

Talking Interoperability

A dialogue series for advancing interoperability in the social protection sector

Kutumba: Breaking data silos for inclusive social protection recording, fact set and press

This brief summarizes key learnings from the dialogue on the Kutumba system (Karnataka State, India) on 15 March 2022.

The keynote was presented by **Rajiv Chawla** – Chief Knowledge Officer and Advisor, National Farmers' Welfare Implementation Society & Former Additional Chief Secretary, Government of Karnataka; and **Annapurna K** – Project Director, Centre for e-Governance, Government of Karnataka. The discussants were **Raul Ruggia-Frick** – Director, Social Security Development Branch, International Social Security Association; and **Rodrigo Assumpção** – Social Protection Management Information Systems Specialist, International Labour Organization. The session was moderated by **Anita Mittal** – Senior Advisor, Digital Convergence Initiative, GIZ.

Please click [here](#) to access the recording, presentation slides and Q&A summary.

System overview

[Kutumba](#)¹ is an integrated social protection information system set up by the Government of Karnataka, India², to extend social protection to the most vulnerable and marginalized while overcoming the challenges of low awareness, high administrative burden, and limited fiscal space. Kutumba is expected to drive the government's ambitious agenda of proactive provision of entitlement-based benefits by the state, thus removing the onus on citizens to apply through a complex administrative machinery. A relatively young system, Kutumba was announced in FY2018/19³, with much of the full-scale implementation done FY2020/21 onward. Kutumba is set to become the key enabler of the implementation of the Once-Only Principle⁴ in the state.

The Kutumba ecosystem is a mix of five core components, which includes:

- a. *three integral components built by Kutumba*: (i) the Social Registry, (ii) the (integrated) Beneficiary Registry, and (iii) Suvidha (online eligibility screening and application portal);
- b. *interoperability interfaces with two state-wide platforms*, (iv) the State Direct Benefit Transfer platform for payments, and (v) the Integrated Public Grievance Redressal System for receiving grievances against Kutumba.

This learning brief focuses on the Social Registry.

¹ Kutumba means family in Kannada language.

² Karnataka is one among the 28 states and 8 union territories in India, with an estimated population of 66.8 million (2021 projection). Under India's federal structure, states form the second tier of government.

³ The annual financial year in India runs from April 1 to March 31.

⁴ Once-only principle means that citizens provide their data only once in contact with public administrations, while public administration bodies take actions to internally share and reuse these data.

Kutumba's Social Registry (SR) – Quick Facts

- **Coverage:** 15 million families (or 55 million people), covering nearly 80 percent of population.
- **Data collection approach:** Operationalized as a virtual social registry⁵, the SR is built off the database of Public Distribution System (PDS)⁶ beneficiaries. It also accepts on-demand applications from households and individuals through its online portal.
- **Breadth of data exchange:** Social protection user programmes (e.g., PDS, public works, housing, utilities, health insurance, social pensions, scholarships); Functional registries (e.g., farmer registry, disability registry, students' registry); Foundational information systems (e.g., civil registration system, caste and income database, socio-economic census data).
- **Depth of data exchange:** There is two-way flow of information between the SR and the various connected information systems via forward and reverse integration. Each connected system is both a data provider as well as data consumer vis-à-vis the SR.
- **Data updating approach:** The SR is updated through data exchange with various systems. Although periodicity (i.e., real-time, daily, weekly, monthly, etc.), type of interoperability approach (i.e. offline ETL process, online APIs, batch mode using cron jobs), and data integration approach (i.e. web services, point-to-point, broadcast) varies by programme requirements.

How does the SR support the social protection delivery chain?

The SR is used – either standalone or with other ecosystem components – to support the following phases of the [social protection delivery chain](#).

- **Outreach:** The SR data is used by Suvidha's eligibility screening module to determine potential eligibility for various schemes. Individuals can access this module online to self-assess eligibility. With 1000+ programmes available across 40 departments, this ability to leverage SR for **providing information to eligible individuals** via Suvidha is valuable.
- **Registration and eligibility assessment:**
 - When SP programmes register applicants through their own departmental channels, they fetch existing data from the SR for pre-populating the application form and validate eligibility against information held in the SR. Citizens are only required to submit documentation for information requirements not available in the SR, thereby **reducing administrative burden**.
 - For some programmes (e.g. scholarships, crop loss payments, and old age pensions), those eligible in the SR are **automatically granted benefits**, without having to apply
 - For other programmes which are yet to create the fiscal space needed for automatic approval of entitlements, Kutumba helps prioritize the most vulnerable. The plan is to run an algorithm to generate a need score for each individual, which can then be used to **prioritize targeting**.
- **Beneficiary management and exits:** The SR periodically shares data with SP programmes to help **them verify continued eligibility and ensure exits** (e.g.

⁵ A virtual social registry collects data primarily by ensuring interoperability of existing administrative databases. Examples include Chile's Registro Social de Hogares and Turkey's Integrated Social Assistance Information System ([Barca, 2017](#)).

⁶ The PDS is among India's largest SP programmes targeting 75% and 50% of the urban and rural population respectively.

suspension of old age pension upon death leveraging CRVS data; suspension of social pensions when land holdings or income exceed predefined threshold).

Challenges and lessons learned

Common family ID, and family member ID mapped with department IDs is a key enabler:

Not all databases integrated via Kutumba contained a common identifier, particularly at the household-level. Where possible, transitive matching process was adopted to link records. Going forward, the government has notified all participating systems to 'seed', i.e. include, the Kutumba family ID and Kutumba family member ID into their respective systems.

Data standards for better data quality: Many systems suffered from issues of incomplete records, duplicate records, non-standardized formats, and invalid values. To address one-off issues, departments were suggested ways to fix quality issues identified by data profiling. As a permanent measure, a data dictionary has been developed that defines data standards for each contributing and consuming department. Existing standards, such as the [Metadata and Data Standards of the Government of India](#), were endorsed for adoption.

A data governance structure as a foundation for meaningful data exchange: Data inconsistency across sources can ultimately undermine the trust in data. While analytical approaches were used to fix this in the initial phase, a long-term solution has involved clearly delineating responsible departments and rectification protocols for each data field. A data governance structure has been set up to sustainably and systematically tackle the aforementioned challenges. The three-tiered data governance structure spans strategic, tactical and administrative matters respectively.

Close collaboration and rich legacy of e-governance success underpins standards enforcement: Standards compliance is key to trustworthy and seamless data exchange. Building on strong existing departmental relationships cultivated through successful e-governance projects over two decades,⁷ the Kutumba project team conducted several one-on-one meetings with participating departments to analyse their current processes and collaboratively identify process changes required. The team also handheld departments during the implementation of technical changes.

Strong emphasis on data privacy and security: Fully cognizant of the risks associated with any data breaches, Kutumba has adopted the 7 principles of privacy by design.⁸ Kutumba has pre-emptively aligned its architecture with the requirements of the India's Personal Data Protection Bill 2019, a draft bill that is yet to be passed into law.

Ensuring data subjects' rights: Kutumba, in line with international good practices⁹, has been explicitly designed to guarantee data subjects (i.e. citizens, applicants, beneficiaries) control over their data in terms of knowing what information is held about them; accessing such information and rectifying such information. Globally, the emphasis on data subjects' control has been crucial to retaining citizens' trust in information systems.

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⁷ E.g. [Land records digitization](#) and [unified farmer records](#) portal.

⁸ See [Lindert et al, 2020 pp. 132](#) for how privacy-by-design approaches can be applied in the case of social registries.

⁹ See GIZ's forthcoming guide on Good Practices for Ensuring Data Protection and Privacy in Social Protection Systems for more details.