

Technical Note:

Better integration of social protection and humanitarian information systems for shock response

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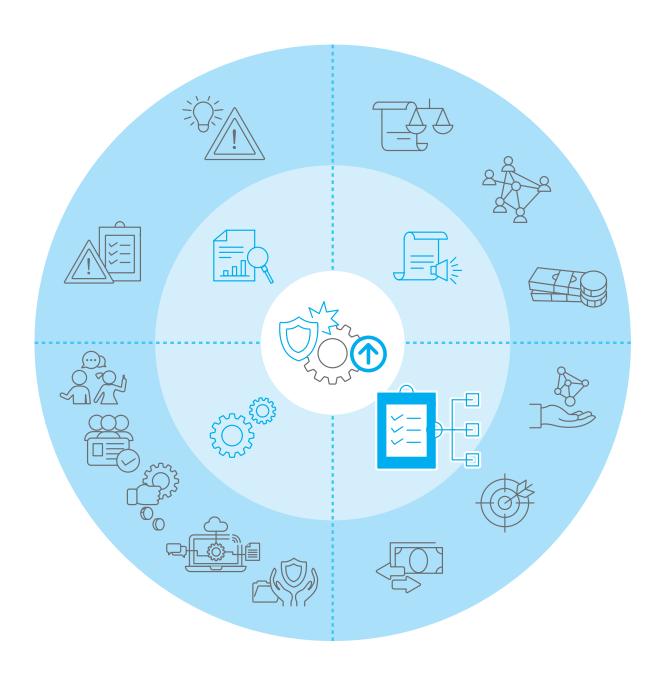
The infographic on the inside front cover represents Social Protection System

LEGEND OF THE BOXES









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Introduction

There is a lot of interest, and growing evidence, in the social protection and humanitarian sectors over the potential integration, or coordination, between the data and information systems of each respective sector to improve emergency response¹, for example by informing targeting (see the accompanying UNICEF Case Study on this). This Technical Note² – designed to be a 'living document' that can be updated over time – offers guidance on this topic, complementing the "UNICEF Guidance on strengthening Shock Responsive Social Protection systems". It leverages the existing DFAT publication titled "Building on government systems for shock preparedness and response: the role of social assistance data and information systems," while also offering insights from recent UNICEF experiences in Iraq, Nepal and Somalia.

Before going any further it is worth stressing what is meant by "data and information systems" of each respective sector, as these differ significantly.

Government social protection information systems³

Running social transfers and services requires the management of beneficiaries' information to effectively accompany operations. Information about a wider population group - including potential future recipients or households who have been assessed but classified as ineligible - is also often collected and stored within the sector. Recent years have also seen a rapid acceleration in integrated approaches to data and information management, including linkages with a broader government data ecosystem. Table 1 below summarizes the four main - and overlapping - types of registries that can serve the sector, depending on country choices and trajectories. These act as a fundamental basis for the broader 'information system', that enables the flow and management of information within the social protection sector and sometimes beyond.4

Table 1 Main approaches to storing and managing social protection⁵ data

	Serving one programme	Serving multiple programmes
Only retaining data on <i>current</i> beneficiaries	Beneficiary registries track data on beneficiaries to support programme management and implementation (payments, case management, conditionalities monitoring, and grievance redress) via what is often referred to as a programme management information system (MIS) or Beneficiary Operations Management System (BOMS). Beneficiary registries maintain information only on beneficiaries of specific programme(s).	Integrated beneficiary registries operate as a data warehouse that collects information from different social programmes and their benefits administration systems, allowing for monitoring and coordination of 'who receives what benefits, where', and for identifying intended or unintended overlaps across programmes – as well as gaps. In some contexts, these are referred to as 'single registries'.
Retaining data on <i>potential</i> beneficiaries	Social registries support 'gateway' functions of outreach, registration, and assessment of needs and conditions to determine potential eligibility for one social programme. In terms of population covered, social registries contain information on all registrants, whether or not they are deemed eligible for, or are enrolled in, a particular programme.	'Integrated' social registries combine the gateway processes of outreach, registration, and assessment of needs and conditions to determine potential eligibility for multiple programmes. They serve as platforms that support access to multiple benefits and services that can extend well beyond the sphere of social transfers. The word 'integrated' is often dropped, for simplicity, when referring to these.

Source: Adapted from <u>Barca and Beazley (2019)</u>, based on <u>Barca (2018)</u> and <u>Leite et al. (2017)</u>. Note: this table presents core typologies, large variations also exist within these. Also, this terminology is now widely accepted – see for example the World Bank '<u>Sourcebook on Social Protection Delivery Systems'</u> (2020).

¹ Prominent examples this case study builds on include Goodman, R. et al. (2020) Review And Analysis Of Identification And Registration Systems In Protracted And Recurrent Crises, BASIC (here); SPACE (2020) Identifying Practical Options for Linking Humanitarian Assistance and Social Protection in the COVID-19 Response (here), and; Ramkissoon (2019) Guidance Note on Targeting Humanitarian Cash Transfers via National Social Protection Registries and Management Information Systems, UNICEF ECARO.

² This Case Study was authored by Valentina Barca and Nupur Kukrety (UNICEF), supported by a wide number of colleagues (in the capacity of key informants and peer reviewers). Specifically, in alphabetical order, we would like to thank Atif Khurshid (UNICEF), David Stewart (UNICEF), Gabriele Erba (UNICEF), Jose Maria Bendito Prieto (UNICEF), Natalia Winder Rossi (UNICEF) and Paul Quarles Van Ufford (UNICEF).

³ Note: these are sometimes referred to as social assistance information systems as in many countries they primarily serve social assistance programmes (e.g. non-contributory social transfers, social services).

⁴ For details, see Barca (2018) Integrating data and information management for social protection: social registries and integrated beneficiary registries (here), and; Chirchir and Barca (2020) 'Building an Integrated and Digital Social Protection Information System' (here).

⁵ Note: these refer to social transfers and services. Social insurance is most often managed separately and linked via the broader information system.

Beyond the four variations above it is also fundamental to stress that these registries (and their information systems) also vary widely across countries in the ways they are set up in practice – if they are set up at all (many countries only operate fragmented 'beneficiary registries'). The main variations are listed in Box 1. The reasons for these variations are multiple: a) whether they play a role at the programme level or national/integrated level; b) the design of the programme/s they serve (e.g. targeting approach, coverage⁶); c) countries' needs and context (e.g. political economy, staff capacity, the

maturity of infrastructure); and d) the preferences and needs of the funders and/or implementing agencies. Each of these variations has implications for the effectiveness of shock response via social transfers and services.

Overall, an effective government information system serving the social protection sector is expected to better serve the needs of people, by focusing on inclusion; efficiency and effectiveness; accuracy and integrity; accountability and stakeholder coordination.



Core variations in the set-up of these registries and information systems

- What percentage of the population is covered: Different social protection registries vary widely in their coverage of the national population (e.g. the beneficiary registry of a small targeted programme versus a national social registry; a social registry with <20% population coverage versus a social registry with >80% coverage).
- Whose data are collected and stored: For example, individual vs household-level data; beneficiary vs non-beneficiary data; data on the 'poor' and 'vulnerable', or specific age groups (e.g. for a social pension) vs wider sub-sections of the population).
- What data are collected and stored: For example, an extensive dataset on household socio-economic conditions vs a limited dataset with key variables; operationally relevant data collected at enrolment (e.g. bank account) vs basic data for eligibility determination; biometric information or not; data on potential exposure to covariate risks and shocks vs not; etc.
- How data are collected: For many social protection registries, the two most frequent approaches to data collection are:
 a) on-demand registration, which relies on households going to an office (or accessing an application/website) to apply; b) census-survey registration, which entails all or selected households in an area being interviewed at selected intervals. These both offer significant advantages and disadvantages (see Barca (2017) for a full list).
- Frequency of updates: Depending on the approach to data collection, on national policy decisions, and on available budgets, the data may be updated on an ongoing basis (ideal) or periodically (every two to three years at most, but often less frequently for logistical reasons).
- Approach to information integration: For example, whether data are linked to other databases (social protection and beyond) for data sourcing/verification / removing duplication, ideally using a unique identifier (national ID or other). These may include social insurance, CRVS, disability, etc.
- How data are validated, stored, and maintained: What procedures are in place to guarantee data integrity, affecting
 trustworthingss.
- Who is responsible for data collection, storage, and management: For example, whether this is performed in-house by the lead social sector ministry, through municipal offices, through other state institutions (e.g. statistics office), or contracted third partners, affecting trust in the data's integrity.
- Level of data security/privacy guaranteed: This depends on existing legislation and provisions, including adherence to international standards, such as the United Nations Guidelines for the Regulation of Computerized Personal Data Files and ISO 27001
- What processes and authorization levels are in place for data sharing: For example, web service vs batch processes; ad hoc v regular through memoranda of understanding, etc.

Source: Barca and Beazley (2019); Barca (2018); Chirchir and Barca (2020)

Humanitarian information systems

Humanitarian information systems, on the other hand, are the ones that underpin humanitarian programmes, and especially Humanitarian Cash Transfers (HCT).

These are developed and owned by international organizations and their national counterparts (NGOs, etc.) for: (i) registering populations displaced by humanitarian crises or living in contexts where the state is weak or

is party to a conflict; and (ii) program-specific targeting (in humanitarian contexts, data collection for these systems is often the first contact point between crisis-affected populations and responders). Some of the most common ones internationally have been developed and institutionalized as proprietary software by WFP (SCOPE), UNHCR (ProGres), UNICEF (HOPE) and more recently, UNICEF (HOPE⁷).

⁶ For example, universal leaning programmes such as child benefits tend to have lower data requirements and higher coverage of population.

⁷ HOPE will be open source by the end of 2021.

These differ widely in their characteristics, but most often:

- they collect and manage limited data to support
 the operations of specific emergency interventions
 (based on specific informed consent) not for future
 use and medium-term planning. Some like HOPE,
 systematically seek consent from beneficiaries to
 share data with governments.
- even within the same country, it is often the case that different humanitarian actors collect different
- data depending on the programmes they run, and new data for each new emergency response. See the Somalia case study for some of the challenges emerging.
- they do not form a part of a broader information ecosystem, sharing data between humanitarian operations or with government systems – though there is an emerging trend in this direction.



It should be noted there is also a push for greater interoperability *within* the humanitarian sector. Increased interoperability could form the basis of a coordinated humanitarian response: collectively aiming to achieve the same outcomes, sharing information to avoid overlap/duplication or gaps. This is an important area of work but is not the focus of this paper. As one example, in early December 2018 OCHA, UNICEF, UNHCR and WFP released a joint statement going in this direction. They declared that, in respect of data protection principles, operational agencies will harmonize their data management approaches using interoperable data systems and stipulating data sharing agreements. *Source: SPACE (2020)*

What could 'integration' look like?

What type and level of 'integration' of data and associated information systems across sectors happen de-facto – or is desirable – will vary extensively from context to context, in the same way as broader linkages across sectors (UNICEF 2019, SPACE 2020b):

- In many, these are entirely parallel systems in some cases, for good reasons (e.g. government party to conflict).
- In others, there may be some initial stages
 of coordination/alignment: ensuring some
 standardization across the two (variables collected,
 data formats etc.) so there is the potential of these
 'speaking the same language' and contributing to a
 common understanding.
- In others still, there is starting to be leveraging/ piggybacking of each others' systems: sharing of data and/or information/insights to inform specific activities.
- In very few cases, information systems are starting to be 'thought through' cohesively to serve the needs of both sectors (and improve social protection's shock responsiveness), acknowledging these aims

to achieve remarkably similar objectives – while addressing emerging risks this may entail.

 Importantly, this does not require one massive database cutting across the two, but an ecosystem that enables **interoperability** where useful, alongside joint strategic thinking to ensure routine information systems serving the social protection sector better incorporate risks and shocks.

In the following sections, these issues are briefly touched on, with a primary focus on: a) How routine social protection data and information systems can be useful for shock preparedness and response; b) How humanitarian information systems could help enhance social protection shock responsiveness.



A. How routine social protection data and information systems can be useful for shock preparedness and response

Depending on their set-up (see Section below), existing government information systems can offer a range of potential uses for shock preparedness and response via a) the social protection sector, and/or b) via the humanitarian sector. For instance, unlike most other data sources, they can⁸ be a useful source of:

- Household and individual-level data e.g. including information on household composition and members.
- Comprehensive socio-economic data e.g. data on assets, livelihoods/employment, income, education, etc.
- Operational data e.g. data that is useful to identify, trace and deliver benefits such as bank account details.
- Geo-referenced or geographically disaggregated data.
- Data that can help to capture household-level shock vulnerability in advance of a shock (in an increasing number of countries where such variables are collected).
- Data on receipt of key benefits, services and grievances/feedback.

On top of this, these data systems sometimes feature **interoperability or data-sharing arrangements** with other government registries (disability registries, CRVS databases etc) and are underpinned by an **established capacity to collect, store, and manage data**.

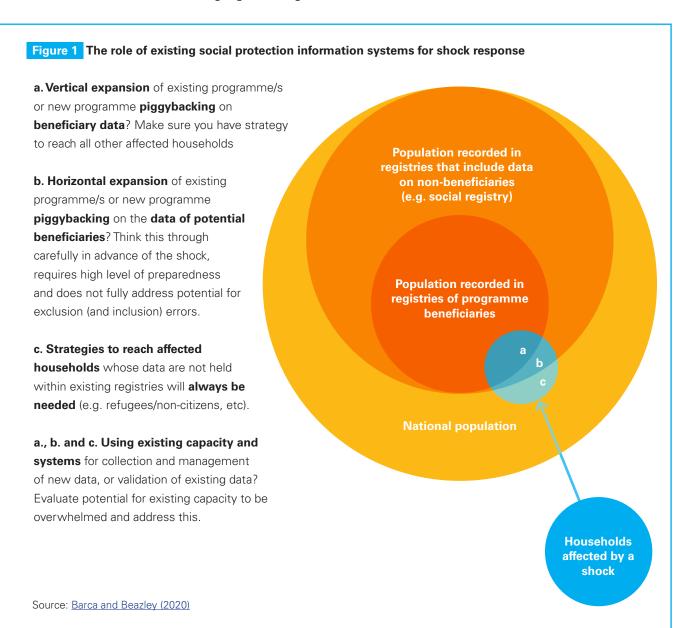
In practice, what does this mean in terms of supporting preparedness and response for different types of hazards, shock and stresses (<u>Barca and Beazley, 2019</u>; <u>Bowen et al, 2020</u>)?

- a. In advance of any specific shock, hazard or acute stress, such data can inform risk analysis and vulnerability assessments, as well as planning and preparedness measures – including 'riskinformed' design tweaks to social protection programming. This may include:
 - Combining social transfer/services data with disaster risk management (DRM) and

- humanitarian tools and data to identify individuals and households that are potentially vulnerable to shocks (not just those who are chronically poor) based on their location, their type of livelihood and other characteristics, for improved risk profiling, forecasting and routine targeting.
- Providing a rough estimation of potential caseloads for different types of shocks and simulating and planning contingency financing needs – especially in the context of recurrent and predictable shocks.
- Supporting broader decision making on design and implementation parameters for emergency responses. E.g. to help define the type and levels of support to provide, and the modality of transfer and delivery.
- Better linking benefits and services together to enhance resilience, as well as leveraging the technology to provide complementary support.
- b. When a specific shock is about to occur, and immediately after it, early warning systems can enable timely responses by leveraging existing data and systems. Triggers are typically designed to release funds and initiate early actions (e.g. immediate top-up payments to existing beneficiaries or payments to new beneficiaries that have been pre-enrolled) when pre-established thresholds are met, with obvious advantages in terms of timeliness of a response. These could kick in before any post-disaster needs assessment conducted by other sectors.
- c. During any shock/stress, social protection data can inform key decisions in relation to identifying who to support (targeting) and the type of support required. Existing capacity (e.g. local staff) and information systems can also be leveraged.
 - Data on beneficiaries can make it possible to swiftly reach those in area 'a' in Figure 1: beneficiaries affected by a shock. This can be

- done through vertical expansion or piggybacking on routine programmes' beneficiary lists for emergency programmes.
- Any data stored on non-beneficiaries (e.g. within a Social Registry) could be valuable for ensuring a timely response to new caseloads if prepared in advance. Specifically, such data could play two roles: i) being used as a basis for providing immediate support to everyone in affected areas (e.g. expanding horizontally) until new data are collected – if required; ii) informing other types of responses (e.g. providing data to complement and inform ex-novo data collection). See area 'b' in Figure 1.
- Strategies to reach affected households whose data is not contained in existing registries (e.g.

- IDPs and refugees) will always be needed though the existing capacity for data collection and management may still be leveraged. See area 'c' below.
- The broader ecosystem of interoperability that social protection information systems feature can also play a role: for validation and cross-checking of data, but also pre-population of certain variables from other government datasets.
- d. In the long-run, data and information systems
 can enable learning and inform policy changes
 – for example by incorporating shock-affected
 caseloads into routine social protection provision.



In other words, there are some **important potential benefits** of using pre-positioned data and information systems versus 'starting from scratch' with new data collection. However, building on existing systems is not always achievable and also may come with **risks and trade-offs**. For example:

- Timeliness of responses can be increased by leveraging existing data, information systems and capacity, if financing is available for timely disbursement of funds and procedures have been thoroughly planned in advance. This can be achieved via vertical expansions or piggybacking on beneficiary data. For horizontal expansions, timeliness can be much more complex to guarantee. On-demand systems for data collection/registration can play a role in countries where they are already present but can be labour intensive, difficult to maintain in the aftermath of a crisis and present excessive direct, indirect and opportunity costs for applicants.
- Ensuring coverage of affected populations, and fully avoiding inclusion and exclusion errors, often requires complementary data collection. Data collected before a shock will never give an exact assessment of needs in the aftermath of a shock (even when the eligibility criteria are altered or where better data are collected beforehand), and beneficiaries of existing programmes are not necessarily those who are most in need. There will also always be affected households/individuals whose data are not held within existing registries.

Trade-off: The most pressing and important tradeoff that needs to be discussed and evaluated by decision-makers in advance of a shock is the one between inclusion/exclusion errors (coverage) and timeliness. When it comes to crisis response, timeliness is usually more important than full targeting accuracy, especially in the first phase of assistance. Specifically, inclusion errors can and should be tolerated in the short term⁹ – especially as they can contribute to controlling tensions within recipient communities. Exclusion errors, on the other hand, should be minimised by design, and promptly addressed through a sound grievance redress process and complementary approaches to swiftly reach all affected households. The true question for policymakers is whether leveraging existing social protection systems and data is the best way to balance this trade-off – as it may not be.

There is a value in leveraging shared data for increased *coordination* amongst social protection, DRM, and humanitarian actors, leading to *improved knowledge/learning*, *reduced duplication of efforts*, and potentially *saving costs* (for example, administrative costs of data collection, recurring costs of data management, and private costs to citizens

 Leveraging and strengthening government information systems is also likely to result in heightened sustainability in the medium-long term. Trade-off: There is an important trade-off between making social transfers and services data more accessible to external partners for these purposes and guaranteeing data security and privacy.

Responses that build on existing data and systems should not compromise the data security and privacy of registered individuals and households, placing households at risk of increased vulnerability – and potentially compromising humanitarian principles. There are good reasons why governments are often not open to sharing this data with non-government entities. Better approaches to data collection, management, and sharing – and agreements developed in advance of a shock – can help to minimise risks while ensuring accessibility of valuable data (potentially in anonymised formats).

⁹ Note this is the case not only in crisis response, but also in areas with chronic widespread poverty (when the difference between those below and over the poverty line is minimal).



Many of the responses to COVID-19 have shown the potential of using these information systems for shock response, via social protection programmes. For example:

- Vertical expansions (leveraging data from beneficiary registries) were performed in a wide variety of countries. Where
 the programmes expanded had extremely high coverage as universally leaning (e.g. Argentina, Mongolia) this resulted in an
 effective response strategy.
- Horizontal expansions of existing programmes or new programmes catering to new caseloads were implemented in several
 countries by leveraging data from existing social registries (raising eligibility thresholds). Examples abound and include
 Pakistan, Brazil, Chile, Peru, Ecuador, etc.
- Existing **information systems and interoperability agreements** were further leveraged in many other countries, to a) support dynamic inclusion to new populations (same criteria, new caseload); b) pre-populate some eligibility variables and/or validate/cross-check new data collected via mass digital registrations (e.g. Namibia, South Africa, Togo, Brazil, Pakistan).

There are also emerging examples of government social protection information systems being leveraged by humanitarian programmes. One such example comes from the Republic of the Congo.

Reaping the benefits of routine social protection information systems will depend on their strength and preparedness.

The varied nature and quality of social protection registries and broader information systems means that their role and use in emergencies can only be identified with reference to the particularities of the registries in the country and context under review.

These vary widely across countries – if they are set up at all. Key variations are listed in Box 1 above.

Six complementary dimensions can be used as a framework to assess the potential utility of social assistance registries and their broader information systems in response to shocks – which derive from the variations described above. Each of these can be linked to important system strengthening and preparedness actions (Table 1).

Table 2 Seven assessment criteria and relevant system strengthening and preparedness actions.

Dimension	Potential preparedness and system strengthening actions
Completeness. This refers to the level of data coverage and the number of records compared with what would be perceived as a full set of records— for instance, 100 percent of the population in affected areas, or 100 percent of those in need. An existing registry may assist an emergency response if the data cover all of those affected by the shock, or a high enough proportion. Important distinctions need to be made between data on beneficiaries and registered non-beneficiaries, acknowledging that neither are likely to offer full coverage of populations affected (Figure 1).	 Retaining data on registered non-beneficiaries (this is often not digitized). Increasing coverage of routine data (and ideally also of enrolled beneficiaries) in areas vulnerable to hazards/shocks/stresses. Ensuring there are no systematic barriers to access for vulnerable groups.
MIS functions appropriateness. This refers to the data management functions needed in terms of information management for a specific programme. These should be mapped and the integration points of these functions with relevant platforms and solutions for financial services, grievances and response mechanism, SMS aggregators or cash plus should be considered. The mapping exercise can be as simple as defining a set of data management tasks and checking whether the available information system can accomplish those or not.	 Map data management needs required by prospective SRSP intervention and match them with existing functions in government MIS Document a data flow where personal data would be needed to accomplish the programme design and investigate the feasibility of MIS integration with needed satellite solutions (FSP, Grievances, SMS aggregator, etc.)

Dimension Potential preparedness and system strengthening actions Relevance. At two levels: A. Data are relevant if • Adapt variables collected to better capture vulnerability to they contain the variables required for the intended shocks (disaster/climate aware). purpose. Data collected for the provision of long-• Ensuring collection of geo-localized and/or geographic information system (GIS) data. term assistance (e.g. another purpose) may not always be relevant for shock response if they do • Where useful, collect operationally relevant information¹⁰ for all registered individuals/HHs (even if not enrolled). not contain variables that comprehensively identify households in affected areas, and ideally that assess Ensuring the amount of data collected is the minimum necessary to meet clearly defined and articulated purposes, ex-ante. household needs and enable an immediate response (operationally relevant). B. Routine information Ensure routine information systems offer a wide set of systems are relevant if they offer the functionalities functionalities (e.g. strengthening additional modules for M&E, required in crisis situations. case management, grievances, etc.) Currency. Data currency is the degree to which data are current (up to date), and thus represent • Investing in on-demand and accessible systems for dynamic households' real circumstances at the required point inclusion of newcomers (e.g. migrants, newborns), dynamic in time. It is, of course, impossible for standard exclusion of those who have died or moved away, and social protection data to reflect the reality after dynamic management of transitory shocks. a disaster, meaning some form of post-disaster • Pre-planning re-registration and validation exercises that are revalidation is always required. The relevant factor is linked to routine systems and capacities, as these will very often be needed in the event of shocks. how up to date existing data are overall – often an issue for concern in many countries reviewed. **Accessibility.** This refers to the ease with which potential users - most likely national or local • Developing protocols and standard operating procedures on government agencies and departments, or their how data will be used. partners - can obtain the data. Accessibility can vary • Signing memorandums of understanding for data sharing. widely depending on who the users are and what • Ensuring relevant data is digitized and clearly labelled processes and authorisation levels are in place for (shareable). • Ensuring software/hardware has required flexibility. data sharing; the underlying policy and legislation; whether or not data are maintained and stored Ensuring compliance with national laws. digitally; existing provisions for data security and • Developing web service interfaces and other data sharing and privacy; what type of data interfaces are provided interoperability arrangements where relevant. and their flexible use, etc. • Strengthening routine data quality procedures, including Accuracy. Data are accurate if they are free from via interoperability with external databases (e.g. internal errors and omission. Accuracy means that a high consistency checks, de-duplication, etc.) level of confidence can be placed in the data, • Building sound institutional arrangements and capacityaffecting their wider credibility and ultimately their strengthening across relevant actors. usability. Auditing existing systems and building trust in them. • Advocate and invest in legislation strengthening if this is **Data protection.** Data are secure when they are inadequate. protected against unauthorised access, misuse, • Ensure true informed consent (including for use or corruption. Data privacy is guaranteed where in emergencies) and comprehensive outreach and data are utilised while protecting an individual's communications on data use and rights. privacy preferences and their personally identifiable • Ensuring clear procedures to avoid breaches of standard information. In emergency contexts, concerns protocols for the secure collection, transfer, and storage regarding misusing or losing such information of information (e.g. non-encrypted sharing of personal - potentially exposing households to further information via email or USB/CD). vulnerability - are heightened. • Stress-test the routine system and enact additional security,

back-up and risk mitigation measures.

Dimension	Potential preparedness and system strengthening actions
CROSSCUTTING:	 Investing in the broader ecosystem, not just the social protection information systems. This should include providing more assistance to centralized national functions such as civil registration and identity. Where possible, using existing data to estimate financing needs, potential caseloads, etc. – not just as a tool to support targeting and 'response'. Piloting and iteratively adapting any changes to routine systems. When developing humanitarian information systems, leveraging elements of routine SP systems where relevant and possible, and/or aligning new systems. Integrating caseloads from previous emergency responses into routine provision where possible and relevant. Ensuring surge capacity, training and guidance for all stakeholders involved at all levels of administration— especially on issues of data protection in emergency contexts.

Source: author, adapting from Barca and Beazley (2019)

The core conclusion is that:

 Before using existing social protection data and information systems at any cost – it will be essential for every country to make a careful assessment of a) existing data and systems based on the six criteria discussed above; b) the benefits,

- risks and trade-offs of using existing data versus 'starting from scratch'. This can inform a decision on how/if existing data and systems should be used.
- There is a significant amount of system strengthening and preparedness work that can be supported by UNICEF and other partners in-country.
 Suggested strategies are summarised in Table 1.



B. Leveraging humanitarian information systems to enhance social protection shock responsiveness

The section above discussed the role of social protection information systems, including the importance of strengthening these over time. This section complements the one above by briefly touching on the roles that can be played by humanitarian actors and their information systems in strengthening social protection shock responsiveness. Which of these considerations will be most relevant depends on the country's context.¹¹

- Developing the humanitarian information system around the business processes and administrative systems of governments (taking into account medium-term strategic directions), not of the humanitarian organisation. For example, in Lebanon, UNICEF's cash MIS was deliberately designed in a manner that mirrors the way government-owned systems are built in other countries, rather than in a way that only focuses on supporting UNICEF-specific business processes, to provide the government with a system that could be built to support its own nascent social assistance programme.¹² The same was done in Irag (see below).
- Avoiding 'quick wins' via a new software/ database. Instead, support government counterparts via analysis of the broader ecosystem and how that can be strengthened over time (data protection legal and regulatory frameworks, civil registration, ID systems). As well as this, support design decisions, contract IT specialists (ensuring right clauses/ considerations) and data protection officers, develop system specifications, integrate databases according to international best practice, etc.
- Building for interoperability between systems (if useful/relevant) by agreeing on common standards for data collection and management,

- rather than through 'single' or specific information systems and registries. Consider sharing information not necessarily data e.g. via Zero-knowledge proofs¹³ and 'Hashed' personal data.¹⁴
- Where needed, develop clear data-sharing agreements, outlining (i) clear, standardized processes and timelines for the provision of data; (ii) identify which organizations/types of organizations can and cannot access data and which fields different users can access; and (iii) identify clear roles and responsibilities to ensure accountability in the data provision/use process.
- 'Opening up' closed and proprietary systems
 using relevant integration technologies such as APIs
 where possible, enabling the development of further
 services and modules within the social protection
 information system on that basis. See for example
 the Iraq example of a case management module.
- Coordinating to 'think through' how to serve the information needs of both sectors, while addressing emerging risks this may entail (taking data protection very seriously). For example, if sharing data with the government, consider whether user consent was given for this purpose, consider the political environment and whether there is a risk to humanitarian and data protection principles. Overall, the collection, storage and sharing of data in humanitarian settings carries heightened risks (threats, abuse, bias, corruption, loss of life) that are greater than in other settings. There are some population groups for which management via humanitarian information systems may always be the best option, complementing government action.

¹¹ Ramkissoon (unpublished); Goodman, R. et al. (2020); SPACE (2020)

¹² Ramkissoon (unpublished).

¹³ A method by which one party can prove to another party that they know a value x, without conveying any information apart from the fact that they know the value. For instance, Organization A could state they have Beneficiary A in their system, without sharing the details of that Beneficiary with Organization B (SPACE 2020).

¹⁴ Encrypted representations of personal data are used as proxies for the actual data (SPACE 2020).

How challenges were addressed in UNICEF programmes – Iraq, Nepal, Somalia

Iraq¹⁵

Context: the routine social assistance system and the SPN information system

Establishing an effective 'safety net' has been a strategic priority of the Government of Iraq (GoI) and development partners since 2012. In 2014, macroeconomic shocks and escalation of conflict curtailed social protection expenditure and hampered programme implementation and efforts to reform public services. In that context, the Government alongside the World Bank, passed Social Protection Law 11, calling for social assistance provision for any Iragi or non-Iragi resident. The law also changed the selection criteria of the country's main cash transfer programme - the Social Protection Network (SPN) - from categorical to poverty based (on-demand self-targeting combined with proxy means-testing (PMT). These provisions are further embedded in the Social Protection Roadmap 2015-19 and the National Development Plan and Poverty Reduction Strategy 2018-2022, which includes a focus on developing common systems for data sharing, identifying chronic and temporary needs, and scaling up support for those affected by disasters.

Running a PMT-based programme required creating a 'Social Registry', a database of potential beneficiaries to draw socio-economic data from. The registration

approach for the SPN is 'on-demand, but only during specific registration windows (e.g. not on a rolling basis). Applications can be finalized online but are often de-facto facilitated by over 1000 staff sitting in 130 offices across the country. Procedures are also in place to tackle barriers to access due to conflict and displacement. For example, If the applicant does not have any proof of identification, there is a committee to which they can bring witnesses to testify for them. Applications for the SPN are then assessed through the PMT¹⁶, and an institutionalized verification process cross-checks the applicants' tax, asset ownership and employment records. Current beneficiaries include 1 million households. The programme also retains data on those who applied but were not eligible (e.g. via its Social Registry function): these constitute a 'waiting list' of over half a million households. If fiscal constraints are relaxed, it has been agreed these households would be prioritized in a horizontal scale-up.

Of course, the SPN database and its associated information system and capacity are not 'perfect' when assessed against the 6 criteria set out in Sections above, and the SPN is not the only social assistance programme in the country (e.g. the Public Distribution System reaches 98% of the population), yet it offers an important starting point for ongoing systems strengthening work.

Dimension	SPN's information system, some key features (both constraints and opportunities)
Completeness	 The database covers 24% of the population and retains data on non-beneficiaries (8% of the population) as well as beneficiaries (16% of the population). It only covers Governorates so does not cover the Kurdistan Region of Iraq, which hosts an overwhelming number of IDPs and refugees). Registration is open for non-nationals/IDPs & procedures are in place to support access.
Relevance	 Relatively comprehensive dataset to assess PMT score, including variables related to refugee and IDP status. Insufficient focus of the core information system on supporting functions such as case management, grievances, M&E, etc. (focus is entirely on targeting). However, UNICEF has been working to shift this.

¹⁵ This section strongly draws on: a) SPaN Case Study, Iraq (2019 here); Tebaldi (2019 here); UNICEF (2019 here); Khurshid (2017 here) as well as a Key Informant Interview with Atif Khurshid.

¹⁶ Which is being adapted to include conflict-sensitive and stratify by displacement status.

Dimension	SPN's information system, some key features (both constraints and opportunities)
Currency	 Opportunity to register online and 'on-demand' via established capacity in 130 local office around the country. Registration is limited by short application windows, due to concerns about fiscal capacity. The system is not 'truly' on-demand.
Accessibility	 No online accessibility to the system via decentralized locations/Governorates, or potential to modify the master data (e.g. if incorrect). Social assistants have no access. No linkages (e.g. via Integrated Beneficiary Registry) between different Government programme databases, each underpinned by different and quite rudimentary programme management information systems (MIS). No protocols for data sharing between government and humanitarian actors (data requests are analyzed on a case-by-case basis by the MoLSA, which can grant access to parts of the data).
Accuracy	Some reports of sub-standard data quality.
Data protection	Not enough info.
CROSSCUTTING:	Different programmes (government and humanitarian) operate their own targeting and verification systems based on different (though overlapping) criteria – high potential to leverage common systems.

Source: authors building on all the resources for this section

How UNICEF leveraged SPN information systems and supported systems strengthening

Beyond ongoing support to Government capacity in other areas, UNICEF has engaged in two key experiences leveraging and strengthening the SPN information system.

- First, UNICEF developed a HCT to step-in during the phase of SPN disruption. The programme was labelled as an 'educational CT' and built on the SPN database, targeting criteria and information system in close collaboration with government officials. In addition to this, the programme also:
 - Developed additional Modules on Case
 Management that were integrated into the routine information system.
 - Supported capacity development and procurement of IT hardware.
 - Supported additional security measures such as firewalling for the system.
- Second, UNICEF collaborated closely with the Iraqi government to jointly design a pilot conditional cash transfer programme, to inform future developments for the SPN. The pilot targeted approximately 4,000 households (with children) – who were already beneficiaries of the SPN¹⁷ – in the poorest city of the Baghdad Governorate and was conditional on the

fulfillment of a set of co-responsibilities related to regular school attendance and primary health care.

Most importantly, UNICEF built on its experience with the Humanitarian CT and ensured a case management approach was built into the pilot, due to the various barriers that can hinder access to services by vulnerable Iraqi households. Cross referrals to services for noncompliant households were designed, supported by a tailored Management Information System that was codeveloped and hosted by the Ministry of Labour and Social Affairs (MoLSA) alongside the Ministries of Education and Health as well as local Mayors' offices. Tablets were procured for social workers, schools and primary health centers to support rapid collection and transfer of data and information flows were established with schools and health facilities to register beneficiary information and track compliance with their co-responsibilities. Monthly data was also used to develop reports and automated text message alerts for participant behavioral change and awarenessraising. Given the success of the proof of concept, MoLSA now intends to scale up the programme with the support of UNICEF and the World Bank.

Box 2 below discusses how this was achieved in practice: challenges and opportunities that could prove useful for other Country Offices.



Existing SPN Information System and internal UNICEF Challenges

- Before UNICEF could propose recommendations and technical guidance on strengthening the information system housed
 within MoLSA, UNICEF Social Policy team along with UNICEF IT staff undertook a rapid assessment of the existing
 business processes and IT performance. The review focused on the following: a) Server capacity; b) Data fields in the
 database and their function and utility; c) Design flexibility to introduce additional fields; d) Its agility to handle complex tasks
 and support the business process of social workers and other departments.
- The rapid assessment revealed not only the **challenges linked to the MIS but also UNICEF internal challenges**, providing room for thought on capacities needed within CO to effectively support cash-based programming. The review showed the following:
 - UNICEF CO had no in-house experts on MIS/ICT that could be used to help in the assessment and strengthening work.
 The existing IT staff from the Operations Unit was available for a limited time and could not be engaged in a dedicated manner.
 - The existing government SPN information system had the basic capacity to capture simple data, but the design and architecture were not flexible. For example, the information system did not have data and processes to allow capturing data related to immunization, neonatal and post-natal care or primary and secondary school enrollment.
 - The system was not online/accessible remotely (not even by social workers) and therefore data would have to be collected from the community health centers and schools in the field and then fed into the master version at the national level.
 - Health centers and school recording systems were not digitized and irregular.

Steps in addressing these barriers and strengthening the information system

- Based on the assessment findings, the UNICEF Social Policy Team subsequently engaged in the following:
 - i. Rapid baseline survey: a quick baseline survey was undertaken by MOLSA with support from UNICEF on the number of households that are currently enrolled and school enrollment status, number of schools in the targeted area as well as health centers and child-specific information; other relevant fields.
 - ii. Resource Mobilization: UNICEF office began internal resource mobilization by approaching management for funding to help strengthen the business process and ICT elements, introducing real-time data entry, etc. 150,000 USD was secured.
 - **iii. Building partnership with WB and MoLSA:** ensuring a collaborative effort to identify gaps in the existing system and ensure expansion and agility in the revised system.
 - iv. Identifying expertise on MIS development in a context like Iraq: Given the lack of expertise within UNICEF and MoLSA, World Bank's network on MIS for cash-based programming was tapped into. WB identified a local firm registered with Microsoft that had led the process of installing the existing information system in MoLSA. With UNICEF's lead, a detailed ToR identifying all the technical ICT specifications and features was developed jointly by all three actors. The local firm was contracted for one year for 150,000 USD.

Total Budget:

Agency	Budget area
UNICEF Iraq CO	150,000 + 150,000 = 300,000
150,000	Contracted IT company
150,000	Tablets, computers, laptops, training of social workers, final launch workshop

New Features developed and strengthened

- i. Digitizing data entry in health centers and schools: Laptops and computers were procured for health centers and schools so that record keeping and data entry could be entered directly into the master database.
- ii. Smartphones/tablets provided to social workers for data collection and training: Every social worker was provided with a smart tablet from which they could access the master database. They would collect data at HH level and input them directly into the database; They could also access the data inputted by health centers and schools and undertake home visits and ensure referrals based on the data.
- iii. Introduction of modules on vaccination, postnatal and neonatal and school enrollment: 3 Dedicated modules were developed on (a) Health; (b) Case Management and (c) Education.
 - **Health Module:** Provides full information on guidelines and schedule for vaccinations. UNICEF partnered with WHO and the Ministry of Health in its development.
 - Case Management Module: Provides 4 templates for social workers on case identification; follow up, referrals and closing the case. UNICEF child protection and social policy team together with World Bank developed the modules and launched them in the system.
 - Education Module: All education rules and law and template for social workers for monitoring. UNICEF education team and the Ministry of Education were engaged in the process.
- iv. Timeline messaging on education, vaccination and post and neonatal care: The system generated messaging on education such as enrollment schedules, the importance of education, the age group for primary and secondary education; Similar automated messages were sent to families with pregnant women on neonatal and post-natal care. Finally, automated messages were sent on vaccination schedules and recommended windows.
- v. Behavioral change component: additional messaging on key behavioral change aspects of education and health.

Nepal¹⁸

Context: the routine social assistance system and its approach to information management

Nepal's social assistance system comprises five 'Social Security Allowances' (SSA) that are delivered as cash transfers delivered every four months targeting the following categories of people:

- 1. Dalit children under five years of age (child grant¹⁹);
- 2. widows and single women over 60 years of age (single women's allowance); 3. people with disabilities (disability allowance); 4. senior citizens over 70 or 60 years for Dalits (senior citizens' allowance); 5. highly marginalized indigenous ethnic groups (endangered ethnicities allowance). In 2015/2016, approximately 2.7 million individuals received an SSA (9% of the population).

Such a system of categorical benefits requires a relatively simple approach to registration and information management. Potential beneficiaries need to register themselves 'on-demand' at the ward offices, submitting relevant documentation. This information is shared with central level stakeholders, but not in a systematic manner. No ad-hoc information system (e.g. via a tailored software application) has been designed to support other cash transfer delivery systems.

Given this context, the Government of Nepal and donors are currently investing in increasing capacity and efficiency at both the central and ward level. This includes efforts towards digitalizing data (the Department of Civil Registration is planning to digitize all the hard-copy data they have), creating a national civil registration system and developing a strong Management Information System playing a Social registry function for the SSAs.

Dimension	SPN's information system, some key features (both constraints and opportunities)
Completeness	 Only data on beneficiaries is available, covering some 9% of the national population (those belonging to specific targeted groups) High reported percentages of eligible individuals not receiving the allowances (due to barriers to access including lack of documentation, unawareness, etc.).
Relevance	 Not yet developed as an 'information system' (e.g. with supporting software application, etc.) Very few variables collected and retained (as eligibility is categorical), none particularly relevant to shock/hazard/stress vulnerability. No focus on supporting functions such as case management, grievances, M&E, etc.
Currency	Registration is on-demand in ward offices, meaning – in theory – newly eligible households can apply when in need
Accessibility	 Data not easily accessible, either at local/ward level or by external actors No interoperability agreements, etc.
Accuracy	Reported challenges collecting, keeping and updating records due to the lack of a supporting Information System
Data protection	Not enough info
CROSSCUTTING:	Extremely limited capacity for performing routine functions, especially at Village level

UNICEF's experience leveraging and strengthening existing systems

On 25 April and again on 12 May 2015, Nepal was affected by two major earthquakes. Amongst other forms of response, the Government of Nepal partnered with UNICEF to provide an Emergency Cash Transfer

¹⁸ This section strongly draws on Merttens et al (2017 here); Holmes et al (2019 here).

¹⁹ This covers the whole population (e.g. not just Dalits) in the Karnali zone, which is the poorest in the country.

Programme (ECTP) to households in affected areas. The ECTP was delivered over two phases:

- Emergency response. Phase 1 of the programme provided a top-up grant to the beneficiaries of the existing Government of Nepal cash transfers to five vulnerable groups (namely Dalit children under five years of age, widows and single women, persons with disabilities, senior citizens, and members of minority ethnic groups) in 19 earthquake-affected districts.
- Recovery response. The second phase of the programme comprised a horizontal expansion of the programme, providing cash transfers to all children under five years of age in 11 of the 14 most earthquake-affected districts.

The choice to start **Phase 1** with a vertical expansion to 430,000 beneficiaries was a practical one: to transfer funds to households using available systems (beneficiary data from the SSAs) rather than collecting new data and delaying the response. The obvious trade-off was that not all earthquake-affected people were beneficiaries of the ECTP. Planning for Phase 1 started immediately after the first earthquake and the programme was internally approved by UNICEF on 19 May. However, valuable time in the first phase of the crisis was lost in Cabinet-level decision-making processes on the geographical coverage of the programme, which lasted for about a month. Fund transfers began in June, and payments were made from 09 July, with most beneficiaries having received their payments by October 2015, five months after the first earthquake.20

The timeline for **Phase 2** was primarily affected by its design, which was focused on the recovery phase once Phase 1 was completed. Planning for Phase 2 was conducted in September 2015 and the Government of Nepal's approval was finalized by January 2016. In this case, existing SSA data could not be used as there was no data on the intended beneficiary category: all children under age 5 in affected areas (not just Dalit children). UNICEF, therefore, supported a household census to develop a registry of all children under five years of age to support the expansion of the child grant in programme districts. The Population Health and Development group (PHD group) were contracted to work with local

governments to carry out the census. This process was not without difficulty, as training was conducted swiftly and with inexperienced enumerators who were already under strain. Problems with data quality due to insufficiently trained enumerators and data entry resulted in beneficiary lists that were often incomplete or inaccurate, creating tensions within communities and necessitating a re-registration exercise. Data collection was ultimately completed by the end of May and data entry by the end of July. District-level orientation sessions for staff from districts and municipalities were also held in March/April 2016, enabling disbursements to 300,000 beneficiaries to start in June through to October 2016.

The **long-term results** of this process have been important. By developing a registry of all children under five years old and increasing birth registration rates from 48% to 94% in the 11 programme districts in Phase 2, UNICEF has laid the foundation for the universalization of the child grant in the country, an explicit priority of the GoN. COVID-19 has been an opportunity to kickstart the process. In addition, through the M&E systems utilized throughout implementation, this programme has developed a comprehensive knowledge base as regards the practicalities of adapting social protection systems to respond to shocks. Moreover, the use of government systems also helped UNICEF gain the trust of key stakeholders and beneficiaries.

Somalia²¹

Context: humanitarian agencies and their approach to information management

Somalia has been experiencing one of the most complex and protracted humanitarian crises in the world. In this context, humanitarian agencies have used cash transfer programming (CTP) alongside in-kind assistance for over 10 years, favored by a highly monetized economy rich in financial service providers.

In the lack of any government social protection system – and related information system – different humanitarian agencies developed their own data collection and management systems and related databases over the

²⁰ Overall, payments were delayed because: a) the standard payment window for government payments was missed in June; and b) there were delays in transferring funds to local levels of administration and to Village Development Committees (who were also overburdened with work).

²¹ This section is largely based on Owino (2020) Harmonizing data systems for cash transfer programming in emergencies in Somalia; WFP (2018) Somalia Databases and Beneficiary Registries for Cash Transfer Programming. An Overview of the Beneficiary Registration and Data Management Practices of NGOs, UN and Government in Somalia, as well as a KII with Jose Maria Bendito Prieto (UNICEF).

years to provide cash assistance. These have been "largely based on individual agencies' policies, guidelines and standard operating procedures, resulting in multiple non-interoperable data systems" and lack of coordination across actors, including duplications and gaps in caseloads (Owino, 2020).

It is obvious such an approach is not viable in the medium-term, especially considering the cost and duplication of having multiple NGOs and agencies collecting different data, in different ways, for registration of new caseloads – including collecting it afresh year after year (see also the Box below).

Within the humanitarian sector, the debate on improving the data architecture for CTP in Somalia has therefore focused on how identification and registration of recipients of cash assistance can be done in more coordinated ways to reduce delays and multiple registrations of the same people (Owino, 2020). In practice, this has led to the creation of NGO "consortia" that operate jointly, as well as the use of the information

systems developed by big cash players. For example, 4.2 million individuals have registered within WFP's SCOPE system alone, approximately 30% of the national population.

As much as this is welcome progress, it still does not solve the problem at its root. In fact, it risks exacerbating competition between humanitarian actors looking to leverage ever-increasing economies of scale: controlling ownership and access to large amounts of registration data is seen as a competitive advantage.

This is especially the case because the 'emergency' that humanitarian operations have been addressing is one where chronic poverty and vulnerability to shocks significantly overlap, where needs have been persistent over time, requiring medium-long term actions that are orchestrated coherently. What is needed is for humanitarian actors and development partners to help set the foundations for government systems that are strengthened over time, starting simple – including information systems, as the next section discusses.



Issues with the humanitarian data architecture that may limit long term sustainability:

- No full standardization across actors, different variables collected in different ways (depending on programme objectives).
- For many of the organizations doing cash-based transfers (e.g. with exception of UNICEF, UNHCR and WFP):
 - data is only collected on the main recipient, not all household members.
 - the registration and enrolment phases are effectively the same, meaning data is only collected after eligibility has been determined e.g. only on 'beneficiaries' (not potential beneficiaries).
- Minimal data collected/stored (registration takes 10 minutes per household). Common variables stored include names, dates of birth and gender, who is the head of household and minimal details about the household such as the location and "principal recipient's" phone number.
- Little evidence of data exchange across organizations for the purposes of verification/validation, as well as understanding both duplications and gaps feeding into medium-term planning decisions. This is limited also by the lack of truly unique identifiers (no national ID or strong CRVS), a necessary foundational investment.
- Re-registration year on year (costly, time-consuming), with most organizations not even having the capability to crosscheck newly enrolled beneficiaries versus beneficiaries enrolled in previous years (truly starting from scratch each time).
- Varying levels of digitization, data protection and security practices.

Source: WFP (2018)

Context: new social protection policy and focus on building a social protection information systems

Thanks to support by UNICEF and other actors, the Government of Somalia passed a <u>Social Protection Policy</u> in 2019.

Within the foreword to that policy, it is clearly stated that "Government will implement the Social Protection Policy through a sustainable and comprehensive national system. The policy envisions strengthening all components of a social protection system, including linking with the development of a single registry²² and

the long-awaited national IDs." Within Policy Objective 1, one of the core priorities in the short term (until 2024) is to "commence the development of a social registry and necessary integration with other databases for social protection programmes" – an objective that is further developed for the long term.

The need for this is further defined in a section below, clearly stating that "Somalia currently has no commonly used data management system or single registry on cash transfer programmes; rather, implementing partners develop and operate beneficiary databases independently. This limits data sharing and often involves costly, repetitive exercises".

Several other paragraphs and sections of the Policy elaborate on this further, stressing the need for an information system that not only integrates registration functions (acting as a social registry) but also provides an overview of who is receiving what, and where (acting as an integrated beneficiary registry) across various sectoral services and activities run by government and partners.

The foundations for this vision within the Policy are being set via a World Bank financed project that sees UNICEF playing an important role in driving the process forward, with Government squarely in the lead. The design process is ongoing, with initial system assessments having been conducted and the proposed form/questionnaire for the social registry having undergone extensive consultation.

On the side of this, foundational efforts are ongoing to launch a national ID for Somalia and develop the required data protection legislation to accompany these shifts. Addressing data protection concerns by design and from day 1 is in fact a particular area of focus, given the worry amongst many humanitarian actors that a government-owned database may be misused.

In the short term, the first programme of the national social protection strategy – Baxnaano – was launched during COVID as a stopgap measure for 200,000 households, with WFP carrying out registration via its SCOPE system.



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