Cost Effectiveness and Resource Allocation

RESEARCH

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From pilot to national roll-out of the improved Community Health Fund (iCHF) in Tanzania: lessons learnt and way forward

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Abstract

Introduction Scaling up public health interventions in the health systems of resource poor settings come with technical and operational challenges. Little is documented on scaling up complex health financing interventions and their related outcomes, especially the voluntary health insurance schemes. This study aimed to analyse the scale-up steps, successes and challenges of the improved community health fund (iCHF), a voluntary health insurance scheme in Tanzania,

Methods In this paper, guided by the Expand Net framework (a scale-up framework for health system interventions), we present a systematic analysis of countrywide scale-up of the iCHF that started in 2019 and implemented in partnership between the government and development partners. We systematically collected information on the scale-up steps and the success and challenges. The collected data was analysed using descriptive statistics.

Results The scale-up involved multiple steps and actions at different levels of the health system. The initial step involved gathering stakeholders' views on scale-up options and strategies. The subsequent steps focused on mobilizing resources for scale-up, advocacy and promotion of the scheme through media, community leaders and role models, capacity building to implementing organs, institutionalizing the scale-up processes, intensifying the scale-upscale-up activities for expansion and spontaneous scale-up and technical backstopping to lower levels of the health system on the scale-up process. We found success and challenges as the scale-upscale-up progressed to mature stages. The success included acceptability and institutionalization of the scale-up activities and growing enrolments and funds in the scheme. The challenges included: the costs to sustaining advocacy and enrolments, equity in scale-upscale-up activities across regions, relying on top-down scale-upscale-up approaches, influence of contextual factors and lack of implementation research alongside the scale-upscale-up process.

Conclusion This paper underscores the scale up steps and success and challenges of scaling-up a voluntary health insurance scheme in a resource-constrained health system. Sustaining the scale-upscale-up gains will require utilizing program data and experiences to sustainably improve the scheme performance while also harnessing support from stakeholders. Further research is needed to assess equity and quality of outcomes of the scale up.

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Keywords Scaling up, Voluntary health insurance scheme, ExpandNet framework, Implementation success and challenges, Tanzania

Background

Globally, several reforms have been implemented to improve the overall performance of health systems and increase legitimate expectations of their populations [1, 2]. These reforms are usually implemented as pilot or phased projects and executed at the full scale should the conditions allow. Fidelity of implementation of these pilot projects or initiatives accompanied by adherence to reforms protocols and adaptations as need arises is an essential component for the successful transition from pilot to full-scale or nationwide implementation [3–6]. Existing evidence on the scale-up of complex interventions attests to the difficulties experienced due to the existence of many intricacies during implementation [7–9]. In addition to conditions allowing scale-up, pursuit of scale-up usually occurs if the pilot projects succeed [10]. Some initiatives have been tried in the past and failed, while others excelled with notable success stories to become a full program or an initiative [11]. Existing evidence attest to the factors that influence scale-up of interventions such as community readiness, government support, stakeholders' engagement, and monitoring and supervision [9, 12]. These factors act as facilitators when present but as barriers when absent.

In recent years, there has been a movement by both donor and recipient countries to make the health care systems resilient and self-sustaining for the betterment of quality health service delivery and improved clients' satisfaction [13]. Among the efforts include strategies to improve domestic health sector resource mobilisation to enhance system performance and respond to the population's health care needs [13, 14]. A resilient health system entails having a robust health financing system to ensure adequate funding of the health programs to answer or meet health care needs.

The health care financing modalities have to ensure that; there is financial and social protection of the population while maintaining the ambition to achieve universal health coverage (UHC) by 2030 [15, 16]. Achieving UHC usually requires the implementation of complex health financing reforms that involve multiple components and the engagement of different health system levels and actors in the settings they are delivered [17]. Some approaches to UHC have been to adopt a single or universal national health insurance pool to create a large-scale scheme and ensure wider risk cross-subsidisation [18]. Countries like Ghana and Rwanda have already started to implement a single national health insurance pool and have realized progress, although out of pocket payment remains relatively high [18–20]. In Tanzania, there have been efforts to ensure that people in the informal sector (including the formal private sector not covered by the National health insurance Fund (NHIF) are enrolled on community health fund (CHF) as a strategy to embark on universal health insurance (UHI) in the stride forward to UHC [21]. However, the population coverage of the National Health Insurance Fund (NHIF), a mandatory health insurance scheme for public sector employees stands at 9%, whereas the community health fund stands 10%. The percentage of the population enrolled in the private insurance schemes stands at 1%. The fact that only 20% of the population is enrolled in health insurance schemes implies that 80% of population rely on out-of-pocket payment and are therefore exposed to catastrophic health expenditures [22].

Several reforms have been implemented in Tanzania, including the introduction of prepayment schemes as country's efforts towards improving access to quality health services and to ensuring financial access to needed health care to the population no matter socio-economic status, including protection against catastrophic health care expenditures [23–28]. The improved CHF (*i*CHF), locally known as "CHF iliyoboreshwa" is among such reforms that went from pilot to national roll-out with some modifications in various areas to meet and address the context-specific requirements and challenges [27, 29, 30]. These contextualised modifications resulted in variations of the national CHF scheme, with varying enrolment rates, in different areas of Tanzania [30, 31].

CHF is a voluntary insurance scheme that targets people in the informal and private sectors and has been widely implemented across Tanzania since its successful pilot in Igunga District in 1996. The preparations and subsequent rollout of the Igunga model resulted in the establishment of CHF act number 1 of 2001 that offered a legal mandate to local government authorities to sensitise, set the premium fees, and use mobilised funds within their stated bylaws and local financial arrangements. This act also gave the mandate to local government authorities to request matching funds from the central government (the ministry or health or a representative) and utilise them to improve the quality of health care delivery [21, 32, 33]. The reforms of the standard (old) CHF to the CHF iliyoboreshwa, have been part of preparations towards having single national health insurance (SNHI) or universal health insurance (UHI) that will ensure all individuals, including the poor are enrolled into the health insurance that will guaranteed access to minimum benefit package hence progressing towards UHC [29, 34].

Evolution of the Community Health Fund in Tanzania

Since its first pilot in 1996 in Igunga District, there has been a cascade of pilots and trials conducted in different parts of Tanzania to try to make the community health financing system effective and efficient and, thereby, to ensure the health system's performance meets the expectations of the population (Table 1). Despite these efforts, after fourteen years of its implementation, i.e. 1996 through 2010, the Tanzanian government continued to experience fragmentation of the CHF scheme that was marred with uncertainty about its viability, and sustainability in different settings within the country [34]. Notable challenges that explained the scheme's poor performance were design issues of the scheme, namely adverse selection and moral hazards due to lacking separation of functions between providers (health facilities) and purchasers (enrolment officers). This was because healthcare providers at the facility level had two roles: health service provision and enrolment of CHF members, eventually causing low enrolment or enrolled only the sick people hence undermining cross-subsidization between the health and the ill. Furthermore, CHF members could not get the promised benefit package, as there were frequent out of stocks of medicines and supplies and absence of needed equipment. This led to the entrance of a number of development partners to try implementation of different alternative modalities of CHF across different regions from 2011 to address the underlying bottlenecks experienced in different settings [29, 30, 38–41].

Implementation of these different modalities by different partners was meant to identify a suitable model that will later be rolled out to the entire country with expected maximum output and efficiency [38, 42]. The country was geographically divided into four zone pilot project sites with different development partners implementing four different CHF models in the phased approach (Table 2). Some regions in the central and lake zones (Dodoma, Shinyanga and Morogoro) were under Health Promotion and System Strengthening (HPSS – '*Tuimarishe Afya*') project, which received funding from the Swiss Development Cooperation (SDC) and implemented by the Swiss Tropical and Public Health Institute (Swiss TPH) [38]. Two regions (Kilimanjaro and Manyara) were under PharmAccess, funded by The Dutch Ministry of Foreign Affairs [43]. At the same time, four regions (Tanga, Mbeya, Mtwara and Lindi) were under the German development agency (GIZ). The remaining 17 regions continued with the original (Igunga district) CHF model as a natural control model. As per the terms of references (TORs) the Government of Tanzania (GoT) issued, all development partners who were implementing alternative CHF models were required to address the following challenges: expansion of portability of CHF membership card and benefits, pro-poor inclusiveness, and increase enrolment rate, to come with organisational structures that will enhance viability, have a good information system, a suitable model of reimbursement and separation of roles between providers and purchasers [29, 40]. The results of the pilot were presented in different stakeholder meetings and indicated significant positive changes in overall performance of the pilot schemes and therefore this called for a need to develop a comprehensive model for scale-up.

Product development (CHF *iliyoboreshwa* - improved CHF) and scale-up

In April 2019, the GoT received reports from all implementing organisations, analysed them, and developed a comprehensive model that had the necessary components for addressing the above-identified challenges. The GoT branded the desired model as CHF *iliyoboreshwa*

Table 1 Evolution of CHF from pilot to the *i*CHF scale-up

Year	Event
1996	The pilot of CHF in Igunga District – Tabora region
1999	Scale-up of the CHF model to all districts
2001	CHF act ratification
	Scale-up of the CHF model to all districts upon meeting criteria set by the Ministry of Health
2005	Preliminary studies that showed weakness and identified areas for improvement [35–37]
2007	NHIF was contracted as Patron to oversee districts CHF operations and payment of matching funds (*Tele kwa Tele*)
2010	Commitment by GoT to engage of development partners to reform the CHF
2011	Improved CHF (CHF *iliyoboreshwa*) piloted in 9 Regions (see Table 2)
2012	CHF *iliyoboreshwa* pilot under HPSS in Dodoma Region and later (2025) expanded to Morogoro and Shinyanga Regions
2013	Reform options for strengthening CHF performance
2014	Improved CHF (iCHF) pilot under PharmAcess support commences in Kilimanjaro region and later (2015) expanded to Manyara region
2015	Consensus building on the new CHF model to be scaled up based on results of piloted (improved) CHF *iliyoboreshwa* model
2017	Launch of Road map for National roll-out of CHF *iliyoboreshwa (iCHF)*
2018	Resource mobilisation for the national roll-out of iCHF and phased roll-out of *i*CHF by taking few regions at the time
2019	Roll-out of iCHF to the entire country – 26 regions in Tanzania mainland

Table 2 The similarities and differences of the CHF options implemented during the pilot phase

	Revenue collection		Risk pooling		Purchasing	
	Sources & contribution	**Collecting organization**	**Risk sharing pool**	**Fund management**	**Benefits**	**Provider payment**
The original (igunga district) CHF model (Status quo)	Voluntary Private	District Health Office	District	CHSB/DMO	Primary health care at local health facility	Budget - CCHP
*i*CHF in Dodoma, Morogoro and Shinyanga (supported by HPSS*)	Voluntary (mandatory) Private (Subsidies for poor through 5% own source at council or village)	Enrollment officers at community level	District	CHFB/CHF office	Portability within the district, across the region and cross regional (Dodoma, Morogoro and Shinyanga) Inpatient at district hospital and regional upon referral	Demand –related (fee-for-service)
*i*CHF in Kilimanjaro & manyara (supported by PharmAcess +)	Voluntary (mandatory) Private (Subsidies for poor through 5% own source at council or village)	Community health volunteers (CHVs) at community level	Region	NHIF regional offices	Access to selected facilities, one at primary level and secondary level within the district Including private not for profit (owned by Faith based organizations -FBOs) within the district Inpatient at district hospital upon referral	Demand –related (capitation, preapaid)
*i*CHF in Tanga, Mbeya, Mtwara and Lindi (supported by GIZ)	Voluntary (mandatory) Private	District Health Office through Village executive officers	District	CHSB/DMO	Primary health care at local health facility	Provider supplied with medical commodities (equally distributed regardless of enrollment rates/ number of CHF members)

*The scheme processes (e.g., enrolment and reimbursement) were managed by the insurance management information system (IMIS)

+The enrollment process was digitalized and clients were enrolled using mobile phones

(Improved CHF – -iCHF). In October 2019, the role out of iCHF started to the entire country with the support from different stakeholders led by the government. Before the role out of the iCHF, an actuarial study was conducted to find out the feasibility of having unified CHF across the country and also to address the challenges of fragmentation of the scheme. The study found that, in order to harness the contribution of the informal sector in the UHI, there is a need to standardize the contribution rates for the iCHF nationally and adopt capitation payment to health providers (especially primary health care facilities). Further details of the study are well documented under draft health financing strategy 2016–2019 [44].

The nationwide rollout of improved CHF was an important step for the government's effort to move towards UHC. The *i*CHF has re-defined the Minimum Benefit Package (MBP) and changed the reimbursement modality from fee for service to capitation system. The premium per annum has increased from TZS 10,000/ (USD 7.69) to TZS 30,000/ (USD 23.08) (1USD=TZS 1,300/- as per an exchange rate as of 22.10.2020). The government is expected to contribute 50% as matching grant to make TZS 60,000/- (USD 46.15) for all regions except for Dar es salaam which is up to TZS 150,000/- (USD 115.38).

The distribution of the use of funds is as follows: 80% of collected funds are allocated for health service provision, 15% for administrative issues, and 5% for saving (Fig. 1). Seventy per cent of the funds earmarked for health service provision goes to health centres and dispensaries through capitation system while the remaining 30% is divided into regional referral hospitals and district council hospitals through fee for service system (Fig. 2). Capitation allocation of the 70% to each individual dispensary and health centre is determined by; utilisation of CHF (number of visits by CHF members) which carries a weight of 70%, catchment population which carries a weight of 10% and number of insured households in the catchment area where the facility is located which carries a weight of 20%. As part of administration cost, the enrolment officers receive 10% of the collected premium from every enrolled member as a commission. The roll-out of *i*CHF use different social marketing approaches such as use of community radio and other local innovations to attract people to enrol.

Theoretical underpinnings of the iCHF scale-up

To understand the level of success with which the iCHF was implemented during scale up, it is important to consider three criteria: (1) technical correctness; this assesses whether the theory of change works well,

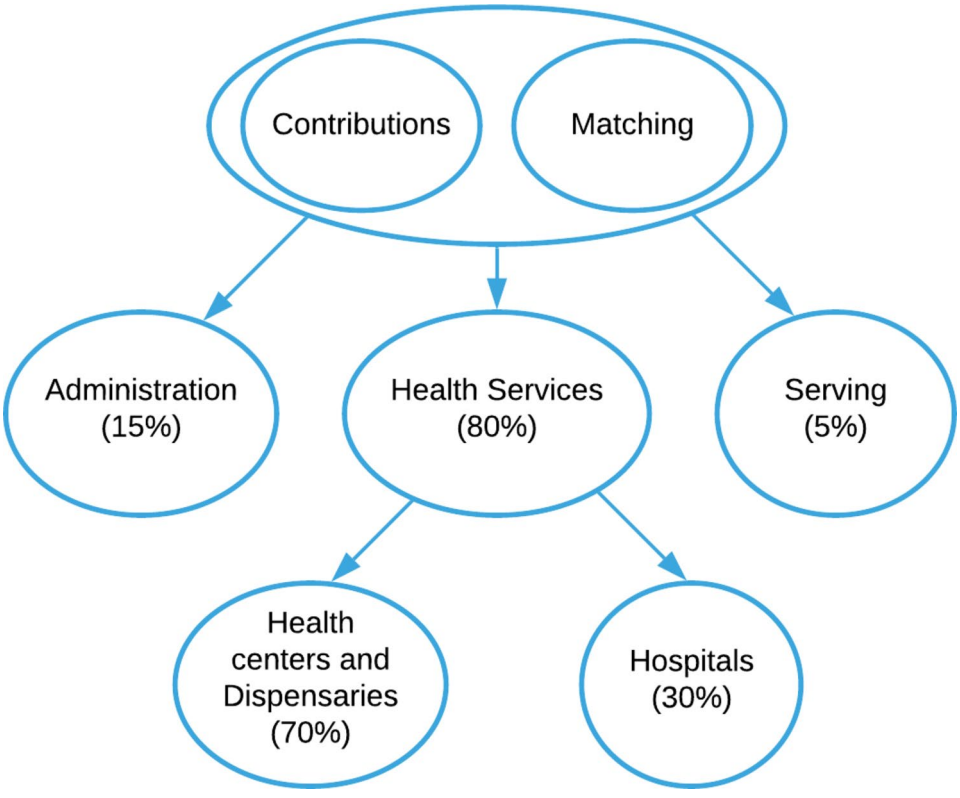

Fig. 1 Resource allocation distribution formula for collected iCHF

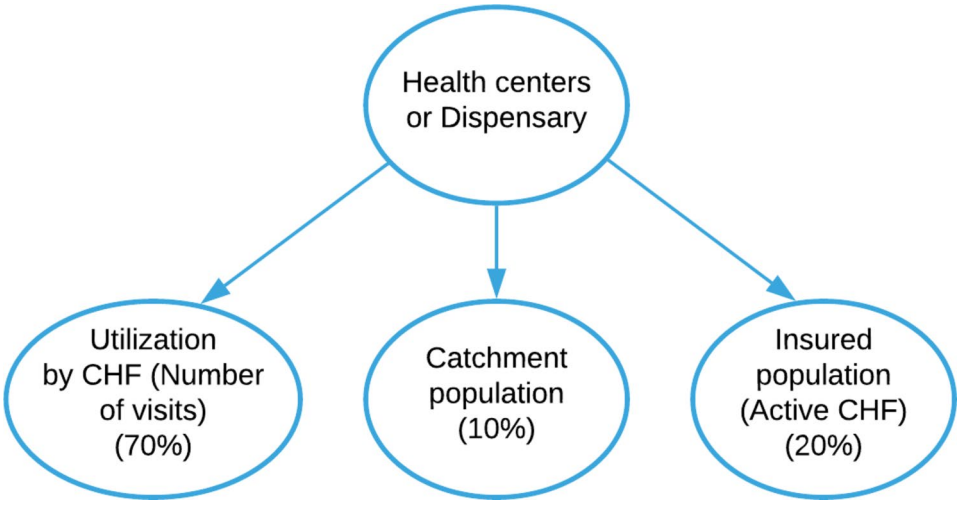

Fig. 2 Capitation allocation to individual health centres and dispensaries

(2) administrative feasibility; this assesses whether there are adequate resources and systems to execute, monitor, and evaluate the program, (3) political support; this looks whether there is backing by relevant authorities and stakeholders in the course of implementation and sustenance of the program. The blueprint approaches to program implementation that assume interventions can be implemented the same way across settings cannot ensure successful scale-up. This is because, some contexts require adaptations and capacity strengthening in a stride forward to successful scale-up of innovations. Efforts to reform complex interventions at large scale can produce unexpected outcomes if attention is not paid to specific behaviour of the health system to be changed and contextual factors [3].

Expanding a complex intervention under real world conditions to reach greater population after a successful pilot, requires an explicit intent to expand the reach of the intervention. As such, this process includes consideration of a range of pre-conditions and strategies that typically precede implementation efforts, including harnessing political will, constituency building, and realigning resources and infrastructure to enable delivery at scale [45]. Multiple theories, models and frameworks have described strategies to scale-up interventions. Such theories, models and frameworks demonstrate that strategies to implement innovations at scale are complex, and involve the consideration of a number of individual, organisational, social, political and other contextual factors [46–48]. The most common utilised theories include diffusion of innovation theory [46] social network theories [47–49] and The Expand Net framework [50, 51]. Roger's diffusion of innovation theory attests to five factors, adopters, and strategies that can lead to fast diffusion of innovation [46], whereas the social network theories use four network strategies in a scale-up process and include: identifying key actors, identifying and shifting the actions of subclusters at a time, stimulating peer-to-peer influence and altering the network (removing or adding actors into key network positions [49]. The Expand Net framework supported by the WHO recommends a stepwise approach to scaling up interventions while abiding to its key principles namely; system thinking, enhancing scalability, focus on sustainability, respect for human rights, equity and gender perspectives [50, 51]. The framework conceptualizes five elements namely: innovation, user organisation(s), resource team, scaling up strategy and the environment. In addition, the framework has strategies of the scale-up process, namely: Dissemination and advocacy, Organizational process, Costs/resource mobilization and Monitoring and evaluation. This framework assumes that by the time the intervention is taken to scale, the benefits of the intervention should have been proven through a pilot or demonstration projects. The stepwise approach takes a sequential scale-up (phased manner) beginning with a pilot, stepwise expansion, and national roll-out. Based on the framework, scale-up is most likely to be successful where there is local ownership of the decision to scale up; strong collaboration by government officials, technical advisors, and donors around a common vision; and a systematic and integrated approach to make the intervention a sustainable part of the routine health system through institutionalization and expansion.

In this paper, we report the scale-up of the CHF iliyoboreshwa (improved CHF) based on our objectives that, specifically aimed at) analysing (i) the steps in the scale-up efforts guided by the Expand Net framework as described by the World Health organisation (WHO)

[52, 53]. (ii) the scale-up successes and challenges of the iCHF in terms of growing enrolments and pooled funds in the scheme.

Methods

Country context

Located in East Africa, Tanzania has an estimated area of 945,087 km^2 and a population of 55,890,747, of which 51.1% are females, based on the 2019 projections. About half (50.1%) of the population is below 18 years of age, and 5.6% are aged 60 years and above [54]. About seventy per cent of the population (70.4%) resides in rural areas. The health sector in Tanzania is under the ministry of health (MOH) for Tanzania mainland and The Ministry of Health (MOH) for Tanzania Zanzibar. The CHF is currently implemented in Tanzania mainland. Tanzania has 31 regions (26 regions in Mainland Tanzania and 5 regions in Zanzibar). The Tanzania mainland (the focus of this study) has 185 district councils and has 9,938 health facilities, of which 5,851 are publicly owned. Of the public-owned facilities, 28 are regional referral hospitals, 179 council hospitals, 716 health centres, and 4,922 are dispensaries [28]. District hospitals, health centres, and dispensaries constitute primary health care. Currently, there are about 24,000 enrolment officers across the country who are mainly responsible for the *i*CHF enrolments at the community level by using mobile phones with the ability to capture Quick Response (QR) codes.

The Tanzanian health system is mainly funded through a mixed financing model through; government funding (i.e., revenue collected from income tax and value-added tax); donor contributions (i.e., grants and loans for health programs); pre-payment schemes (i.e., social health insurance schemes, the community health fund, and private health insurance); and out of pocket contributions (direct payments when accessing services). The main pre-payment schemes are the National Health insurance Fund (NHIF), which has 9% of the population, *i*CHF (10.87%), private insurance schemes (1%) [21, 32, 55, 56].

Description of the scaled-up program

The government circular number CD/ 151/161/01"C"/46 of April 2018, laid down the scale-up of the iCHF in Tanzania. The circular contained information to guide the scale-up by stipulating the features of the scheme, the functions and responsibilities of different parts involved in the scheme and procedures related to enrollment, provider payments and community engagement. The intervention and its key features / components.

We describe the key features, the insurance management system and reporting systems (administrative and financial) of the scheme.

The key features of the scaled-up iCHF

The scaled up *i*CHF had specific key features that differentiated it from the pilots and its predecessor (see Table 3). As per government circular

Table 3 Description of the key features of the scaled up *i*CHF

Elements	Features
Governance	Reorganized structure that displays purchaser (the iCHF) and provider(Health facilities) split. The CHF management team operating at regional level under the Regional Administrative Secretary (RAS)
Pooling	Regional level pooling of funds (CHF fund collection at regional level)
Marketing and branding	Active marketing and branding strategies using above the line (media such as radio, TV, print media such as newspaper and magazines, and billboards) and below the line approaches (brochures, flyers and social media campaigns)
Enrollment	Close to client active enrolment and renewal at village and urban quarter level using enrollment officers. Instant issuing of membership card to each member of the household
Premium	Annual premium per household is TZS 30,000/= (appr. USD 12.4) with the exception to Dar es Salaam region TZS 150,000/= per household (USD 62) and TZS 40,000/= (USD 16.5) per individual
Benefit package	Expanded range of services to include hospitalization and portability of CHF cards (improved referral system). CHF members have access to medical treatments at all levels of public health facilities from Dispensaries, Health Centers, and District Hospitals to Regional Referral Hospitals across the country
Reimbursement to service providers	Health facility reimbursed using capitation system
Use of CHF funds	80% of collected funds are allocated for health service provision, 15% for administrative issues, and 5% for saving
Insurance information management (IMIS)	Use of information technology as an integrated system including members enrolment, renewal, enquiry, and facility claims processes. The IMIS has the following capabilities Able to manage different insurance products (benefit packages) in parallel Able to manage different options of reimbursement to health facilities (fee for service, capitation, with or without waiting periods, management of ceilings for individuals or households for insurance products) Able to manage options for the payment of membership premiums (in full, or by instalments), in cash or through e-payment Able to manage health insurance schemes at different levels of control (community schemes, district schemes, regional schemes, national schemes) Available as an open-source software embedded into an international initiative (https://openimis.org/)

(CD/151/161/01"C"/46), the key features of the scaled up *i*CHF are as follows:

Purchaser-provider split (PPS) there is a shift in scheme management from the districts (under the district medical office) to the regional secretariate (the Regional administrative secretary). With the old CHF the District Medical officer (DMO) who is the manager of all health facilities in the district/councils had also the mandate to oversee operations of CHF hence creating the conflict of interest as he/she has the influence on the allocation of CHF funds across facilities. The shift of CHF management to regional secretariat level helps to ensure that the DMO focus on ensuring quality of service provision. Further, under the improved CHF the role of health facilities will be to provide services to members and claim their payments from the scheme. Initially health facilities had responsibility to register and collect premiums for CHF members.

Standardized premium and expanded minimum benefit package (MBP) Contrary to the old CHF, the premium has been standardized under the *i*CHF whereby each household will pay TZS 30,000 per year (except in Dar es Salaam where premium is 150,000 per household). The annual premium of TZS 30,000, covers six members of a household. The members are eligible to get all services offered at primary-care facilities (including surgeries, radiological investigations such as X-rays, and Ultrasound), which were not included before. Moreover, there has been improved packages and referrals to secondary and tertiary care hospitals. A special arrangement has been put in places for faith-based facilities and private health facilities to provide services to *i*CHF members.

Portability of entitlements under *i*CHF, members are allowed to access services to any public health facility of their choice within the region. Under the original CHF members were entitled to services at the facility where they have registered. Access to district hospital and regional referral hospital follows the normal referral system whereby members are required to obtain a referral form from a dispensary or health centre.

Use of mixed provider payment system Payment to the health facilities will be through capitation mechanism. Capitation payments to each dispensary and health centre is determined by; utilisation of CHF (number of visits by CHF members) carrying weight of 70%, catchment population with a weight of 10% and number of insured households in the catchment area where the facility is located with a weight of 20%. The payment to enrolment officers is performance-based whereby a commission of not more than 10% per household enrolled in the scheme, will be paid. The combination of provider payment system is expected to increase efficiency.

Improved financial and administrative management capacities at insurance and provider levels this aims at increasing efficiency and transparency enabled by a robust insurance management information system (IMIS).

Under *i*CHF, enrolment officers work under their supervisors, the extension officers placed at the ward level. They report to the Council Director through District *i*CHF coordinator (Fig. 3).

Under the improved CHF, funds are collected and pooled under the Regional Secretariats. They are responsible for requesting matching funds from the NHIF and then disburse collected funds and matching grants to the primary health facilities (i.e., Health centres and Dispensaries) through a capitation system as per described formula above (Fig. 3). On the other hand, regional secretariats also disburse funds to the district or council hospitals and regional referral hospitals through the fee for service approach (Fig. 3). Both health centres and dispensaries use district council hospitals and regional referral hospitals as their referral points for the patients who cannot receive services as per their levels [28, 57].

The use of insurance management information system (IMIS)

Data management is required for health insurance schemes performance and resilience. The Insurance Management Information System (IMIS) is an essential component for the roll-out of the *i*CHF. It has simplified coordination and information flow for the management of the iCHF. The IMIS, developed by the Swiss TPH through the HPSS project in partnership with the Government of Tanzania (GoT) since 2012 was fully handed over to the GOT in June 2019 for managing the iCHF. Now available internationally as an open source software through the OpenIMIS initiative supported by Swiss and Germany governments [58]. IMIS is designed to automate and streamline the management of health insurance schemes especially in low and middle income countries. It supports key functions like beneficiary registration,premium collection, health care provider management, claims processing, payment management, reporting, policy and benefit package management, integration with other IT systems, user and role management and mobile as well as offline functionality, making it a valuable tool for improving efficiency in resource limited settings. Since 2019, the IMIS has been used by the government to as a tool for managing the iCHF for the entire country. This system has helped the enrolment of members through the collection of contributions and fund flows and disbursement of funds back to health facilities in the catchment area. This system has helped to get real-time data of members enrolled and funds and revenue

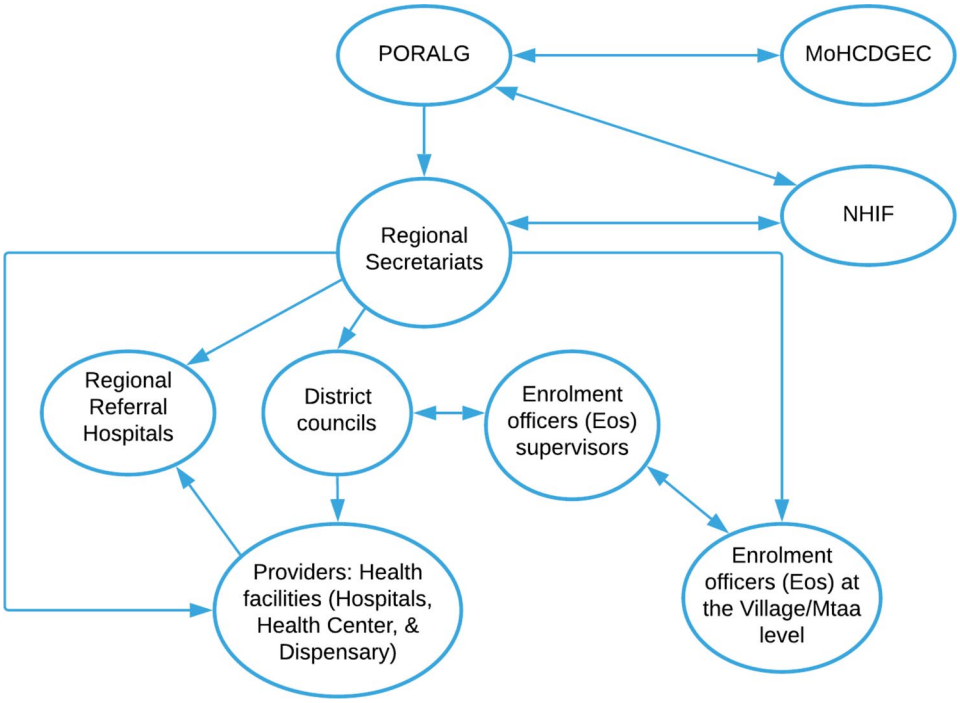

Fig. 3 Organization of *i*CHF from national to the community levels

collected. It was trying to address the challenges like fund mismatch between enrolled members and bank balance and also fraud made by some members who have expired membership. The system was also meant to address the reimbursements of funds to the respective facility when they have received health services elsewhere.

Financial and administration reports

Financial and administration reports follow two channels of submission;

Enrolment officers or enrolment agency/shop at village level reports to division/ward CHF Supervisor who compiles village reports for submission to the District CHF Manager. The District CHF manager reports to the Regional CHF coordinator, who reports to the regional medical officer (RMO) (who is an assistant to the Regional Administrative Secretary) and the Director of Health, Social Welfare and Nutrition Services at President's Office Regional Administration and Local Government (PORALG). The District CHF coordinator reports to the Regional CHF coordinator and respective standing committees, and then to the Full council.

Sustainability of the scaled-up of *i*CHF

Sustaining the scale-up can be achieved by having good infrastructure and systems to accommodate the roll-out plan. One of the important sustainability structures has been identifying the regional secretariat as the funds pooling centre and responsible for requesting matching (*Tele kwa Tele*) grants from NHIF. The funding holder at the regional level is Regional Administrative Secretary (RAS), who is responsible for pooling all the funds from all the individual districts and then presents the requests for matching grants to the NHIF for possible reimbursement. However, the existing challenge has been the unavailability of a national health financing strategy to guide the implementation of iCHF, which is still under the draft version.

The other sustainability key feature is the involvement of existing local government structures to enrol CHF members by using enrolment officers. Since 2009, the NIHF has been overseeing the implementation of CHF, and the role was jointly supported from 2015 after the establishment of the Department of Health, Social welfare and Nutrition Services at the President's Office – Regional Administration and Local Government (PO-RALG) who technically advises and also oversees the implementation at the regional and local government levels. Moreover, it is responsible for disseminating policy guidelines for the *i*CHF and coordinates its implementation.

In addition, PO-RALG is responsible for ensuring that local governments allocate required staff to implement CHF and, in collaboration with the MOH and NHIF, supervise regional and local government administration on implementing the *i*CHF. Whereas, MOH is mainly responsible for policy and guidelines formulation regarding CHF and strategy formulation for implementing *i*CHF in the country (Fig. 4). Moreover, it is responsible for setting up national targets for *i*CHF coverage

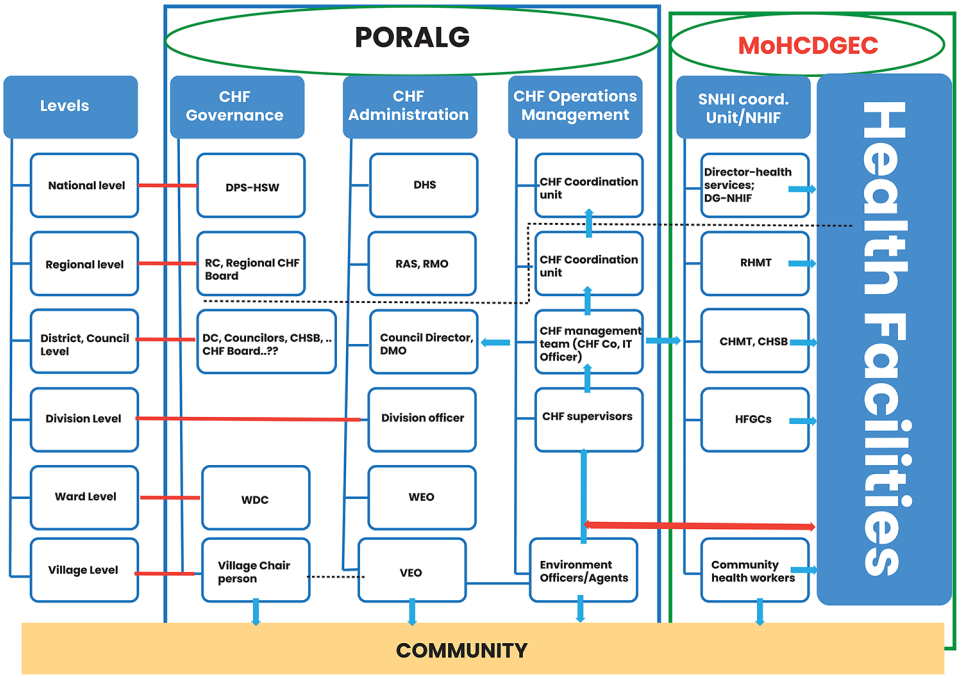

Fig. 4 Organization and different stakeholders' engagement in iCHF implementation

and preparing CHF reform policy/ guidelines/ directives to be implemented countrywide. The MOH is further responsible for monitoring and evaluating the national implementation of the *i*CHF done by NHIF and securing funding for reformed CHF implementation before the scheme reaches the scale. Other governing structures like the Council Health Service Boards (CHSB) are mainly responsible for ensuring that people are sensitised to join *i*CHF, claims and disbursement of funds from health facilities to the regional secretariat, from the regional secretariat to the health facilities.

The roles and responsibilities of key stakeholders in the implementation of *i*CHF in Fig. 4 are shown in Table 4.

Another sustainability component of iCHF is subsidising the poor by engaging other organs responsible for identifying the poor and conditional cash transfer. Tanzania Social Action Fund (TASAF) has been championing this. Its database has helped the local government authorities use domestic revenue collected to cater to the poor.

Data gathering and analytical framework

The data for this retrospective analysis was gathered through existing documents (technical reports, dissemination workshops, program documents) and interviews (and personal communication) with experts and key personnel who participated in the development and implementation of the CHF iliyoboreshwa. Analysis of the collected information followed the ExpandNet/ WHO framework (Fig. 5). In this framework, 5 elements of scale-up: the innovation (package of new interventions), the user organisation or a coalition (a resource team) responsible for implementing the innovation) and the environment (social, political, economic, and institutional) in which scale-up occurred; and the scaling-upstrategy used to establish the innovation in policies, pro-grams, and service delivery. The scale up strategy is often affected by interaction of the first four strategies. The scale up strategy includes five strategic choice areas: type of scale (i.e., expansion, institutionalization, diversification, or spontaneous), dissemination and advocacy, organizational process, costs and resource mobilization, and monitoring and evaluation (M&E). The strategic choices are influenced by the context and type of scale-up being pursued.

Results

Description of the *i*CHF scale-up steps

To scale-up the iCHF, the MOH and PORALG worked with stakeholders who have been piloting the iCHF, notably the HPSS project, PharmAcess and GIZ (the resource team) and planned the key scaling up steps and a clear strategy. The strategy included capacity building, learning through scale-upscale-ups and intensifying supportive supervision and technical backstopping. The scale up steps are described hereunder and Table 5 provides further details.

Table 4 Roles of *i*CHF stakeholders at Regional, District and lower levels

No	Staff cadre	Level of engagement	Mode of engagement	Roles and responsibilities
1	Enrolment officers (Community health workers and any other appointed person)	Village/Mtaa	Engagement of Enrolment Officers is based on acceptable integrity determined by respective villagers themselves	• Advocacy and collection of contributions (both enrollment and on renewals) • Enroll members, take pictures, issue identification cards and fill and update member registers at the village level
	Village/Mtaa Executive Officer	Mtaa/Village	A circular to Regional Secretary to instruct VEOs' and MEOs' roles expansion on supervision of CHF	• Supervisor to the Enrollment Officers • Support community mobilization • Support accountability through village assembly
2	Division and Ward CHF Supervisor (the community development officers (CDOs) and social welfare officers (SWOs)	Division and Ward level	CDOs/ SWOs who are LGA employee at ward levels; they can be tasked to supervise Enrolment Officers; in anticipation, they will be responsible enough and capable to supervise village enrolment officers	• Supervise enrolment, collect collections and deposit to CHF accounts, enter CHF members' data into the database. Technical support • Each CDO/SWO will be assigned one division to supervise and provided with working equipment and targets
3	District CHF- Coordinator (reports to Council District)	District level	Before full operationalisation, we may continue to use CHF guides that require District Managers to be Social Workers. More often, an officer at the district council is appointed to coordinate CHF	• Middle supervisory and coordination roles • CHF-Coordinator and Manager should not have other responsibilities except issues to do with CHF. Must be an employee of the government • CHF manager – District • CHF coordinator – provider side • CHF manager will be very close to the district commissioner but also report to the district executive officer
4	Regional CHF – Coordinator	Regional Secretariat	Employed as Regional Supervisor by NHIF and charged mainly with overall supervision of CHF in the respective region	• Overall regional CHF supervisor and a link officer • Management of CHF affairs at the regional level • Secretary to the regional CHF board

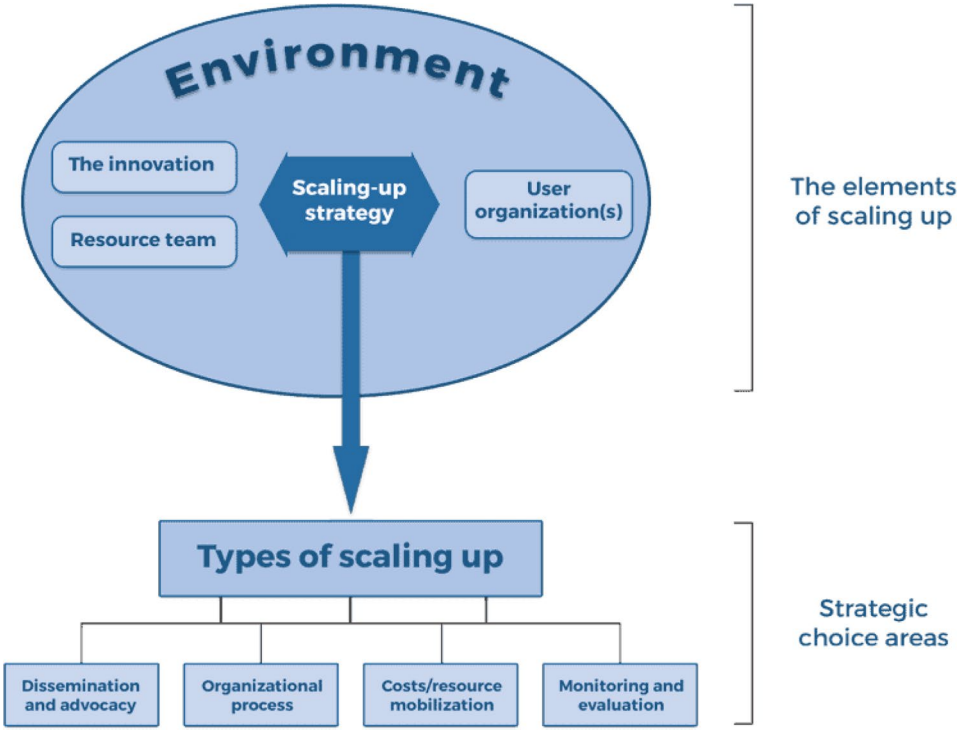

Fig. 5 The ExpandNet/World Health Organization (WHO) scaling-up framework (ExpandNet and World Health Organization 2010)

Table 5 Steps used to scale-up *i*CHF

Step	Description of activities
Step 1: Planning actions to increase the scalability of the innovation	• Identify and work with stakeholders with interest on *i*CHF/ health insurance in the country. • Prepare the scale-up options and strategies
Step 2: Increasing the capacity of the user organization to implement scaling-up	• Capacity building to organisations at all levels (governance and operations) • Piloting the scale-up options and strategies before scale-upscale-up activities
Step 3: Assessing the environment and planning actions to increase the potential for scaling-up success	• Consolidating the institutional arrangements and learning through the operations to increase scale-up processes
Step 4: Increasing the capacity of the resource team to support scaling up	• Identifying gaps for capacity building and support/ mentorship as the scale-up is on progress
Step 5: Making strategic choices to support vertical scaling up (institutionalization)	• Consolidating the roles of the Fund and the service providers
Step 6: Making strategic choices to support horizontal scaling up (expansion/replication)	• Capacitating frontline operations and operators (implementers) and related frontline structures
Step 7: Determining the role of diversification	• Using the lessons from scaling up to diversify further scale-up
Step 8: Planning actions to address spontaneous scaling up	• Intensifying supportive supervision and technical backstopping to enhance spontaneous scaling up

Step 1: Working with stakeholders to prepare the scale-up options and strategies

Before the launch of the *i*CHF, meetings were conducted to gather opinion from the stakeholders to prepare the scale-up options and strategies. Stakeholders who have piloted the *i*CHF, specifically the HPSS project, PhramAcess and GIZ presented their proposals and options for scale-up focusing on revenue collection, pooling arrangements and purchasing. Stakeholders worked towards harmonizing the different key elements and components from different implementers of the pilot CHF projects. The *i*CHF implementers' national task force did these meetings that MoH and PORALG authorities co-chaired. The meetings were part of the National Health Financing Technical Working Group (TWG). In these meetings the following issues emerged and were discussed and resolved:

1. Resource mobilization to support scale-up of *i*CHF, specifically to avail materials to support enrollment in the *i*CHF. Since the *i*CHF operates using the IMIS, procurement of mobile phones for enrolment, receipt books, development of the regional database, and other enrolment materials were the main focus of the discussion.
2. Health Facility rreimbursement modality and payment to enrolment officers. Capacitation system was selected over the fee for service, and the meetings came with a resolution on the *i*CHF capitation formula to be used countrywide (Figs. 1 and 2). Strategies for subsidization of the poor people and the roll-out plan were discussed and resolved.

Step 2: Capacity building to organizations at all levels (governance and operations) to implement and sustain scaling-up

To increase capacity of the user organizations countrywide (the regional secretariates and Local Government Authorities (LGAs), in 2018, a comprehensive training package was developed, piloted and implemented in phases. The training program started with training of master of trainers (MoTs) to form the national facilitation team. Then, the Regional Health Management Team (RHMT, Council Health Management Teams (CHMT) and enrolment officers identified from the village government were trained to register, administer, and manage *i*CHF in all LGA councils in Tanzania.

Step 3: Consolidating the institutional arrangements and learning (by doing) through the operations

The National Health insurance Fund (NHIF) as an overseer of the *i*CHF signed contracts with LGAs (on behalf of primary health facilities). The contract is a service or accreditation contract that stipulates the responsibilities of the parties in the contract.

Furthermore, a communication strategy was developed to ensure uniformity in terms of social marketing and branding messages across the country. These messages went through various stages of before use. The ccommunication strategy covered the areas of enrolment procedures, minimum package, and sensitization of community members.

Evaluation and research agenda to learn from the implementation were set and are to continuously be pursued by different stakeholders. These activities are meant at assessing the performance of the *i*CHF vis a vis the implementation facilitators and barriers across different contexts in the country. Furthermore, assessments on whether the *i*CHF meets stakeholders' expectations is

an important evaluation or research agenda that is to be pursued continuously while also adjusting the implementation processes or features of the scheme that is found problematic in meeting stakeholder expectations and government aspirations.

Step 4: Supportive supervision and technical backstopping
One of the important strategies to support the implementation is to Identifying gaps for capacity building and support/ mentorship as the scale-up is on progress. The setup of the scheme implementation includes a supportive supervision component that is envisaged to identify strengths and gaps in implementation, prepare a capacity building plan and offer mentorship and technical backstopping to all levels in the *i*CHF implementation continuum.

Step 5: Consolidating the roles of the Fund, the service providers and the community (institutionalization)
Developed and distributed guidelines and practical guides that indicated the procedures, roles and responsibilities of different parts in the implementation of the *i*CHF.

Moreover, the media campaign strategy that saw different actors taking lead in inducing citizens participation in the *i*CHF, specifically marketing the *i*CHF by explaining the benefit packages and the importance of enrolment into the insurance scheme.

Step 6: Intensifying horizontal scaling up (expansion/ replication)
This entailed capacitating frontline operations and operators (implementers) and related frontline structures so as intensify horizontal scale-up across different communities. Ongoing training activities, coaching and mentorship are envisaged to facilitate expansion of the *i*CHF.

Step 7: Determining the role of diversification and actions to address spontaneous scale-up
The activities for this step combined actions to diversify scale-up and to ensure spontaneous scale-up. Lessons drawn from the scale-upscale-up activities helped to diversify further scale-up operations. Furthermore, Intensifying supportive supervision and technical backstopping was considered as a cornerstone to enhance spontaneous scaling up.

Successes of the iCHF scale up
The scale-upscale-up of the *i*CHF came with several success stories. The success is described in terms of (1) acceptability and institutionalization of the scale-up activities and (2) growing enrolments and funds in the scheme (3) Enrolled *i*CHF members against utilization visit counts (4) Increased coverage and premium between 2018 and 2020.

Aacceptability and institutionalization of the scale-up activities
Since the commencement of the scale-up activities, RS and LGAs have accepted the scheme and have taken into their institutional setup. The scheme activities have been integrated in the budgets of RS and LGAS in order to sustain *i*CHF actions.

Growing enrolments and collected funds in the scheme
Since July 2018 to August 2021, a total of 3,868,698 individuals from 644,783 households have been enrolled in the scheme, which is equivalent to 7.8% % of the target household population (taken as 49,517,060, which is 90% of the 2018 NBS population projections). Performance per region shows that the Shinyanga region is relatively performing well with 17.6% of households enrolled, followed by the Dodoma region with 17.1% enrolment, as compared to the other 24 regions (Table 6).

Premium collected since July 2018 to august 2021 amounted to 22,166,745,658 TZS ((taking exchange rate of 2301TZ=1USD), equivalent to 9,633,527 USD) with Dar es salaam (15.5%) and Dodoma (11.4%) having the first and second high premium collections, respectively. Payment to providers since July 2018 to August 2021 amounted 13,624,515,134 TZ (equivalent to 5,923,702 USD) which is 61% of all the collected premium (Table 6).

In terms of amount remaining for scheme administrative services, there was variations between regions with some regions having saved more than others. The most performing regions in terms of savings after reimbursing health facilities are Dar es salaam (24%) and Mtwara (10.5%). Rukwa region showed to have a negative balance (-1.11%) in relation to the amount remaining, this could be a result of enrolling members who are sick (Moral hazard) who instantly utilizes health services (Table 5).

Increased coverage and premium between 2018 and 2020
There was a notable difference in the enrolment coverage between 2008 and 2019 (565 people) relative to 2019–2020 (6370 people), an increase of about 91%. The increased enrolment rates were also proportional to a significant increase in premiums during the same period (Table 7).

Scale-up pitfalls and mitigation efforts
Analysis of scale-up reports indicated some pitfalls in scaling up the CHF iliyoboreshwa as follows (1) Getting CHF members to sustain the scheme (2) Uneven intensity of scaled up activities across regions, districts and local geographic areas with the district's (3) Basing too much on top-down scale-up strategies and leaving local

Table 6 Enrolments, premium collected, funds paid to health facilities, and amount remaining to run the *i*CHF scheme

Region	2018 NBS projections*	Target population (discounted by 10%)	HH size	HH population	Enrolment		Premium collected		Amount paid to providers		Amount remaining for scheme administrative processes	
					Number	%	Amount (TZS)	%	Amount (TZS)	%	Amount (TZS)	%
Dodoma	2,492,989	2,243,690	4.7	481,479	82,246	17.1	2,523,516,000	11.4	2,132,046,092	0.16	391,469,908	4.58
Shinyanga	1,993,589	1,794,230	5.9	304,107	53,513	17.6	1,472,153,708	6.6	1,057,933,862	7.76	414,219,846	4.85
Morogoro	2,799,260	2,519,334	4.7	536,029	54,691	10.2	1,729,347,165	7.8	1,114,707,860	8.18	614,639,305	7.20
Pwani	1,295,267	1,165,740	4.4	264,941	18,5	7.0	525,600,333	2.4	306,690,347	2.25	218,909,986	2.56
Tabora	2,870,522	2,583,470	6.0	430,578	19,321	4.5	569,497,000	2.6	276,576,953	2.03	292,920,047	3.43
Mwanza	3,532,378	3,179,140	5.7	557,744	32,298	5.8	928,670,000	4.2	743,140,045	5.45	185,529,955	2.17
Ruvuma	1,579,811	1,421,830	4.5	315,962	19,397	6.1	635,110,000	2.9	322,133,770	2.36	312,976,230	3.66
Mbeya	2,070,412	1,863,371	4.3	433,342	26,064	6.0	752,031,501	3.4	609,792,290	4.48	142,239,211	1.67
Njombe	803,299	722,969	4.1	176,334	16,039	9.1	475,860,000	2.1	296,300,055	2.17	179,559,945	2.10
Geita	2,434,800	2,191,320	7.5	292,167	16,591	5.7	530,160,000	2.4	344,680,976	2.53	185,479,024	2.17
Rukwa	1,270,050	1,143,045	5.0	228,609	8,457	3.7	280,670,000	1.3	375,225,512	2.75	-94,555,512	-1.11
Manyara	1,750,864	1,575,778	5.2	303,034	28,1	9.3	870,384,000	3.9	417,868,026	3.07	452,515,974	5.30
Tanga	2,337,053	2,103,348	4.7	447,521	15,021	3.4	459,009,000	2.1	314,096,436	2.31	144,912,564	1.70
Arusha	1,999,907	1,799,916	4.5	399,981	21,562	5.4	658,962,951	3.0	459,035,473	3.37	199,927,478	2.34
Singida	1,612,854	1,451,569	5.3	273,881	14,443	5.3	599,100,000	2.7	300,345,100	2.20	298,754,900	3.50
Mara	2,209,143	1,988,229	5.6	355,041	11,249	3.2	326,900,000	1.5	202,126,658	1.48	124,773,342	1.46
Lindi	983,738	885,364	3.8	232,991	13,915	6.0	458,320,000	2.1	216,511,057	1.59	241,808,943	2.83
Mtwara	1,983,947	1,785,552	3.7	482,582	12,168	2.5	437,980,000	2.0	217,672,977	1.60	220,307,023	10.52
Iringa	1,095,172	985,655	4.2	234,68	21,255	9.1	732,400,000	3.3	385,270,671	2.83	347,129,329	4.06
Kagera	3,022,037	2,719,833	4.7	578,688	31,714	5.5	910,990,000	4.1	692,960,655	5.09	218,029,345	2.55
Katavi	738,237	664,413	5.6	118,645	17,733	14.9	587,550,000	2.7	257,182,909	1.89	330,367,091	3.87
Kigoma	2,616,200	2,354,580	5.7	413,084	23,094	5.6	696,400,000	3.1	370,344,121	2.72	326,055,879	3.82
Kilimanjao	1,864,329	1,677,896	4.3	390,208	25,535	6.5	802,336,000	3.6	416,738,952	3.06	385,597,048	4.51
Dar es Salaam	6,042,183	5,437,965	4.0	1,359,491	36,34	2.7	3,436,388,000	15.5	1,342,110,550	9.85	2,094,277,450	24.52
Simiyu	2,418,495	2,176,646	6.9	315,456	13,445	4.3	385,990,000	1.7	233,079,789	1.71	152,910,211	1.79
Songwe	1,202,419	1,082,177	3.7	292,48	12,092	4.1	381,420,000	1.7	219,943,998	1.61	161,476,002	1.89
Total	**55,018,955**	**49,517,060**		**10,219,055**	**644,783**	**6.3**	**22,166,745,658**	**100**	**13,624,515,134**	**100**	**8,542,230,524**	**100**

Table 7 Enrolment coverage of *i*CHF and premium from July 2018 – June 2019 and July 2019 – June 2020

Variable	Log (mean)	Transformed mean	Mean difference (log)	T-value	*p*-value
Coverage					
Coverage 2018–2019	6.34	565	2.45	5.30	< 0.001
Coverage 2019–2020	8.6	6370			
Premium					
Premium 2018–2019	16.65	16,951,249	2.51	5.54	< 0.001
Premium 2019–2020	19.13	202,378,912			

innovations and power of the local actors (such as CSO and cultural groups) (4) Failure to address adequately the contextual factors hence making it difficult to scale-up the program uniformly (the same speed) across contexts (5) Financial constraints and difficulty to estimate the cost effectiveness of the scale-up across context (6) Lack of proper coordination of stakeholders (7) Lack of embedding a systematic implementation research to follow up implementation successes and pitfalls. The scale-up pitfalls that were identified were documented and a plan was set to address if feasible.

Discussion

The fact that countries need to invest in their health systems to move to UHC cannot be overemphasised. However, the path to UHC is not straightforward and requires deliberate efforts to reform the health financing system. Voluntary health insurance schemes represent one of the health financing mechanisms that when taken into scale can act as interim solutions towards UHC as it paves the way to mandatory (social) health insurance schemes. The evolution of the CHF in Tanzania portrays a stride forward to strengthening the health financing systems with the aim of reaching everyone with quality health services without suffering catastrophic expenditures. Piloting and combining the four CHF models to develop one model: the improved CHF (*i*CHF), that was taken to scale in all regions in the country, paves the way to the current ongoing initiatives to reform the health insurance system in the country [43]. Tanzania is in the process of developing Universal Health Insurance act with the objective of making sure that every individual and households is mandatorily enrolling in health insurance and has access to standard minimum benefit package. Rolling out i *i*CHF is a necessary step towards this broad objective of strengthening health insurance system.

The initial steps in the scale-up process that saw the development of the scale-up plan and strategies were critical to the acceptability and subsequent scale-up activities. Scale-up activities across the regions gained momentum from time to time as a result of the solid foundations emanating from the initial steps. Experiences on scale-up of public health interventions elsewhere emphasize on planning the scale-up in order to maximize gains in the course of scaling up the intervention [7, 8, 10, 59, 60].

Rolling out a new or modified public health intervention is not easy, specifically so if the intervention is a voluntary health insurance scheme. Community health insurance schemes, such as the CHF, have chronically suffered from low enrolments and operational challenges that have hampered their developments across different contexts [61–66]. Scale-up activities that include extensive sales forces in the media outlets and community-based campaigns may have led to the gains in the scheme scale-up.

The observed variation in CHF performance across regions might have been caused by inequity in advocacy, social marketing and political will of the leaders. The local innovations on social marketing and enrolment strategies, though not a strategy that was explicitly considered as an important approach in the scale-up strategy, may also be the cause of the observed variations. The observations after this analysis is in line with initial studies on the CHF iliyoboreshwa which reported the influence of contextual factors in explaining the variation in performance across contexts [29, 30].

The scaled up *i*CHF that comes with a purchaser-provider split, may have been received by some resistance by the health facilities, as in the old scheme they used to manage the funds but also provide services to the clients [29]. Now that they have to claim payment from the purchaser of the services (the *i*CHF under the regional secretariate) after they provide, it may take more time to get used to the new norm. Health care workers may show little interest to provide service to *i*CHF members as a result of difficulties that arise in filling the claims forms and other related documents. There is a litany of evidence on successful change and resistance to change after introduction of a new intervention, specifically so in scale-up of public health interventions [29, 50, 67]. Moreover, the PPS have been practiced to create competition and other incentive structures and have been linked with improvements in service delivery, such as improved cost containment, greater efficiency, organizational flexibility, better quality and improved responsiveness of services to patient needs [67, 68].

The fact that the current purchaser-spilt model is still semi-spilt, because both the regions and the *i*CHF are

under the PORALG, may be facilitative or inhibitive to the *i*CHF performance. On one hand, in the case where the *i*CHF is not performing well because the regional leadership is weak, the appointing authority at the PORLG may decide to change the regional leadership in the process of improving performance in the scheme. On the other hand, the semi spilt model may not present the best when it comes to competition and improving the quality of care since there are no clear formal contractual arrangements between the *i*CHF and the health facilities because they all belong to the same owner who could be lenient to solve disputes between the parties. The complete split model where the CHF is autonomous or under another institution, such as the pilot implemented by PharmAcess in Kilimanjaro and Manyara regions where the *i*CHF was under the National Health insurance Fund (NHIF), which is also a government institution but under the Ministry of Health, could have a brought a different picture in performance of the CHF iliyoboreshwa. The contexts that lead to the semi-spilt model may be particular to the context of scaling up while planning for further sustainability (complete split model) of the scheme, as context is everything in the process of scaling up complex interventions [9, 50].

The finding that there was variation in enrolment and financial pool across regions may be linked also to efforts and strategies set to motivate and retain enrolment officers in the scheme [30]. Motivating enrolment officers may entail more the 10% commission they receive for all enrolments, but could include refresher trainings. Furthermore, modifying the environment to facilitate enrolment such as introduction of an enrolment kiosk or agency that deals with mobile money services in respective areas may motivate and retain enrolment officers in the scheme. Furthermore, providing clear job descriptions and contract to enrolling officers and other frontline actors may add value to scaling up the scheme. Such approaches could boost enrolment rates and hence improve both risk and financial pooling. Innovative approaches that motivate frontline actors in enrolment and service provision may help to expand the scheme to the needy population [69].

The increasing number of health facility visits among members observed in this study may mean that there is moral hazard. However, this may be a temporary phenomenon as clients would like to confirm what is promoted in campaigns that the situation in health facilities has changed and medicines are available all the time to the members. Providing a comprehensive insurance education among community members can help address moral hazards [70]. Furthermore, the previous experiences with the CHF that saw clients complaining on the benefit package could have prompted new enrolments as there are aspirations that the *i*CHF has been improved to address what was missing in the old CHF [29, 55, 64, 66].

The fact that the scale-up of the *i*CHF follows the existing hierarchy of regional and LGAs administrative and management structures, may have contributed to lower the scale-up costs. Apart from costs of scaling up the scheme, other challenges observed by our team have been observed in other scale-up endeavours elsewhere [9, 12]. Future efforts to strengthen and sustain the scaled-up program should focus on addressing the observed pitfalls while also embedding formative implementation research to guide future developments.

The strengths the current scale-up effort come with include; (1) the scale-up process built up from successes and challenges of multiple pilot models implemented by different partners (2) the scale-up process follows clear steps as stipulated in the ExpandNet framework (3) Use of a multi-level perspectives that capitalizes on existing structures in the regional and LGAs (4) paying attention to context in the process of a step by step scale-up strategy while having a close look at sustainability as the scheme grows.

The fact that in this analysis we focused on producing a narrative analysis based on literature and document review (mainly programmatic reports and strategies), our conclusions may have some deficiencies specifically so on the successes and challenges of the scale-up processes and outcomes of the scaled-up scheme. As this an initial attempt to document the scale-up process of this complex health financing intervention, the successes and challenges could further be explored in the directions of examining the cost effectiveness of the scheme scale-up process, the causal links between scheme implementation and access to health services, health outcomes and reduction of catastrophic expenditures among the enrolled population and beyond.

Conclusion

This paper underscores the lessons and challenges of scaling up a voluntary health insurance scheme in the health system of poor resourced settings. Sustaining the scale-upscale-up will require addressing the challenges, thus mobilizing more funds, increasing the intensity of sales forces, while also taking into consideration equity and bottom-up innovations. Scale-up requires concerted efforts that require multiple actions and substantial support from stakeholders (development partners and the private sector) and governments in doing so.

Abbreviations

CHF	Community Health Fund
CHSB	Council Health Service Board
SNHI	Single national Health insurance
CSO	Civil society organisation
HPSS	Health Promotion and System Strengthening Project
IMIS	Insurance Management Information System

MOH	Ministry of Health
UHC	Universal Health Coverage
NHF	National Health Insurance Fund
PORALG	President's Office Regional Administration and Local Government
UHI	Universal Health Insurance
WHO	World Health Organisation

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Author contributions
NAK, JTK and AKA designed the study, NAK, BM, and JTK collected the data, NAK, GR, SK, IM and AKA analysed the data, NAK and AKA prepared the manuscript. GM, HM and AKE critically reviewed the manuscript in relation to field experience: NAK and AKA edited the final document. All authors read and approved the final manuscript.

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Data availability
All data underlying the findings are fully available without restriction from the corresponding author of this study.

Declarations

Ethics approval and consent to participate
Ethical approval was not required as we analyzed de-identified publicly available data.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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