CASE STUDY

FrontlineSMS and Oro Verde: Market Price
information via SMS in Colombia
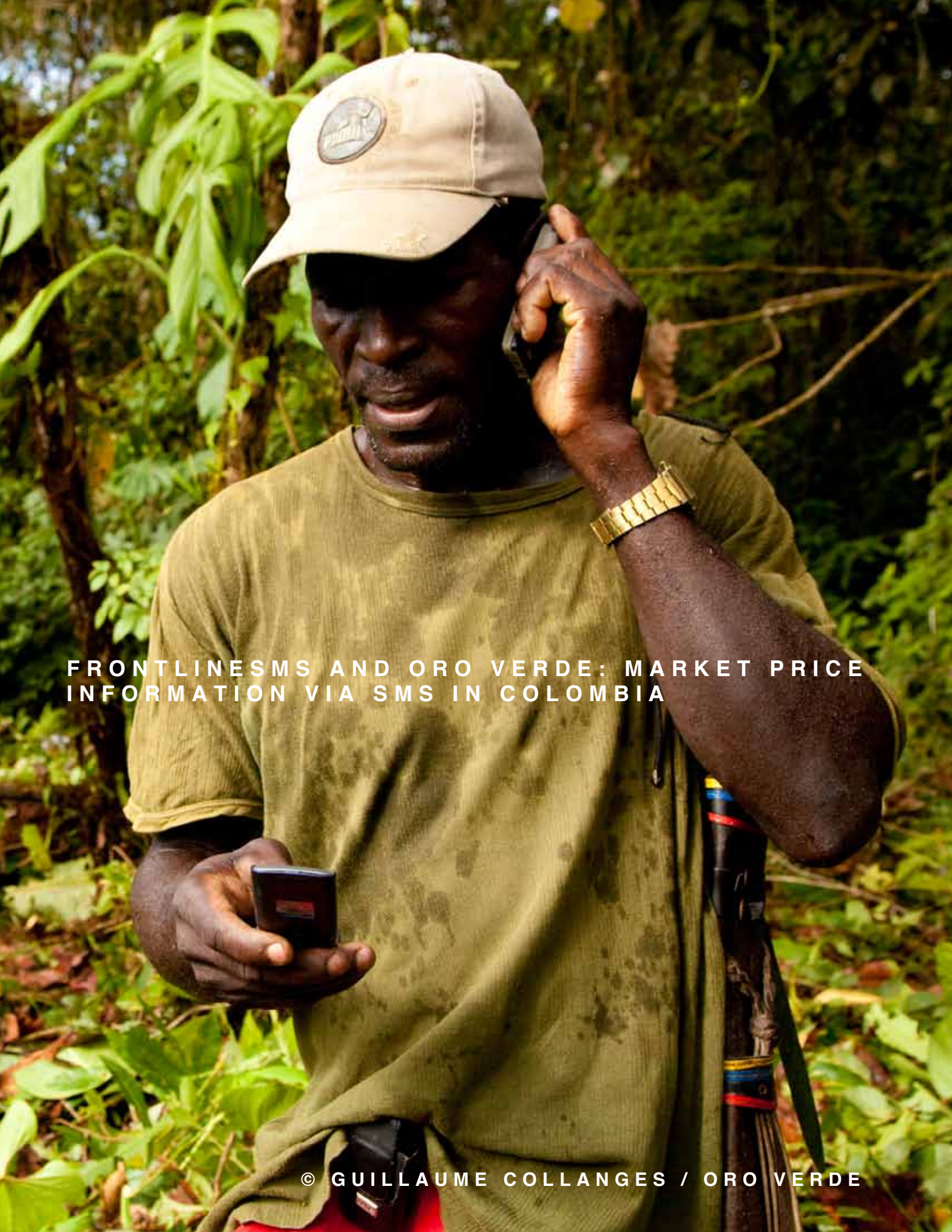
FRONTLINESMS

About FrontlineSMS

FrontlineSMS is open-source SMS-messaging software that runs on a laptop connected to a GSM modem, a mobile phone, or an online SMS (or text message) service. It enables users to send, receive and manage SMS over a mobile network. The software can work without the need for Internet access, is easy to set up, simple to operate and free. Users only pay the standard text messaging charges through their regular mobile provider.

We build and distribute free and open-source software; provide support and resources to our users; run sector-specific projects to share our expertise, and draw on our experiences to help inspire others.

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Introduction

The Oro Verde Program is a social enterprise committed to supporting mining communities in Colombia; helping support use of sustainable mining techniques and access to fair prices. The Oro Verde Program has been using FrontlineSMS software for sending and receiving text messages, in order to provide an accessible market price information system to the communities they support. This service has been piloted to show its potential to improve the way that market prices are communicated to miners; both in terms of efficiency, and the utility of the information shared. This case study details how the Oro Verde Program set their Price SMS service up, and shares the key learning from the experience.

About the Oro Verde program

Since 2000, Oro Verde has worked to reverse environmental degradation caused by uncontrolled mining in the Chocó Bioregion by developing certified responsible mining methods. Oro Verde has created the basis for the world's first local certification scheme for precious metals and has propelled a worldwide Fair Trade movement around responsible mining. Gold and platinum are extracted responsibly by artisanal miners who comply with strict ecological standards, and these products are then sold under the 'Oro Verde' brand name. The metals are then sold to ethical jewelers in green markets primarily in Europe and North America.

The Oro Verde Program is comprised of a partnership between four organizations: AmiChocó, Asocasan, Fundamojarras, and Cocomacoiro. Amigos Del Chocó (AmiChocó) is an NGO that works to preserve the Chocó and to support the marginalized indigenous communities within the Chocó bioregion. As part of the Oro Verde program, AmiChocó is responsible for strengthening and formalizing the producer groups, developing new markets and thus connecting local miners with national and international opportunities. Asocasan (Tadó) and Cocomacoiro (Condoto) are two organizations which are the respective Community Councils of Tado and Condoto communities of the Choco region. They represent the local mining communities; supervise, guide and coordinate ground activities; participate in the decision-making process; and co-own the Oro Verde brand. And finally, Fundamojarras plays a key role through providing support to the Community Councils and co-owning the Oro Verde Brand.

The context for Oro Verde's FrontlineSMS use

The Chocó Department sits on the Pacific Coast of Colombia and is part of the broader Chocó Bioregion that extends through Panama, Colombia, Ecuador and Peru. Though this region is rich in biodiversity, ethnic traditions and precious metals, it is the poorest and one of the most heavily exploited regions

of Colombia. Its ethnic Afro-Colombian majority have some of the lowest standards of living and opportunities in all of Colombia; with health, education, incomes and security consistently falling below national averages. Years of instability have left infrastructure and services largely underdeveloped, with few transport routes, poor communications and unreliable electricity leaving the majority of communities marginalized, and intensifying their geographical isolation.

The Oro Verde Program exists to support the local communities, helping them to secure a decent livelihood free from exploitation, and enabling them to be instrumental in preserving their highly valuable natural environment. The Oro Verde Program provides this support by developing certified mining techniques based on environmentally sustainable practices, which allow miners to sell any certified produce at premium rates.

In spite of its continued success, the Oro Verde Program still faces challenges. The Program covers a vast geographical area with poor infrastructure, which makes effective communication between Oro Verde, local Community Councils (representing groups of mining communities), and Miners' Family Production Units a slow and cumbersome process. Also, as many miners live in remote communities they must travel long distances into the nearest town to sell their metals, before finding out whether they are able to get a favorable price. Finding ways to improve the availability of these precious metals prices could increase the effectiveness of Oro Verde's supply chain.

The Oro Verde price information is derived from international benchmark metal prices and reacts to their daily fluctuations. Most miners access market-specific information from Oro Verde by contacting their Community Council or by 'word-of-mouth' in the community. Due to historical community exploitation surrounding precious metals in the region, the miners of Chocó find it difficult to trust metals dealers and agents, who are often their only source of gold price information.

Yet improvements in mobile telecommunications infrastructure, coupled with the advent of low-cost mobile phones and services represent a major opportunity to enhance the livelihoods of the artisanal miners working with the Oro Verde program. The program began piloting an SMS price information service for the miners, run using FrontlineSMS, to take advantage of this opportunity. As a social enterprise, Oro Verde saw use of SMS as an opportunity to improve the efficiency of its core business function, which will benefit Oro Verde members and the broader mining community.

Starting out and using FrontlineSMS

For Oro Verde, the aim of the service is to provide the miners with a reliable source of key market information, allowing them to better participate in the economic process. The immediate aim of running a FrontlineSMS pilot was to test the viability of the system for broad-scale implementation. Important factors within this included assessing the usability and utility of the system for the miners, as well as evaluating as the overall reliability of mobile signal in the area.

FrontlineSMS was identified as a helpful tool to manage sending large numbers of outgoing messages.

One of the main reasons FrontlineSMS was particularly favored by Oro Verde was its ability to work without an internet connection. Although Oro Verde's head office in the Colombian city of Medellín has internet access, in the Chocó region there is very limited connection; outside the provincial capital, Quibdo, there is essentially no wired internet. FrontlineSMS offered the ability to communicate by sending large numbers of SMS to mobile phones already in miners' hands, without needing to be online.

In order to introduce this service to miners Oro Verde produced some promotional material – such as flyers and instruction leaflets. tttProject promotion was also supported by the local community councils. It was explained to the miners what the text messages would be for, and how often they would receive them, when they initially signed up for the pilot at their Community Centers.

The pilot project ran over three weeks, and involved 49 miners in the Choco region being sent daily SMS, informing them of that day's Oro Verde price. This information helped miners to decide whether it was worth traveling to sell their produce that day or not. By sending direct price information reliably and consistently to each individual miner the SMS information system was tailored to significantly build trust and loyalty in Oro Verde. This trust will be valuable in maintaining long term participation of miners and when attracting new miners to the program. Having an official source of Oro Verde price information consistently sent to participating miners provided simple and accessible price information, and also added a degree of formality and reliability to the information which is traditionally shared through word-of-mouth. Receiving this information via a personal SMS also could help each individual miner to feel more valued and connected with the Oro Verde program.

The system was mainly run as an outgoing SMS information service, and the SMS were purchased from the premium telecommunications provider in Colombia. This is the only provider with network coverage in Chocó at this point. As this pilot sent only a small number of SMS messages for a short period, it was feasible to simply purchase SMS at the retail level. This type of purchasing is easy from local retail stores, where you can also recharge airtime and purchase "SMS packets" which allow a discount rate for SMS messages from the local mobile network operator's usual service charges. Overall, the pilot was very easy to get up and running; low-cost and accessible technology aiding the process.

Promising Beginnings

The overall response to this pilot was very positive. A survey of the miners was carried out following the pilot, and although the number of responses was modest, the results gave some initial signs that the SMS pilot project had proved useful for those miners involved. In addition, considerable positive feedback was collected through direct interviews with miners, as well as anecdotally. One miner said "it's very important to have this line of communication as it helps the miners to stay informed". Community Council Staff commented that, "during the pilot a non-Oro Verde miner approached him and asked about the price SMS system and when it will be formalized". Several miners mentioned that transparent and consistent information was important to them, and many miners thought that the Price SMS system helped to improve confidence in Oro Verde. This is a significant step forward, as these small communities have been historically exploited and are very untrusting when it comes to outsiders trying

to get involved in precious metals trading.

Key Learning from the project:

COST:

The most significant cost involved in this project was sending outgoing SMS to miners daily. For this particular pilot, the use of a prepaid SMS package through the main local mobile service operator was seen to be the least costly and simplest option to follow. Though prepaid SMS packages were chosen for this short-term project, the process of consistently having to add 'airtime' is a cumbersome process in Colombia and furthermore, each prepaid service limits the number you can purchase within a certain time period. This service had several limitations and would not be viable for future project replications, especially when the scope and scale of the project could be broadened significantly. The most feasible option to manage this primary cost in the future is to engage in partnership with the mobile network operator, and this is currently being explored.

The labor costs involved in managing this project and operating the software and system were also found to be a significant consideration; this will correspond to the estimated time commitments required for execution of this project. Once the system was up and running it only took about an hour per day to manage. However, the planning of an effective SMS program took time and staff commitment. The human resources needed to manage an SMS system is something Oro Verde will consider in potential further roll-out of this project.

VERIFICATION OF SMS:

It was decided that the miner text messages should be sent consistently, with same format and at a specific time of day. This was deemed essential to maintain the integrity of the system and to slowly build the miners' confidence in the information being provided. With price information - which fluctuates daily - it is essential that before sending each SMS the prices should be double-checked and also cross-checked by a separate staff member. It was found to be crucial to maintain complete consistency with the SMS sent to miners; only then can miners build strong confidence in the system. Even a single missed message or incorrect figure can significantly damage the system's integrity in the minds of the users. This process of price verification will be strictly followed throughout any future extensions of this project.

Accuracy of user data is also a critical requirement. Through the post-pilot survey, it was discovered that two miners had not received their SMS price updates, because of an error in recording their number originally. This is an important issue that will be addressed by Oro Verde in any future SMS projects. Building in confirmation of SMS receipt is a quality control measure which can mitigate this risk and which will be addressed in any future program.

EASE OF ADOPTION:

Overall it was found if the SMS was kept simple then the majority of miners had no difficulty reading them. Younger members of each Family Production Unit - aged between 18 and 30 – were found to have better working knowledge of the SMS function on their cellular phones, and could be highly effective in showing this function to the elder members of their community. In future, Oro Verde plans to work more closely with younger Family Production Unit members.

TELECOMMUNICATIONS COVERAGE:

Another original goal of this pilot project was to assess whether miners in this region had sufficient cellular signal to allow them to access SMS sent in a timely way. Oro Verde found that the majority of miners were able to find somewhere with a cellular signal even if this requires walking a short distance to a high point with better reception. It was found that when miners have metals to sell, finding a high point to receive messages will be a preferred option to traveling to a larger town or finding out through word-of-mouth.

Plans for the Future

A lot of learning was gained through the pilot of this SMS price system. The mapping records Oro Verde have produced as a result show how to set up out system in the future, providing a good deal of transferable content: templates for promotional material, some example SMS, records of messages and any technical difficulties experienced, approximate labor hours applied and general learning for future integration. The Oro Verde Program are now in the process of assessing the potential for further scale-up of the project and the model.

Suppliers and Hardware used

FrontlineSMS Version 1.6.16.3 (SMS sent in Spanish)
Huawei E1556 USB Modem
Macbook pro 2.66 Ghz intel Core 2 duo. Memory 4GB 1067 Mhz (Mac OSX 10.6.7)