both for processes and results—and management alerts).
- Control and accountability (performance reports and citizen service).

The review of CCT programs in the region indicates that four of the 10 programs analyzed<sup>8</sup> have focused the objectives of their MIS on support for internal program management. They include *Programa Bono Juana Azurduy* (Bolivia), *Familias en Acción* (Colombia), *Red de Oportunidades* (Panama) and *Programa Juntos* (Peru). Within this group of programs, *Familias en Acción* has made the greatest progress in the development of its MIS, not only because of the age of the program but also because it has tools for all of its internal operating processes, as will be detailed later. The MIS of the rest of the programs named have reached different levels of development; these programs have been classified in this group based on their stated objectives, even though they may not yet have all the tools required to achieve them.



## ii. Management of Related Services

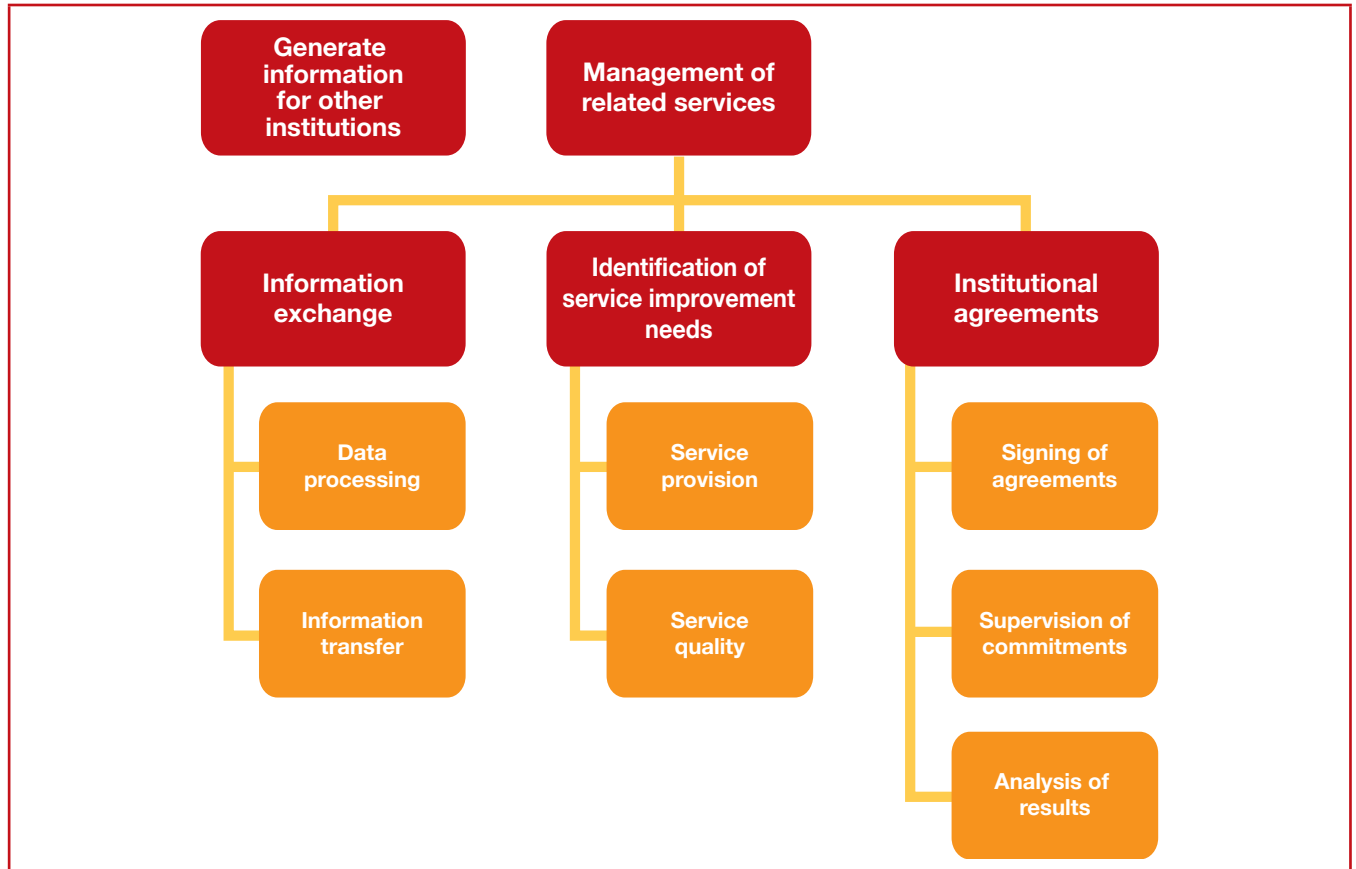
In addition to providing support for internal program operation, the second level of MIS identified also includes the generation of useful information to manage actions with other institutions that participate in the program. This level involves the actions by institutions associated with the program to adequately carry out the tasks that are asked of them for program success. In practical terms, this means that the MIS allows three especially important processes to be carried out:

- Exchange of information (data processing, information transfer).
- Identification of areas for service improvement (service provision, service quality).

<sup>8</sup> The analysis of each program's MIS was done on the basis of information provided by the Task Team Leader and staff of each project, which was captured in a survey and analyzed at the "Information Management Systems for Conditional Cash Transfer Programs and Social Protection Systems in Latin America" workshop, held in Washington on January 25 and 26, 2010.

- Institutional agreements (signing agreements, supervising commitments, analyzing results).

Four of the 10 programs reviewed can be identified as having MIS objectives for the management of related services. They include *Programa Solidaridad* (Dominican Republic), *Mi Familia Progres*a (Guatemala), *Programa Oportunidades* (Mexico), and the PATH Program (Jamaica). The MIS of each of these programs have reached very different levels of development, but the objective for which they have designed and gradually implemented their MIS is the same. The first two programs have an MIS in the design and initial implementation phase, and the other two programs have reached much more sophisticated levels of development and are highly functional for program results.

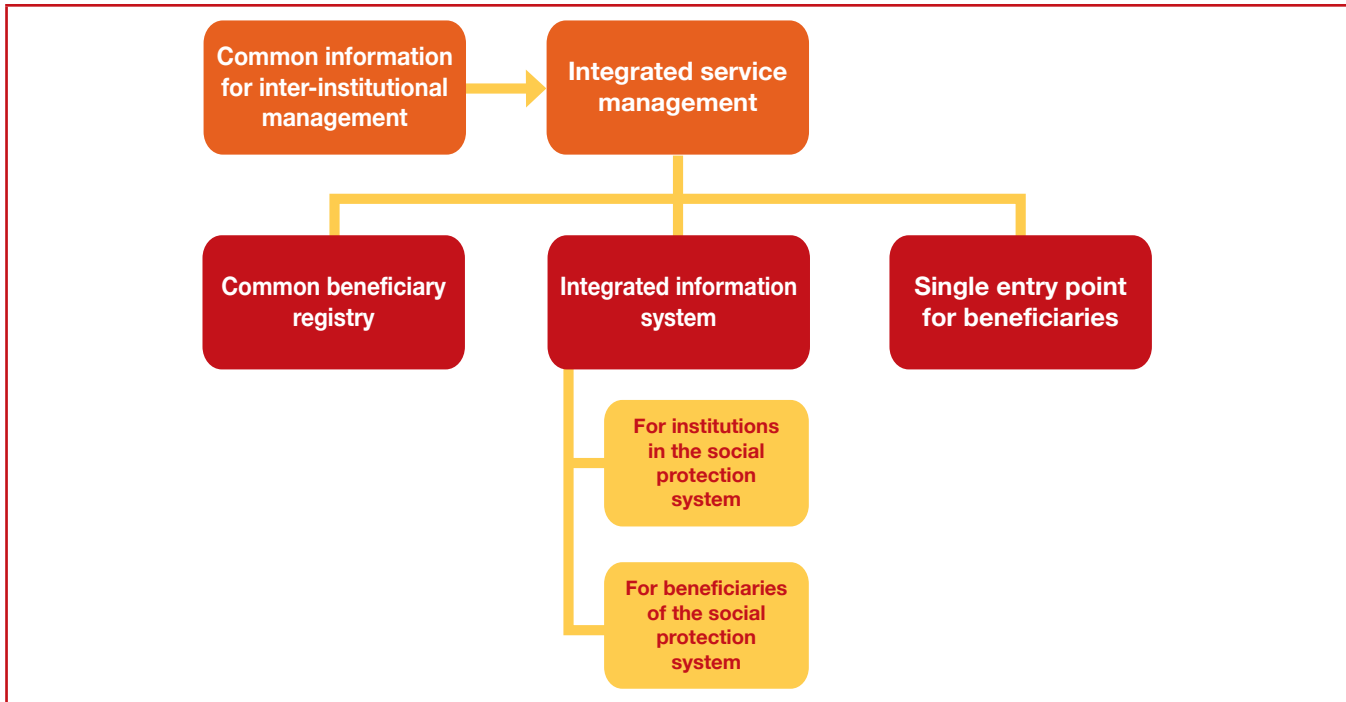


### iii. Integrated Management of Social Protection Systems

In addition to the objectives of the first two levels, the third level adds another objective for the MIS: the availability of common information for inter-institutional management of social protection systems. Under this arrangement, the CCT program is one of the components of the country's social protection system, and the MIS has a broader scope since it is expressed as the integrated management of social protection services for beneficiaries. In this case, the MIS is a tool that provides the social protection network with:

- A common beneficiary registry.
- An integrated information system (for the institutions in the social protection network and for beneficiaries).
- A single entry point for beneficiaries to access social protection programs.

This group includes Brazil's *Programa Bolsa Familia*, which is gradually advancing toward the integration of social services for its beneficiaries through close coordination with the rest of the country's social services and support network; and *Chile Solidario*, a component of the Chilean social protection system. As in the other two categories of MIS, the MIS in these programs have different levels of development.



The following diagram classifies the 10 CCT programs into the different types of MIS. The programs with a dark border have more highly developed MIS within their category. These levels can be understood as part of a continuum. At the same time, MIS in a given level can reflect different stages of development, from early adopters to more consolidated programs that have achieved a high degree of sophistication both in terms of tools and operability.



## B. MIS Functions

Taking into account the objectives of the MIS for the CCT programs and/or for the implementation of social protection programs, the MIS present very diverse functions, which can be categorized into two approaches: internal program management and integrated management.

### i. Functions for Internal Management

MIS that focus their efforts at the level of internal program management tend to design and implement functions that are mainly related to the program's operating processes, especially those referred to as internal processes. The main function of this type of

MIS is internal operation of the program, including the administrative processes of providing benefits, rather than monitoring, supervision, control, and/or program management accountability. This approach includes the programs classified in the internal management level as well as the *Solidaridad* (Dominican Republic) and *Mi Familia Progresada* (Guatemala) programs, whose MIS functions focus on the processes involved in the internal management of benefits even though they declare objectives at the level of management of related programs and services.

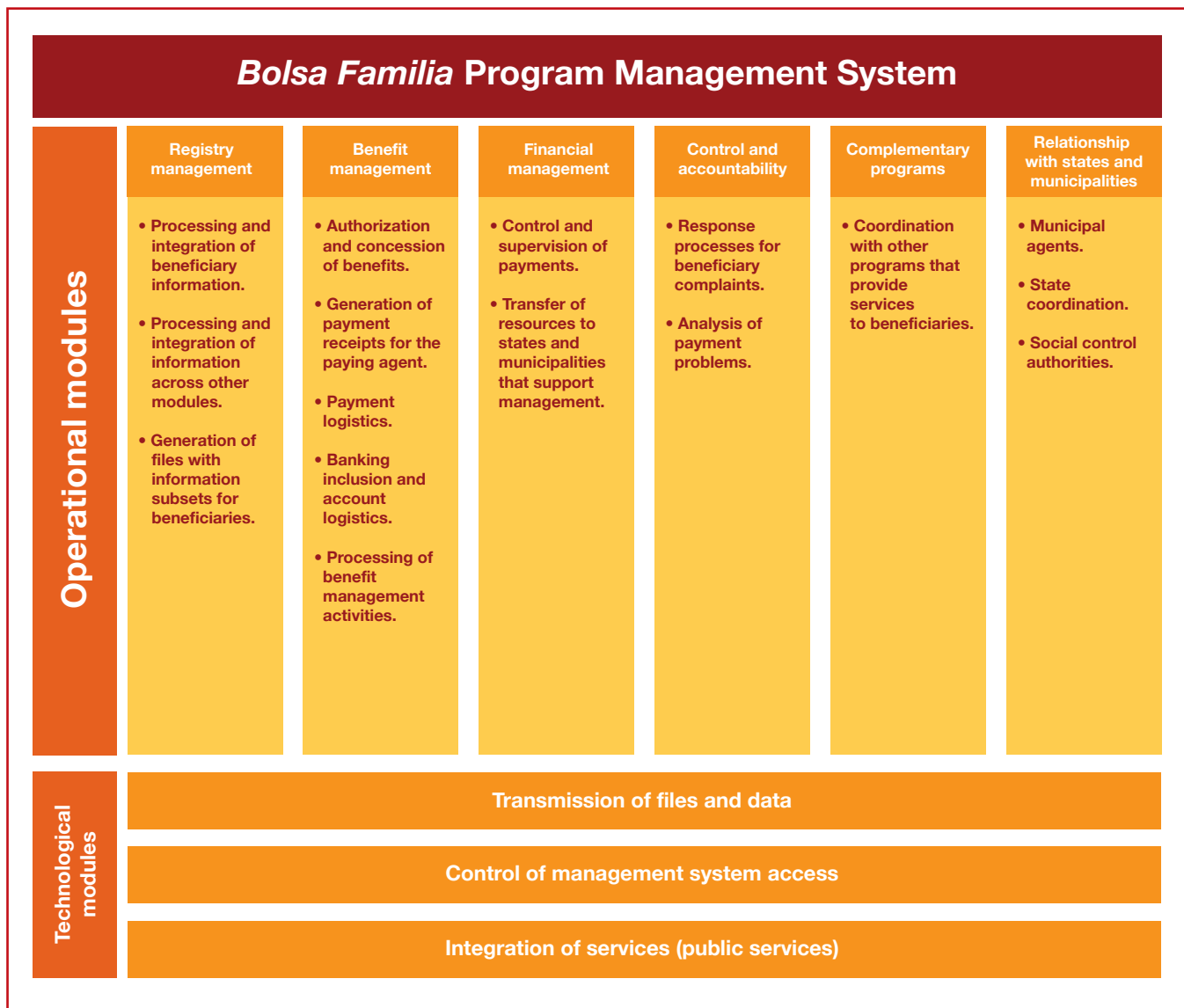
The following table shows the modules or tools used to support internal program processes in those programs. In the case of Bolivia, a single module covers most of the aspects of operations, while in Colombia and the Dominican Republic, multiple modules (or systems) cover all operational processes. These modules are not always part of the program itself.

Program COUNTRY	MIS Module	Selection of Beneficiaries	Enrollment/ Affiliation	Registration of Beneficiaries	Supervision of Co-responsibilities	Administration of Payments
<b>Bono Juana Azurduy BOLIVIA</b>	SIBJA (Bono Juana Azurduy Information System)		✓	✓	✓	✓
<b>Familias en Acción COLOMBIA</b>	SISBEN (Selection System for Beneficiaries of State Subsidies)	✓				
	SIPOD (Displaced Population Information System)	✓				
	SIFA (Familias en Acción Program Information System)		✓	✓	✓	
	SIRC (Commitment Compliance Registry Information System )				✓	
	SIIF (Integrated Financial Information System)					✓
<b>Programa Solidaridad DOMINICAN REPUBLIC</b>	SIUBEN (Unified Beneficiaries System)	✓				
	ADESS (Social Subsidies Administrator)					✓
	SCGE (Management System for Educational Centers)				✓	

## ii. Functions for Integrated Management

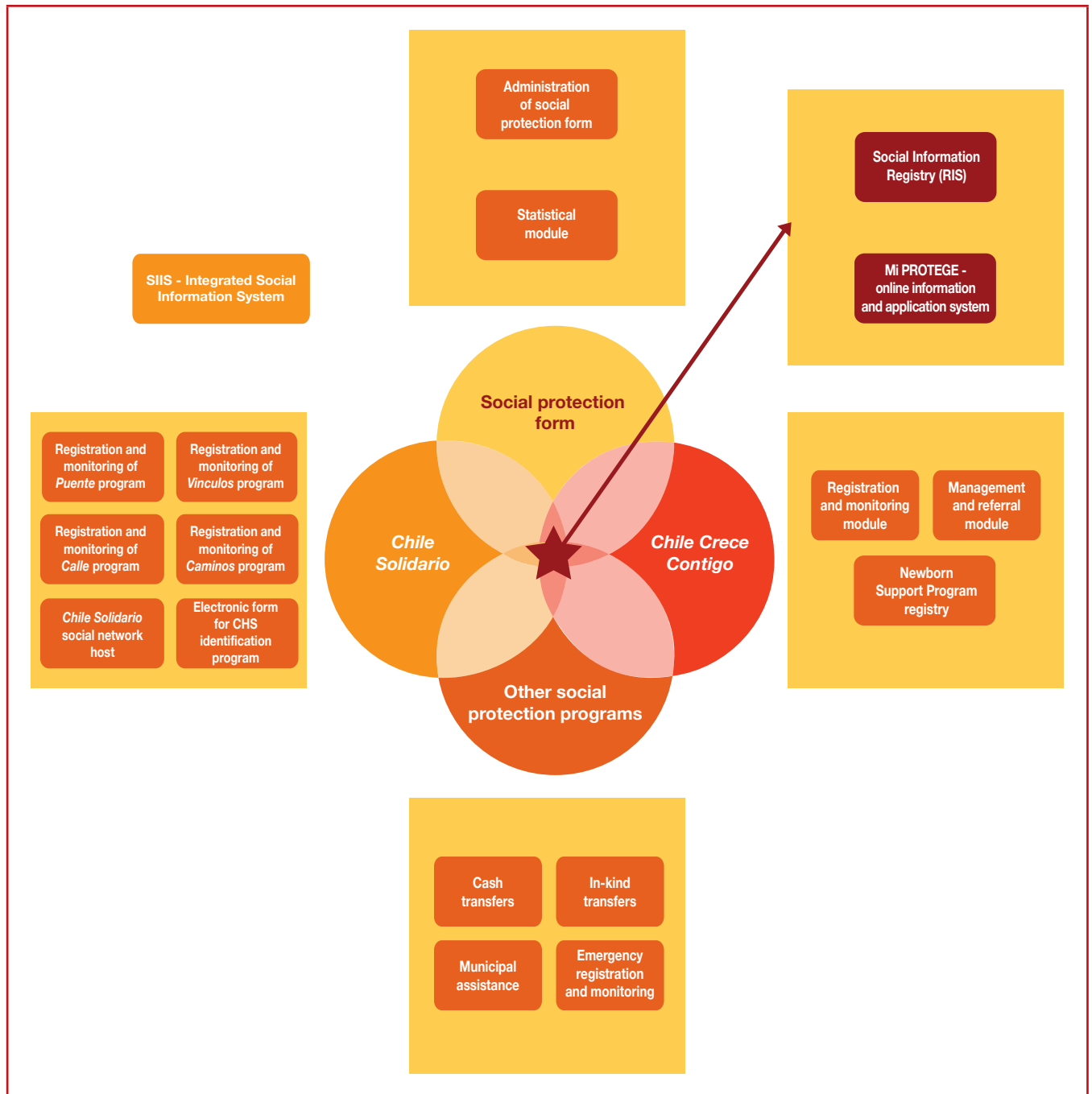
More comprehensive MIS have the functionality to carry out internal program processes, and also have management support tools for planning, service coordination, reporting information to users, production of management indicators, and public service. In these cases, the MIS have reached different levels of development in their implementation, but they are clearly a powerful management tool not only for the program itself, but also for other institutions and, in some cases, for users. The programs in Brazil, Chile, Jamaica, and Mexico all share this approach.

In the case of **Brazil**, the *Bolsa Familia* Program Management System has been designed to distinguish between needs arising from operational processes and those related to technology. The system is composed of nine modules, six of which are devoted to the main program operating and management procedures, and the remaining three to technological support for optimum operation of the core processes. The system is organized based on the functions and tasks that the program must carry out for its implementation, both internal and in relation to other stakeholders. Given the decentralized nature of the program, the management system includes both the state and municipal levels in its functions.



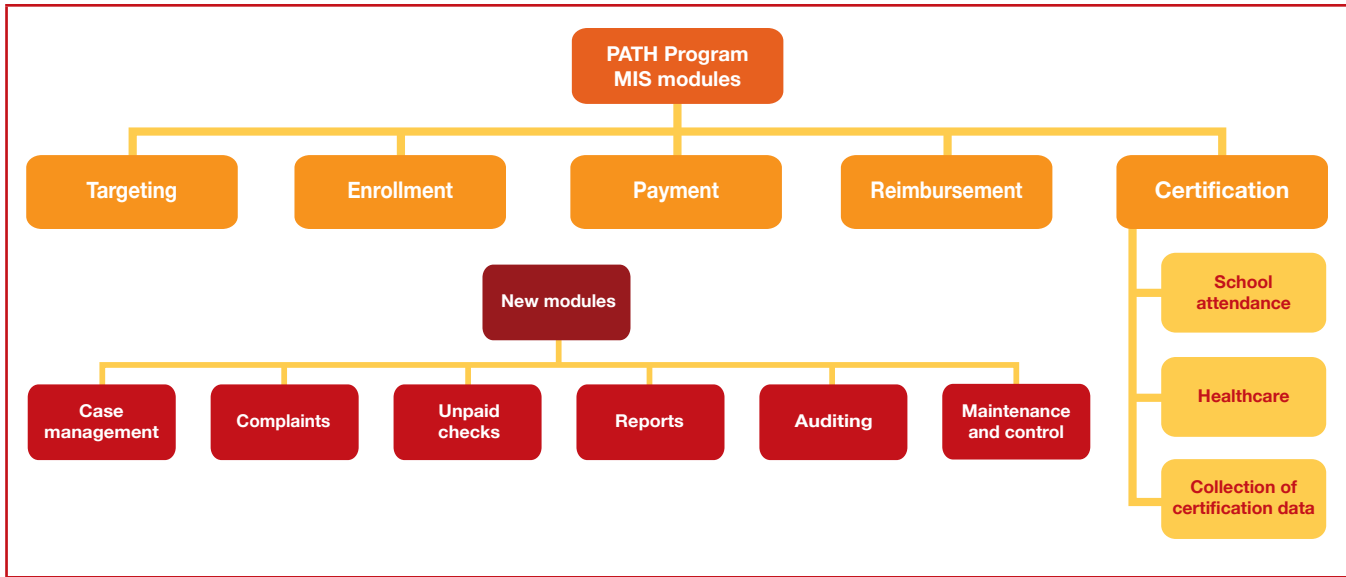
In **Chile**, the Integrated Social Information System (SIIS) was designed with the implementation of *Chile Solidario*, but it includes information about assistance and benefits available through the entire social protection system. This system is composed of four large, interconnected modules, each of which also has its own modular structure.

The SIIS is organized by components of the social protection system in order to support (i) social protection system access mechanisms, (ii) the services and benefits that cover the system's target audience, (iii) the management of these benefits and services, (iv) the single registry of beneficiaries of the State, and (v) online enquiry and application for social assistance and benefits on the part of citizens. As in Brazil, the SIIS includes functions at the regional and local levels that reflect the emphasis on decentralized management of the social protection system at the municipal level.



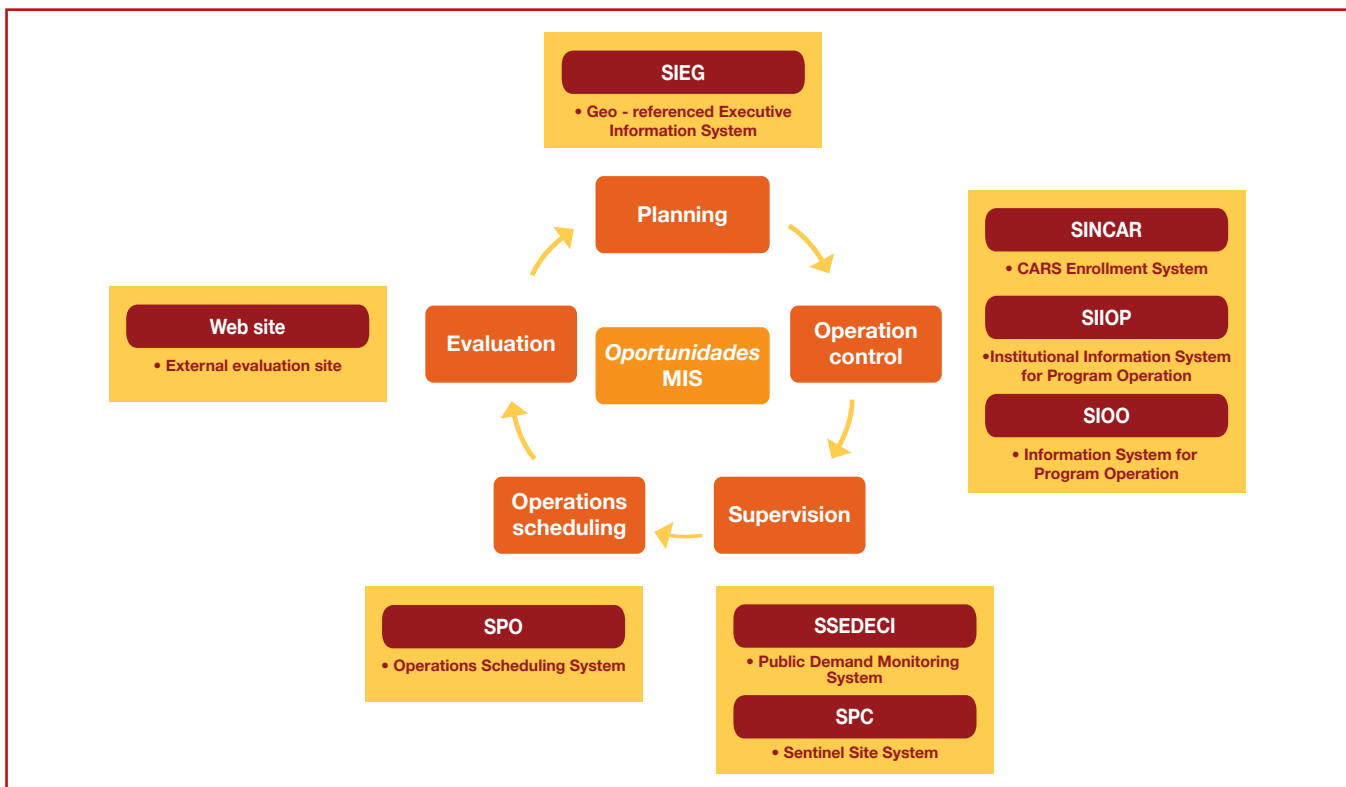
**Jamaica's** MIS is a component of the monitoring and evaluation system, and is structured around modules that have been added over time. While it focuses on the program's internal management processes, this MIS also has a certification module both for the collection and registration of school attendance and health controls. In addition, a set of new modules has been incorporated for specific processes and functions, in particular a module that registers the program's case management process.

The modules mentioned above are interconnected such that once the information is uploaded at the local level it can be processed, verified, and used for different purposes. Program actions are registered and the validated information is available to all users. The information is being used by other social programs in order to target their own services or benefits.



**Mexico's** MIS for *Oportunidades* has a modular structure, as do those described above, but its distinctive characteristic is that it is organized in keeping with the cycle of processes involved in the management of *Oportunidades*: planning, operations control, supervision, operations scheduling, and evaluation. In this way, a single tool covers the management of the procedures used by the program and the information required by managers for decision-making.

The information comes from both internal and external sources and the modules are interconnected, each using the same information. The MIS has tools for the automatic generation of management indicators and results, which are a fundamental input for improvement actions and accountability. It also includes modules that allow for the supervision both of public demand and the needs and service quality in the different localities where the program is implemented.



For either approach—internal program management and integrated management—the development of the MIS can be modular and progressive over time. There can be interconnected modules that make up a single information system (in the case of a comprehensive approach) or modules that provide services to specific operational processes that are part of the program itself or of other programs or institutions.

## C. Institutional Arrangements for the MIS

CCT programs have put into practice the design and operation of management information systems, each with different levels of development. From the perspective of the institutional framework on which the MIS rests, there are two key issues for consideration: (i) whether or not to create a specialized unit, and (ii) what service modalities are associated with MIS design and implementation.

### *i. Whether or not to Create a Specialized Unit*

At the beginning of program operation, the MIS is often seen as a task of the institutions' IT units. Most of the programs analyzed have had to create a specialized unit for MIS administration within the structure of the program. In some cases, it takes the shape of an office or department, and in others it is an area or management unit. The units in charge of the MIS tend to comprise computer engineers or technicians and information management specialists.

When the MIS requires the active participation of other institutional stakeholders outside the program, the organizational structure includes people or units that are given the specific task of inter-institutional coordination. This is the case of modular information systems, where one or more modules involve the active exchange of information with other institutions: Colombia with the SISBEN and SIPOD, the Dominican Republic with the Ministries of Education and Health, Brazil with the complementary programs that provide services to *Bolsa Familia* beneficiaries, and Chile with the inter-institutional information exchange agreements with all institutions involved in the social protection network.

### *ii. The Service Modalities Associated with MIS Design and Implementation*

According to the experience of the CCT programs analyzed, the design and implementation of an MIS involves a series of steps and stages. Practical decisions must be made along the way about the services required to successfully carry out each stage.

***Logical Design of the MIS.*** The development of the MIS's logical design is crucial to ensuring that the information system will be able to perform all of the functions asked of it. This stage involves defining the data matrix and the relationships among data, which is the foundation for the MIS. It is essential that the technical team in charge of the program participate actively in the logical design of the MIS since it will be the main user of the information. According to program experience, it is advisable that logical design be done by the program itself rather than outsourced. In the case of outsourcing, a technical counterpart from within the program must be closely involved.

***Development of the Applications.*** Once the logical design of the MIS is agreed upon, the next step is the design and development of the computer applications. This is a highly specialized computer engineering and programming task. It is common and advisable to outsource this work as long as the program has a specialized counterpart that can closely supervise the development of the applications.

***Updating the Information.*** As discussed earlier, it is crucial to update MIS information in order for the system to adequately perform its functions, especially those related to supporting the program's decision-making process. Since the majority of the information comes from the program itself, it is advisable that information updating mechanisms be developed and timelines specified such that this process occurs in a timely manner. For data that are provided by other institutions and that are indispensable for program operation, it is recommended that inter-institutional agreements be signed that regulate the information to be shared and the frequency with which it is updated.

***System Maintenance.*** An MIS is not a static tool; on the contrary, it is fluid and is constantly used by a wide variety of stakeholders. The task of system maintenance, both in terms of technical content and technological platform, is particularly

important. Maintenance should also include the updating of computer applications in order to incorporate changes to the program over the course of its implementation. It is advisable that the ongoing review and monitoring of the MIS's technical contents be the task of the internal program team, which must thus include a specialist. The maintenance of the technological platform and its components (modules) may be outsourced, always keeping in mind the importance of a strong program counterpart.

## **D. MIS Strengths, Weaknesses and Challenges**

### ***i. Strengths***

The MIS analyzed in this paper illustrate a range of functionalities and levels of development. Nevertheless, it is possible to identify a set of strengths common to all of them.

- The use of MIS in CCT programs has implied the development of computer applications to support the management of social programs. These highly complex computer programs, which manage a wide range of processes, including beneficiary selection, verification of co-responsibilities, and payments, have become useful tools for program management at all stages of implementation. There is no software for CCTs on the market and creating one would be difficult given the variation across CCT programs. Therefore, each program has had to develop its own applications.
- CCT programs are generally implemented through a sequence of actions—targeting, enrollment, verification of co-responsibilities, payment and payment control—that have specific requirements and tight timelines. A good MIS accompanies and supports the complete sequence of actions, and is thus an indispensable management tool, contributing to program efficacy and efficiency as well as to the transparency of program actions.
- MIS that have applications dedicated to program monitoring and supervision can generate timely alerts to improve management. This is an important functionality given that program managers need to find out about anomalous or critical situations that may affect program processes or results in a timely manner. Just-in-time alerts generated by the MIS increase the likelihood that program managers can deal with difficulties quickly and successfully, contributing to the ongoing program improvement processes.
- The most developed MIS have been built in a modular fashion, which has a number of advantages. The most important of these is the ability to adapt to natural program changes, for example, by designing and implementing new modules when the programs add new components. A modular structure lends greater flexibility to the MIS, and supports one of the most distinctive characteristics of CCT programs: constant review and updating based on the results of experience and the demands of social policy.
- One of the greatest strengths of MIS is that they make available a registry of program beneficiaries that, together with granting transparency to program implementation, may also serve as the basis for an integrated registry of beneficiaries for social programs throughout the country. Given that CCT programs generally tend to cover a large proportion of the population living in poverty, these programs have a comparative advantage over other social programs to begin a national registry of social program beneficiaries.

### ***ii. Weaknesses***

The review and analysis of the MIS for CCT programs have also allowed for the identification of several weaknesses and opportunities for improvement:

- Less-developed MIS tend to focus on the registration of beneficiaries and compliance with co-responsibilities, but they do not include the full sequence of actions involved in a CCT program. This often reduces program efficiency. When the program is in its initial phase, it is understandable that the MIS take on only basic functions, but the overall MIS design should also include the incorporation of new modules until all program operations are covered.

It is thus advisable to prepare the logical design of the entire MIS even if it will not be completely implemented until the mid-term.

- Some MIS lack a mechanism for registration and/or verification of co-responsibilities via the system. Often, this occurs due to limited information on the part of the institutions that certify the co-responsibilities. Nevertheless, since compliance or non-compliance with the co-responsibilities is an essential and distinctive part of CCT programs, it should be one of the first processes to be incorporated into the MIS design. The priorities for the operation of a CCT program should include support for the certifying institutions so that they can carry out certification operations using the MIS as soon as possible, even if it must be done manually.
- Some MIS have modules to register and address complaints, making a significant contribution to program operation and efficacy. However, the information collected there is not always used to make improvements or modifications to the programs. The information arising from the receipt of complaints can be turned into an extremely useful instrument for monitoring the quality of services offered to beneficiaries by both the program and its associated institutions.
- The vast amount of information made available by the MIS is often focused on monitoring processes rather than program evaluation. In practice, an MIS has all the census-type administrative information (from the program) needed for important evaluation analyses both of program results and of changes that beneficiaries experience through their participation in the program.
- Many MIS face the challenge of updating databases outside the program. One way to address this is to request regular and timely updates for the processes related to program operation.

### *iii. Challenges*

MIS have become indispensable tools in the operation of broad-ranging and complex social programs in the region. There is no doubt that CCT programs have become a core element of policies to combat poverty and strengthen the human capital of the most vulnerable households. Among the many contributions that these programs make to the public management of social issues is the design and implementation of the MIS. MIS have numerous advantages and there seems to be a consensus on some of the main challenges faced by the MIS.

A crucial aspect of any MIS is to assign a single identification number to the people and households included in the program. In countries that use a single national identification number on a large scale (for example, Chile), it is much easier to configure the beneficiary database and especially to cross-check information with other relevant programs. When this identification number does not exist or is limited in coverage, the MIS design must resolve this problem through the generation of numbers unique to the program. The possibility of exchanging information is thus limited or highly complex, since sophisticated data-matching algorithms (first and last names, etc.) must be developed. Of course, it is not the program's job to achieve the implementation of a single identification number at the national level, but it is a great challenge to find the best way to resolve the problem. In addition, the solution must be one that lasts over time in order to accumulate historical data series.

The mechanisms and instruments required to collect the data for an MIS represent another important challenge. Many programs face the challenge of reducing the large-scale use of printed forms and data registration records. Some programs (Mexico, for example) have used innovative new technologies such as mobile devices, which has resolved many practical difficulties associated with printed forms and records. There is much to be learned in this area; we can review experiences, analyze the conditions necessary to replicate success and seek alternatives that make programs more efficient and effective, ensuring not only timely but, above all, high-quality information.

As previously discussed, MIS contain a large quantity of very valuable information. One of the challenges is to foster and increase the use of all of this available information for program monitoring, supervision and, especially, evaluation. Generally, program managers focus on the registration of program beneficiaries and on aspects necessary for payments rather than on the results and the evaluation of program management.

Another area for improvement is the integration of information between MIS and external databases (of related programs) to improve service delivery and quality for beneficiary households. Information exchange processes are complex; they require effective inter-institutional coordination that is not always the responsibility of the CCT program. Nonetheless, these processes are essential if the CCT program is to achieve results and offer the best quality service possible to its beneficiaries.

Through their respective MIS, CCT programs have at their disposal detailed information about their beneficiaries (household structure and living conditions, among the most important), which is extremely useful for other social programs in the country. The main challenge is to move towards integrated information systems involving the participation of all programs that make up a country's social protection system. Having this type of tool available makes a significant contribution to the efficiency, efficacy and quality of social protection actions.

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## Conclusions

CCT programs in Latin America and the Caribbean have developed management information systems, which have made positive contributions to the impact of these programs on improving the living conditions and quality of life of millions of poor households in the region. A large number of evaluations verify the positive impact of these wide-ranging social interventions in their respective countries.

The information that can be generated by a good MIS allows for a complete understanding of the elements and processes that are essential to the effective operation of a social protection system. MIS provide information about the specific needs of beneficiaries (and often potential program beneficiaries), the availability of services, the quality of these services, and the coordination necessary to better meet the needs of beneficiary households. At the same time, MIS facilitate better organization of program services, identify differences among different zones or geographical areas where the program is implemented, and detect critical situations that require special attention through management alerts.

Similarly, MIS make an important contribution to accountability, auditing, and transparency processes, not only in terms of the program's use of resources but also with regard to the results associated with these resources. This applies both to the benefits delivered by the program (transfers) and to the services provided to beneficiaries by other sectors (primarily health and education).

In addition, MIS serve as a tool to contribute to the inter-institutional planning of the services that must be made available to households to facilitate their compliance with program co-responsibilities. The information produced by MIS is not only used by the program itself, but also for all other institutions that participate in program operation in one way or another. The intensive use of MIS information by all institutional stakeholders can make a large contribution to the improvement of their respective management actions. A program's MIS has the potential to operate as a common tool to facilitate inter-institutional coordination essential to ensuring high-quality social interventions for beneficiaries.

The shared use of the information provided by an MIS also implies greater efficiency insofar as it lowers the costs of data collection and processing by social program operators. For example, MIS have the potential to become a shared targeting tool for a group of social programs, not just for the CCT program. A single program collects the information about potential beneficiaries, which is then used by all programs targeting the same population. Colombia's SISBEN, Chile's Social Protection Register, and more recently Mexico's Single Socioeconomic Information Questionnaire (CUIS) are examples of data collection tools that are integrated with the respective MIS of the CCT programs, allowing targeting and selection of beneficiaries for a variety of social programs.

As technology rapidly advances, new possibilities open up for MIS. It becomes easier and less expensive to expand functions, thus increasing cost-effectiveness and contributing to the efficiency and efficacy of social protection programs and policies. The incorporation of new technologies in data collection processes, the progressive increase in universal web access, and the increased use of open source platforms (which do not require payment for software licenses) make MIS more and more viable and accessible for any social protection program. The design and implementation of MIS through CCT programs has set a high standard of quality for other social programs.

Nonetheless, it is important to remember that the main value of an MIS rests on its logical design and not only on the technology used. The value of an MIS rests primarily on the choice of information modules to be included, the relationship among the data collected, the reporting options, the tools to connect information modules, and, above all, the intensive use of the information on the part of program managers. To the extent that an MIS becomes an essential tool for ongoing program improvement, strategic planning of program implementation processes and integrated program management, it is an irreplaceable management instrument. State-of-the-art technology alone is not enough for an MIS to perform its main functions and guide the decision-making process for program management.

Given the advances made in the development of MIS for CCT programs, the main challenge is to move towards integrated information systems that serve as a basis for social protection systems in the different countries in the region. MIS used for

CCT programs have the potential to become the backbones of integrated social protection management systems, leading to increased efficiency and efficacy of the use of public resources and improved services for households covered by the social protection system.

The work done by CCT programs in the region in the design and implementation of MIS holds important lessons that can be used by new CCT programs in the region and in the world, as well as by other social protection programs that challenge themselves to improve, modernize and find synergies that favor the poorest and most vulnerable households.

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