



Living Goods Uganda
A community health service leveraging
mobile technology



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ABBREVIATIONS

CHW	Community health worker
DHIS2	District health information system
DOB	Date of birth
EDD	Estimated date of delivery
KPI	Key performance indicator
MNCH	Maternal and newborn child health
MoH	Ministry of health
M&E	Monitoring and evaluation
SMS	Short message service



Executive summary

Living Goods Uganda deploys a network of door-to-door Community Health Workers (CHWs), 92 per cent of whom are women, who are responsible for guiding families towards improved health and wellbeing. They do this by counselling families on appropriate health and nutrition practices, providing disease diagnosis, some treatment services and selling life-enhancing products to the families they visit. These products include medicines and other health products, fortified foods and supplements, water filters, clean cook stoves and solar lights. In this way, Living Goods contributes to lowering child mortality as the products and health information provided address the health issues underlying 70 per cent of child deaths.

Three key elements drive the success of the Living Goods business model:

- CHWs are paid for their performance, earning a margin of what they sell as well as monetary incentives linked to Key Performance Indicators (KPIs);
- CHWs are trusted community members, positioned as the first port of call when customers are in need of accurate diagnosis and quality medicines;
- CHWs are empowered through smartphone apps that support them in performing their daily responsibilities.

The primary app, the SmartHealth App, allows CHWs to register members of a household, record relevant health information and manage their workload scheduling, ensuring timely follow-ups with each

household. The app also guides CHWs through customer health assessments, helping them to accurately identify and diagnose child illnesses and at-risk pregnancies. A second app² provides CHWs with a product catalogue and reference material to help drive sales and improve their support to customers.

In parallel to the CHW support apps, Living Goods provides its customers with life-saving maternal and newborn child health (MNCH) information delivered via Short Message Service (SMS) for free. The SMSs are scheduled according to the customer's estimated date of delivery (EDD) or their child's date of birth (DOB) to ensure timeliness and relevance of the content.

Since 2015, GSMA has partnered with Living Goods under the mNutrition Initiative, funded by UK aid (the UK Department for International Development, DFID). Through collaborative efforts with the Uganda Ministry of Health (MoH) a set of digital nutrition content was developed, validated and integrated into the Living Goods service as a compliment to existing MNCH messaging. The nutrition content has been included in both the SmartHealth App and the Living Goods SMS service (re-launched in 2017). The GSMA also provided service diagnostics and consultancy to identify opportunities to further enhance the customer experience of the mobile channels used by Living Goods. In addition, the GSMA provided monitoring and evaluation (M&E) support to investigate the pathway towards nutritional outcomes, e.g. improved nutrition knowledge and practices among Living Goods customers. This case study highlights the key learnings from GSMA's three year engagement with Living Goods Uganda.

1. Living Goods operates directly in Uganda and Kenya.

2. The second app is currently being trialled with CHWs in two districts.

Key findings

- **Living Goods has created a sustainable platform for community health services driven by motivated and performance driven CHWs.** The Living Goods model generates retail revenues that recover 100 per cent of the product and distribution costs as well as provides motivating incomes for the CHWs. Living Goods CHWs also earn incentives, linked to health and sales based KPIs, which drives CHW work ethic and improves the quality of the service they provide.
- **Living Goods users demonstrated improved nutrition behaviours over non-users across all topics tested.** The most notable improvement was around exclusive breastfeeding rates. Eighty-two per cent of users who had a consultation with a CHW and received SMSs on this topic report to be exclusively breastfeeding their babies - a 32 percentage point improvement over non-users of whom only 50 per cent report to be implementing this practice. Almost all Living Goods users reported to initiate breastfeeding within the first hour of birth in comparison to only 88 per cent of non-users.
- **Repetition of messages on key nutrition practices reinforces the behaviour among users.** Providing four messages on exclusive breastfeeding as opposed to just two, over a four-week period, increased adherence to this practice by eight percentage points. Eighty-four per cent of users who received four SMSs reported to be exclusively breastfeeding their babies as opposed to only 76 per cent of users who only received two SMSs on exclusive breastfeeding.
- **The combined approach of mobile messaging and CHW consultations has greater impact on nutrition knowledge and behaviours among users than either on its own.** Only 61 per cent of non-users could correctly recall the practice of exclusive breastfeeding. Users who had only had a consultation with a CHW on this topic demonstrated a 13 percentage point improvement in knowledge over non-users. Similarly, users who had only received SMSs on exclusive breastfeeding demonstrated an 18 percentage point improvement in knowledge over non-users.

Knowledge levels on exclusive breastfeeding were highest among users who had both received SMSs and had a consultation with a CHW on exclusive breastfeeding – 92 per cent of this user segment correctly recalled knowledge on the topic. Similar improvements were observed for nutrition behaviours. This demonstrates the complementarity of mobile messaging and in person consultations and how together they can drive greater health outcomes among users.

- **The mobile messaging service improves knowledge, even when existing knowledge around certain nutrition topics is reasonably high.** Existing knowledge around early initiation of breastfeeding was reasonably high, with credit to existing government breastfeeding education efforts. Ninety per cent of non-users correctly recalled that breastfeeding should be initiated within one hour of birth. Ninety-seven per cent of users who had only received SMSs on early initiation of breastfeeding were able to correctly recall knowledge on this practice, proving that mobile messaging can help close the existing knowledge gap.
- **CHWs can play a key role in educating their customers on the SMS service.** CHWs are trusted community members. CHWs are trusted community members and with appropriate training, they can share information about the SMS service during their household visits. CHWs are often mothers themselves who already are experiencing the value of the SMS service first hand, with the potential to become true champions of the service.
- **Strengthening the capacity of CHWs through mobile tools is key to achieving results.** The performance and success of Living Goods relies greatly on the capacity of CHWs to manage their tasks, communicate clearly with customers, as well as remain highly motivated. As CHWs are trained to use the apps on their phones throughout their work, the quality of their efforts is not only monitored remotely, but can be improved with time.

- **Ensuring action ability of content is essential.** When user testing messages promoting the consumption of high quality animal proteins (including meat), all 12 user research participants named access and cost of high quality animal protein as the main barriers for acting on the message. To overcome this common challenge, Living Goods always offers alternative, cheaper and locally available sources, e.g. in the Ugandan context - silver fish and legumes.
- **Ensuring messages are understood by target customers is critical.** Whilst some of the interviewed users were able to read the messages in English, they could not always comprehend the meaning of the content or describe the call to action. At the same time the ability to comprehend

the same messages, translated in Luganda, was much higher. Users who received Luganda messages had improved nutrition knowledge over users who received English messages – by 18 percentage points. Eighty-eight per cent of users who received SMSs on exclusive breastfeeding in Luganda could correctly recall the practice as opposed to only 70 per cent of those who received SMSs in English. This highlights the need for translation of content into local languages.

- **Branch based marketing could improve the credibility of CHWs within local communities.** When CHWs wear branded clothing, they are perceived to be legitimate agents of a known organisation. Branch events have the added benefit of building morale among CHWs.



Introduction

Living Goods trains and deploys a network of community health workers (CHWs), who work as independent agents within their communities. Through its CHWs, Living Goods is providing door-to-door community health services. This includes diagnosis and treatment of childhood diseases, pregnancy and new born check-ups, family education on appropriate health and nutrition practices, and detection and referral of acute health cases to qualified facilities.

Additionally, Living Goods CHWs sell health products to households at affordable prices, saving families the time and cost of travelling to clinics or shops. The range of products includes test kits and medicines for childhood disease diagnosis and treatment,³ family planning⁴ and nutrition⁵ products as well as high efficiency cook stoves, solar powered lights, water filters and reusable pads.

After CHWs are recruited, they receive training and an inventory loan⁶ for the Living Goods 'business-in-a-bag,' which includes essential products as well as branded uniform, visual referral guides and teaching tools,⁷ a thermometer and a Mid-Upper Arm Circumference (MUAC) tape. In order to implement the model at scale, Living Goods provides every CHW with an android phone equipped with a mHealth app to help them provide quality care for their customers and manage their workload more effectively. Living Goods sends free content via SMS directly to customers to reinforce the health and nutrition education efforts of the CHWs.

Each Living Goods CHW serves approximately 100-150 homes. As of January 2018, Living Goods Uganda has more than 2,300 CHWs providing services to over 400,000 families. To date, efforts have been focused largely in Central and Eastern Uganda both in rural and peri-urban communities.

FIGURE 1



A Living Goods CHW re-stocking her product inventory at one of the Living Goods branches.

3. These include malaria diagnostics tests and medication, oral rehydrate solution and zinc for the treatment of diarrhoea, antibiotics to treat pneumonia and de-worming pills.
4. These include oral contraceptives, condoms, safe or 'clean' delivery kits, prenatal vitamins and baby caps.
5. Such as fortified porridges (millet, soya/maize), vitamin A and iron folate.
6. The loan covers the cost of the stock-on-hand that allows CHWs to start making sales without the need for cash to buy goods first.
7. Flip books, approved by Ministry of Health, that convey key health messages via easy-to-understand illustrations with local language translations.

Country context

Despite government efforts, access to maternal and child healthcare remains low. This is mainly due to long distances to health facilities, especially in rural areas, accounting for 84 per cent of the Ugandan population.⁸ This infrastructure challenge paired with a shortage in skilled medical staff⁹ has led to the fact that one in four births in Uganda is not attended by a skilled provider.¹⁰ As a result, maternal and child mortality rates remain high: for every 100,000 live births in Uganda, there are 343 maternal deaths and for every 1,000 live births, 64 children under-five die (see Table 1).¹¹

Poor nutrition is a key factor in deaths arising from diarrhoea, malaria and pneumonia for children, and

anaemia for pregnant women. In Uganda, 29 per cent of children under-five are considered to be stunted.¹² Stunting is greater among children in rural areas (30 per cent) than urban areas (24 per cent) in Uganda.

There are several government-endorsed action plans and policies that seek to address the country's nutrition issues.¹³ Private tech players have entered the space experimenting with business models that can offer nutrition and health support in the context of poor infrastructure.

TABLE 1

Uganda maternal and child health indicators, 2016



8. World Bank, 2016.
 9. In Uganda there are roughly 12 doctors for every 100,000 people. African Health Observatory, World Health Organization, "Uganda: Factsheets of Health Statistics 2016".
 10. The probability of dying between birth and the fifth birthday. Skilled provider includes doctor, nurse/ midwife, and medical assistant/ clinical officer. Uganda Demographic and Health Survey 2016
 11. Uganda Demographic and Health Survey 2016
 12. A child who is below -2 standard deviations (SD) from the reference median for height-for-age is considered short for his or her age, or stunted - a condition that reflects the cumulative effect of chronic malnutrition; Uganda Demographic and Health Survey 2016
 13. Uganda Nutrition Action Plan 2011-2016, Nutrition Advocacy Communication strategy for UNAP and the 1,000 days window.

There are approximately 18.5 million unique mobile subscribers in Uganda and network coverage is estimated at 80 per cent.¹⁴ With phone access rates exceeding 75 per cent among rural and female

populations (see Table 2),¹⁵ mobile is well positioned to be leveraged for extending healthcare to underserved communities in Uganda.

TABLE 2

Mobile phone ownership and access rates in Uganda, 2016

	General population	Urban	Rural	Male	Female
Mobile phone ownership	51%	72%	44%	60%	43%
Access to a mobile phone	78%	89%	75%	80%	76%

The use of mobile to bridge the gap in access to healthcare services and information is already being explored extensively in Uganda. Data from the GSMA mHealth deployment tracker currently lists 53 mHealth services in Uganda,¹⁶ of which the majority are donor funded. The most notable services are:

- **Community Health Management System (CHMS):** With support from the United Nations Children's Fund (UNICEF), CHMS is the MoH approved application that provides frontline health workers with patient registration and case management, tools, under the National Health Records Program (NHRP). The Uganda MoH expects all new mHealth programmes to align to and support the NHRP and CHMS.
- **mTrac:** This SMS service tracks the stock of essential medicines at health facilities. Launched by the MoH with support from UNICEF and the

Foundation for Innovative New Diagnostics (FIND), mTrac allows health facility workers to send stock take reports by SMS. This reduces stock-outs at facilities and improves transparency and accountability for the drugs.

- **WhatsApp Doc** is a private sector led service owned by The Medical Concierge Group (TMCG) that gives mobile users 24-hour access to a medical professional¹⁷ through WhatsApp. In addition to text, users can provide image, video and audio information.

Living Goods is another example of an mHealth service delivering impact, whilst also operating a sustainable business model. The Uganda MoH has endorsed Living Goods as well as approved the MNCH and nutrition content used within the CHW mHealth apps and the SMS service targeted at end customers.

14. Based on the network coverage of MTN (80 per cent), the largest mobile operator in Uganda; GSMAi, Q4 2016.
 15. Financial Inclusion Insights (FII), 2016, Data Finder.
 16. GSMA mHealth deployment tracker.
 17. A doctor or pharmacist.

Service design

Living Goods uses mobile to improve health service and information delivery by offering a digital channel for frontline workers – e.g. mHealth apps embedded

on CHWs' smartphones. Another mobile channel is targeting end customers through a free SMS information service.

Living Goods apps for community health workers

There are two apps available to CHWs. The first app, the 'Living Goods SmartHealth App', was developed and scaled across the entire CHW network in 2015. The app has three core components:

- 1. Household registration:** Allows the CHW to register all members within a household, record important health and nutrition information related to each family member, document details about births and capture relevant mobile numbers.¹⁸
- 2. Health, pregnancy, and nutrition assessments and counselling:** Guides the CHW through counselling sessions with the family. It also helps CHW to accurately identify and diagnose child illnesses and at-risk pregnancies and take appropriate action.¹⁹
- 3. Workload scheduling:** An appointment scheduling feature prompts CHWs to follow up with specific members of their community and provide appropriate health support.

All data captured by CHWs in the app is aggregated and visualised on the Living Goods dashboard, allowing the branch teams to monitor results against health and sales targets in real time. CHW health related key performance indicators (KPIs) include: number of pregnancies registered, newborn visits completed, under-one and under-five assessments and timely treatment follow-ups completed.



In 2017 Living Goods, with support from the GSMA, developed a second mobile app, the 'CHW Community App'. The primary objective of the CHW Community App is to help the CHWs boost their sales and become more independent. There are three key features in the app:



¹⁸ If no members of the household own a mobile phone, the CHW records the mobile number of a nearby relative or friend that the family will have access to.

¹⁹ The system flags acute cases for immediate referral to a qualified facility. CHWs follow up with referrals within 24 hours to ensure the patients received proper care and are fully recovered.

1. Upcoming events notifications: CHWs receive notifications for upcoming training sessions, community outreach events, and re-stocking opportunities, with the hypothesis that increased awareness of such events will result in increased CHW participation.
2. Product catalogue: The catalogue increases CHWs' access to essential information such as product prices and images. This feature is particularly favoured by the CHWs as it allows them to show customers the images of items available for order/ purchase such as cook stoves and solar lamps, which are physically difficult for CHWs to carry around. Product savings calculators allow CHWs to estimate the cost savings these products would bring to their customers over time.

3. Frequently asked questions (FAQ) section: Enables CHWs to formulate quicker responses to typical customer queries and provide a better service experience.

The CHW Community App was rolled out among Living Goods CHWs in Masaka and Masaja Living Goods branches in July 2017.

Medic Mobile is the technical vendor responsible for the development, user-testing and maintenance of the Living Goods SmartHealth App and dashboard, where the CHW Community App was developed with an alternative partner.

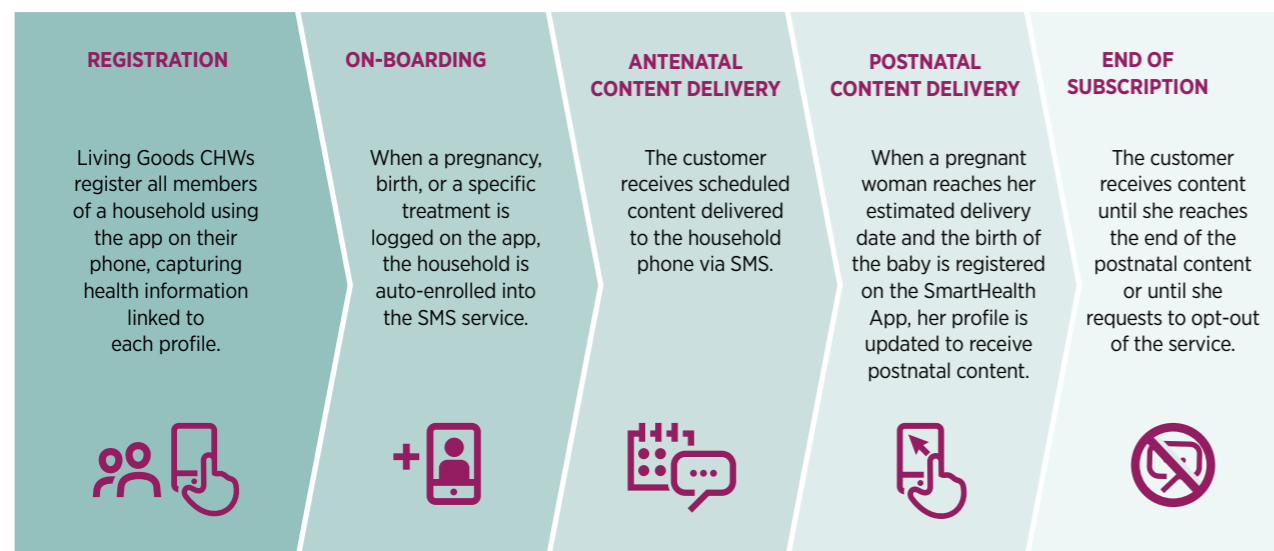
Living Goods SMS service

Once a CHW registers a pregnancy or a newborn baby via the SmartHealth App, the household is automatically subscribed to receive SMS messages according to the woman's EDD, or the baby's DOB. The SMS service provides stage-based messages around

pregnancy, maternal and new born child health (MNCH) and nutrition. Where treatment has been provided in the household for either malaria, diarrhoea or pneumonia, this household receives a set of messages to remind them to take their medication (see Figure 2).

FIGURE 2

The Living Goods SMS service customer journey



User experience research on the SMS service undertaken by the GSMA and frog design revealed key insights along the customer journey:

- **Auto-enrolment of registered Living Goods customers enables greater SMS service uptake.** Essential information about Living Goods customers such as their mobile number, a woman's EDD, or their baby's DOB is already available in the Living Goods platform allowing SMS content to be scheduled appropriately. This seamless auto-enrolment of consenting users into the SMS service process avoids unnecessary complications typically encountered by users during self-registration processes. If users wish to opt out they can do so by contacting their CHW.
- **Educating users on the Living Goods short code and/or labelling the short code with the Living Goods name could improve SMS 'read' rate.** The occurrence of SMS spamming in Uganda is relatively high making it highly likely that mobile users will pay little or no attention to messages sent from an unknown numbers. Living Goods could therefore spend more effort on ensuring that

customers know the number used by Living Goods to send messages. Alternatively, labelling the shortcode with the Living Goods name will ensure that customers are able to easily identify and trust the messages.

"With that my phone, I receive so many messages including those I don't benefit from and I just delete them. Sometimes you get a message [from an unknown number] and ignore it."

- Rural user

- **In-house data analysis, regular quality assurance calls or check-ins with customers enable identification of user challenges or technical complications.** Analysis of message delivery logs revealed high rates of message delivery failures. In addition, when engaging with users it was found that a vast majority were not receiving post-natal messages. This revealed a technical issue related to the transferral of users from the pregnancy to post-natal content bundle. With this knowledge, Living Goods were able to solve the problem and enable successful delivery of messages.



Sustainability

As of January 2018, Living Goods has a network of more than 2,300 CHWs providing services to over 400,000 households. At the current rate of expansion, Living Goods is forecasted to reach 4,500 CHWs and 600,000 households by the end of 2018.

The Living Goods product sales model generates revenues that recover 100 per cent of the product costs, a retail margin that covers the income of the CHWs and a wholesale margin that covers most of the product distribution costs. Supplementary donor funding covers the remaining operating costs, as well as the costs of the mobile-based service components: support apps embedded on the CHWs' smartphones and an additional mobile channel targeting end customers through a free SMS information service.

Living Goods sees the mobile channels as a viable investment because they improve the quality of the service it provides whilst also streamlining operations by increasing efficiency and reducing costs:

- 1. Mobile saves time and reduces the cost of managing service delivery at scale.** By replacing paper-based data capturing and collection processes, mobile reduced the resource requirements to collect, digitise, clean and analyse the data, in turn reducing data management overheads.
- 2. Mobile tools improve the quality and consistency of care provided by the Living Goods service.** Improvements occur on three fronts:

- Guided counselling and diagnostic tools in the SmartHealth App ensure consistency of care and treatments and accuracy of diagnosis;
- Improved data visibility and service monitoring through a real-time dashboard enable timely decision making and improved performance management of both CHWs and branch teams; and
- Communication of vital health and nutrition information directly to customers improves their knowledge and behaviours. In comparison to non-users, exclusive breastfeeding knowledge and behaviours increased by 18 and 23 percentage points respectively among Living Goods SMS service users.²⁰

- 3. Mobile strengthens the product sales workflow.** Tools embedded in the CHW Community App, such as the product catalogue, cost-savings calculator and the FAQ section, support CHWs in their product sales efforts.

These improvements, which are made possible by the implementation of digital tools, contribute to achieving greater health outcomes, strengthening the value proposition of the Living Goods service to the Ugandan MoH. Mobile-enabled data collection in particular is already benefitting the government. At present, Living Goods share quarterly aggregated district-level health data, aligned with existing government health

data requirements, with the MoH. Living Goods is also engaged in discussions with the eHealth Technical Working Group and the MoH on improved integration with the District Health Information System (DHIS2) and greater adoption of the Living Goods model by the MoH. Integration with the health system could improve how referrals to health facilities are tracked and how appointments are scheduled.

Partnership with the Living Goods service presents potential value for MNOs. As a preferred network provider to all Living Goods CHWs an MNO would ensure direct revenues from core services used by the growing CHW network.²¹ If CHWs make quarterly calls to each household, this could generate annual revenue of over UGX 720 million²² for MNOs. As Living Goods expands its operations, these benefits will become more significant.

In addition, the use of mobile money could further streamline operations, for example by allowing for timely and secure cash transfers between the CHWs, the end users and back-end Living Goods staff. By adopting mobile money, Living Goods could reduce cash handling costs. Potential use cases include CHWs paying Living Goods for re-stocking of goods via mobile money, thus allowing end users to pay CHWs digitally for big ticket purchases. As recognised community members with established business relationships, there can also be an opportunity for CHWs to further improve their income by becoming mobile money agents.



20. Improvements are for users who only received SMSs educating them on exclusive breastfeeding and had no consultation with CHWs on this topic.

21. An MNO could offer in-kind contributions, such as reduction of data bundle costs or mobile money transaction fees for CHWs, to secure them as customers on their network.

22. Roughly \$201,600; estimate based on call durations of one minute at a per minute call rate of UGX 300 and calls made to a total of 600,000 households by 4,500 CHWs.



Spotlight

Savings for Living Goods customers

Although public healthcare is free in Uganda, there are many embedded costs in actually accessing this care, including the cost of transport to get to health facilities. As Living Goods provides customers with healthcare at their doorstep, it saves customers the money and time required to travel to the clinic. With this approach, Living Goods reaches those who may not have been able to afford the trip to the nearest clinic or hospital. The convenience and cost saving for customers means that they are more willing to pay the reasonable prices for the quality health products and medications that Living Goods CHWs sell.

"I started giving my child [the Living Goods] Healthy Start (fortified porridge) about a year ago. It makes a big difference, she now looks much healthier, and her skin has a healthy glow. She was always sickly and weak when I gave her normal porridge."

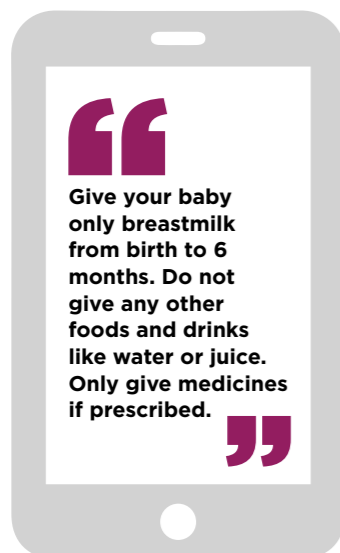
– Rural user

Early detection and treatment of the three main diseases that lead to child mortality (malaria, diarrhoea and pneumonia) also happens at the doorstep, saving families time and money, while helping them treat and manage the diseases and most importantly, save their child's life. Living Goods CHWs do not replace health workers, but rather provide supplementary and basic health services, relieving the burden on the health system and increasing access to health services for isolated communities. In any serious circumstance, CHWs are trained to refer patients to the local clinics.



Content

The Living Goods SMS service content is purposed to provide customers with nutrition and health information that they may not have known before, reinforcing customers' existing knowledge of appropriate health practices and correct or debunk existing myths. In some cases, traditional beliefs and cultural practices may discourage dietary practices that are in fact medically proven to be beneficial to the pregnant woman and the unborn baby. Often a message may help to provide clarity and overcome the confusion caused by inaccurate and/or conflicting advice.



The MNCH content embedded in the original Living Goods SMS service covered pregnancy,²³ newborn care,²⁴ Water and Sanitation for Health (WASH)

practices, family planning, and care for children up until the age of 18 months.²⁵

The nutrition content was developed by GSMA and a consortium of partners led by the Centre for Agriculture and Bioscience International (CABI), in partnership with the International Livestock Research Institute (ILRI).²⁶ The digital content was developed locally, translated into four local languages,²⁷ user tested and validated by the MoH. The nutrition messages integrated into the Living Goods SMS service complemented already existing MNCH messages. New nutrition content covered advice for pregnant women, appropriate breastfeeding practices²⁸ and advice for feeding and vitamin and nutrient supplementation for young children up until the age of 18 months.²⁹

User experience research conducted by frog and GSMA revealed key learnings related to content:

- **Content needs to be actionable.** Some messages delivered through the service focused on promoting the consumption of high quality animal proteins, notably meat. However, many people in rural areas of Uganda struggle to access meat due to availability and cost constraints. All 12 user research participants named access to high quality animal proteins as the main barrier for adherence to this message. To overcome this challenge, messages should always offer alternative, cheaper and locally available sources, e.g. in the context of Uganda - silver fish and legumes.

- **Content needs to be understandable by target users, it is important to use relevant terminology and language.** Whilst some of the interviewed users were able to read messages in English, they could not always comprehend the meaning of the content or describe the call to action. Phone surveys revealed that one out of five users had trouble understanding the messages. At the same time their ability to comprehend the same messages, translated in Luganda was much higher.

As the exact match of terminology may not exist in two languages, user testing to find appropriate phrasing for translation is advised.

"If they could also send translated messages in the different local languages because we are many here in Uganda. So if they could translate their messages it would be good."

- Urban user



23. Reminders for antenatal care visits and education around pregnancy danger signs.

24. Importance of skin-to-skin and umbilical cord care.

25. Vaccination reminders, deworming and identification childhood diseases like pneumonia.

26. The Medical Concierge Group was contracted to develop the messages and test and review them in collaboration with a content working group that included the MoH, UNICEF and Straight Talk foundation. Testing of messages was conducted in Kabale district, south of Uganda with final messages approved by and signed off by the MoH.

27. Luganda, Rukiga, Atesot, Langi. For further information on the nutrition content, or to get access to the content, please contact mobilehealth@gsma.com.

28. Early initiation of breastfeeding, exclusive breastfeeding for the first six months and continued breastfeeding up until two years of age.

29. Including education around complimentary feeding from six months old, appropriate vitamin intake and supplementation and malaria and diarrhoea danger signs.

Marketing

Since CHWs are at the centre of the Living Goods service, to date they have been the primary channel for promoting the service. This door-to-door marketing, complemented by customer referrals, has helped Living Goods reach over 300,000 families in Uganda since its launch in 2007.

In August 2017, the GSMA, together with Living Goods Uganda, commissioned a small scale pilot campaign

to explore alternative approaches for strengthening brand recognition for Living Goods, and enhancing household engagement with CHWs. The campaign included radio advertisements, as well as two branch-based events. Materials for the campaign included branded merchandise and banners, as well as an audio jingle used in the radio advertisements and played over megaphones during the community events.



CHWs at community based promotion event.

Key lessons on effective marketing strategies to support service uptake include:

- Branch based marketing could improve the credibility of CHWs within local communities.**
 When CHWs wear branded clothing, they are perceived to be legitimate agents of a known organisation. Branch events have the added benefit of building morale among CHWs.
- CHWs can play a key role in educating their customers on the SMS service.** Awareness of the SMS service amongst customers was low. Many customers were not able to recall receiving messages from Living Goods. CHWs are trusted community members and are therefore best positioned to influence the customers. With appropriate training, CHWs can share information about the SMS service during their household visits, educating customers on the value of the SMS service. This improves the chances that customers will read the messages and share the information with relevant members of the household (pregnant women and mothers specifically).

“This is what we have been wanting. Now people won’t just see us, they will see that we belong to a big organisation and they can believe us.”
 - Living Goods CHW, Masaka branch

FIGURE 3



Senior health officials from Masaka District sample and buy products from a CHW's display during the Masaka launch.

Improved nutrition outcomes

GSMA, together with Altai Consulting, conducted phone surveys with Living Goods users³⁰ and non-users³¹ to explore the extent to which the service improves nutrition knowledge and behaviours of its customers.



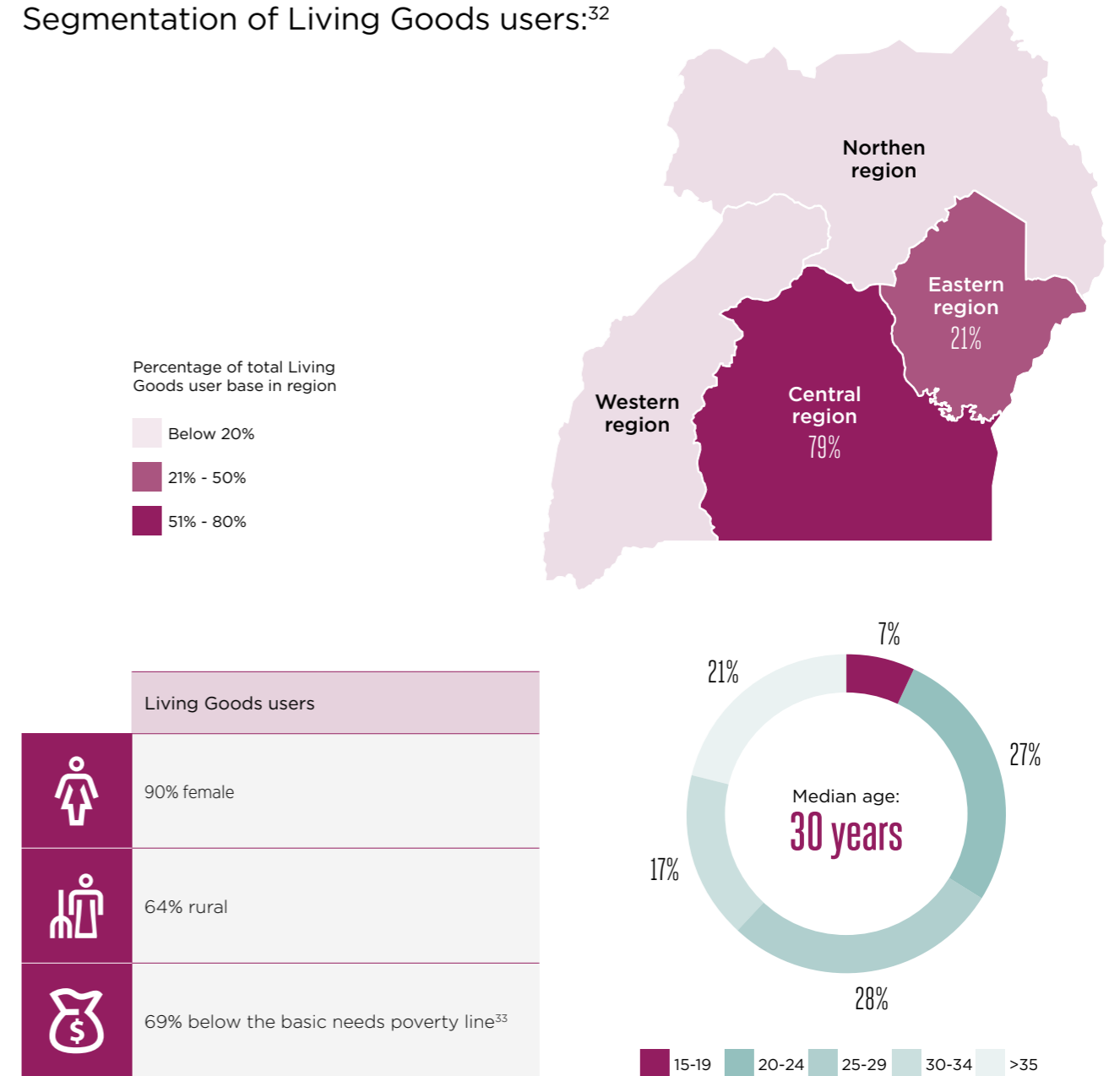
30. Users are customers who are confirmed to have received an SMS and/or have had a consultation with a CHW on the topics investigated in the survey.
 31. Non-users are customers who had only recently been registered on the Living Goods service and are confirmed to have not received an SMS or had a consultation with a CHW on the topics investigated in the survey.

Living Goods is driving improved nutrition outcomes among populations that need it most

Living Goods has a 90 per cent female user base. This is encouraging when considering that only 76 per cent of the female population in Uganda are reported to have access to a mobile phone. Approximately 69 per cent of users are living below the basic needs poverty line and 64 per cent of the user base resides in rural areas (see Figure 4).

FIGURE 4

Segmentation of Living Goods users:³²



32. Based on socio-demographic profiling of M&E user feedback survey participants.
 33. Poverty figures are estimated using the national basic needs poverty line of \$1.9 per adult per day or less.

Improving nutrition knowledge

User research revealed that there is a lack of information or knowledge around appropriate nutrition practices.

“I will insist on the issue of the lack of information, lack of sensitisation and not knowing what we need to do. When a mother is told to take the child to the hospital, she won’t be taught anything since the clinic has no time to teach her”
– Rural non-user

“We don’t know what we are supposed to do, our parents were ignorant and didn’t go to school. We got at least some knowledge from school but if our parents knew they could have taught us these practices.”
– Urban user

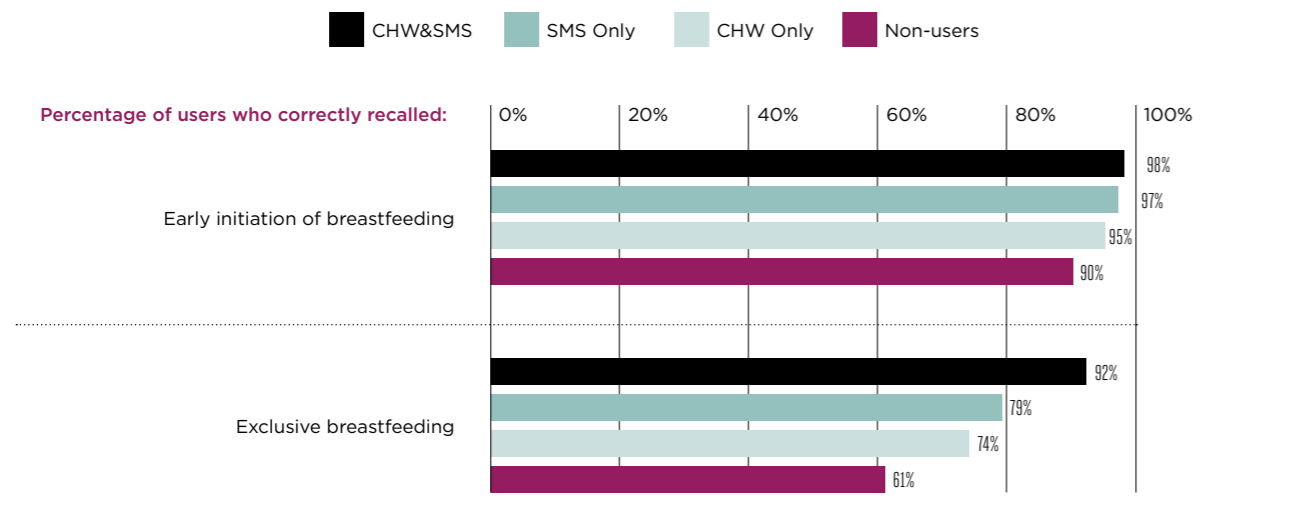
Evidence generated through M&E user feedback surveys suggests that the Living Goods service can help overcome this knowledge barrier:

- **The combined approach of mobile messaging and CHW consultations has greater impact on nutrition knowledge levels among users than either on its own.** Only 61 per cent of non-users could correctly recall the practice of exclusive breastfeeding. Users who had only had a consultation with a CHW on this topic demonstrated a 13 percentage point improvement in knowledge over non-users. Similarly, users who had only received SMSs on exclusive breastfeeding demonstrated an 18 percentage point improvement in knowledge over non-users. Knowledge levels on exclusive breastfeeding were highest among users who had both received SMSs and had a consultation with a CHW on exclusive breastfeeding – 92 per cent of this user segment correctly recalled knowledge on the topic (see Figure 5). This demonstrates the complementarity of mobile messaging and in person consultations and how together they can drive greater health outcomes among users.

- **The mobile messaging service improves knowledge, even when existing knowledge around certain nutrition topics is reasonably high.** Existing knowledge around early initiation of breastfeeding was reasonably high, with credit to existing government breastfeeding education efforts. Ninety per cent of non-users correctly recalled that breastfeeding should be initiated within one hour of birth. Ninety-seven per cent of users who had only received SMSs on early initiation of breastfeeding were able to correctly recall knowledge on this practice (see Figure 5), proving that mobile messaging can help close the existing knowledge gap.
- **Translation of SMSs into Luganda improved knowledge levels by 18 percentage points.** Eighty-eight per cent of users who received SMSs on exclusive breastfeeding in Luganda could correctly recall the practice as opposed to only 70 per cent of those who received SMSs in English. Higher knowledge levels due to improved message comprehension among users, when messages were translated into Luganda, highlights the need for translation of content into local languages.
- **Thirty-three per cent of users reported that all of the information they received through the service was new to them.** A further 40 per cent reported that some of the nutrition practices promoted by the service were new to them.

FIGURE 5

Breastfeeding knowledge levels for various user segments



Changing nutrition behaviours

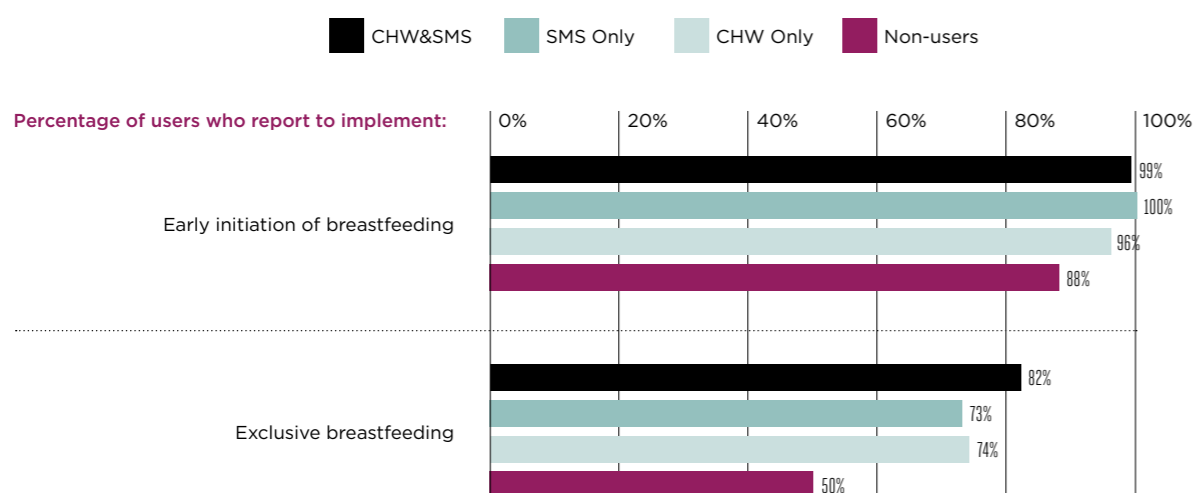
In addition to improved knowledge, Living Goods users are demonstrating improved nutrition practices over non-users:

- **Living Goods users demonstrated improved nutrition behaviours over non-users across all topics tested.**

The most notable improvement was around exclusive breastfeeding rates. Eighty-two per cent of users who had a consultation with a CHW and received SMSs on this topic report to be exclusively breastfeeding their babies over only 50 per cent of non-users – an improvement in behaviours of 32 percentage points. Almost all Living Goods users reported to initiate breastfeeding within the first hour of birth in comparison to only 88 per cent of non-users. Combining mobile messaging and CHW consultations has greater impact on exclusive breastfeeding behaviours among users, further illustrating how the two approaches combined have greater impact than when implemented in isolation (See Figure 6).

FIGURE 6

Breastfeeding behaviour levels for various user segments



- **Repetition of messages on key nutrition practices reinforces the behaviour among users.** Providing four messages on exclusive breastfeeding as opposed to just two over a four-week period, increased adherence to this practice by eight percentage points. Eighty-four percentage points of users who received four SMSs reported to be exclusively breastfeeding their babies as opposed to only 76 per cent of users who only received two SMSs on exclusive breastfeeding.

- **Users report to be changing behaviours following the advice received from the service:**

“I didn’t take vegetables as something important. I knew if I had my beans and posho³⁴ I was good to go but now I ensure I make some greens at least every two days and I ensure to pass on the message to the pregnant women I know and to those with children below 5 years.”

– Urban user

34. Posho is made up of finely ground white corn flour mixed with boiling water until it becomes solid.

- **In addition to lack of information, users cited high cost of recommended products and foods and entrenched cultural beliefs and dietary behaviours as the key barriers to adopting advised nutrition behaviours.** For example, our research showed that Ugandans prioritise their budgets on starch-rich foods valued as the primary source of satiety and energy. These carbohydrate-heavy meals are often low in diversity and nutrients, but resistance to change this behaviour is high. Through both CHW consultations and the SMS service, messaging should be adapted to encourage subtle dietary changes, such as adding a side dish or increasing a particular ingredient to carbohydrate-heavy meals.

“What I think is that what makes a practice hard to follow is still the financial issue. So you may find a practice that is good but cannot afford it.”

– Rural user

“My grandmother grew up not eating chicken. It was very hard even to convince her to taste it since she had never eaten it. In the culture she grew up in, it is told that women are not supposed to eat chicken”

– Urban user

“If we spend 2000 shillings to buy Matoke,³⁵ it is enough to fill two people, but if we use the same 2000 shilling to buy half portion Matoke and two eggs, it would be only [enough] for one person.”

– Rural user

- **Husbands are the finance controllers and their education is key to effective behaviour change.** To change family diets, it is critical to target men for education and support as well as women. Both CHW consultation and mobile based education should include messages tailored for men.

“CHW told me I should drink milk, but I eat whatever my husband wants to buy. I don’t have a special pregnancy diet.”

– Rural user

- **Users express satisfaction in the Living Goods SMS service, citing that message reminders, timeliness of message delivery and accessibility of messages are most valued.** Users also view the service as a source of encouragement. Satisfaction in the service has resulted in widespread sharing of the information by Living Goods users within the communities in which they live.

“They remind us, when the message comes you remember. You know most of us forget so it reminds us of what to do.”

– Rural user

“Even when you are fed up and tired, the messages encourage you and make you feel special and even your own husband may not tell you that. It is very important to have someone who cares about you. They follow up and they do show that they care which encourages you to move on.”

– Urban user

“I have been even forwarding some messages on WhatsApp to certain groups I belong to.”

– Urban user

35. Matoke is a starchy variety of banana. The fruit is harvested green, carefully peeled and then cooked and often mashed or pounded into a meal.

Future roadmap

In 2018, Living Goods Uganda will continue to explore ways to leverage mobile technology to achieve efficiencies, improve CHW performance and enable data driven decision making. Living Goods will continue to optimise mobile apps for CHW support by improving existing features and adding new functionality. New features may include training and refresher courses as well as community chat forums to enable improved communication and shared learning among CHWs. User experience research has identified three attributing factors for high performance of CHWs to be addressed in training: financial literacy, social skills and marketing skills.

The Living Goods SMS service will be expanded to include content about children up to 24 months of age. Living Goods are also exploring ways to further leverage the SMS service to strengthen relationships with customers and serve as a promotion channel for related products and services.

Living Goods Uganda will continue resolving challenges related to the SMS service that were identified through the user testing and data analysis. These include: improving the transition of customers between the various content bundles; ensuring that all messages are available in local languages and user-tested for comprehension. Living Goods will also explore opportunities for customers to access on-demand content outside of the bundles they are subscribed to.

User experience research showed that perceptions of the Living Goods service and brand were strongly linked to the perceptions of the CHWs in the community. Well recognized and trusted individuals affect it positively while timid CHWs tended to dilute the brand value. There is a continued need for building a strong Living Goods brand that supports the trust in the CHW within the communities they serve.





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