

Transforming Iraq's PDS through digital innovation

Iraq's Public Distribution System (PDS) is one of the world's largest food subsidy programs, received by approximately 37 million people. The program is currently undergoing digital transformation as part of reforms to the PDS and Iraq's broader social protection system. This case study focuses on the deployment of OpenSPP, the Digital Public Good (DPG)¹ used to create ePDS, the digital PDS system.

KEY TAKEAWAYS

ePDS, based on OpenSPP, has greatly enhanced the efficiency of Iraq's national food subsidy program, which benefits approximately 37 million people.

The introduction of digital and automated processes has sped up administrative tasks, and helped to reduce backlogs and instances of leakage and mismanagement.

The ePDS social registry now provides one of the most comprehensive sources of information in Iraq regarding the demographic and socio-economic situation of its citizens, with powerful capabilities to support accurate poverty targeting.

The shock-responsiveness of the PDS has been strengthened through the creation of the comprehensive ePDS social registry which supports risk analysis and preparedness planning, whilst the digital management information system (MIS) allows for the flexibility to quickly adapt programs to changing circumstances.

The adaptation of OpenSPP for ePDS, and the development of three corresponding mobile applications (Tamwini, Tasjeel, and Wakeel) for use by citizens, enumerators, Wheat Flour Agents and Food Agents, was completed by March 2023.

ePDS has improved access to the PDS for Iraqi citizens, by allowing households to update their information through the Tamwini application, avoiding long travel distances, and associated costs of visiting the local PDS office in person.

Designed for interoperability, ePDS can be linked to Iraq's biometric Unified National Card (UNC) database and other registries and data sources as Iraq's social protection system is further developed.

The digital technologies set up for ePDS, along with the program's wide coverage have created a strong foundation on which the Government of Iraq (GoI) can develop its Digital Public Infrastructure (DPI),² enabling the modernization and improvement of public services.

1. DPGs are open-source software, open data, open AI systems, and open content collections that adhere to privacy and other applicable best practices, do no harm by design and are of high relevance for attainment of the United Nations 2030 Sustainable Development Goals (SDGs). DPGs may also be implemented as part of a country's Digital Public Infrastructure.
2. DPI refers to the foundational digital systems, platforms, and resources that support the delivery of public services and enable interactions between governments, citizens, and businesses.

IRAQ IN TRANSITION

Iraq is currently in a period of relative calm and stability after decades of armed conflict, and profound political and socio-economic challenges. As such, development agendas have shifted towards longer-term development goals of reducing poverty, addressing unemployment, and improving government services.³ Meanwhile, parts of Iraq continue to experience significant humanitarian challenges, including a substantial population of internally displaced persons (IDPs), a refugee crisis from neighboring Syria, and climate-induced displacement resulting from drought and land degradation. As of 31st August 2023, more than one million individuals were identified as internally displaced.^{4,5}

In alignment with this context, Iraq's social protection system is currently under transition, moving away from a primarily humanitarian intervention towards a development-focused approach to providing social assistance, whilst also factoring in the high risk of future humanitarian crises. Operational reforms are integral to this transition and include the digitalization of administrative systems, the establishment of a comprehensive social registry centered around the PDS, and the introduction of digital processes to improve targeting.

PDS DISTRIBUTION CHALLENGES

The PDS is managed by the Ministry of Trade (MoT) and funded by the Iraqi government, and stands as one of the world's largest food subsidy programs. It is received by approximately 96% of the population (37 million people) in both Iraq and the Kurdistan Region of Iraq (KRI) (see Image 1).⁶

The program was initiated in 1990 as a response to food shortages and has remained largely unchanged in terms of the mechanisms used to identify and verify populations. The program has helped reduce the poverty rate and has



Image 1: Map of Iraq and Kurdistan Region of Iraq (KRI)

positively impacted life satisfaction among the poor. For IDPs, the monthly rations have been particularly beneficial in improving their food security.⁷

However, the PDS is resource-intensive, consumes a considerable portion of the government's social protection budget, and is estimated to comprise 70% of the MoT's workload.⁸ The program has become deeply ingrained in Iraqi society, with households typically expecting monthly rations of wheat flour, rice, vegetable oil, and sugar, regardless of their level of vulnerability.

Operational challenges and gaps have significantly contributed to the inefficiency of the PDS. Until recently, the program's MIS operated on a legacy relational database management system built in the 1990s. The system only functioned offline, creating a significant reporting burden and requiring numerous manual steps for distributions, reconciliations, and data transfers. This resulted in a two-week inactive period every distribution cycle for data to be exchanged using flash drives or CD-ROMs.

3. Human Rights Watch, World Report 2024: Events of 2023.
4. International Organization for Migration (IOM), October 2023. Iraq Master List Report 130. IOM, Iraq.
5. International Organization for Migration (IOM), September 2023. DTM Iraq –Climate-Induced Displacement Southern Iraq (1 – 15 September 2023). IOM, Iraq.
6. Savage E and Labs M, January 2021. Humanitarian Cash and Social Protection in Iraq—The CALP Network. CALP Case Study.
7. Phadera L, Sharma D and Wai-Poi M (2020) Iraq's Universal Public Distribution System: Utilization and Impacts During Displacement, World Bank Group Poverty and Equity Global Practice.
8. CALP Network, December 2023, Feasibility of achieving resilience By linking vulnerable populations receiving humanitarian CVA to development and social protection.

The PDS database was segmented, with each governorate having its own separate database. The PDS databases were also not operable with databases of other social protection and humanitarian programs, nor with the database for the relatively new UNC. This made it difficult to have a holistic view of Iraq's social protection programs, and impeded the identification of gaps, duplications, and potential opportunities for collaboration.

The outdated system also imposed burdens on citizens, requiring them to visit their local PDS office in person to register for the PDS or update their household information, such as adding or removing household members. Due to the two-week inactive period in every distribution cycle, this could only occur on a limited number of days per month. Once registered, households could only collect their monthly food allowances from the local ration distribution point in the area where they originally registered, resulting in some citizens facing long travel distances, and significant costs to collect their food allowance.

For IDPs, the manual system created a significant barrier to accessing the PDS, as many were unable to return to the PDS office where they originally registered to carry out administrative processes such as updating their household information, or requesting to change their ration distribution point. Many IDPs also lacked PDS cards or the necessary identification documents, such as a Civil Status ID to register for the program. In September 2022, it was estimated that up to 1 million Iraqis were unable to obtain basic civil documentation, many of these were IDPs.⁹

The administration of the rations only functioned offline, with distributions and reconciliations carried out manually during every distribution cycle. This created a significant reporting burden and lack of transparency in handling data and resources, with households reporting missing months, missing key commodities, or shorted quantities.¹⁰

RATIONALE FOR ADOPTING OPENSPP

The benefits of digitalization for social protection programs are widely understood. Digital systems increase efficiency, reduce costs, and enhance accuracy through automated processes and integration with government databases. They foster transparency with clear audit trails, and facilitate program monitoring. Accessibility is improved through online portals or mobile applications, even in remote areas. Additionally, digital systems offer flexibility for rapid adjustments to evolving needs, including during large-scale humanitarian crises.

Digitalizing the PDS aligns well with the Gol's broader vision for the digital transformation of government services, where the establishment of robust and interoperable DPI plays a vital role. Given the challenge of deploying a large-scale digital system to transform the PDS, the Gol decided to work with a team of skilled software consultants to deploy an adapted off-the-shelf product. Skills and capabilities within the MoT would be developed, leading to the eventual transition of ePDS to the MoT and locally based software developers.

Several factors led to the selection of OpenSPP as the preferred platform for the ePDS. OpenSPP is a DPG specifically created for the implementation and delivery of social protection and humanitarian programs. It is built upon a proven open-source Enterprise Resource Planning (ERP) platform, Odoo. Several companies in Iraq are certified Odoo partners, and can provide maintenance and improvements to the system once the platform is handed over, promoting national ownership and sustainability of the platform. As OpenSPP is a DPG, the MoT is not tied to proprietary vendors, providing flexibility to repurpose the platform for other ministries. Furthermore, DPGs are inherently more interoperable due to their adherence to open standards and protocols, facilitating integration with other systems and enabling smoother data exchange.

9. Buchanan E and Zullo C (2022) Life in the margins: Re-examining the needs of paperless people of post-conflict Iraq. DRC, IRC, NRC.
10. Savage E and Labs M, January 2021. Humanitarian Cash and Social Protection in Iraq—The CALP Network. CALP Case Study.

OPENSPP DEPLOYMENT

OpenSPP's open-source management information system for social protection (SP-MIS) offers customizable building blocks for effective program implementation and delivery (see Image 2). Its modular design allows users to select only the components they need.

The deployment of OpenSPP for ePDS supported the initial program reform objectives of digitalizing the administrative systems, establishing a comprehensive national registry centered around the PDS, and improved targeting methods. As such, the development of ePDS focused on adapting the OpenSPP components related to registration, case management, entitlement management including printing of ePDS cards, and monitoring and reporting. Additionally it involved migrating data from the existing databases, and integrating with other systems to create the national registry and the system's targeting capabilities. ePDS was hosted in the data center of the MoT, providing the GoI with complete control over their data.

Due to OpenSPP being an open-source, pre-built platform, it was largely ready for deployment. Adaptations were made to tailor the platform for the PDS, including customization of fields and interfaces, language options for English, Arabic and Kurdish, and integration of the platform with hardware to read UNC cards and scan documents, and to print ePDS cards using ID PASS Card Generator.

As the web-based ePDS is primarily used by PDS central and Governorate level administrators, three mobile applications (Tamwini, Tasjeel, and Wakeel) were also created to enable the digital inclusion of users at local levels: citizens, enumerators carrying out the re-registration process, Wheat Flour Agents (WFA) and Food Agents (FA).

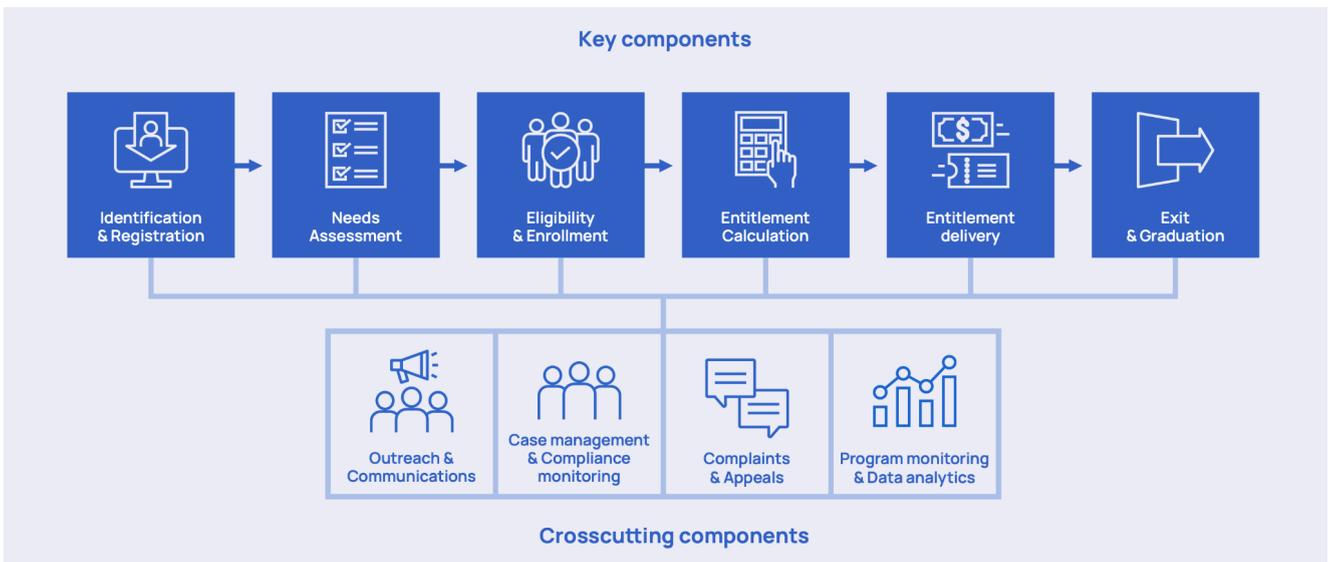


Image 2. OpenSPP building blocks

Tamwini allows Iraqi citizens already enrolled in the PDS to update their household information, such as adding or removing household members. Citizens submit their updates via the app, which offers a menu of change requests (see Image 3).¹¹ PDS Government Agents access change requests for review, approval or rejection, through ePDS web interface.

Wakeel is a mobile application which allows WFA and FA to facilitate the redemption of e-voucher-based food allowances. Government Agents assign payment tokens to households and generate e-vouchers via the ePDS web interface of Wakeel. WFA and FA use the Wakeel POS application on their mobile devices to read either the household representative's ePDS card or UNC, and then provide their food allowance according to the amount shown on their record. Wakeel is designed to be compatible with multiple voucher systems.

Tasjeel is operated by a PDS Government Agent and is used to re-register citizens already enrolled in the PDS, and facilitate augmentation of the existing data. Upon entering information from the existing PDS cards (either paper-based or ePDS), Tasjeel automatically matches the household data with their existing record held in the ePDS database. At the same time, a survey is carried out, and this information is added to the household record. Finally, the household's biometric UNCs are scanned, which adds the Unified ID (UNID) field and other biographical information to the household record.

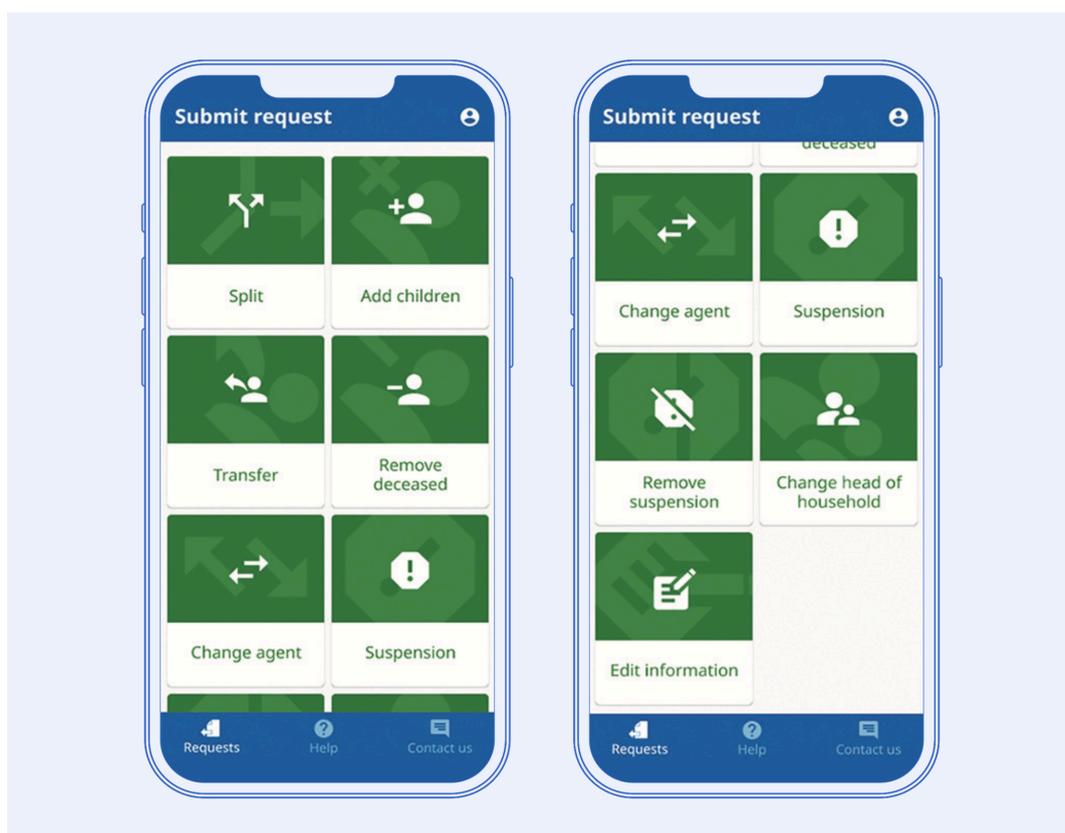


Image 3. Tamwini mobile interface showing the menu of change request

11. Citizens with change requests to split a household (e.g. in the case of divorce), transfer household (e.g. multiple household units coming together under one household) and remove suspension, are still required to attend the PDS office, due to the complexity of these requests.

OUTCOMES OF PDS DIGITAL TRANSFORMATION

ePDS, based on OpenSPP, has greatly enhanced the efficiency of Iraq's national food subsidy program, which benefits approximately 37 million people. The adaptation of OpenSPP for the ePDS, development of the corresponding mobile applications, and registration of 20 million people was completed by March 2023. The process of each Governorate transitioning their database to the single ePDS social registry, and re-registering households is almost complete.

The introduction of digital and automated processes has led to several immediate outcomes for PDS distribution. Removal of the previously required two-week period of inactivity for manual data exchange and reconciliation has resulted in more timely distributions. The accuracy of entitlement distributions has been improved with the implementation of the OpenSPP entitlement management function and the introduction of Wakeel. PDS managers now have the capability to monitor and audit distributions, detect irregularities, and respond promptly to potential instances of leakage. While it is still early to measure the impacts of the ePDS on administrative efficiency and costs, it is reasonable to assert that the digital system has sped up administrative processes, helped to reduce backlogs, and reduced instances of leakage and mismanagement.

Access to the PDS has also improved for Iraqi citizens. The Tamwini application allows for Iraqi citizens to submit household information changes remotely, saving time and travel costs. This has been particularly important for IDPs, as it provides them with the option to submit a request to change their ration distribution point without returning to their area of origin. The inclusion of the UNID in the records held in ePDS will also help ensure that IDPs can continue to access their monthly food rations. It is common for citizens to lose their identification documents during a humanitarian crisis, and the biometric information stored in the UNC database provides a reliable method of identifying individuals.

The ePDS social registry now provides one of the most comprehensive sources of information in Iraq regarding the demographic and socio-economic situation of its citizens, bringing many benefits for policy and planning of effective social protection and humanitarian programs. Surveys

conducted using Tasjeel during the re-registration process, provide comprehensive information on household demographics, income and assets, and the disability status of household members. In the longer term, this data will enable more targeted and effective interventions, improving the overall resilience of Iraq's social protection system. The addition of the UNID field in the registry also enables linkage with Iraq's UNC database, and future interoperability with other registries and data sources as Iraq's social protection system is developed.

The new ePDS is now operationally ready to carry out accurate needs assessments based on the household data contained in the registry. After policy decisions are reached regarding the targeting criteria and parameters, the platform can be easily used to apply indicators, and conduct poverty and income tests. Initial steps have already been taken to improve targeting by providing citizens whose income is more than 2 million Iraqi Dinars per month the option to suspend themselves from the program using the Tamwini app.

The creation of the ePDS social registry has additionally strengthened the shock-responsiveness of Iraq's social protection system. The comprehensive demographic and socio-economic information contained in the social registry provides the capability to accurately identify individuals and households vulnerable to climate-related shocks, conflict, economic downturns, or disease outbreaks. As a result, Government and humanitarian agencies will be better able to forecast, plan, and coordinate responses.

The digital technologies set up for ePDS, along with the program's wide coverage have created a strong foundation on which the GoI can develop its DPI, enabling the modernization and improvement of public services.

CONCLUSION

The PDS digital transformation, including the adaptation of OpenSPP and the development of Tamwini, Tasjeel, and Wakeel mobile applications was completed by March 2023. The process of each Governorate transitioning their database to the single ePDS social registry, and re-registering households is almost complete. With its improved targeting capabilities, the ePDS is now ready to be used for accurate needs assessments, and to enhance risk analysis, preparedness and response to future humanitarian crises.

Additionally, the introduction of digital processes has streamlined administrative tasks, reduced instances of leakage and mismanagement, and improved access to the PDS for citizens, particularly IDPs. Overall the new ePDS based on OpenSPP significantly contributes to the reform of Iraq's social protection system, and contributes to the GoI's broader vision for the digital transformation of government services and development of DPI.

ABOUT OPENSPP

OpenSPP is a Digital Public Good (DPG) for social protection hosted by the Association pour la Coopération Numérique (ACN), a French non-profit organization, also known in English as the Association for Digital Cooperation.

The platform is open-source, modular and highly interoperable, offering a comprehensive management information system and dynamic registries, which can be easily adapted to a country's needs, goals, and existing systems.

OpenSPP was created by Newlogic, a software company that has worked with governments and humanitarian agencies to develop digital information systems for social protection for more than 8 years. These systems are currently in use in more than 50 countries.

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