

DEEP CHALLENGE FUND WORKING PAPER 1

A Blueprint for Creating a Zanzibar Dynamic Social Registry (ZDSR) to Map and Identify Poor Households

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August 2025

About DEEP

Our mission is to build evidence, insights, and solutions that help end extreme poverty globally.

We aim to contribute to new global and national data and evidence that governments, decision-makers, citizens and researchers can use to improve people's lives and support the world's poorest people in their efforts to escape extreme poverty.

We are a consortium of the Universities of Cornell, Copenhagen, and Southampton led by Oxford Policy Management, in partnership with the World Bank's Development Data Group and funded by the UK Foreign, Commonwealth & Development Office.

About the DEEP Challenge Fund

The DEEP Challenge Fund provides small to medium-sized grants to national researchers working on country-specific poverty reduction. The scope of the Fund was co-designed with Tanzanian policy and research communities at multiple stages.

Awards were selected through a fair and rigorous competitive process, led by a nationally constituted Technical Review Panel in collaboration with the Tanzania National Steering Committee.

The DEEP team gratefully acknowledges the contributions of the Tanzania National Steering Committee, the Technical Review Panel, members of the DEEP consortium, and colleagues at Oxford Policy Management, all of whom have played a central role in shaping, reviewing, and implementing the Challenge Fund. We also extend our thanks to the Foreign, Commonwealth and Development Office (FCDO) for funding this initiative.

How to cite:

Khalfan, T. M., Worthington, R., Rashid, R. S., Gaumont Lacerte, L., & Ali, A.-R. H. *A blueprint for creating a Zanzibar Dynamic Social Registry (ZDSR) to map and identify poor households*. DEEP Research Programme.

Available at: <https://doi.org/10.55158/DEEPCFWP1>

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Preface

The authors extend their deep gratitude to Sadick Masomhe of Wazohub Technologies, and to Twamaa Hababuu, Hala Elhassan, and Sara Hamza of the Zanzibar Research Centre for Socio-economic and Policy Analysis (ZRCP) team, for their dedicated assistance in conducting this research. Special thanks to Dr Thomas Teuscher from ZRCP for his insightful review and valuable comments, and to the DEEP National Steering Committee and participants of the 2025 DEEP Conference in Arusha for their helpful feedback. The authors also appreciate the support of Juma Reli and Ally Baharoon from the ZRCP management team. Additionally, sincere appreciation goes to Jamie Williams, Manager of the DEEP Project, for his cooperation and administrative support.

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List of abbreviations

AI	Artificial intelligence
CRVS	Civil Registration and Vital Statistics
DCI	Digital Convergence Initiative
DEEP	Data & Evidence to End Extreme Poverty
ESR	Enhanced Single Registry
IBR	Integrated beneficiary registry
ISASS	Integrated Social Assistance Services System
MIS	Management information system
MoCDGEC	Ministry of Community Development, Gender, Elderly and Children
NIDA	National Identification Authority
NSER	National Socio-Economic Registry
OCGS	Office of the Chief Government Statistician
PMT	Proxy means testing
PSSN	Productive Social Safety Net
RGoZ	Revolutionary Government of Zanzibar
RSH	Registro Social de Hogares
SDGs	Sustainable Development Goals
SISBEN	System of Identification of Social Programme Beneficiaries
TASAF	Tanzania Social Action Fund
TZS	Tanzania shilling
UHI	Universal Health Insurance
UNICEF	United Nations Children's Fund
USSD	Unstructured Supplementary Service Data
WFP	World Food Programme
ZCSRA	Zanzibar Civil Status Registration Agency
ZDSR	Zanzibar Dynamic Social Registry
ZHSF	Zanzibar Health Service Fund
ZPC	Zanzibar Planning Commission
ZRCP	Zanzibar Research Centre for Socio-economic and Policy Analysis

ZSPP	Zanzibar Social Protection Policy
ZSSF	Zanzibar Social Security Fund
ZUPS	Zanzibar Universal Pension Scheme

1 Introduction: Why is it Important to have a dynamic social registry in Zanzibar?

Over the past few decades, a growing wave of developing countries have embraced the development of dynamic social registries to leapfrog operational constraints and to strengthen social protection systems, recognising them as vital tools for reducing poverty, promoting equality, and building more resilient societies (Andrews *et al.*, 2021). This global shift towards dynamic social registries reflects the need to keep pace with the evolving nature of poverty and household vulnerability, as well as rapid advancements in technology. It is evident that a well-developed dynamic social registry plays a vital role in the delivery of adaptive social protection programmes in environments where household welfare can change dramatically and abruptly due to shocks (Encinas *et al.*, 2025).

If Zanzibar's social protection system is to be effective, an integrated and dynamic registry must be built. Such a registry will enable the expansion and coordination of existing and new social protection programmes, as well as building linkages between social sectors and economic policies. Even though the benefits are clear, Zanzibar lacks a dynamic and integrated social registry for the social protection system to address several prevailing challenges, such as fragmentation, high administrative costs, and the fact that the lack of a dynamic integrated data system leads to difficulties in identifying poor households. To date, Zanzibar's social protection¹ has primarily been delivered through universally targeted schemes focusing on the elderly (universal old age pension), poor households (conditional cash transfer), and social security (contributory pension and health insurance funds). All flagship programmes implemented by the Revolutionary Government of Zanzibar (RGoZ) have their own independent way of defining a household, identifying eligible households, and capturing the related personal and socioeconomic data to determine the eligibility for the respective programmes.

As part of efforts to strengthen the social protection system in Tanzania Mainland, a World Bank policy note² provided the analytical underpinnings for the next stage in the process of developing the country's integrated social registry. However, to the best of the authors' knowledge, no comparable analytical work has been conducted for Zanzibar, highlighting a significant gap in the evidence base needed to inform the advancement of its social registry system.

Zanzibar's population is estimated to be approximately 1.9 million and is growing at a rate of 3.7% annually. It has a population density of 603 persons per square kilometre.³ Like many other countries, the effectiveness of Zanzibar's social protection system in meeting the

¹ Zanzibar is an archipelago and is part of Tanzania. It consists of two main islands, Unguja and Pemba, and has a total area of 2,654 square kilometres.

² World Bank (2021) 'A Blueprint for Developing a Unified Social Registry in Tanzania', final draft.

³ According to the 2022 Population and Housing Census conducted by the National Bureau of Statistics and the Office of the Chief Government Statistician (OCGS).

lifecycle needs of its population fundamentally depends on the government's ability to accurately identify individuals in need, enrol them in appropriate programmes, deliver targeted benefits, and coordinate the layering of complementary interventions for those requiring multiple forms of support. Currently, Zanzibar faces distinct challenges in ensuring equitable access to social protection services, due to the lack of a dynamic social registry. Addressing this gap can improve targeting accuracy, and support the efficient delivery of social protection interventions. The presence of a dynamic social registry, encompassing an integrated beneficiary registry (IBR), is important for distributional outcomes, as it will reduce both errors of exclusion and errors of inclusion. In an era in which Zanzibar is likely to face increasingly frequent and negative climate-related vulnerabilities and effects, it is paramount to identify the most vulnerable populations in a timely manner.

On the immediate demand side, the establishment of a dynamic social registry is a prerequisite for enabling effective provision of social assistance, particularly the subsidisation of poor and vulnerable households under the Universal Health Insurance (UHI) scheme. Indeed, the accurate and up-to-date identification of those who are unable to afford health insurance premiums is a prerequisite for ensuring equitable access to healthcare. A dynamic registry that is regularly updated with real-time socioeconomic data would ensure that subsidies are directed to those most in need, thereby reducing exclusion and inclusion errors. Without such capabilities, the mission of achieving UHI coverage under the Zanzibar Health Service Fund (ZHSF) is unlikely to be realised. By systematically identifying and profiling poor households, a dynamic, data-driven social registry can facilitate their identification, enabling a more accurately targeted UHI subsidy, with minimal exclusion and inclusion errors; it can also improve efficiency in service delivery and facilitate integrated social protection planning. This would not be a new phenomenon in the international context: many countries are leveraging social registries to determine priority or eligibility for poverty-targeted programmes with a degree of subsidisation for health insurance (Cotlear *et al.*, 2015)

Against this background, this research builds on recent experiences in countries that have developed integrated social protection information systems, and on extensive consultations with key stakeholders, to present a blueprint for establishing the Zanzibar Dynamic Social Registry (ZDSR), which will incorporate the IBR. It sets out the key building blocks required, while also acknowledging the main challenges and risks that will need to be mitigated and addressed in the phased implementation process. A dynamic social registry capable of mapping poor households is anticipated to significantly enhance the efficiency of the social protection sector by streamlining programme delivery, reducing duplication, and enabling better coordination across services. Equally important, ZDSR will improve the monitoring and evaluation of programme outcomes, impact, and aid evidence-based service delivery and financial planning.

It is essential that the blueprint for establishing ZDSR set out in this research paper is followed. This will lead to an optimal ZDSR to ensure that social assistance reaches the right

beneficiaries, addresses diverse vulnerabilities, and promotes the long-term financial sustainability of the social protection system. The future architecture of ZDSR can also serve as a foundational element for building an integrated information management system that not only serves social protection programmes, but also caters to other strategic sectors, such as education, agriculture, and the blue economy. With the aim of keeping data dynamic, establishing ZDSR in line with the blueprint proposed by this research is essential for strengthening a national data architecture that increases intersectoral collaboration, for enhancing the efficiency and responsiveness of social service delivery, and for building a cohesive and adaptive social protection system in Zanzibar.

The rest of this paper is organised into the following chapters. Chapter 2 introduces the concept of a social registry and sets out the main components of Zanzibar's social protection information system, at both the programme level and integrated level. Chapter 3 presents experiences from other countries related to the development of a social registry. Chapter 4 describes the research methodology. Chapter 5 sets out the research findings, while Chapter 6 proposes an adequate model for establishing ZDSR. Chapter 7 articulates how to operationalise ZDSR.

2 Basic concepts relating to social registries, and Zanzibar's social protection landscape

2.1 What is a social registry?

Social registries are digital databases that store demographic and socioeconomic information about populations or specific groups within them. They function as standalone tools or as integrated platforms withing broader social protection frameworks that encompass programmes like direct cash assistance, nutrition support, healthcare, and educational services. When connected to other platforms, social registries offer a holistic perspective on community socioeconomic conditions, enabling more informed policy decisions and more efficient resource utilisation and public service delivery.

Social registries help governments deliver social protection programmes more effectively by registering beneficiaries and validating their socioeconomic status. They typically support social protection programmes throughout the beneficiary life cycle: from community outreach and initial enrolment to registration processes and eligibility assessments for various social benefits and services. Additionally, the data produced by social registries are also used by governments for other purposes, such as calculating benefit levels, validating information collected through other methods or sources, assessing potential demand for programmes/services, planning and costing interventions based on projected coverage rates, and monitoring and evaluation.

Figure 1: The main difference between social registries and IBRs



2.2 What is an IBR?

IBRs compile records of benefits and services that individuals or households have actually received across multiple programmes. IBRs aim to create a complete overview of benefit distribution, tracking which recipients receive what assistance from which specific programmes. Social registries are closely related to IBRs, but with a key difference: **social registries maintain records of all registered individuals and households who may qualify for benefits, regardless of whether they have received them; in contrast, IBRs exclusively track people and households who have actually received benefits from one or more programmes, focusing on service delivery rather than potential eligibility.**

2.3 Zanzibar's social protection landscape

Zanzibar's social protection system is in a transitional phase and comprises a heterogeneous mix of formal and informal social assistance interventions, as well as contributory social security schemes. Since the revolution that took place in 1964, Zanzibar has operated as a socially oriented state, providing universal access to education and healthcare, alongside state-funded welfare services for specific groups such as orphans and the elderly. This reflects a strong commitment to social equity and poverty reduction. However, it was only in 2014 that Zanzibar Social Protection Policy (ZSPP) was endorsed, with the overall objective of 'establishing a comprehensive social protection system that meets the needs for income security, risk management and access to basic services for all Zanzibaris, thereby contributing to a more equitable society.'

Central to Zanzibar's social protection landscape is the Zanzibar Universal Pension Scheme (ZUPS), which provides a monthly non-contributory pension of Tanzanian shillings (TZS) 50,000 to nearly 49,000 residents aged 70 and above.⁴

The Productive Social Safety Net (PSSN), managed by Tanzania Social Action Fund (TASAF), is the flagship social assistance programme in Tanzania, targeting extremely poor and vulnerable households through a combination of conditional cash transfers, public works programmes, and livelihood enhancement measures. Using proxy means testing (PMT), this community-based targeting programme has reached approximately 55,000 of Zanzibar's households as at 2025, with grants worth TZS 52 billion received through cash transfers in Zanzibar since 2020. However, the PSSN relies heavily on contributions from development partners: World Bank financing (in the form of concessional debt and grants) is the single financing source, and most operating costs are funded by donors (World Bank, 2021).

In Zanzibar, social protection for other vulnerable groups PSSN beneficiaries, such as people with disabilities and orphans, is negligible. This is reflected in RGoZ's own assessment of the ZSPP 2014, which revealed that the strategic goal of providing adequate social assistance to people with disabilities remains off track.⁵

A key strength of Zanzibar's social protection system is the fact that access to public healthcare is free for everyone. As a result, the share of RGoZ spending on health is relatively high compared to comparable economies. This averaged 8% of total government expenditure over the period from 2015/16 to 2020/21, according to a Health Expenditure Review by the World Bank. The health budget has increased from TZS 160 billion in 2020/21

⁴ Nipashe (2024) 'Zanzibar is a classroom for nations to learn about pensions for the elderly', Nipashe, 19 November. Available at: <https://ippmedia.co.tz/nipashe/makala/read/zanzibar-ni-darasa-mataifa-kujifunza-pensheni-kwa-wazee-2024-11-19-192927>

⁵ Revolutionary Government of Zanzibar, 2020. Mid-Term Evaluation of the Zanzibar Social Protection Policy. <https://www.unicef.org/tanzania/media/2566/file/ZSPP%20Mid-Term%20Evaluation.pdf>

to TZS 219 billion in 2023/24.⁶ However, out-of-pocket health expenditure remains elevated, at an estimated 30–40% of total health expenditure. For many households this level of expenditure constitutes catastrophic health expenditure, which results in financial hardship, especially for the poor, and in delayed care-seeking, which leads to worse health outcomes.

ZHSF was established in 2023, and has the responsibility for extending UHI to the majority of residents in order to improve the quality of healthcare services and enhance the financial sustainability of the health sector. Subsidised health insurance is anticipated to play a key role in advancing progress towards universal health coverage. However, despite being given a clear mandate for administering and extending the coverage of UHI, enrolment in ZSHF is only compulsory for formal employees. This implies that Zanzibar is making slow progress in its efforts to attain UHI.

In Zanzibar, certain challenges hinder the full realisation of scaled up UHI. Similar to many other emerging economies, a notable bottleneck in scaling up UHI is the enrolment and enforcement of informal workers and the subsidisation of the poor (Das and Do, 2023). A well-functioning social registry that includes an IBR would be a critical first step in addressing this challenge.

Parallel to ZHSF, the National Health Insurance Fund, which is regulated by the Tanzania Insurance Regulatory Authority, covers all public sector employees of the Government of the United Republic of Tanzania residing in Zanzibar and their dependents. While voluntary enrolment is permitted for private individuals, uptake remains limited. Critically, there is currently no publicly available data about the proportion of the Zanzibari population covered by the National Health Insurance Fund.

On the pension side, the Zanzibar Social Security Fund (ZSSF) is primarily mandated to administer the contributory social security scheme for employees in the public and private sectors. It offers pensions and related benefits to formal sector employees. ZSSF is mainly financed by contributions paid by its members and their employers. The contribution rate is 21% of the basic salary (7% contributed by employee, and 14% by employer). While some voluntary enrolment options exist for informal workers, uptake is still limited to formal workers in the public and private sectors. As at June 2024, ZSSF had 135,068 active members.⁷ RGoZ provides a gratuity for retirees who have worked but failed to reach the vesting period required to qualify for an old age pension benefit. Moreover, *ad hoc* social assistance is also provided by the Ministry of Community Development, Gender, Elderly and Children (MoCDGEC), the First Vice President's Office, and the Ministry of Education and Vocational Training, covering social services for vulnerable families, including the management of homes for the elderly and the state orphanage and child protection services;

⁶ World Bank (2023) Zanzibar Education and Health - Public Expenditure Review: Policy Brief. Available at: <https://documents1.worldbank.org/curated/en/099092223091517529/pdf/P178027007205207e09c0407185fe786ab2.pdf>

⁷ PaySpace (2024) 'Zanzibar 2024 Tax Year'. Available at: <https://www.payspace.com/wp-content/uploads/2023/05/ZR-PAYROLL-SOLUTION-TAX-GUIDE-SUMMARY-2024.pdf>

cash and in-kind support for persons with disability, such as one-off grants for assistive devices; and provision of meals for 50 primary schools and porridge for children at pre-primary level.

As at 2025, the following are the key government entities within Zanzibar's social protection system:

MoCDGEC was created on 8 March 2022 and is structured into four key departments, each playing a vital role in advancing social welfare and protection: the Department of Planning, Policy, and Research; the Department of Operations and Service; the Department of Social Welfare and the Elderly; and the Department of Community Development, Gender, and Children. MoCDGEC, among other things, is mandated to implement ZSPP 2014 and ZUPS.

Zanzibar Civil Status Registration Agency (ZCSRA) was established under Act No. 3 of 2018 through the merger of two institutions: the Births and Deaths Office and the Zanzibar Registration and Identity Cards Office. Operating with full executive authority in all 11 districts of Zanzibar, ZCSRA is responsible for the registration of vital events, such as births, deaths, marriages, and divorces, as well as the issuance of identity cards for both resident and non-resident Zanzibaris.⁸ It also provides official certification for these civil events, serving as a critical institution for maintaining accurate population data that are essential for planning, service delivery, and social protection programmes.

The Department of Disability Affairs is under the First Vice President's Office and serves as the secretariat to the Zanzibar National Council for People with Disabilities. Its mandate encompasses the coordination and oversight of disability-related policies and programmes across sectors.

The Ministry of Education and Vocational Training provides free access to elementary schools offer school feeding to all pre-primary schools and selected primary schools.

The Ministry of Health provides free access to healthcare in all public facilities, while RGoZ seeks to establish UHI through ZHSF.

The Disaster Management Commission is under the Second Vice President's Office and manages initiatives related to disaster mitigation, preparedness, response, and recovery for Zanzibar's population.

Zanzibar Planning Commission (ZPC) is an autonomous agency which holds the highest authority for economic development planning. It supervises the implementation of socioeconomic development plans and interventions.

The Office of the Chief Government Statistician (OCGS) was established in 1999 to coordinate the production of official statistics, provide high-quality statistical data and information,

⁸ Zanzibar Commission for Social Security Authority (ZCSRA) (2025) *Huduma Zetu* (Our Services). Available at: <https://www.zcsra.go.tz/huduma-zetu/>

and promote their use in planning, decision-making, administration, governance, and monitoring and evaluation.

2.4 Snapshot of Zanzibar's social protection legislation

Zanzibar lacks coherent legislation governing the social protection system; instead, that system is governed by a series of separate laws that provide the foundational framework for social protection. ZSSF,⁹ established by RGoZ in 1998, administers contributory pension benefits, but with limited coverage of the informal sector. The Children's Act of 2011 provides a critical legal basis for the protection of child rights and the provision of support to vulnerable families, reinforcing the imperative of prioritising child-centred social welfare interventions.¹⁰ RGoZ has enacted the Elderly Affairs Act of 2020 to protect and serve older people, including the provision of ZUPS¹¹. More recently, the Zanzibar Health Services Fund Act of 2023 established a dedicated fund to promote equitable access to healthcare. Also, the Zanzibar Civil Status Registration Agency Act of 2017¹² established ZCSRA, which is responsible for the registration of births, deaths, marriages, and divorces.

Zanzibar does not have dedicated data governance and privacy legislation specific to its context outside the United Republic of Tanzania. Robust data governance laws are needed to provide clear and consistent guidelines on the collection, storage, sharing, and protection of sensitive personal information, on complying with national standards, and on protecting individual rights.

2.5 Social welfare data systems

In Zanzibar, there are two main databases used for targeting and recording beneficiary data, ZUPS and the Tanzania Mainland-based PSSN database, but there is limited interoperability and sharing of data between them (UNICEF, 2022). The PSSN database, containing data on poor families, is not widely integrated or shared. While the ZUPS management information system (MIS) can interface with the civil registry for ID numbers, this process is not always aligned with formal civil registration updates, and the ZUPS MIS is not compatible with the TASAF system (RGoZ, 2020a). The lack of a social registry and integrated social protection payment mechanism significantly hinders the government's ability to monitor the sector and results in duplication of effort. Furthermore, the existence of multiple databases distorts

⁹ ZSSF was established under Act No. 2 of 1998 as amended by Act No. 9 of 2000 and amended by the Government Notice of 2004, and the eventually re-appealed and re-enacted ZSSF Act No.2 of 2005 <https://zssf.or.tz/about-us/act-regulations>

¹⁰ Revolutionary Government of Zanzibar (2011) The Children's Act. Zanzibar. <https://www.zanzibarassembly.go.tz/storage/documents/acts/english/all/1674712366.pdf>

¹¹ HelpAge International (2020) *Elderly affairs bill signed into Law in Zanzibar*. Available at: <https://www.helpage.org/news/elderly-affairs-bill-signed-into-law-in-zanzibar-tanzania/>

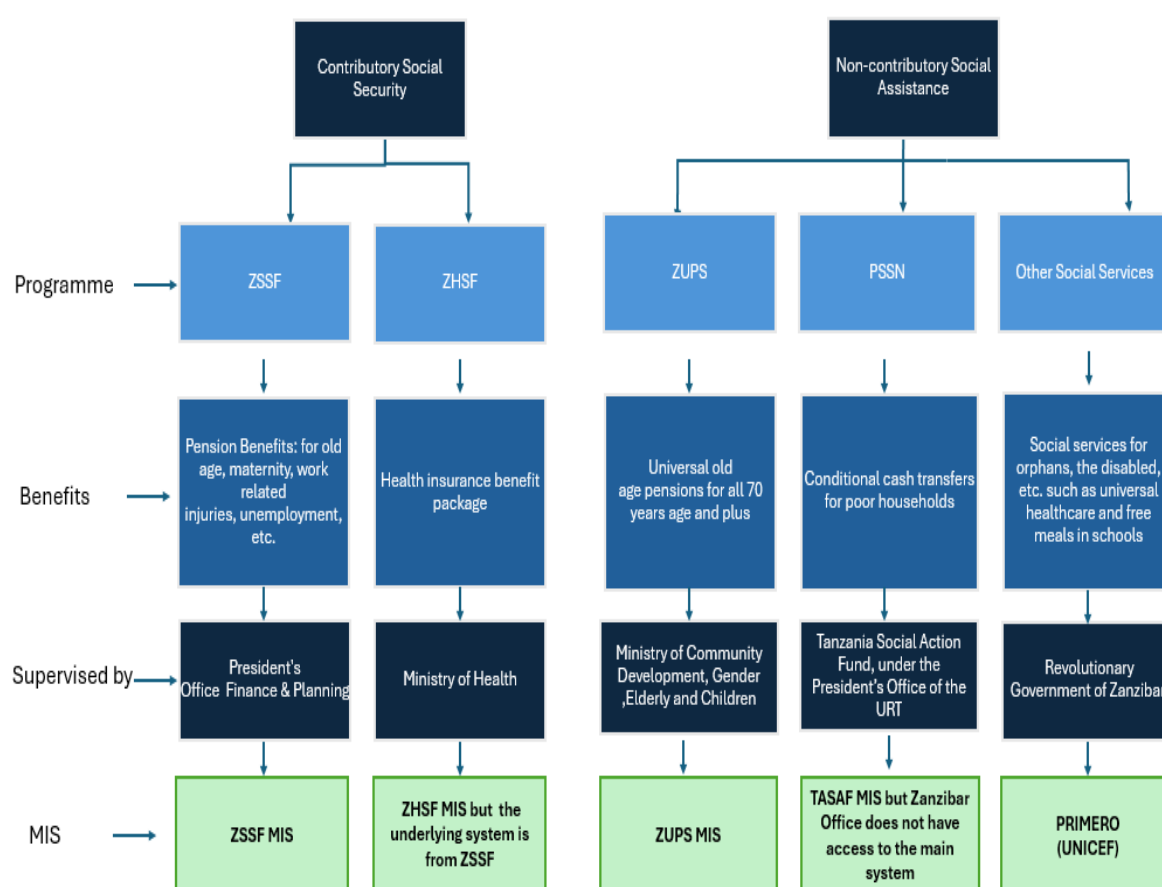
¹² Revolutionary Government of Zanzibar,(2018), An Act to Establish the Zanzibar Civil Registration Agency and to Make Provisions for Registrations and Other Matters Connected Therewith. Available at: https://zcsra.go.tz/Downloads/act_3.pdf

information on the actual coverage of social protection programmes and beneficiaries (UNICEF, 2022).

Zanzibar's social welfare landscape is characterised by a mix of established and nascent data systems and registries. While efforts towards digitalisation are evident, spearheaded by the Zanzibar e-Government Authority, a comprehensive and integrated approach remains a critical challenge.

Figure 2 below presents a graphic overview of the social protection landscape and the main MISs used for registering potential beneficiaries and for managing social protection benefits.

Figure 2: A graphic summary of Zanzibar's social protection landscape and MISs



3 A review of global experience relating to social registries

Multiple countries have developed social registries, offering valuable lessons and international best practices, from which Zanzibar can learn.. Unified registries can reduce transaction costs associated with running multiple programmes and services; they can increase access to much-needed services among citizens; they can increase programme efficiency; and they can improve the coordination of social policy.

The country experiences examined in this chapter reveal two distinct institutional approaches to social registry development, each reflecting different policy priorities and administrative capacities. **Unified social registries for eligibility determination** focus primarily on identifying and assessing potential beneficiaries across multiple programmes while maintaining programme-specific beneficiary management systems. In contrast, **unified beneficiary registries** emphasise comprehensive administrative management of enrolled participants throughout the service delivery cycle, from initial registration through to benefit disbursement and case management. These sophisticated systems adopt combined approaches that integrate both eligibility determination and beneficiary administration functions within a single platform, supported by extensive inter-institutional data sharing arrangements and advanced technological infrastructure.

Box 1: Summary of international best practices in setting up comprehensive social registries

Political will and legal framework: Strong government commitment and a clear legal basis are the foundation for the process including enforcement mechanisms.

Interoperability and data sharing: Establishing formal data exchange agreements and technical linkages with various administrative databases (e.g. civil registries, tax, health, education) to enrich the registry and reduce respondent burden.

Dynamic registration and updates: Moving beyond static 'census-style' data collection to allow for continuous, on-demand registration and regular data updates, ensuring data freshness and responsiveness to life cycle changes and shocks.

Robust data collection and validation: Employing rigorous methods, including PMT, household visits, and cross-verification, to ensure data accuracy and minimise inclusion/exclusion errors.

Clear institutional arrangements: Defining roles and responsibilities among different levels of government and agencies involved in the registry's operation.

Privacy and data security: Implementing strong data protection measures and adhering to privacy regulations to build trust and safeguard sensitive personal data.

Grievance redress mechanisms: Providing transparent channels for individuals to appeal decisions or report inaccuracies, ensuring fairness and accountability.

Digital infrastructure and capacity building: Investing in appropriate digital technology, including the use of artificial intelligence (AI), and training personnel to manage and utilise the complex data systems.

Flexibility and adaptability: Designing registries to be adaptable to evolving social protection needs, new programmes, and changing socioeconomic contexts.

3.1 Difference between static and dynamic registries

Static social registries rely on periodic data collection cycles and present considerable operational challenges in regard to maintaining accurate information on poverty and vulnerability status (Arif, 2022). These systems typically conduct comprehensive registration exercises at four- to five-year intervals, with certain countries implementing biennial collection cycles. However, *the implementation of static social registries frequently involves delays due to resource constraints and logistical complexities*, resulting in progressively outdated beneficiary information. Also, *the absence of interim registration mechanisms between scheduled data collection periods represents a critical systemic limitation*. Life events, such as births, deaths, changes in marital status, and other significant household transitions, remain unrecorded until the subsequent registration cycle. Such a temporal gap creates substantial data accuracy challenges, as static registries reflect only point-in-time conditions that rapidly lose relevance. Moreover, *static registry systems can generate significant targeting inefficiencies through two primary mechanisms: exclusion errors and inclusion errors*. These systematic inaccuracies undermine programme effectiveness and the efficiency of resource allocation.

Dynamic social registries incorporate dynamic inclusion mechanisms that substantially improve responsiveness and operational effectiveness (Arif, 2022). *These systems enable continuous information updates, facilitating more precise targeting of social protection interventions*. Dynamic registries prove particularly valuable in responding to acute shocks, including employment disruption, onset of disability, pandemic-related impacts, and natural disasters. Dynamic registration systems ensure that social protection reaches target populations during periods of greatest need. They represent a fundamental shift from retrospective to real-time social protection delivery.

3.2 Empirical lessons from global experiences with social registries

The examples discussed below highlight diverse pathways, challenges, and successes in leveraging data for effective social protection delivery. They demonstrate cross countries dynamic social registry variations and their role in building effective and responsive social protection systems:

Pakistan's National Socio-Economic Registry (NSER) was developed as the backbone of the flagship social assistance programme, the Benazir Income Support Programme. Its development represented a large-scale effort to establish a comprehensive registry for social assistance targeting. Initially constructed through a national poverty scorecard survey, NSER has evolved to progressively integrate dynamic approaches, presenting an evolution from a purely static social registry to a dynamic social registry (Guyen *et al.*, 2024). Between 2010 and 2019, the NSER undertook a nationwide door-to-door household survey to establish a comprehensive social registry. It collected detailed data on individual characteristics, asset ownership, durable goods, and housing conditions. Despite being resource-intensive and time-consuming, this system has registered approximately 27 million

households, covering 87% of the total population, through digital surveys carried out from 2019 to 2022 (Akbar, 2023). By 2015, the Pakistani Government considered this static and PMT-based registry to be outdated, and eventually the NSER moved from a static to a dynamic and digital social registry in 2023 (Encinas *et al.*, 2025). This transition aligns with a key international best practice of shifting to continuous social registration and updates that are more responsive to fluctuating poverty levels.

Indonesia's Unified Database of Beneficiaries (UDB) reflects recognition of the need for an integrated registry system to efficiently identify and expand social protection programmes to benefit the entire population. Indonesia is currently developing Regsosek system, which unifies household socioeconomic and demographic information to support the national development planning process and social protection system (BAPPENAS and UNICEF, 2024). Regsosek, as a national socioeconomic registry, supports Indonesia's One Data initiative by presenting comprehensive microdata on 78 million families, which are used for a multitude of purposes, in combination with other datasets.¹³

Brazil's *Cadastro Único* (Unified Registry) is a pioneering example of a comprehensive social registry. Established in 2001, this is a single registry of beneficiaries with a system that collects detailed socioeconomic information from low-income families nationwide and whose unique hybrid targeting technology (using self-declarations plus administrative data) is considered a global best practice.¹⁴ *Cadastro Único* has achieved remarkable scale, serving as a central instrument for identifying low-income households and facilitating the delivery of targeted social programmes and services (Antonio *et al.*, 2020). Brazil made substantial investments in developing *Cadastro Único* as a reliable and dynamic platform to support the expansion of its flagship conditional cash transfer programme, *Bolsa Família*. Over time, *Cadastro Único* was scaled to serve as an integrated platform for over 30 social programmes, enabling cross-sectoral coordination and more efficient beneficiary targeting (Leite *et al.*, 2017). Over 42 million families and 96.8 million persons were covered by this registry in April 2024.¹⁵ *Cadastro Único*'s success stems from its emphasis on regular data updates through active outreach campaigns and continuous on-demand registration processes, ensuring the registry remains dynamic and reflective of changing household circumstances. Its effectiveness is further enhanced by robust inter-institutional arrangements that establish clear divisions of responsibility between entities for data collection, validation, and programme utilisation (World Bank, 2021).

¹³ SKALA (2024) 'Regsosek: One Data for a Golden Indonesia 2045', SKALA – Activity Updates, 3 July. Available at: <https://skala.or.id/en/activity-information/regsosek-one-data-for-a-golden-indonesia-2045/>

¹⁴ World Bank and United Nations Development Program (2022) Social Protection for Brazil of the Future: Preparing for Change with Inclusion and Resilience. Washington, DC: The World Bank. Available at: <https://documents1.worldbank.org/curated/en/099041823131543914/pdf/P1748360cee7150e30857b06a0e80ada814.pdf>

¹⁵ Global Alliance Against Hunger and Poverty (n.d) *Brazil: Single Registry (CadUnico)*. Available at: [https://policybasket.endhungerandpoverty.org/index.php/Brazil:Single_Registry\(CadUnico](https://policybasket.endhungerandpoverty.org/index.php/Brazil:Single_Registry(CadUnico)

The **Philippines' Listahanan (National Household Targeting System for Poverty Reduction)** functions as a unified social registry for identifying poor and near-poor households across the archipelago. Managed by the Department of Social Welfare and Development, Listahanan conducts periodic nationwide household assessments using PMT to determine poverty status.¹⁶ A crucial best practice demonstrated by the system is its systematic approach to sharing data with various government agencies and selected private organisations, facilitating coordinated targeting of beneficiaries across a wide array of social protection and development programmes beyond direct cash transfers (World Bank, 2017). This interoperability framework is carefully balanced with strict data privacy and protection protocols that safeguard sensitive household information while enabling effective programme coordination.

Kenya's Enhanced Single Registry (ESR) represents an emerging example of a country working towards an integrated social protection information system. While still under development and being consolidated, the initiative aims to consolidate information from various social protection programmes into a unified platform, moving beyond fragmented programme-specific databases.¹⁷ The ESR is a socioeconomic database of vulnerable households. It provides a single platform where common and essential information across social protection programmes are stored, analysed, and utilised by diverse stakeholders. The ESR also provides checks against one beneficiary receiving multiple benefits within and across programmes.

Egypt's Unified National Registry has been developed as part of a broader social protection reform agenda that is designed to enhance the effectiveness and targeting of programmes, notably the Takaful and Karama cash transfer initiatives (World Bank, 2024). The registry centralises citizens' data to enable improved the identification of eligible populations and enhance the efficiency of benefit distribution. It uses a PMT questionnaire that is cross-checked with the Unified National Registry, which linked to individuals' unique IDs (World Bank, 2020). The Unified Social Registry now includes around 11.3 million registered households, with 40.5 million individuals (World Bank, 2024). Development of the registry has focused on integration with identification systems and the strategic use of technology for streamlined registration and data processing capabilities.

The advanced examples described below demonstrate sophisticated combined approaches where robust social registries for eligibility determination are embedded with IBRs:

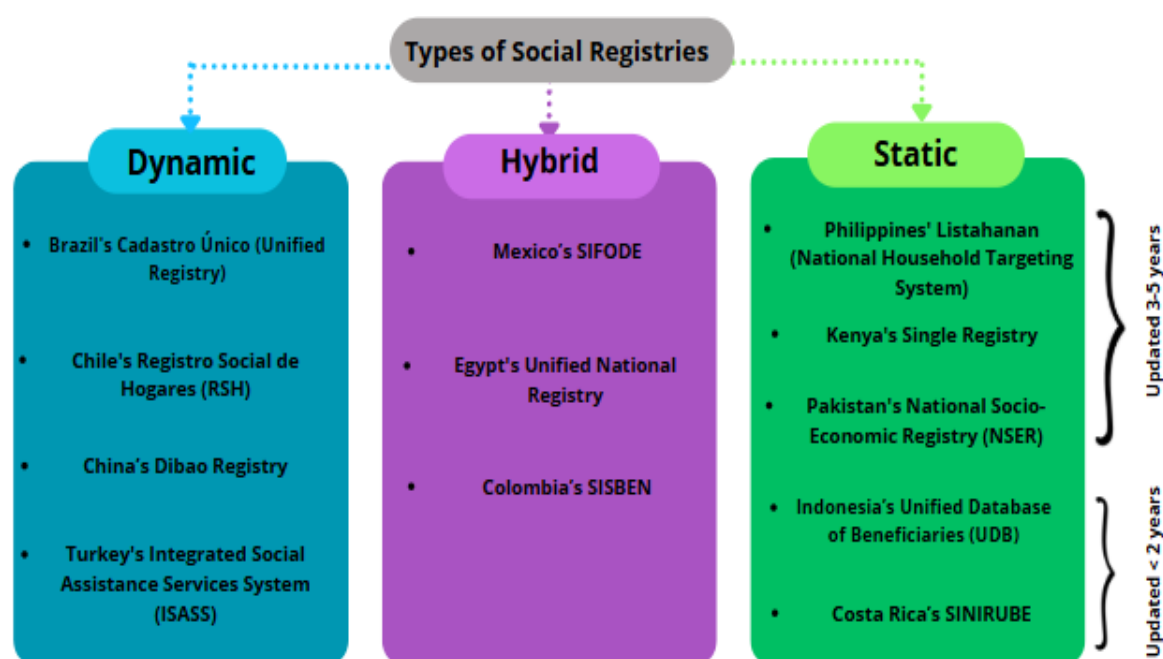
Chile's Registro Social de Hogares (RSH), which evolved from earlier registry systems, is internationally recognised for its sophisticated data integration capabilities. The system

¹⁶ Department of Social Welfare and Development (DSWD) (n.d.) *Listahanan Info Kit*. Quezon City: DSWD. Available at: <http://listahanan.dswd.gov.ph>

¹⁷ Maintains (2021) Opportunities of, and obstacles to, the utilisation of the Enhanced Single Registry: Findings from social protection research in Kenya. London, UK: Oxford Policy Management. Available at: <https://www.opml.co.uk/files/Publications/A2241-maintains/opportunities-of-and-obstacles-to-the-utilisation-of-the-enhanced-single-registry-edited.pdf>

draws information from various administrative sources, including the civil registry, tax records, and health databases, complementing this with self-reported household data to assign socioeconomic scores that are used by numerous social programmes for targeting decisions (World Bank, 2020). Best practices demonstrated by Chile's RSH include its emphasis on comprehensive interoperability through formal agreements and web service integrations with over 40 state institutions, ensuring real-time data exchange and validation capabilities (OECD, 2020). This dynamic system architecture enables continuous updates and citizen-initiated data modifications, embodying a highly responsive and data-driven approach to social protection delivery.

Figure 3: Selected sample countries: static, dynamic, and hybrid social registries



Turkey's Integrated Social Assistance Services System (ISASS) exemplifies a sophisticated combined approach: it integrates data from 28 different public institutions and 120 web-based services in one easily accessible online portal while managing all aspects of social assistance delivery from initial application through to final payment disbursement.¹⁸ The system functions as a comprehensive 'poverty inventory' for targeting and administrative purposes. ISASS demonstrates international best practices through its high degree of process automation for functions, including eligibility determination and payment disbursement, supported by sophisticated IT infrastructure investments. The system has the capacity to provide real-time statistical reporting and continuously updated information to diverse users, significantly enhancing transparency, accountability, and adaptive resource allocation based on changing needs and programme performance data.¹⁹

¹⁸ World Bank (2018) 'Turkey's integrated social assistance system', Washington, D.C. <http://documents.worldbank.org/curated/en/515231530005107572>

¹⁹ Ali Demiroz and Ercan Dansuk (n.d.) Talking Interoperability: In Focus | Turkey. Available at: <https://spdc.org/wp-content/uploads/2022/11/Talking-Interoperability-Turkey.pdf>

3.3 Key challenges and risks related to digital systems and social registries

The integration of digital technologies into social protection delivery systems presents significant opportunities for enhanced efficiency and programme effectiveness but it also involves complex challenges and risks that demand careful consideration (Karippacheril *et al.*, 2024). Some of the potential challenges and mitigation measures are discussed below.

Complexity and financial sustainability: Digital social protection systems require substantial financial investments and involve technical complexity that extends far beyond initial implementation. Cost barriers for end-users, particularly in contexts with limited digital literacy or infrastructure, can undermine system adoption and effectiveness. It is important to note that without careful planning and adequate resource allocation, these systems risk becoming unsustainable burdens. Mitigation strategies include implementing phased roll-outs to manage financial commitments, and establishing dedicated budget lines for long-term maintenance.

Managing implementation scope and complexity: Ambitious initial system designs that attempt to incorporate multiple functionalities often exceed implementation capacity and user readiness, leading to system failures or underutilisation. Complex systems introduced without adequate foundational infrastructure can create more problems than they solve, potentially leading to unanticipated costs and delays. Effective mitigation includes conducting comprehensive needs assessments before system design, implementing modular approaches that allow for incremental expansion, and ensuring that basic functionalities are fully operational before adding advanced features.

Coordination and data governance: The concentration of information within integrated digital systems creates power dynamics that can generate resistance from stakeholders who are reluctant to share data or collaborate across institutional boundaries. Inter-agency competition and varying data governance standards can impede the seamless integration that is necessary for effective system operation. Addressing coordination challenges requires extensive stakeholder consultation from the design stage, the establishment of clear governance frameworks that define data sharing protocols, and the implementation of whole-of-government approaches with senior-level political support.

Building sustainable technical capacity: Many countries lack the technical expertise, institutional capacity, and human resources necessary to develop, implement, and maintain sophisticated digital social protection systems. Over-reliance on external contractors creates dependency relationships that threaten long-term sustainability and institutional ownership. Sustainable solutions involve putting in place comprehensive capacity-building programmes, establishing clear knowledge transfer requirements in external partnerships, and ensuring that core system knowledge remains within government institutions.

Infrastructure prerequisites and connectivity: Inadequate telecommunications infrastructure, unreliable internet connectivity, and insufficient supporting infrastructure in rural and remote areas can severely limit system effectiveness. Power supply issues and

limited mobile network coverage can prevent system access, particularly affecting vulnerable populations. Coordinated infrastructure development that aligns digital social protection investments with broader connectivity initiatives can help address these challenges. Implementing offline capabilities for areas with limited connectivity and developing mobile-first solutions that leverage existing infrastructure can enhance system accessibility.

Data privacy and security considerations: Digital social protection systems concentrate sensitive personal information, creating attractive targets for cybercriminals and increasing risks of data breaches, identity theft, and unauthorised access. The integration of multiple data sources amplifies these risks by creating comprehensive profiles that can be misused if security measures fail. Protecting beneficiary privacy requires implementing robust cyber security protocols, including encryption and access controls, establishing clear data governance policies that limit data use to authorised purposes, and conducting regular security audits and vulnerability assessments.

Preventing digital exclusion and bias: Digital systems can create new forms of exclusion by requiring technical skills, documentation, or infrastructure access that some vulnerable populations lack. Automated decision-making processes based on incomplete or biased data can perpetuate or amplify existing inequalities, particularly when profiling algorithms make determinations about eligibility or service provision. Implementing inclusive design principles that accommodate diverse user needs, establishing multiple registration channels (including offline alternatives), and developing robust data quality assurance processes can help ensure equitable access. Implementing transparent and accessible grievance mechanisms and conducting regular audits to identify and address exclusion patterns can promote continuous improvement in system inclusivity.

4 Research methodology

4.1 Visioning, literature review, and data collection

The key to the formation of a viable and significant social registry for Zanzibar is a shared understanding of what has worked elsewhere and what can work in Zanzibar. Thus, the research involved an extensive review of global literature to learn from international experience and best practices for developing ZDSR, which will encompass the IBR. There is ample evidence in the literature to show that countries have succeeded in creating more nuanced, adaptable and resilient systems by taking a step back to learn first and subsequently designing their own social registry. This was the case with Rwanda's recently launched *Imibereho* Registry (BMZ, 2024). The authors of this research therefore reviewed a substantial amount of literature (i.e. Castaneda *et al.*, 2020; GIZ 2020; World Bank; 2021; and OECD, 2024), which yielded valuable insights into how registries can move from being static systems to living systems that adapt in real time to household changes. However, Zanzibar's path in developing a dynamic social registry, with the IBR, must be its own.

Consultations with relevant institutions were carried out between February and April 2025. They involved the collection of primary data through one-to-one interviews with the key government entities²⁰ and joint consultations with key stakeholders based in Zanzibar. A major outcome of this phase was the shift in focus from a poverty registry to a social registry, which is a dynamic system that is capable of capturing a broader cross-section of household and individual data. The researchers conducted detailed interviews with relevant officers from key organisations, namely: the Ministry of Health, ZPC, OCGS, ZCSRA, ZHSF, ZSSF, and MoCDGEC. These interviews identified databases with the potential to contribute to – or to be customised in order to develop – a dynamic social registry database, such as the paper-based *Shehia* (*Daftari la Shehia*), the digital TASAF (PSSN), and the Ministry of Health's digital *Kadi ya Matibabu* and *Jamii ni Afya*.

When the desk review and consultations were completed, a high-level stakeholder workshop was conducted to discuss the digital transformation of Zanzibar's social protection system, including understanding which systems are needed to identify poor households and vulnerable groups. The workshop involved all key stakeholders, including the Zanzibar e-Government Authority, the Ministry of Education and Vocational Training, GIZ, the World Food Programme (WFP), and the United Nations Children's Fund (UNICEF).

4.2 Research writing and dissemination

The research methodology and preliminary findings from the landscape analysis were presented to the Data and Evidence to End Extreme Poverty (DEEP) Steering Committee for validation and strategic alignment in September 2024 and March 2025, respectively. A draft

²⁰ Principal Secretary at the Second Vice President's Office, Executive Secretary ZPC, and Chief Statistician OCGS.

paper, with the proposed dynamic model as a core component of this blueprint for developing ZDSR, was presented to the DEEP International Conference on Poverty Evidence in June 2025. The finalisation of this research paper is the final step in the process of outlining a blueprint for developing the most suitable type of social registry in Zanzibar. It is anticipated that the research paper will be disseminated to high-level decision-makers and policymakers within RGoZ and to all other relevant stakeholders, with the aim of fostering continued engagement, mobilising support for implementation, and ensuring transparency and accountability.

5 Findings from the field work

5.1 Key challenges and gaps

During the primary data collection exercise, several gaps were identified that illustrate the need for developing ZDSR to address challenges associated with the social protection sector, as shown in Figure 4. Despite the existing infrastructure and the recognised momentum for digitalisation, significant challenges impede effective data management and verification for social welfare in Zanzibar. The prevailing environment is characterised by fragmented data systems and a lack of a cohesive, whole-of-government approach to digitalisation in social welfare. This leads to fragmented and duplicated registration processes across different programmes, making it difficult to ascertain overall coverage, identify beneficiaries, and prevent duplication of benefits. MISs across different ministries and entities are often disconnected, leading to siloed data and limited interoperability..

This research also established that many social welfare programmes operate without a robust, standardised MIS, leading to inconsistencies in data collection, management, and reporting. Parallel systems create inefficiencies and data inconsistencies. Lack of a consistent geographical identifier also makes it challenging to link data across different administrative levels and to conduct spatial analysis of poverty and vulnerability. Without a standardised household or building identifier, it is difficult to accurately identify and target households for social welfare interventions and to track the impact of programmes at the household level. Another gap is the lack of a dedicated disability registry, which hinders the accurate identification of people with disabilities, impeding the design and delivery of targeted social protection services.

5.2 Existing personal identification systems

Zanzibar has a strong foundation for personal identification, through the recent ZanID system. This system is crucial for formal identification and is used by various government and private institutions, such as banks, ZSSF, and ZHSF, to verify citizens' identity. However, it requires supplementation with Civil Registration and Vital Statistics (CRVS) IDs for individuals under 18 years old, to ensure comprehensive coverage from birth. Challenges persist with parallel identification systems (e.g. ZanID and National Identification Authority (NIDA)) and a significant portion of the population lack any formal identification, hindering their access to services. Tanzania, through NIDA, is actively developing and implementing a digital ID system, known as the *Jamii Namba* to unify identification and streamline access to services. While NIDA has historically issued physical national IDs to adults, the new digital ID aims to provide a lifelong unique identifier for all citizens from birth, and will eventually eliminate the need for multiple, fragmented identification documents.

5.3 Key administrative registries

Several key administrative registries form the bedrock of governmental operations in Zanzibar, though their direct utility and interoperability with social welfare systems vary:

Shehia Registry: Registration of all citizens' key information and addresses. This is of fundamental importance for identifying individuals and households in neighbourhoods. The process is partially digitised as Shehia leaders (Sheha) collect and update information in paper format.

CRVS system: Registers births, deaths, and marriages. While it forms the basis for a unique identification system from birth to death, it faces challenges, including an outdated system that is difficult to update and that primarily relies on paper-based records. Integration with the ZanID system to verify citizens' identity was noted, such as the linkage with Zanzibar Revenue Authority, but its full potential for seamless data flow has not been realised.

Land Registry: This is of fundamental importance for property ownership and land-based entitlements.

Vehicle Registry: This is primarily for transport-related administration but may hold tangential data that are useful for broader demographic or economic analysis.

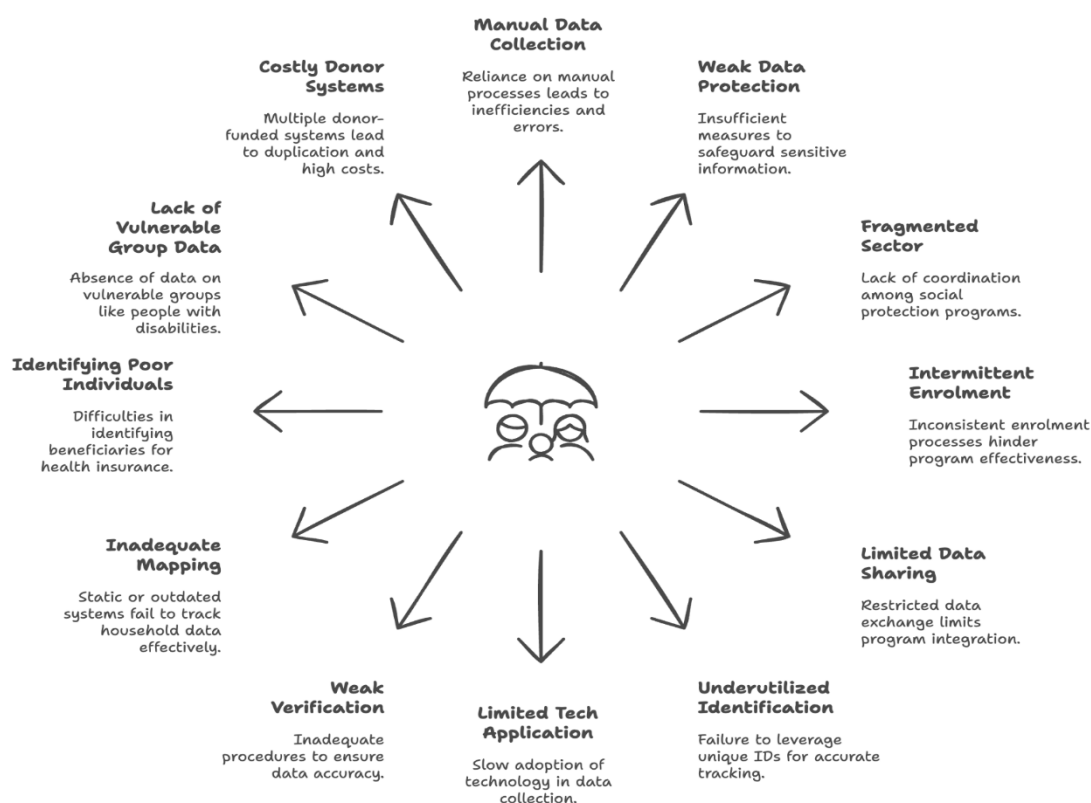
Farm Registry: This is important for understanding the agricultural sector and identifying vulnerable farming households.

Registration system for housing-related support: This registration system focused on housing-related support is maintained by the Zanzibar Housing Commission.

ZUSP Payment Registry: This is crucial for facilitating and monitoring the universal old age pension.

Figure 4: A Summary of findings on identified challenges facing Zanzibar's social protection system

KEY CHALLENGES DERIVED FROM CONSULTATIONS



5.4 Data governance, quality, and sustainability issues

In Zanzibar, there is a broad consensus regarding the significant gaps in data governance, data sharing protocols, and data quality assurance mechanisms. Other challenges in CRVS (birth, death, marriage registration) were noted during primary data collection for this research. These contribute to incomplete and inaccurate demographic data, which impacts the ability to identify eligible beneficiaries and monitor population trends. Also, digital projects within ministries often suffer from a lack of proper documentation and standardised operating procedures, leading to sustainability issues and a reliance on individual consultants or short-term projects. Additionally, the critical aspects of data consent, cybersecurity, and data protection require significant reinforcement to build trust and ensure the ethical use of personal data.

5.5 Fragmented digital projects and lack of coordination

The primary data collection carried out through interviews reveals that Zanzibar is experiencing a proliferation of fragmented digital pilot projects, often undertaken by various consultants and organisations in parallel, without adequate coordination. This uncoordinated approach leads to duplicated efforts and MISs that are not sustained or integrated into the broader governmental framework, as well as wasted resources. To reverse this trend there is a pressing need to transition from a project-centric approach to a

whole-of-government systematic approach that prioritises user-centric design and ensures the long-term sustainability and scalability of digital initiatives. The department responsible for social protection has limited practical control and authority, hindering effective coordination and implementation. Moreover, limited availability of comprehensive data on poverty trends and vulnerability further complicates targeted interventions.

5.6 Health sector digitalisation

Zanzibar's health sector has various databases, but there is limited ability to leverage health data for social protection purposes. At the same time, the extensive coverage of the population by community health workers who are equipped with digital tools represents a significant potential point of data collection for the social protection sector.

As part of the research, field visits were conducted to ZSSF, ZHSF, the Ministry of Health, TASAF, and the Department of Social Welfare, to assess their MISs. While *Kadi ya Matibabu* and *Jamii ni Afya*, hosted by the Ministry of Health, were initially considered potential platforms for a social registry, consultations with the Ministry of Health, D-Tree, and PharmAccess revealed major limitations. The Ministry of Health has limited ownership and understanding of the systems, which lack unique identification, verification, dynamic updating, and exit mechanisms. The systems' usage remains low and is restricted to the Ministry of Health and its implementing partners. Additionally, the systems overlap with ZHSF membership data and risk becoming redundant once ZHSF scales up under the UHI framework.

6 Establishment of a dynamic social registry in Zanzibar

The section covers key decisions that Zanzibar must take when establishing a dynamic social registry. It summarises research on each decision area and recommends a course of action. Additionally, a comparison between the recommended hybrid model for ZDSR and other models based on international best practices is made, as depicted in Figure 5.

6.1 Common implementation models for social registry intake

Social registries serve as critical information systems that primarily support outreach, intake, registration, and the determination of potential eligibility for social protection programmes, among other functions. Countries worldwide have implemented different approaches to data collection and registry development, with four primary models emerging from global experience, as set out in the sub-sections below.

6.1.1 En masse registration (census sweep) model

The en masse registration model involves systematic, large-scale household surveys conducted at regular intervals, typically every three to five years. Countries like the Philippines (with Listahanan), Colombia (with the System of Identification of Social Programme Beneficiaries (SISBEN)), Indonesia (with Regsosek), and Malawi (with the Unified Beneficiary Registry) have utilised this model (World Bank, 2017). Indonesia's Regsosek, for instance, is based on a nationwide census conducted in 2022, covering approximately 275 million people (UNICEF, 2024). The en masse registration model typically employs contracted field teams, community organisations, or government statistical offices to conduct comprehensive door-to-door data collection campaigns (Leite *et al.*, 2017). Advantages of this model include broad population coverage, standardised data collection procedures, and the identification of baseline demographic and socioeconomic profiles across entire populations. However, the model has major limitations, including high implementation costs, infrequent updates (which can lead to exclusion errors), and challenges in maintaining data currency between registration cycles.

6.1.2 On-demand registration model

The on-demand registration model allows households to apply for social protection programmes continuously through permanent service interfaces. Countries like Brazil (with *Cadastro Único*), Chile (with RSH), and Turkey (with ISASS) have successfully implemented this approach (World Bank, 2019). Similarly, Malawi and Rwanda are in the process of implementing on-demand registration to improve the accuracy and timeliness of data. Brazil has overcome barriers to accessibility through an innovative network of 8,500 physical service centres at the municipality level, allowing households to report and update their information at any time of their choosing, complemented by proactive registration

campaigns reaching isolated populations. This model supports the principle of dynamic inclusion, where anyone can register or update information at any time, without a prior guarantee of eligibility. The model reduces administrative burden over time, maintains more current data, and supports the human rights principle of universal access to social protection. However, the on-demand registration model is associated with challenges, such as the need to establish adequate network coverage for citizen interface at the local level, ensuring consistent service delivery across locations, and managing potentially uneven registration flows. This is less applicable for Zanzibar given its small size, with few first-level administrative units. Digitisation through phones (including Unstructured Supplementary Service Data (USSD) codes for non-smartphones) and digitally enabled Sheha could overcome this challenge.

6.1.3 Hybrid models

Many countries have adopted hybrid approaches that combine elements of both en masse and on-demand registration. Mongolia's Integrated Household Information Database exemplifies this approach, offering dual channels through relatively frequent census surveys (conducted in 2010, 2013, 2017) alongside continuous on-demand registration for their Food Stamp Programme (Social Protection Toolbox, 2024). This hybrid approach allows countries to establish comprehensive baseline coverage while maintaining dynamic updating capabilities. The hybrid model provides the flexibility to adapt to different population segments and contexts while maintaining both comprehensive coverage and data currency. Countries can leverage periodic census exercises to reach remote or marginally connected populations while providing continuous access through on-demand channels for more accessible areas. Nonetheless, the main drawback of this model is that it needs a robust mechanism for citizens to interface with the registry, such as through local offices. This is likely to be less challenging for Zanzibar due to its small size and the pre-existing Shehia administrative structures.

6.1.4 Administrative data integration models

An emerging fourth approach involves leveraging existing administrative databases to populate social registries. Turkey's ISASS, for instance, integrates data from 22 different public institutions, and provides 112 web-based services through automated data sharing protocols (World Bank, 2019). This model requires robust foundational identification systems, mature intergovernmental data sharing agreements, and sophisticated technical infrastructure to ensure real-time data integration and validation.

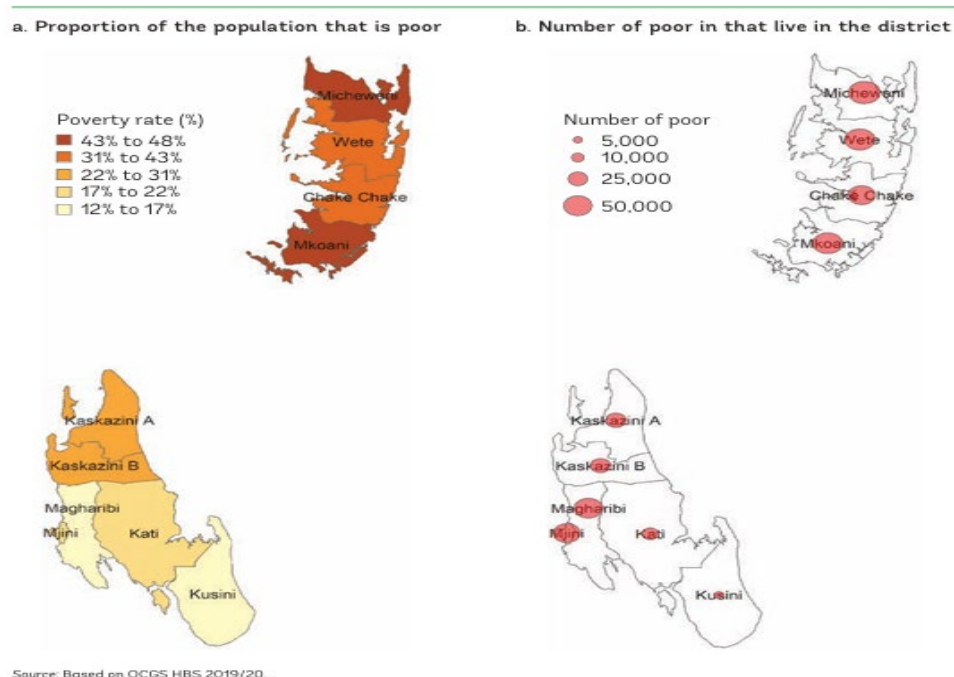
Figure 5: Comparison between hybrid model recommended for ZDSR and other models

Social Registry Models Comparison				
Characteristic	En Masse Registration	On-Demand Registration	Administrative Data Integration	Recommended hybrid model
Data Collection	Large-scale household surveys	Continuous applications accepted	Leverages existing databases	One off census followed by on-demand and administrative
Update Frequency	Regular intervals (3-5 years)	Continuous updates possible	Real-time data integration	Relatively frequent with continuous updates
Advantages	Comprehensive coverage, standardized data	Dynamic inclusion, current data	Automated data sharing	Flexibility, comprehensive coverage
Challenges	High costs, infrequent updates	Requires local service centres	Requires robust systems	Requires local service centres, limited integrations with robust databases
Examples	Philippines, Colombia, Indonesia, Malawi	Brazil, Chile, Turkey	Turkey, Chile	Pakistan

Made with Napkin

6.2 Optimal model for Zanzibar

Based on the research evidence and analysis it is rational to propose that the hybrid model be adopted in Zanzibar, and that this be applied in a phased approach. This ideally ought to start with en masse registration, but initially targeting priority areas with higher poverty levels (Pemba North and South Regions and North Unguja) (shown in Figure 6). The en masse approach is required initially as Zanzibar lacks a high-quality data source that can be used as the basis for the social registry. Zanzibar should leverage existing local government offices and structures, particularly the Shehia-level administration, which already manages the tracking of household composition using analogue systems. In parallel, integration with the CRVS should be implemented to ensure that the social registry is notified of key life events that affect household composition. The priority can then shift to the on-demand registration model. For the hybrid model to be developed effectively the process needs to utilise existing systems and local government structures. As a smaller country, the logistical challenges of establishing and running the local services centres needed for on-demand registration are much less than would be the case for larger countries.

Figure 6: Geographical distribution of poverty, as illustrated in the World Bank Assessment 2022

6.3 Architectural models

Social registry systems can be implemented using different architectural approaches, each with distinct characteristics that affect scalability, maintainability, security, and operational complexity. As discussed below, the choice of architecture significantly impacts system performance, data governance, integration capabilities, and long-term sustainability.

6.3.1 Should Zanzibar adopt a centralised, decentralised, or federated architecture?

Centralised models consolidate all social registry functions, data storage, processing, and management within a single unified system under centralised control. Household and individual data are therefore stored in central repositories, with a single portal providing access to registry functions and standardised processes for registration and eligibility determination. This approach offers strong data consistency, simplified governance, and straightforward integration with other government systems, making it cost-effective, manageable for technical teams, suitable for eligibility management, and adequate for maintaining data privacy.

Decentralised models, on the other hand, distribute the social registry functions across multiple autonomous systems, typically organised by geographic regions or administrative divisions, with each system operating independently while maintaining coordination mechanisms for data sharing. This approach features distributed data storage at regional levels, autonomous operations with minimal central coordination, regional customisation capabilities, and peer-to-peer integration between decentralised nodes. Decentralised models provide enhanced resilience through distributed failure points, improved local performance, natural horizontal scalability, and flexibility for regional adaptation. However,

they face significant challenges relating to maintaining data consistency across distributed systems, increased integration complexity, sophisticated governance coordination requirements, and potentially higher operational costs due to multiple technical teams and infrastructure investments.

Federated models combine elements of centralised and decentralised approaches, creating autonomous systems that collaborate under common governance frameworks and technical standards while maintaining operational independence. Key features include autonomous components with local decision-making authority, shared data formats and communication protocols, coordinated service delivery across federated components, and central orchestration for policy alignment and interoperability. Challenges include increased governance complexity requiring coordination between autonomous systems, sophisticated technical integration needs, potential performance impacts from network communication, and ongoing standardisation efforts requiring consensus-building among participants.

Figure 7: Comparison between main architectures that can be used for building ZDSR

Characteristic	Centralized	Decentralized	Federated
Data Storage	Single repository	Distributed regionally	Autonomous components
Governance	Simplest	More complex	Most complex
Integration	Straightforward	Increased complexity	Sophisticated needs
Customization	Standardized processes	Regional adaptation	Enables customization
Resilience	Single point failure	Distributed failure points	Risk distribution
Operational Costs	Cost-effective	More costly	Most costly

Evidence from this research suggests that a centralised model is more optimal for Zanzibar because it will be more cost-effective and faster to implement. As a small country, the potential benefits of decentralised and federated models (where local autonomy is required) are less important. Zanzibar's small geographic size (approximately 2,461 square kilometres) eliminates the performance disadvantages typically associated with centralised systems. Over time, the centralised foundation could evolve towards federated capabilities to support integration with Tanzania Mainland systems. For this reason the data models in the social registry should follow the standards established by the Digital Convergence Initiative (DCI)²¹ for fostering interoperability with Tanzania Mainland.

²¹ See <https://spdc.org/standards-interfaces/>

6.3.2 Software options

Zanzibar has a wide range of options to consider when evaluating and selecting the software that will serve as the basis for its social registry. It is beyond the scope of this research to provide a detailed evaluation of relevant software options and recommendations on a short list. Instead, the paper discusses some key considerations and trade-offs that should be considered when making a decision on which software to be adopted for ZDSR. It should be noted that this will be the biggest success/risk factor for implementation. Therefore, a lot of effort needs to go into the evaluation.

Proprietary versus open source?

Several established commercial providers offer robust social registry platforms with proven track records in similar contexts. Microsoft, Salesforce, and Development Pathways represent mature offerings with extensive customisation capabilities. These platforms typically provide comprehensive case management, eligibility determination, and benefit administration modules built on enterprise-grade infrastructure. The primary advantage of commercial solutions previously lay in their immediate availability and professional support structures. However, commercial solutions present significant drawbacks for a jurisdiction like Zanzibar. Licensing costs can be prohibitive, often requiring substantial annual fees that may strain limited government budgets. Additionally, vendor lock-in creates long-term dependency, potentially limiting future flexibility and innovation. The complexity of these systems may also exceed Zanzibar's immediate needs, while requiring extensive training and ongoing technical support that could prove challenging to sustain locally.

Zanzibar might consider instead one of several open source providers, many of which are registered as digital public good providers. Open source solutions and digital public goods offer compelling alternatives that align well with the principles of digital sovereignty and sustainable development. Platforms like Open Social Protection Platform (OpenSPP) were developed specifically for social protection use cases, providing comprehensive functionality while maintaining transparency and avoiding vendor dependency. The maturity of these solutions is evolving quickly as more countries opt to use them to implement social protection data systems. The advantages of open source solutions extend beyond cost savings. Local technical capacity building becomes possible when source code is accessible, reducing long-term dependency on external consultants. The collaborative nature of open source development also means that improvements and bug fixes benefit from a global community of contributors, potentially accelerating innovation and problem-solving.

The OpenG2P ecosystem, which includes identity management, registry services, and payment systems, is a particularly relevant option. Applying the principles of modular architecture, it allows governments to implement components incrementally while maintaining interoperability. The platform has been designed with developing country contexts in mind, incorporating features like offline capability and multi-language support that could prove valuable in Zanzibar's diverse linguistic environment. For instance, the open

source Kwantu platform²² offers a low-code configuration layer that enables a business analyst or IT professional to modify underlying components that define workflow, roles, permissions, forms, reports, dashboards, and other areas. Components can be configured to create different interoperable systems. This platform has been widely used by the South African Government to manage the delivery of public employment programmes.

Similarly, the GIZ and World Bank-supported OpenIMIS platform was initially developed to serve the needs of social insurance and cash transfer programmes. However, Zanzibar may need to proceed with some caution in adopting OpenIMIS, as its implementation often relies on ongoing external programming support, particularly when introduced as a standalone project. In Tanzania Mainland, OpenIMIS was first piloted in 2012 under the name IMIS. As its benefits became more evident, the system was gradually expanded to include additional functionalities and was later adopted in other countries as well. However, after six years of development and implementation, the original design of IMIS ran into important roadblocks. The software lacked flexibility to be easily implemented in more countries. The non-fully open source technology and a monolithic architecture were identified as major drawbacks for further extensions. A full redesign and rewriting of openIMIS was decided on.²³

Low cost and implementation time and increasing sustainability via low-code option

No-code and low-code development platforms allow programmers and non-programmers to create applications through graphical user interfaces and configuration files, instead of through traditional computer programming. Low-code software implementation is increasingly common in the private sector, with studies finding that it can lower the cost of development by up to 80% and can speed up implementation time. However, the main benefit of low-code platforms is in contexts where the availability of skilled software developers (needed to maintain and enhance systems) is limited and in cases where business rules change frequently. Social protection programmes often require rapid adjustments to eligibility criteria or benefit calculations in response to policy changes, making configuration-based approaches particularly attractive. The ability to modify system behaviour without code deployment cycles can substantially improve operational agility.

This Blueprint recommends that RGoZ through the Zanzibar e-Government Authority develop criteria for evaluating potential software platforms and for carrying out an evaluation of any promising options, and for considering the criteria proposed.

6.4 What data should be included in ZDSR?

ZDSR must provide a detailed profile for each household that is registered. In this section, the research draws on the work of DCI²⁴ to propose components that should be included in

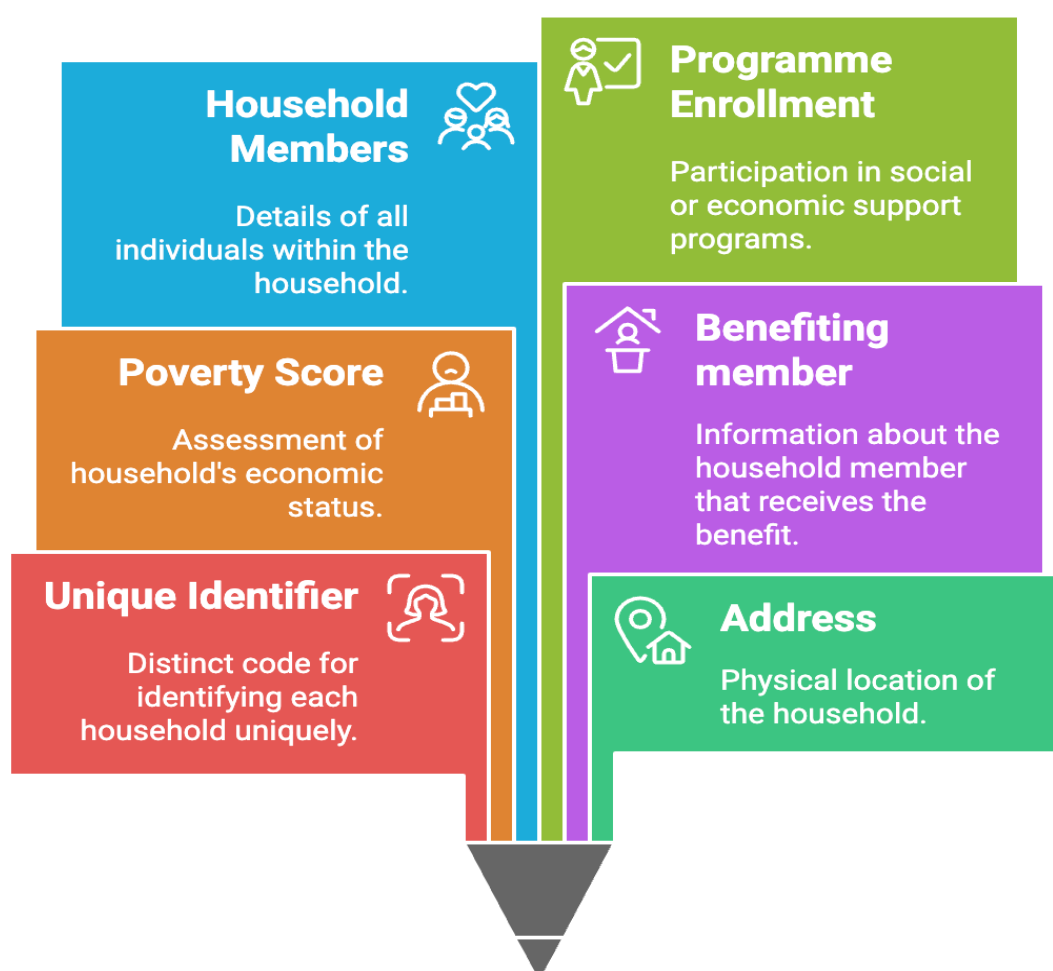
²² Disclosure: one co-author of this report is a co-founder of Kwantu.

²³ Bluesquare, 2022. Increasing health insurance access in LMICs: the ambition of openIMIS. [online] Bluesquare. <https://www.bluesquarehub.com/blog/increasing-health-insurance-access-in-lmics-the-ambition-of-openimis/>

²⁴ See <https://spdci.org/standards-interfaces/>

the household profiles. It proposes that six key components should be included, based on the definition of a household as being ‘all de jure household members (usual residents)’, as depicted in Figure 8. Each household will require a unique identifier. These will be assigned and managed by the ZDSR which will be the primary registry managing households in Zanzibar. The household will confirm those people who are members of the household. The DCI standards cover standard metadata for each household member, plus additional information that may be required for the head of household. This includes data on the date of birth and date of death (if appropriate) that can be sourced from the civil registry database. Finally, ZDSR should include an overall poverty score that is derived from a series of proxy indicators for poverty. This research proposes utilising the indicators developed by the OCGS as the basis for proxy poverty indicators, utilising more modern data collection methods proposed in Sections 6.11 and 7.1.

Figure 8: The flow of key data to be captured by ZDSR

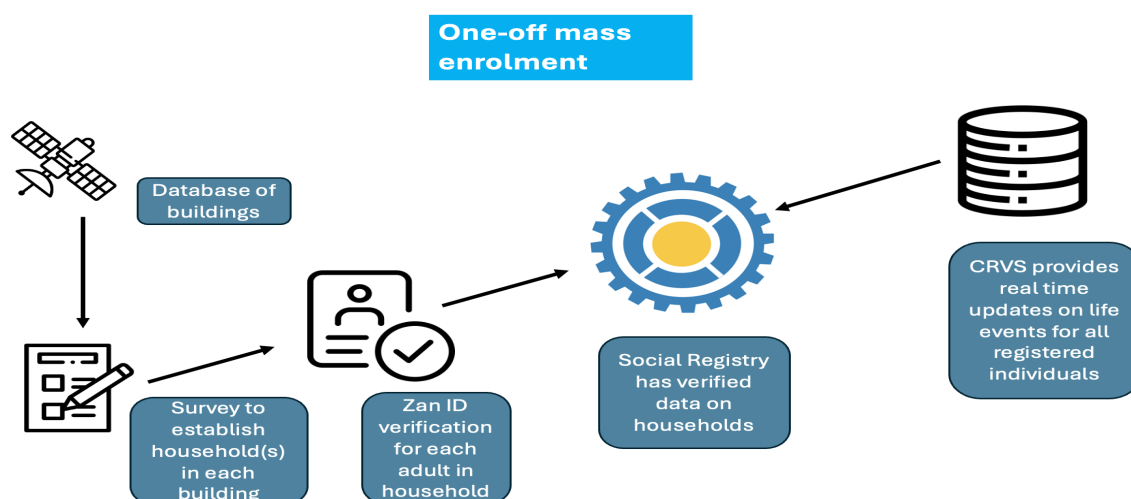


6.5 How will ZDSR register individuals and households?

The research has found that Zanzibar lacks a suitable existing data source that can be used to populate the ZDSR. It therefore proposes a one-off mass enrolment process to register households, ideally to be led by trained enumerators from OCGS. A key prerequisite for this process is to establish a database with a unique identifier, which is the ZanID number, and a

location for each dwelling. In this perspective, Zanzibar needs to have in place legislation and operational arrangements for providing ZanID numbers to its citizens who are under 18. This will ensure that each household is associated with the dwelling in which they reside. For the data collection, the use of satellite data and AI to identify dwellings and assign unique identifiers could be explored. AI has the potential to assume several pivotal roles in dynamic social registry platforms, including data integration and harmonisation, eligibility determination and targeting, fraud detection and prevention, as well as predictive analytics to inform social policy planning. The dataset can then be validated during the mass enrolment process. Figure 9 shows a simplified mass enrolment process. In this approach, the satellite-generated database of buildings is used to inform the household visits by enumerators. Data collected will cover all household members, including (where available) their ZanID number. Integration between ZDSR and the ZanID system will verify the name and other details are correct. This will be done through effective communication and strong enforcement. A further integration with the CRVS will provide additional verification, and updates on life events that affect the household composition.

Figure 9: One-off mass enrolment process in the ZDSR



6.6 How will individuals and households update their information as their circumstances change?

Having completed the mass enrolment process, ZDSR will then move to a dynamic enrolment and update process. This will enable households to request that they be registered (if not covered by the mass enrolment) or to update their details (if circumstances change).

Changes to address and household composition

The Shehia leader will be responsible for managing these changes. This builds on existing responsibilities which are currently managed at the Shehia level using a paper book (*Daftari la Shehia*). ZDSR will need to provide a mobile app that works offline and USSD code, on both a tablet and mobile phone, for this purpose. Robust standard operating procedures should be established for ZDSR to verify household composition changes. *For household member*

relocations, local government officials must collect residential verification through rental agreements, utility bills, or formal attestations from traditional leaders (Shehas), to confirm the individual's new address. When households split, evidence might include separate residential documentation for each new household unit, witness statements from community members, and updated family composition forms signed by all adult members. For individuals joining existing households, verification might require consent documentation from the receiving household head, proof of relationship through civil registration records or community attestation, and confirmation of physical residence. All changes should be cross-referenced with existing registry entries to prevent duplicate registrations and ensure data integrity.

Income status changes and proxy poverty reassessment

Income fluctuations necessitate systematic reassessment of proxy poverty indicators identified by OCGS. These triggers for reassessment include reported employment status changes, acquisition or loss of assets (livestock, land, and household goods), changes in dwelling characteristics, or alterations in household composition affecting dependency ratios. OCGS should conduct field verification using standardised assessment tools covering housing quality, asset ownership, livelihood sources, and demographic composition. The reassessment must incorporate seasonal income variations, which are common in the agriculture, blue economy, and tourism sectors. OCGS should obtain documentary evidence, through photographs of living conditions, witness statements for employment changes, and updated asset inventories. Digital tools should be used to enable real-time data capture, with GPS coordinates for verification purposes. Quality assurance measures could include supervisor spot-checks, community validation meetings, and appeals mechanisms for disputed assessments. Figure 10 demonstrates the mixture of channels recommended for dynamic updates to ensure household data remain current and accurate. Over time, further integrations can be completed. Key candidates are the business, revenue, land, and vehicle registries, and electricity and information on mobile data consumption. These will provide real-time data that helps assess the poverty level of a household.

Figure 10: Dynamic updates to ZDSR

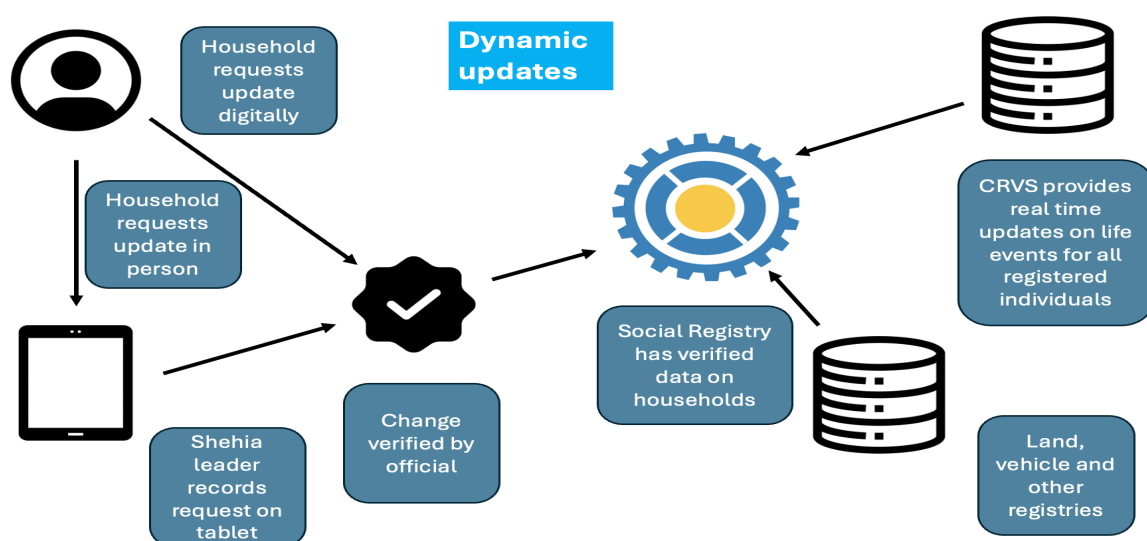
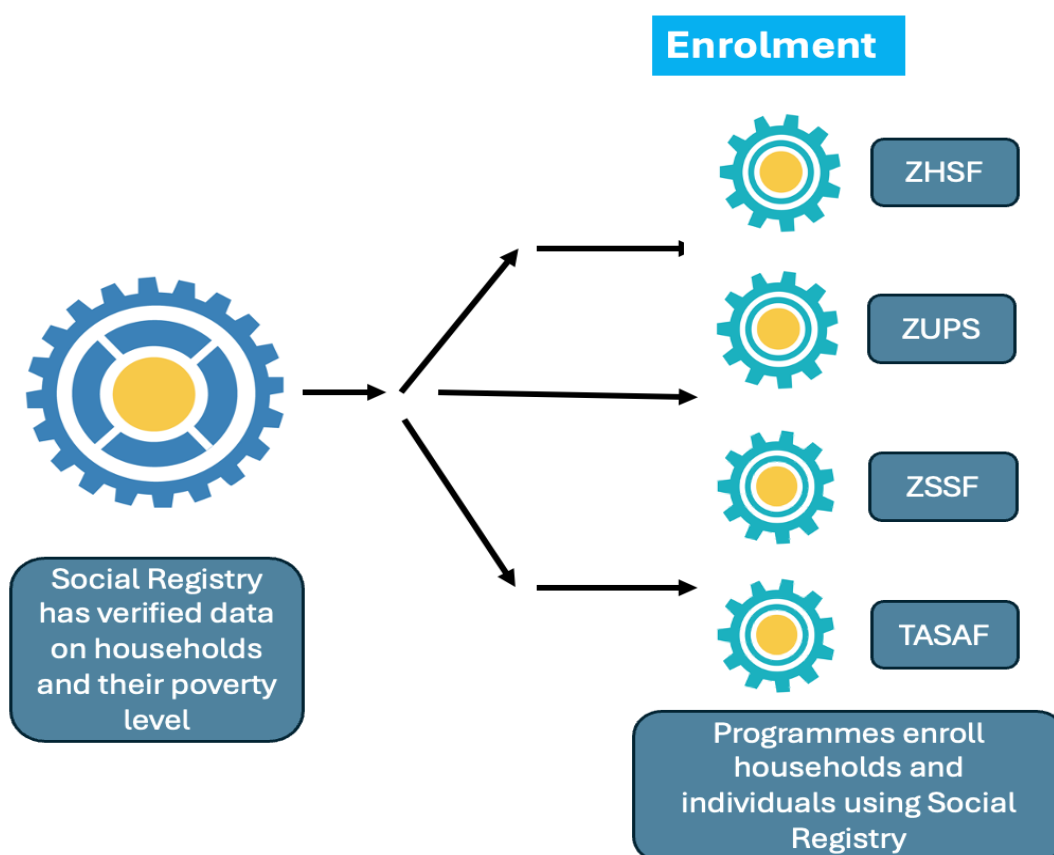


Table 1: Summary of recommendations for data collection and verification

Change type	Required evidence	Verification process	Reassessment trigger
Member relocation	Residential proof, Sheha attestation	Address verification, registry cross-check	Change in household size/composition
Household split	Separate residence docs, witness statements	Multi-household verification	New dependency ratios, asset division
Member addition	Consent forms, relationship proof	Household head approval, residence confirmation	Increased household size, new dependents
Income changes	Employment records, asset documentation	Field verification, photographic evidence	Employment status, asset acquisition/loss
Asset fluctuation	Updated inventories, photographs	Physical verification, community validation	Proxy poverty indicator thresholds exceeded

6.7 How will social protection programmes use ZDSR for enrolment?

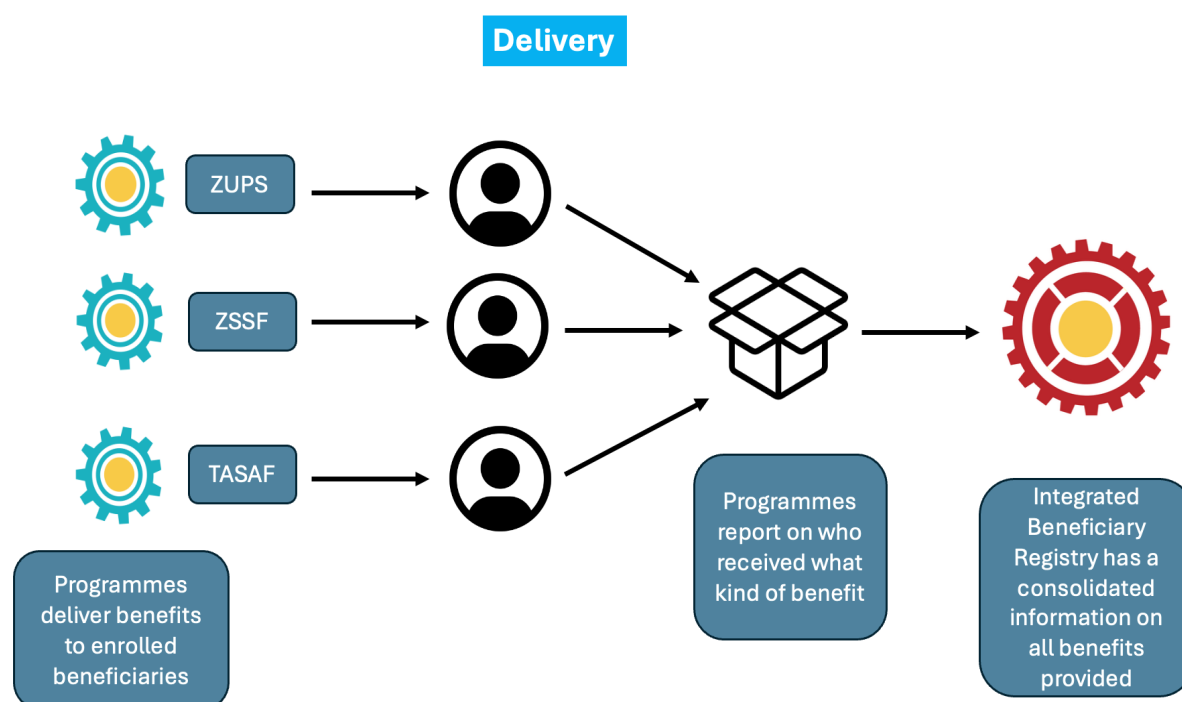
ZDSR should be directly integrated with the MISs used to manage social protection programmes. This integration should use the Application Programming Interface standards developed by DCI. This will enable each programme MIS to query ZDSR to enrol new people or to request a notification when people or households meet the enrolment criteria. For example, the criteria for enrolling in ZUPS are that the person must be over the age of 70 and be resident in Zanzibar for at least two years. The age and residency period are both attributes that ZDSR will hold. It can therefore proactively notify programme MISs when people meet these conditions. Similarly, TASAF, which uses poverty levels as conditions for eligibility, can query the poverty score of a person or household to determine if they are eligible. Additionally, since ZDSR will be integrated with the CRVS, it will have the ability to relay information on people who have died to each programme MIS. In this way, benefits can be cancelled proactively for deceased persons.

Figure 11: Existing programmes enrol beneficiaries from ZDSR

6.8 How will the IBR provide a consolidated picture?

Once a programme MIS has received a batch of potential beneficiaries from ZDSR it can determine if they should be enrolled in the programme. In some cases, additional information or verification may be required. Once they are enrolled, the process of disbursing benefits will begin.

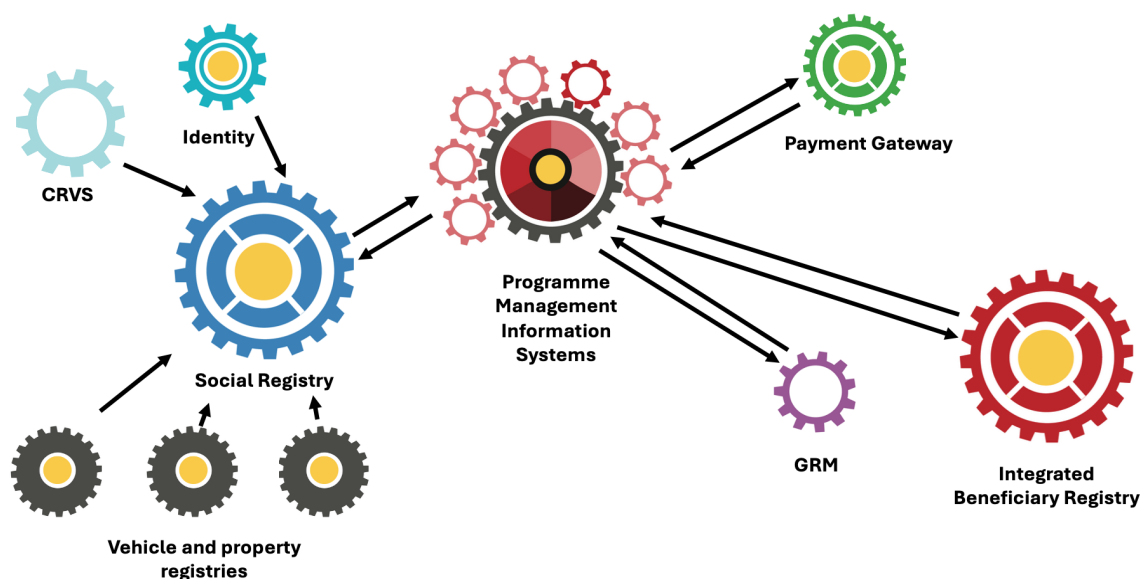
Additional integration is required with the IBR. This should again follow DCI standards. In this case, when benefits have been disbursed (a pension payment, a cash transfer, a work opportunity or similar), this information should be transmitted via an API to the IBR, which is particularly important for ZHSF operations. In this way, the IBR can maintain a detailed record of both which benefits each person and household are currently receiving, but also which benefits they have received in the past.

Figure 12: Existing programmes report on package of benefits delivered to the IBR²⁵

6.9 Role of ZDSR and the IBR in the social protection ecosystem

ZDSR and the IBR will be important components in a wider ecosystem of integrated social protection systems. Figure 13 provides a high-level perspective on the different types of systems that Zanzibar might implement and how they could interoperate with each other. Foundational identities for individuals and households will provide the primary unique identifiers to ensure one system may query and access data from another system. In this ecosystem each system will have a clear mandate and purpose. In the case of ZDSR, this will be to create and manage a registry of households and their members and to assess their poverty status. ZDSR will serve as the primary source of data for enrolment in social protection programmes. MISs designed to manage the enrolment of beneficiaries for these programmes should use the social registry as their primary source of data for enrolling beneficiaries. Regarding the IBR, its purpose will be to provide a record of which beneficiary has received which benefit from which programme. It includes specific individuals benefiting from an old age pension or an entire household benefiting from a cash transfer programme and UHI subsidy. This in turn enables programme MISs to query the IBR to exclude beneficiaries that are enrolled in a contradictory programme and to incorporate systems for transparency, accountability, and whistleblowing.

²⁵ World Bank (2024). Playbook on Digital Social Protection Delivery Systems: Towards Dynamic Inclusion and Interoperability (English). Washington, D.C

Figure 13: Proposed Zanzibar integrated social protection ecosystem

6.10 Existing legislative landscape for data protection in Zanzibar

Data protection and privacy form the cornerstone of effective and ethical social protection systems. The increasing digitalisation of social protection services has significantly expanded the processing of personal data, making robust data protection frameworks more critical than ever. Social registries, which serve as centralised databases containing sensitive personal information about beneficiaries, represent particularly high-risk environments that require comprehensive protection measures. The fundamental importance of data protection stems from its role in safeguarding human dignity and maintaining public trust in social protection systems. Failure to maintain this trust can result in reduced participation in social programmes, undermining the very objectives these systems seek to achieve.

Data protection for social registries in Zanzibar operates within the framework of Tanzania's Personal Data Protection Act No. 11 of 2022, which came into effect on 1 May 2023. This comprehensive legislation applies to both mainland Tanzania and Zanzibar, establishing minimum requirements for the collection and processing of personal data while recognising the constitutional right to privacy enshrined in both the Constitution of Tanzania and the Constitution of Zanzibar. Given that social protection is a non-union sector, Zanzibar needs to enact the act, which establishes the Personal Data Protection Commission as the regulatory authority responsible for overseeing compliance, registering data collectors and processors, and investigating data protection violations. For ZDSR, this means mandatory registration with the Commission and adherence to strict data processing requirements, including the appointment of a personal data protection officer for organisations handling significant volumes of personal data.

As the implementation of ZDSR advances, safeguarding personal data becomes paramount. ZDSR will collect and process sensitive information, including socioeconomic, demographic,

and health-related data. Without robust data protection measures the integrity, credibility, and public trust in the ZDSR may be significantly undermined. This section outlines key recommendations for embedding strong safeguards in ZDSR's design and operations, aligned with national laws and global best practices. The following measures are critical to prevent misuse, ensure accountability, and enable secure, responsible data sharing across the social protection ecosystem.

Implement privacy by design principles: Following SPIAC-B guidance, social registries should embed privacy considerations into every stage of system design and implementation. This includes conducting privacy impact assessments before launching new features or expanding data collection practices, ensuring that data protection is not an afterthought but a fundamental design principle.

Establish a clear legal basis for data processing: Under Zanzibar's proposed Personal Data Protection Act, all data processing must have a lawful basis, whether through explicit consent, in the form of legitimate interests, or as a result of a legal obligation. Social registries should clearly document and communicate the legal basis for collecting each category of personal data, ensuring transparency about why specific information is necessary.

Implement robust access controls and data minimisation: Collect only those personal data that are adequate, relevant, and necessary for the specific social protection purposes. Implement role-based access controls ensuring that staff members can only access data necessary for their specific functions, reducing the risk of unauthorised disclosure.

Ensure data accuracy and individual rights: Establish procedures for individuals to access, correct, or request deletion of their personal data. The Zanzibar Data Protection Act ought to grant data subjects specific rights, including the right to request modifications or corrections to inaccurate personal data through the Personal Data Protection Commission.

Develop comprehensive data breach response procedures: Create incident response plans that comply with notification requirements under the forthcoming Personal Data Protection Act, including procedures for reporting breaches to the Commission and affected individuals within prescribed timeframes in Zanzibar.

Strengthen cross-border data transfer safeguards: When sharing data with international partners or using cloud services, ensure adequate protection measures are in place, as the Act requires specific conditions to be met for transferring personal data outside the United Republic of Tanzania's borders.

Foster efficiency: An additional principle might be gleaned from Latvia, where no information is collected and entered into a data system twice and where ministries, departments, and agencies that do this are fined. This seems to have enhanced the efficiency of Latvia's e-Gov, which is a global best practice and is highly developed.

6.11 Institutional and legal settings for establishing ZDSR

The findings of this study suggest that ZCSRA is comparatively better positioned than other government institutions to host ZDSR. However, to effectively assume this role, considerable improvements are required in its operational capacity, digital infrastructure, and data governance frameworks. Building upon its existing legal mandate for civil registration, legislation governing ZCSRA needs to be amended to expand its core functions to include hosting ZDSR, anchored on unique identification, consistent with international standards for integrated CRVS systems (World Bank, 2017; UNDESA, 2019).

This research also identifies OCGS as the institution that is best suited to lead the identification of poor and vulnerable households under ZDSR. OCGS already plays the crucial role of conducting poverty assessments in Zanzibar. Nonetheless, to meet the increasing demands of dynamic social protection systems, OCGS should transition from traditional survey-based poverty measurement towards the adoption of digital technologies, such as machine learning algorithms, small area estimation, and the use of administrative and geospatial data, as described in the previous sections of this research, to estimate poverty and gradually move away from survey waves.

The ministry responsible for social protection (MoCDGEC) emerges from this analysis as the most appropriate institution to serve as the principal user of ZDSR. This is due to its statutory mandate to coordinate the implementation of social protection policy, deliver social assistance programmes, and respond to the evolving needs of vulnerable populations. Aligning ZDSR under the ministry would ensure that data use is closely linked to programme implementation, monitoring, and cross-sectoral coordination. A legal amendment is therefore necessary to reinforce the ministry's role, to allow it to more effectively support the national UHI agenda and promote the equitable inclusion of poor and vulnerable households, in line with ZSPP (2014).

6.12 Potential financial implications of establishing ZDSR

The following are among the most important financial factors in developing ZDSR, consisting of initial setup costs, ongoing maintenance, and operational expenses:

- a) *IT infrastructure costs* for acquiring and setting up the necessary hardware, software, and network infrastructure to support ZDSR. Factors influencing these costs depend on whether the system will partially build on existing infrastructure or will require an entirely new investment.
- b) *Human resources costs* associated with recruiting, retaining, and training skilled personnel to manage and operate the registry system and associated activities.
- c) *Operational costs* related to outreach activities, data collection, regular system updates, data protection and cybersecurity measures, and general system maintenance.

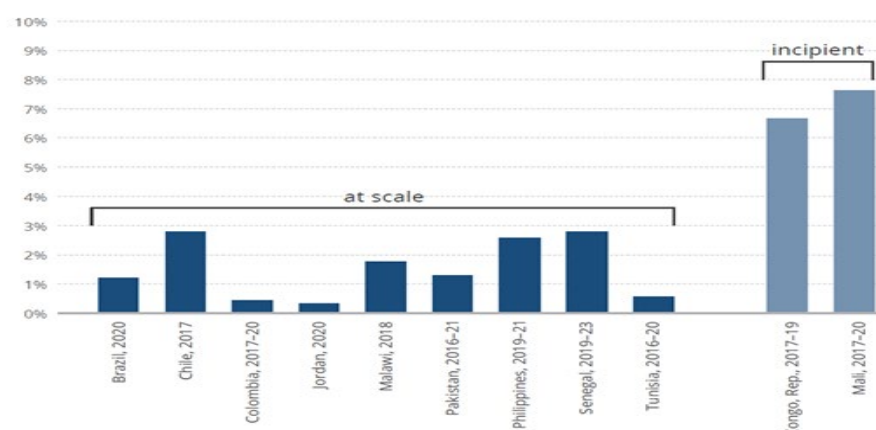
- d) *Sustainability and recurring costs* required to sustain the system, including regular maintenance, periodic upgrades, audits, capacity-building initiatives for personnel, and cybersecurity measures to safeguard the data and infrastructure. These costs also include the costs of investment in outreach and communications.
- e) *Private sector engagement*: Outsourcing to non-state entities could be considered for certain components, for efficiency and effectiveness reasons. For instance, outsourcing the whole of IT to a Zanzibar based tech company, outsourcing outreach management to a phone operator, and outsourcing communication functions to public and private media.

The budgetary requirements for the aforementioned categories will depend on the roll-out plan and the number of individuals to be enrolled in the first phase. Another crucial factor is the on-demand registration activity plan, including the number of centres at a local government administrative location where people can go to register themselves. Additionally, the decision regarding which agency will host the registry and whether the registry will utilise existing infrastructure and human resources or will require new infrastructure and human resources must be taken into account as an important budgetary requirement.

This research has identified strong empirical support for establishing ZDSR as it will generate benefits from cost efficiencies that are far higher than the cost of developing the system. There is a body of evidence (as demonstrated in Figure 14) suggesting that the overall cost of data collection for ZDSR would be significantly smaller than the benefits linked to the cost effectiveness and efficiencies gained from social protection programmes in Zanzibar. The cost for establishing ZDSR is estimated to be US\$ 5.8 million, and this will involve significant initial investment, primarily divided into two key components: infrastructure and data collection. Outside of this, the infrastructure cost is estimated at US\$ 1.05 million, covering primarily purchases of servers, bandwidth and backup costs, software development, system management, and maintenance and support (see Annex B). Equally critical is the cost of data collection, estimated at US\$ 4.75 million,²⁶ as shown in Table 2, to populate the registry. This will involve extensive fieldwork, household surveys, community validation, and data cleaning processes. This phase will require substantial logistical coordination, trained personnel, and resources to ensure the accuracy, inclusivity, and reliability of the data captured.

Despite presenting the cost for setting up ZDSR and initial data collection through a survey wave, the research acknowledges the need for a more detailed analysis of the financial implications of establishing ZDSR. The estimate set out above does not cover potential costs incurred by citizens involved in the registration process in terms of gathering required documents, travelling to citizen service points, and participating in registration.

²⁶ This estimation is based on the cost of the National Census conducted in 2022, which spent an average of TZS 6,265/- per person. <https://dailynews.co.tz/census-lives-up-to-expectations/>

Figure 14: Ratio of the unit cost of a social registry versus the annual benefit of the largest social protection programme in different countries

Source: Grosh et al. 2022

Table 2: Estimates of initial cost of setting up existing social registries

Country	Programme	Year	Cost in US\$ to develop the system	Remark
Brazil	Cadastro Único	2010-2013	US\$2.06 per household	Online synchronisation with the federal centre and pension system
Colombia	SISBEN	2017	US\$1.27 per household	This covers registration, data collection, and front/back office investment for improving interoperability
Turkey	ISASS	2017	US\$1.3 per household	Cost efficiencies (\$39 million per year) far outweighed the costs of developing the system (\$13.1 million).
Zanzibar	Zanzibar Dynamic Social Registry	2026	US\$2.5 per each of 1.9 people, amounting to US\$4.75 million plus US\$1.05 million for initial infrastructure cost	This covers the cost of system development (infrastructure) and data collection

7 Operationalisation of ZDSR

7.1 Pragmatic implementation approach

This blueprint for establishing ZDSR concludes by suggesting a phased roll-out strategy, beginning with selected geographical areas (Pemba North and South Regions and North Unguja) with higher poverty levels, as shown in the previous section (Figure 6). In particular, the short-term target should be the beneficiaries of the UHI subsidy, as well as ZUPS. Afterwards, roll-out could be extended to the use of ZDSR for PSSN and other conditional social assistance programmes.

Phase 1: Foundational development (Years 1–2)

This phase needs to begin with modified en masse registration targeting the most vulnerable populations, utilising existing Shehia community boundaries as the focus administrative area. To make the efforts to develop ZDSR cost-effective, two modern approaches ought to be employed. Firstly, the small area estimation modelling technique should be used to identify the poorest Shehias, which should be targeted first for registration. Secondly, the process should involve the effective utilisation of new satellite-based sources of data and AI-enabled automated valuation models that estimate property values using a formula. Inputs to this formula would include objective property characteristics (e.g. location, built area, type of walls, type of roof, year of construction, floor area, etc.), along with market data like sale prices for similar properties, construction costs, and projected income generated by the property to identify dwellings and categorise the type. The underlying formula would be calibrated with statistical methods (regression analysis), and its output would be an estimated market value.²⁷ This will enable unique identifiers to be assigned for each dwelling and allow for the provision of data on the dwelling type, which are needed to inform the criteria used to determine the PMT score. To create confidence in these digital approaches, transparent validation efforts need to be made with the populations concerned.

This phase will also involve the development of a modular registration questionnaire and a digital tool that can be completed using tablets while working offline. Trained enumerators, identified by OCGS, will collect data using the registration tool. The dwelling database can be used to assign dwellings to enumerators, but should also allow for new dwellings to be added if they are not picked up in the satellite imagery. In this process, it is important to ensure that criteria for the evidence needed to verify the data collected are clear, and that

²⁷ Orgeira Pillai, N., Schenker, X., Prichard, W. and Stewart-Wilson, G. (2024) Implementing a points-based valuation system for property taxation. Guidance Note 02. Toronto: University of Toronto, Local Government Revenue Initiative.

the evidence can be scanned or photos uploaded to tablets for later auditing. Auditing a sample of households registered is a good proxy to verify the accuracy of the data collected.

It is worth noting that this phase will focus on establishing comprehensive coverage of the poorest households while building system infrastructure and institutional capacity for Shehas (Shehia leaders) to manage updates to household composition. Integration with the CRVS should therefore also take place at this stage. This implies that the ZCSRA team will be capacitated to enable ZCSRA to host ZDSR, while OCGS needs to gear itself on using more modern data collection approaches and real-time consumption and assets ownership data for measuring poverty. This would enable the social registry to receive updates on birth and death events in near real time, which will improve data quality and will make it possible to utilise existing real-time data for measuring economic status. On-demand registration should be tested with a small number of Shehias to assess the feasibility of this process and to develop a plan for decentralisation of the social registry. This will involve exploring a range of channels to support self-registration and on-demand updates.

Table 3: Feasible options to support self-registration and regular updates of ZDSR

Channel	How it might work	Considerations
Web app form	Self-register via website (subject to verification)	Limited to those with internet access
Mobile app	Self-register via mobile app (subject to verification)	Limited to those with smart phones
Mobile phones	Self-register through USSD	Needs to be connected with mobile phone companies
WhatsApp chat bot	Self-register via chatbot over WhatsApp or similar (subject to verification)	Limited to those with feature phone
Kiosk	Self-register via kiosk housed in district or Shehia-level government offices	More costly to maintain, could be outsourced through a public–private partnership with major distributors, e.g. a mobile phone company, pharmacy chain, drinks distributors
Toll-free line	Self-register via toll-free line (subject to verification)	Cost of staffing and running call centre

Phase 2: Gradual expansion and dynamic integration (Years 2–3)

The implementation of on-demand registration must be prioritised as a core feature of ZDSR. This should be operationalised through strategically positioned service points, co-located with existing government institutions, health facilities, or community centres to maximise accessibility and coverage. Establishing permanent institutional arrangements and investing in the continuous training of staff are essential to ensure the system remains responsive, inclusive, and capable of supporting real-time updates. This will mark a critical step towards institutionalising sustainable, dynamic, and citizen-centred social protection infrastructure in Zanzibar. Developing administrative data integration capabilities with key government systems, such as property registries, vehicle registries, and payroll systems, is

another crucial step for operationalising ZDSR. This calls for a greater focus on creating interoperability frameworks that support real-time data sharing and validation. By prioritising these systems (which are more mature) Zanzibar can expand registration to cover the wealthier section of the population – who can then be excluded from programmes targeting poorer households.

7.2 Identifying potential financing options for ZDSR

The establishment and operationalisation of ZDSR will require a multi-faceted financing strategy that combines domestic resources with international support. A thorough assessment of available financing mechanisms should consider both immediate implementation costs and long-term sustainability requirements. It should explore domestic financing capacity as a critical first step in ensuring national ownership and sustainability of ZDSR. Such an assessment should include a comprehensive analysis of fiscal space within Zanzibar's budget framework. Specialised public financial management expertise will be required to evaluate current budgetary allocations for digital public infrastructure and social protection programmes (ZSSF, ZHSF, and ZUPS) and to identify areas for resource mobilisation, including through contributory programmes and savings from system efficiencies related to the introduction of a social registry.

Given the substantial initial investment required for registry development, international financing can play a complementary role in supporting introduction of ZDSR, especially in terms of technical assistance. There will be a need for a coordinated approach involving multiple development partners, all guided by RGoZ, to optimise resource mobilisation while reducing fragmentation risks. The World Bank and the German Federal Ministry of Economic Cooperation and Development (BMZ) emerge as primary potential partners, offering both technical expertise and potential financial support for registry establishment and capacity building initiatives. Additional partnership opportunities exist with development partners such as the UK Foreign, Commonwealth and Development Office and Swiss Development Cooperation. Specialised agencies, such as WFP and UNICEF, present valuable collaboration prospects, particularly given their mandates in social protection and child welfare.

7.3 Citizen engagement and transparency

For a social registry to be effective, it must earn the trust and participation of the people it is meant to serve. In Zanzibar, where community relationships and informal networks play a strong role in everyday life, a citizen engagement strategy must be central to the entire process of establishing ZDSR. At its core, engagement must about more than just informing people: it must ensure that citizens understand their rights, feel involved, and have a voice in how the system is designed and used. Outreach and awareness must be inclusive by ensuring all citizens understand the eligibility criteria and validation process. A well-structured, multi-tiered communication approach needs to be created early in the roll-out, explaining the following:

Why the social registry matters: Clarify how it will improve access to services, make targeting fairer, and reduce duplication.

What people can expect: Detail how registration works, what data will be collected, and how decisions are made.

What rights individuals have: Emphasise the right to be included, to appeal decisions, and to have one's data treated with confidentiality.

Eligibility rules must be transparent, explicitly defined, simple to understand, and publicly available. This includes outlining income thresholds, vulnerability indicators, and priority groups so that all stakeholders and beneficiaries know exactly who qualifies and why. Further, the steps for application, verification, and enrolment should be transparent and well-communicated, ensuring inclusivity and comprehension across literacy levels. Additionally, updates on beneficiary lists and programme changes should be regularly shared with communities to maintain openness. Feedback mechanisms should be established to allow appeals or corrections if someone feels wrongly excluded or included.

7.4 Channels for grievance management and appeals

The grievance management system for Zanzibar's social registry must reflect the archipelago's unique cultural, linguistic, and technological landscape while ensuring accessibility across both Unguja and Pemba islands. The system should establish multiple reporting channels to accommodate diverse communication preferences and technological access levels. Primary channels include dedicated toll-free hotlines operating in both Kiswahili and Arabic, staffed by trained operators who are familiar with local dialects and cultural sensitivities. There should be a channel for complaints, in which people disclose their identifier, and an anonymous channel for whistleblowing. Digital/mobile channels can be used, like the existing system known as *Sema na Rais* (Speak with the President). Digital channels should comprise a user-friendly web portal and an AI-powered WhatsApp/USSD chatbot, which should be designed to function effectively with basic mobile phones, which are prevalent in rural communities. Community liaison officers, appointed from among respected local figures, should serve as intermediaries for citizens who are uncomfortable with formal reporting mechanisms. These officers should conduct regular village visits, targeting elderly citizens and women who may face mobility constraints.

7.4.1 Case tracking and management

All cases should be entered into a digital case tracking system. This will assign each grievance received a unique reference number that will be communicated to the complainant in their preferred language via SMS. The digital case tracking system will incorporate a centralised database for tracking all cases through predetermined stages: receipt, initial assessment, investigation, resolution, and closure. The system should generate automatic SMS notifications to complainants at each stage, ensuring transparency and maintaining public trust. Cases should be categorised by type (exclusion error, inclusion

error, data correction, service delivery complaint) and severity level, with urgent cases, such as those affecting vulnerable households' immediate welfare, receiving priority processing within 48 hours. Regular cases should follow a standard 15-day resolution timeline, with provisions for extension when investigations require additional verification. District-level grievance committees, comprising registry staff, community representatives, and civil society members, should review complex cases requiring local knowledge. These committees should meet twice a month and maintain detailed minutes to ensure accountability and consistency in decision-making.

7.4.2 Three-tier appeals mechanism

This research recommends an appeals framework that operates through three progressive levels, respecting traditional dispute resolution while maintaining administrative rigour. The first tier would involve district-level review by senior registry officers not involved in the original decision. Appellants would be able to present their case in person or through written submissions, with interpretation services available in local languages. Second-tier appeals would proceed to the Regional Appeals Committee, chaired by a senior government official and including representatives from the Ministry of Social Welfare, civil society organisations, and traditional leaders. This committee should conduct monthly hearings and have the authority to reverse first-tier decisions and recommend systemic improvements. The final tier would establish an Independent Appeals Tribunal, comprising retired judges, respected community elders, and technical experts. This tribunal would address cases involving alleged procedural violations or significant policy implications, providing binding decisions that inform future registry operations.

7.5 Data governance guideline

Establishing robust data governance guidelines is of fundamental importance to ensure the integrity, security, and effective utilisation of ZDSR throughout its operational lifecycle. These guidelines must provide a comprehensive framework that governs data collection, storage, processing, sharing, and disposal, while maintaining compliance with Tanzania's Personal Data Protection Act No. 11 of 2022 and international best practices. *ZDSR must implement standardised data quality protocols that ensure accuracy, completeness, and consistency of data across all registered households.* This includes establishing mandatory field validation rules during data entry, implementing automated cross-verification mechanisms with existing government databases (CRVS, ZanID, and administrative registries), and requiring photographic evidence for key verification documents. Regular data auditing procedures should be conducted quarterly, with systematic sampling of registered households to verify information accuracy and identify potential discrepancies.

A tiered access control system must define specific roles and permissions for different user categories, including enumerators, Shehia leaders, district officers, and programme administrators. Each role must have clearly defined data access rights, modification

permissions, and audit trail requirements. This can be easily done through blockchains. Multi-factor authentication and regular password updates should be mandatory for all system users, with automatic session timeouts for inactive accounts. The mobile application must be location locked to prevent access outside of the geographic area associated with each role assigned.

Formal data sharing agreements must be established with partner institutions, including ZHSF, ZSSF, and TASAF, defining the scope, frequency, and security protocols for data exchange. All data sharing must follow the DCI standards to ensure future compatibility with Tanzania Mainland systems. APIs should implement robust encryption and authentication mechanisms, with detailed logging of all data access and transfer activities. Additionally, a comprehensive audit trail must track all data modifications, including timestamps, user identities, geographic location (if using a mobile device), and justifications for changes. Regular compliance reviews should assess adherence to data protection protocols, with quarterly reports submitted to designated oversight committees. Clear escalation procedures must be established for data breaches or unauthorised access incidents, ensuring rapid response and appropriate notification to affected parties and regulatory authorities.

7.6 Realistic pathways for effective compliance

To ensure effective compliance with ZDSR, RGoZ must establish robust incentive structures that link registry enrolment to access to essential public and socioeconomic services. Compliance with ZDSR should be framed not as a bureaucratic requirement but as a foundational pathway to securing rights and entitlements. This section presents strategic and contextually realistic entry points for operationalising such linkages. Many of these align with existing administrative processes or service access transactions, allowing for phased integration with the ZDSR. Specifically, registration in ZDSR should be progressively institutionalised as a prerequisite for eligibility to key services and benefits, including (but not limited to) the following: social assistance schemes (e.g. old age pension and UHI subsidies), issuance of land and housing title deeds, formal employment contracts and work permits, marriage registration, motor vehicle registration and road licensing, economic empowerment and poverty alleviation grants, business and driving licences, and financial services (such as opening a bank account).

7.7 ZDSR implementation roadmap

This blueprint for developing ZDSR concludes by presenting a phased five-year roadmap structured around key milestones that are aligned with the 2030 Sustainable Development Goals (SDGs) timeline. The first and most critical step is the designation of a high-level coordinating institution to oversee and drive implementation. This should be followed by comprehensive legislative work to establish the legal and regulatory foundation, which is an essential precondition for all subsequent actions. Parallel to this, lessons from existing

global experience in digital governance (such as from Latvia, Turkey, Rwanda, and Brazil) should inform the evaluation of software options, including the potential use of blockchain and AI, as well as capacity-building needs. A pilot roll-out in North Pemba, South Pemba, and North Unguja (high-poverty areas) can serve as a testing ground for system design and definition, followed by scalability testing in urban Unguja. Throughout this process, a strong advocacy and communication strategy should be implemented, alongside an early digital citizen feedback mechanism to foster engagement and transparency.

ZDSR implementation roadmap: five-year strategic implementation plan

YEAR 1: Foundation and design

Phase 1A: Legal and institutional framework Q1–Q2

Legislative actions

- Amend ZCSRA Act to include ZDSR hosting mandate
- Enact Personal Data Protection Act implementation regulations
- Update OCGS mandate for digital poverty assessment
- Establish MoCDGEC coordination authority

Institutional setup

- Designate ZCSRA as ZDSR host institution
- Create ZDSR Technical Working Group
- Establish inter-ministerial coordination committee
- Appoint Personal Data Protection Officer

Phase 1B: Technical architecture and pilot design Q2–Q4

System architecture

- Complete software platform evaluation using defined criteria
- Select open source/digital public goods solution
- Design system architecture
- Develop API specifications following DCI standards

Pilot area selection

- Target North Pemba, South Pemba, and North Unguja (high-poverty areas)
- Conduct baseline poverty mapping using small area estimation
- Develop satellite imagery and AI dwelling identification system
- Create unique dwelling identifier database

Phase 1C: Capacity building and procurement Q2–Q4

Human resources

- Recruit core ZDSR technical team (5–7 staff)
- Train OCGS enumerators on digital data collection
- Capacitate 50 Shehia leaders on registry updates
- Establish data governance protocols

Technology infrastructure

- Procure tablets and offline-capable software
- Establish secure data centres and backup systems
- Implement cybersecurity measures
- Develop mobile app for Shehia-level updates

System implementation

- Develop minimum viable prototype of ZDSR
- Make iterative improvements to prototype
- Obtain cyclical feedback to guide improvements
- Implement DCI interoperability standards

YEAR 2: Pilot implementation

Phase 2A: Mass enrolment pilot Q1–Q2

Pilot registration campaign

- Launch en masse registration in three pilot regions
- Register approximately 80,000 households (20% of total)
- Collect comprehensive socioeconomic data
- Implement PMT using OCGS indicators

System integration

- Integrate ZDSR with ZanID system for verification
- Link with CRVS for birth/death notifications
- Establish API connections with ZUPS and ZHSF systems
- Create IBR prototype

Phase 2B: On-demand registration testing Q2–Q3

Dynamic registration setup

- Pilot on-demand registration in 10 Shehias
- Test multiple registration channels (mobile app, web portal, kiosks)
- Implement grievance mechanism and appeals process
- Train local staff on dynamic update procedures

Phase 2C: Programme integration Q3–Q4

Service delivery integration

- Connect UHI subsidy eligibility to ZDSR

- Integrate ZUPS automatic enrolment (age 70+)
- Pilot TASAF beneficiary identification
- Establish benefit disbursement tracking in IBR

YEAR 3: Scale-up and expansion

Phase 3A: Island-wide roll-out Q1–Q2

Full geographic coverage

- Extend registration to all 11 districts
- Target remaining 300,000 households
- Implement mobile registration units for remote areas
- Achieve 90% household coverage

Phase 3B: Advanced system features Q2–Q3

Enhanced functionality

- Deploy machine learning for fraud detection
- Implement automated eligibility scoring
- Launch predictive analytics for vulnerability assessment
- Integrate with land, vehicle, and business registries

Phase 3C: Multi-programme integration Q3–Q4

Comprehensive service delivery

- Integrate all social protection programmes
- Connect education sector (school feeding, bursaries)
- Link health sector services beyond UHI
- Establish disaster response rapid identification system

YEAR 4: Optimisation and sustainability

Phase 4A: System optimisation Q1–Q2

Performance enhancement

- Optimise system performance and user experience
- Implement advanced analytics and reporting
- Enhance mobile app functionality
- Strengthen cybersecurity measures

Phase 4B: Sustainability measures Q2–Q3

Long-term sustainability

- Establish sustainable financing mechanism
- Create local technical maintenance capacity
- Develop staff retention and training programmes
- Implement cost-recovery mechanisms where appropriate

Phase 4C: Regional integration Q3–Q4

Mainland Tanzania alignment

- Align with Tanzania's unified social registry development
- Facilitate cross-border beneficiary management
- Share best practices and lessons learned

YEAR 5: Maturity and innovation

Phase 5A: Advanced features Q1–Q2

Innovation implementation

- Explore further use of AI
- Launch citizen self-service portal
- Integrate with digital payment systems

Phase 5B: Policy impact and evaluation Q2–Q3

Evidence generation

- Conduct comprehensive impact evaluation
- Measure improvements in targeting accuracy
- Assess cost-effectiveness gains
- Document lessons learned and best practices

Phase 5C: SDG alignment and reporting Q3–Q4

SDGs preparation

- Align registry indicators with SDG targets
- Prepare comprehensive data for 2030 SDG reporting
- Demonstrate contribution to poverty reduction (SDG 1)
- Support universal health coverage progress reporting (SDG 3)

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Annex A Criteria for evaluating software platforms

Technical architecture and scalability

Modular architecture: Platform should support incremental implementation and component interoperability to allow phased deployment and future expansion.

Scalability and performance: Ability to handle growing beneficiary populations and transaction volumes without performance degradation.

Integration capabilities: Support for APIs and interoperability with existing government systems, payment platforms, and third-party services.

Cost and sustainability

Total cost of ownership: Comprehensive evaluation, including licensing, implementation, maintenance, training, and ongoing operational costs.

Vendor independence: Avoid vendor lock-in situations that limit future flexibility and create long-term dependencies.

Local capacity building: Platform should enable development of internal technical expertise rather than perpetual reliance on external consultants.

Functional requirements

Core social protection features: Social registry and IBR functionality.

Configuration flexibility: Low-code/no-code capabilities to adapt business rules, workflows, and eligibility criteria without extensive development.

Multi-programme support: Ability to manage multiple social protection programmes within a unified system.

Operational considerations

Deployment context suitability: Appropriate for developing country environments, including offline capabilities and infrastructure constraints.

Language and localisation: Multi-language support and cultural adaptability for diverse populations.

User experience: Intuitive interfaces for both administrators and beneficiaries, considering varying levels of digital literacy.

Security and governance

Data security and privacy: Robust protection of sensitive beneficiary information with appropriate access controls and audit trails.

Transparency and accountability: Open systems that support oversight, reduce corruption risks, and enable public accountability.

Strategic alignment

Digital sovereignty: Solutions that support government control over critical social protection infrastructure and data, aligning with national digital transformation goals.

Annex B Initial tentative setup cost for ZDSR infrastructure

1. Infrastructure	Budget estimate	Type
Server hosting and management	US\$ 50,000	Annual
2. Software development		
Initial system implementation over pilot period	US\$ 800,000	One-off
3. System management		
Core team managing system and providing training and support	US\$ 80,000	Annual
4. Maintenance and support		
Ongoing system implementation after pilot along with maintenance and support	US\$ 100,000	Annual