

## Research Article

# “Ten Seeds”: How Mobiles Have Contributed to Development in Women-Led Farming Cooperatives in Lesotho

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#### **Abstract**

*The potential for mobiles to contribute to development has been widely heralded, but evaluations tend to be technically oriented and not framed by development theories. Thus, empirical evidence on their actual developmental impact is limited. This article attempts to address this gap by building on several follow-up qualitative evaluations over the four years since mobiles were provided to the women-led Thulare Dairy Farming Cooperative in Lesotho. Using theories of development as economic growth, empowerment, and choice, the article highlights the ways that, in these women-led farming cooperatives, development has certainly been achieved for all of these elements. In so doing, it argues for the importance of qualitative and longitudinal evaluations to truly capture development impacts.*

## 1. Introduction

Information and communication technologies (ICTs) have been widely heralded as a mechanism for promoting development (Saunders, Warford, & Wellenius, 1983; UNDP, 2001). This is particularly the case in Africa, where in recent years there has been rapid growth in both mobile ownership and signal coverage. A number of academic communities have turned their attention to the developmental impacts of ICTs, resulting in such terms as M4D (mobiles for development) and ICT4D (ICT for development), as well as the growth of a development informatics discipline. However, the dominance of technical specializations in development informatics, relative to development studies, means that impact assessments have been poorly informed by conceptual frameworks with which to truly assess the effects of mobiles on development. By association, it also raises the question of how to define (and measure) development. This article addresses some of these shortcomings by presenting a qualitative and longitudinal examination of the impact of 10 mobile phones provided by a development program to a women-led farming cooperative. Using a qualitative methodology, it is possible to show evidence for development in broader terms than simply economic growth and other quantitative indicators typically prioritized in development monitoring and evaluation frameworks. Similarly, by having conducted follow-up qualitative evalua-

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tions at various intervals in the four years since the mobiles were provided, it is possible to give a longer-term perspective than what is typically shown in end-of-intervention evaluations.

### 2. Growth in the Availability and Uptake of Mobiles in Africa

In 2008, mobile signals covered 58.5% of the African population, with some countries, including South Africa, Botswana, Mauritius, and Seychelles, approaching 100% coverage of inhabited areas (ITU, 2009). A number of African governments, such as in South Africa, Kenya, and Uganda, have required mobile operators to provide a certain population coverage as part of their license conditions or have required them to install community service telephones, thus ensuring that coverage is not restricted to urban areas (Gray, 2006). By the end of 2008, there were more than 246 million mobile subscriptions in Africa (out of a population of just under 700 million), and between 2003–2008, the rate of growth was more than double that in the rest of the world. Estimates suggest that actual usage might be twice the subscription rates, due to the shared use of mobiles (Heeks, 2009). Even vulnerable groups that are typically targeted for development interventions, such as the elderly and women, are embracing the technology and learning how to use mobiles (Buskens & Webb, 2009; Murphy & Priebe, 2011; Vincent, Cull, & Freeland, 2009; Vincent & Freeland, 2008).

### 3. Theories on the Linkages Between Mobiles and Development

While the increased diffusion of ICTs is undisputed, questions have been raised about the actual impact of these ICTs on development. In a recently published article in the policy arena of the *Journal of International Development*, Richard Heeks argues that the development informatics community has been informed much more by academics with a technical bias (for example, those from the information sciences, information systems, communication studies, and computer science disciplines) than those with a development studies focus (Heeks, 2010). The consequence has been that the impact assessments of ICT4D have typically been descriptive, rather than analytical; lacking in methodologi-

cal rigor and, crucially, not linked to development studies–informed conceptual frameworks around which to structure and analyze findings. Perhaps even more fundamentally, undertaking impact assessments around ICTs requires epistemological questions to be asked concerning what development actually is and how to best measure and evaluate it.

The policy arena in the *Journal of International Development* presents three articles in which different perspectives on mobiles and development are discussed. Donner and Escobari (2010) use models of enterprise value chains first proposed by Porter (1985) to define how mobiles contribute to development. They find that mobiles improve the quality and depth of existing trading relations by allowing small and micro-entrepreneurs to build trust by keeping in closer contact with their suppliers and customers, and also by reducing their costs by removing the need for physical journeys. This is defined as progressive change, but not transformational. Donner and Escobari (2010) find less evidence of transformational change, with few signs that mobiles alter the market structures or create new livelihoods. However, they cite other studies that have found evidence of the “digital provide”—namely, that the existence of mobiles tends to change the operating environment to the benefit of all in it, whether or not they, themselves, have direct access to mobiles. This is the reverse of the argument proposed in the 1990s and 2000s that a “digital divide” would arise between those with access to ICTs and those without it (Norris, 2001; van Dijk & Hacker, 2003). A study on fisheries in India showed that, after the introduction of mobiles, profits for small-scale fishermen in Kerala increased, regardless of whether those fishermen owned mobiles. For those who did, profits rose by an average of US\$4.50 per day, more than offsetting the costs of phone ownership and use. But even the profits of those fishermen without phones increased by US\$2 per day, as market efficiency improved for everyone, meaning that fishermen were able to sell more of their catch, and thus, reduce wastage. The actual price per kilogram for fish dropped—as less wastage meant the market was better supplied—but this, of course, provided benefits to all consumers (Jensen, 2007).

While economic growth is undoubtedly one

aspect of development, there are other, less tangible elements that are equally important. The second aspect of development addressed in the policy arena is a sense of empowerment, arguably something that is of particular value to vulnerable groups in society, whose economic position may have consequences for their social standing. Khan and Ghadially (2010) take the example of Mumbai—second only to Bangalore as a center for ICTs in India—and show that, despite the widespread availability of ICTs, uptake shows gendered differences, with women far less likely to use computers and the Internet outside of their college time. However, those women who have benefited from ICT training report higher indicators of empowerment than their male counterparts, thus suggesting that, if women are enabled to cross the digital divide, ICTs do have a potential to reduce inequality. Psychological perceptions of well-being thus also form a critical component of development.

Staying with the more qualitative definitions of development, a sense of empowerment can also be brought about by the increasing availability of choices open to individuals. Sen (1980, 1984, 1993, 1999) argues that development is about freedom of choice in the personal, social, economic, and political spheres. He argues that “functionings” are the things that a person may value doing or being, such as being healthy, having a sense of wellness, and being able to play an active role in society. “Capabilities” refers to the alternative combinations of functionings that can be feasibly achieved. Development, therefore, becomes about increasing one’s capabilities, taking into account that beneficiaries may use their own combination of functionings to lead their life as they choose, reflecting their ontological values.

While Sen takes a more holistic approach to development than, say, notions of economic growth, it comes at the cost of increasing the difficulty of operationalizing the approach. When individuals may prefer different combinations of functionings, a wider range of capabilities needs to be promoted by development interventions to meet that goal. The notion of empowerment has been embraced by many development organizations as a key aspect of their poverty reduction programs. Practically, their approach is instrumental and often means direct support to poor people’s organizations,

but it has been suggested that it would be better for them to follow Sen’s ideal, aiming instead to create a political environment that allows poor people to organize themselves (Moore, 2001). This is particularly the case for women’s empowerment, where active participation in strategic life choices requires not only their own agency, but also an enabling environment where they are able to access the resources required to participate (Kabeer, 1999).

In the third policy arena paper, Kleine (2010) zeroes in on the individual level, looking at the impact ICT plays on the life of a single female micro-entrepreneur living in Chile. Underlying the fact that development involves so much more than economic growth, she finds that the choices now open to this woman might be overlooked by quantitative indicators. For example, to the woman herself, the ability to “visit” a German city in which she once had a pen pal online was just one way in which ICTs offered her a choice that was of significant value to her life.

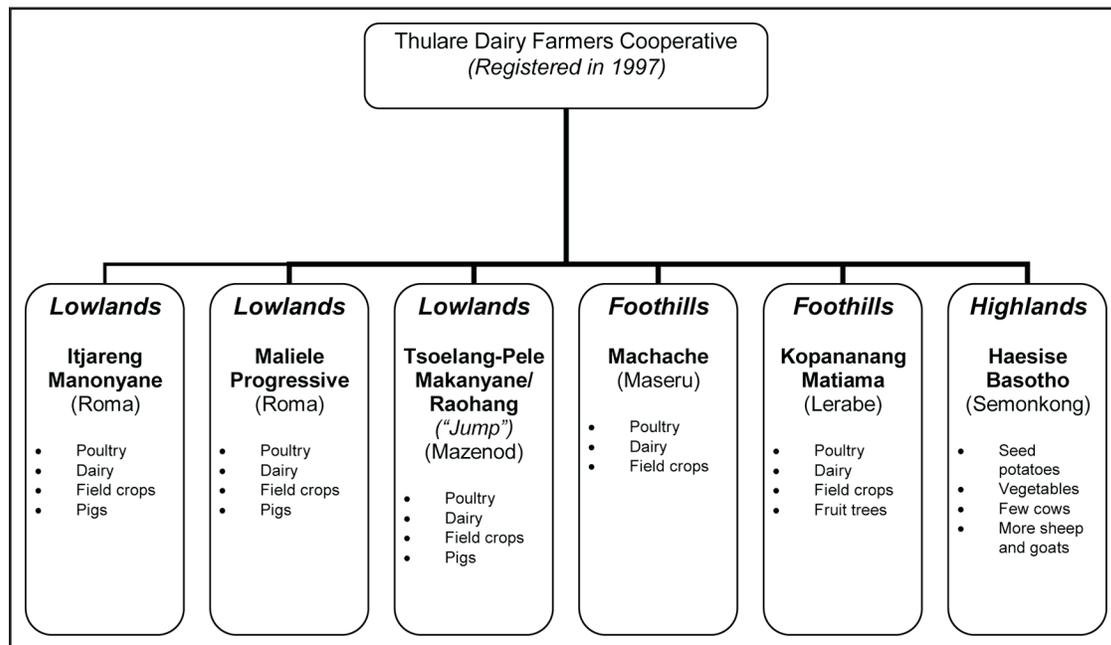
#### **4. The Thulare Dairy Farmers Cooperative**

The present article applies the various conceptions of development outlined above to a women-led farming cooperative in Lesotho. Cooperatives are recognized as playing critical roles in development at the grassroots, as they enable active participation of weaker actors and act as a force to counteract monopolies (Normark, 2007). This is particularly the case for women (Kandiyoti, 1990). The Thulare Dairy Farmers Cooperative comprises a number of member groups based in different agro-ecological zones in Lesotho—the lowlands, foothills, and highlands. The cooperative has its headquarters at the Bishop Allard Vocational School in Roma, and it benefits from sharing skills with and receiving training from the school. Indeed, the cooperative was initially formed by a number of agriculture teachers at the school who had received overseas training on cooperative management. The Thulare Dairy Farmers Cooperative was formed in 1997 and formally registered with the Ministry of Trade and Industry, Cooperatives and Marketing in Maseru. To be registered, the cooperative had to have a formal structure, including an executive committee comprising one representative from each of the member groups.

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*Table 1. Themes Explored in Focus Groups and Interviews.*

- How the mobiles are managed (who keeps them, how other members gain access to them, costs involved, etc.)
- Uses of mobiles (e.g., connecting various groups, arranging clinic visits, arranging to participate in shows)
- Any problems experienced to date (e.g., need for maintenance and repair, theft, loss)
- Financial aspects (what is the procedure for paying for calls, topping up airtime, etc.)
- Perceived benefits of mobiles (how access to mobiles has changed their lives in the multiple facets of development, e.g., economic growth, empowerment, self-esteem, and well-being)
- Future growth plans (e.g., for acquisition of additional mobiles, use of money earned through having mobiles, future plans within the cooperatives that are enabled by having mobiles)



*Figure 1. Structure of the Thulare Dairy Farmers Cooperative, highlighting the location and primary agricultural activities of the member groups.*

Figure 1 shows the six member groups that belong to Thulare. Three of these (Itjareng Manonyane, Maliele Progressive, and Tsoelang-Pele Makanyane/Raohang) are based in the lowlands; two are based in the foothills (Machache and Kopananang Matiana), and one is based in the highlands (Haesise Basotho). Reflecting the different agro-ecological zones, as well as group preferences and priorities, each group specializes in different crops and livestock.

As part of its remit to build evidence on innovative approaches to develop better, more dynamic ways to tackle both acute hunger and chronic, predictable vulnerability, the Regional Hunger and Vul-

nerability Programme (RHVP) undertook a pilot project to see how vulnerable people benefit from mobiles. RHVP was a joint program of the British government's Department for International Development (DfID) and AusAID, the Australian government agency for overseas aid. It advocated for long-term social protection to at-risk groups to reduce their vulnerability, thereby reducing the likelihood that such episodic events as drought will plunge such groups of people into crises.

Cash transfers are a popular example of social protection in southern Africa, taking the form of noncontributory social pensions, child support grants, and disability grants. Effective and efficient

delivery of cash transfers is, however, an important policy question (Devereux & Vincent, 2010). Electronic delivery systems using smart cards, debit cards, and mobiles have been proposed and trialed, but initially, opponents cited the inability of vulnerable groups (such as those targeted for cash transfers) to handle ICTs as an obstacle to their use. RHVP provided mobiles to the cooperatives on the basis that cooperative members had similar demographic profiles to the target beneficiaries of cash transfers, and thus could serve as a test case to see whether vulnerable people could handle the technology. The members of the cooperatives had no existing access to communication technologies in the form of landline telephones.

#### **4.1 Provision of Mobiles to the Thulare Dairy Farmers Cooperative**

Ten mobiles (Siemens handsets) were provided to the Thulare Dairy Farmers Cooperative in Lesotho in August 2006. Five of these stayed in the lowlands groups, one went to the foothills groups, and four went to the highlands group (see Figure 1). Given that the women had not owned mobiles before, basic training on how to make calls and send SMS was provided by the Maseru-based service provider (Vodacom Lesotho). Joint monitoring committees were established, composed of a teacher in the community and a young scholar from the Bishop Allard Vocational School, together with the members of each farming group, to provide assistance on an ad hoc basis should it be required. As it was beyond the scope of RHVP to provide a regular cash transfer, each handset was preloaded with ZAR500 (approx US\$50 at the time) of airtime, with the intention that the recipients would use ZAR100 of this for group communication, and then sell the remaining ZAR400 (as airtime or SMS) to other community members, such that the enterprise would become self-sustaining.

Follow-up qualitative evaluations were conducted in July 2007, January 2009, and July 2010, based around focus group discussions, interviews with various key personnel (including the cooperative manager and group leaders), and observations. Table 1 summarizes the themes that were explored in the focus groups and interviews, with each evaluation building on the findings of the previous one. Observations were made with the intention of validating information offered in the focus groups and interviews.

## **5. Results and Discussion**

### **5.1 Mobiles and Economic Growth**

Perhaps the most immediate impact of mobiles on the farmers is the way in which the improved ability to communicate contributed to economic growth. Economic growth is brought about in two inter-linked ways: by reduced transactional costs and by increased sales. Lesotho's terrain is mountainous, and outside of the capital, Maseru, transportation infrastructure can be poor, meaning that disproportionately long times are often spent travelling short distances. This means that, even within the cooperative, internal communications are arduous. Often, letters detailing monthly meetings have to be personally delivered. In the lowlands, for instance, the distance between groups is up to 200km, which means a 16-hour round trip by taxi costing ZAR130 (approx US\$13 at the time) and necessitating an overnight stay. This situation is compounded in the winter, when inclement weather in the mountains can impede physical transport. At the time of the third evaluation in July 2010, for example, the group based in Semonkong (in the highlands) was unable to travel to Roma for the meeting, needing to cancel at the last minute due to the forecast of imminent snow. Now that groups are connected by mobile, members report that internal communication is far easier, and costly physical meetings are only arranged when there is a need, which, of course, can be ascertained by calling ahead.

As well as being more economical through reducing transportation costs, the availability of mobiles has also improved the cooperative groups' productivity and marketing successes. Marketing their produce is one of the focal areas of the cooperative. A lot of trade takes place among the members of the different cooperative groups, with goods typically available more cheaply than through the market. In the highland location of Semonkong, for example, women would typically have to make a long and difficult journey to the Bishop Allard Vocational School, where ad hoc meetings are held concerning marketing the produce. After mobiles had been distributed, it was possible for the women to call ahead to the market and obtain pricing information and then to communicate with each other, removing the need for physical travel. The different groups have also been able to make better use of product exchange, building on their geographical

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advantages. This proceeded such that, in 2010, those in the lowlands could swap maize for wheat from the highlands.

Similarly, external trade (outside the cooperative) has improved through the availability of mobiles. In one case reported in January 2009, those in Nyakosoba had a surplus of beans, but they were able to successfully market them by using their mobiles to contact potential markets. In 2010, as a result of financial pressures, the government had reduced the number of agricultural shows it hosted, thus limiting a traditional product marketing opportunity. The Thulare Dairy Farmers Cooperative therefore planned to hold regular open markets at the Bishop Allard Vocational School, as well as in other key centers, where group members would be able to sell their produce. Before instant communication was available through mobiles, such open markets would have been impossible due to the time necessary to communicate, both internally (with members on what products to bring) and externally (with potential buyers).

Thus, mobiles have clearly enabled economic growth within the Thulare Dairy Farmers Cooperative. Findings correspond with those noted by Donner and Escobari (2010) and Jensen (2007), that mobiles increase the depth and quality of trading relations, both within and outside the cooperative. However, economic growth benefits are not limited to progress in existing activities—there is also evidence for transformation, in terms of new and expanded activities.

Discussions with various representatives of the cooperative member groups on all three evaluation visits highlighted the role that mobiles had played in creating new income-generating activities which had, in turn, expanded the roles of the cooperative. Trading airtime vouchers is undertaken by all the groups. They purchase discounted airtime vouchers from town-based outlets, and then they sell these within their communities at the list price, thus making a very small profit on each sale. The exact modality of this varies from group to group: At Bishop Allard Vocational School, a small stall has been set up that sells vouchers to pupils at the school, as well as to community members, who par-

ticularly appreciate the flexibility of being able to purchase airtime outside of formal shop hours. In the highlands, where the distance from shops is greater, group members based in the city may purchase airtime and use Vodacom Lesotho’s network facility to transfer that airtime to other mobiles held in the highlands. From there, it can be purchased and transferred (again via the network facility) to other mobile owners.

Despite the very small margins on each sale, the cooperative has been able to capitalize on the greater diffusion of mobile technology and tap into the resultant market for airtime for prepaid subscriptions. The Thulare Dairy Farmers Cooperative, for example, began with only 10 mobiles, but this figure has now grown to 27 handsets collectively owned and held by members. Thus, 17 phones have been purchased using income generated through the sale of airtime over the last four years. In January 2009, the Maliele group explained how they had initially saved up ZAR1,000 from airtime sales, then used those funds to purchase four additional mobiles. Now, the greater availability (and thus distribution) means it is easier for those group members not charged with holding a mobile to access one, thus further benefiting the groups (and the wider community), as well as the individual members.

All member groups have furthered their agricultural activities with the profits from airtime sales, leading to economic growth. Two of the lowlands cooperative groups purchased two piglets that they fattened up and slaughtered, thus further generating income through the sale of the meat. This money was invested in a *stokvel* (savings wheel<sup>1</sup>) for the farming groups, the profits of which enabled a further member group to be formed. The lowlands groups’ next plan is to buy a breeding pair of Duroc pigs, from which they intend to distribute piglets, so that, eventually, each group has a breeding pair of Duroc pigs. Having breeding pairs, in turn, increases the availability of income through the sale of piglets.

Other groups have expanded their activities beyond the agricultural sector, with the choice of activity depending on group priorities and perceived opportunities for development. One of the groups in

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1. *Stokvel* are common group savings mechanisms in southern Africa, where members contribute monthly, with group proceeds rotating among the members. In this case, a small surcharge was levied for participation, enabling the *stokvel* to generate a profit.

the foothills has embraced trade in second-hand clothes, sourcing them in bulk from Maseru and then selling them locally. Generating income from airtime sales gave them the initial capital required to start up this business, which has become so successful that other member groups in the lowlands are considering following suit. The highlands group put the first ZAR1,000 generated from airtime sales to another use. Due to its location in the mountains, Semonkong is a popular tourist destination. The group loaned the first profits to a community member who was setting up a guesthouse to enable her to purchase linen. She will pay this money back to the group with 5% interest. It is intended that further profits will also be invested in tourism-related small businesses.

### **5.2 Mobiles and Empowerment**

In addition to communication and income-generation advantages, the availability of mobiles has had some other important, and perhaps unanticipated, benefits for the farming groups. These benefits relate to empowerment. As already explained, the Thulare Dairy Farmers Cooperative was targeted to receive the mobiles from RHVP primarily because the members have demographic profiles similar to those typically targeted for cash transfers. On the whole, members are women, elderly, and with generally poor levels of education. As noted by Heeks (2010), measuring empowerment is arguably more difficult than economic growth, as it requires more qualitative indicators, but on all three follow-up evaluation visits, comments from various group members verified that empowerment certainly was a consequence of having access to mobiles.

The mobiles had been presented to the Thulare Dairy Farmers Cooperative on Women's Day (August 9) in 2006, and one female chicken farmer from the Maliele Progressive group recounted in the July 2007 follow-up how she had felt so proud, as a woman, to have been chosen to benefit from technology, which is typically a male-led phenomenon. Similarly, in January 2009, the (female) head teacher at the Bishop Allard Vocational School explained how farmers now have much more confidence, both personally and in their farming ability—"mobiles have enlightened us." In July 2010, a spokesperson from one of the foothills groups said that, before his group had access to mobiles and the

income-generation opportunities that they brought, he had not been as "well-presented" (i.e., dressed) as he was at that moment.

The empowerment advantages of having mobiles extend beyond individual feelings of self-esteem and confidence. In Semonkong, which is remote from urban areas and has high levels of illiteracy, the chieftainess reported in January 2009 that members of her community have learned basic English and mathematical literacy through using the mobiles—they know how to perform addition (to work out how much airtime they have used) and they understand the instructions on the mobile.

Empowerment has also resulted from the sense, felt by group members, of belonging to a successful cooperative. There is a Basotho saying that translates as "If you walk alone, you are doomed," which emphasizes the importance of collective action in Basotho society. In July 2010, one lowlands group member said, "We want to buy more mobiles in order to stay united." The manager of Thulare Dairy Farmers Cooperative also explained, "We are vulnerable—to be strong we need to be able to communicate." The headquarters of the cooperative at the Bishop Allard Vocational School is now home to a number of trophies and awards that members have won at past agricultural shows and exhibitions, all of which have helped to instill pride and confidence that is vested not only in individuals, but in the groups as a whole.

Similarly, empowerment has resulted from the way mobiles have facilitated access to networks and relevant expertise. Such networks have now been recognized as an asset, that of social capital (Bourdieu, 1985). On the one hand, social capital and the networks it embodies are required for the formation of institutions (Dasgupta, 2003). The mere existence of the Thulare Dairy Farmers Cooperative, for example, indicates that social capital already exists among group members—in that they have trust in each other and believe in the power of collective action based both on common rules, norms, and sanctions, and on connectedness, networks, and groups (Adger, 2003; Paldam, 2000; Pretty & Ward, 2001; Putnam, 1993). Major distinctions are drawn between bonding social capital and networking social capital. Bonding social capital refers to ties with family and friends related to kinship, obligation, and reciprocity. Networking social capital is a more distant concept that relates to ties

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with people outside the kinship or friendship group, ties based on trust and shared aims or beliefs (Adger, 2003). While Thulare already had evidence of bonding capital, through the mere existence of the cooperative, mobiles have facilitated the members' capacity to build networking capital. Using the networking capital enabled by mobiles, the Thulare Dairy Farmers Cooperative is now able to collaborate more effectively with relevant government structures, including the Ministry of Agriculture and the Ministry of Trade and Industry, Cooperatives and Marketing. In fact, on the day of the July 2010 follow-up evaluation visit, the cooperative had arranged for both the local extension office and their official liaison person from the Department of Cooperatives to be present, to capitalize on the fact that the majority of the cooperative members were having a physical meeting. UNESCO representatives were also in attendance to document the cooperative's activities as a case study of best practices for a development publication. Similarly, members linked their membership of the Participatory Ecological Land Use Management (PELUM) network to their access to mobiles. PELUM is “a civil society network that aims to build the capacity of farming and rural community groups to enable them to accumulate skills, stimulate farmer learning and inspire experimentation and innovation in their quest to achieve food security” (for additional details about PELUM, see [www.pelumrd.org](http://www.pelumrd.org)).

In addition to improving access to relevant networks and building social capital, mobiles have also brought about empowerment through facilitating access to formal education. Female education, in particular, is recognized as a major driver of empowerment in the developing world (Herz & Sperling, 2004). It has been suggested that education empowers in five separate, but interrelated, ways: knowledge autonomy (women have a wider world view and a greater capacity to question authority), decision-making autonomy (education strengthens women's say in decision making), physical autonomy (educated women have more contact with the outside world and the opportunities it brings), emotional autonomy (women shift their loyalties from extended kin to the conjugal family, and they also have more egalitarian relationships between spouses and between parents and children), and economic and social autonomy and self-reliance (education increases a woman's self-reliance in economic mat-

ters and the self-reliance that is required for social acceptance and status; Jejeebhoy, 1996).

Education refers not only to formal schooling, but also to informal training opportunities. In a simulation study in Kenya, researchers set up an experiment to test the hypothesis that a program with the express aim of increasing women's feelings of competence; developing their skills through collaborative activity; and relating appropriate health, nutrition, and other developmental concerns would yield positive results. Based on interviews and indices constructed before and after taking part (and in conjunction with a control group), the results of six groups of 130 women found highly significant changes in the confidence in their own abilities after the informal education program (Clark & Gakuru, 1982).

By the time of the January 2009 follow-up evaluation, income from the mobiles had enabled four group members to attend formal training arranged by the Department of Cooperatives in Maseru. Similarly, a number of cross-border training opportunities have occurred on visits to South Africa. In early 2009, the lowlands dairy farmers visited a Jersey cow farmer in Ladybrand, South Africa, with a view to learning about and potentially purchasing breeding stock. In July 2010, the cooperative reported that a number of South African farmers have assisted with the participation of group members in informal training opportunities. One, in particular, had offered free training in artificial insemination, enabling further participation by the cooperative, since they only needed to contribute travel costs. Clearly, without mobiles, finding out about such training opportunities would have been difficult, impeding the increase in skills among group members.

The provision of a valuable commodity to vulnerable groups has raised concerns that it would inadvertently increase the vulnerability of the recipients. Although there had been no incidents of mobile theft within the groups in the four years since receiving the handsets, the women were all familiar with incidences of mobile theft within their social circles. One woman explained how her daughter's phone had been stolen at a party attended only by family and friends. The availability of electricity for charging the phone batteries was problematic, particularly for the highlands groups, where mainline electricity is only available in Semonkong town.

Table 2. Summary of the Key Impacts of Mobiles to Date and the Next Priorities for Four of the Member Groups of the Thulare Dairy Farmers Cooperative.

	<b>Itjareng Manonyane</b>	<b>Maliele Progressive</b>	<b>Tsoelang-Pele Makanyane/Raohang</b>	<b>Kopananang</b>
Location	Lowlands (Roma)	Lowlands (Roma)	Lowlands (Mazenod)	Foothills (Lerabe)
Impacts of mobiles	Improved communication means they can seek markets for excess produce (reducing wastage) and reduce the travel costs associated with seeking markets	Improved communication for marketing vegetables and distribution of seeds enabled the group to compete in agricultural shows and disseminate news about training courses	Improved communication	Improved communication, self-confidence, and empowerment
Current activities enabled by mobile-generated profits	Purchased piglets and an additional mobile for a group member who lives far away	Organizing <i>stokvels</i> to build team spirit and benefit group members	Purchased piglets, encouraged each member to keep chickens	Purchasing of second-hand clothes in bulk, which they then sell in their area
Key quotation		"We turned mobiles into a business."	"We want to buy more mobiles so that we can stay united."	"Before mobiles I was neither as well presented nor as 'rotund' as I am now."
Next priorities	Purchase a landline for cheaper communication, enter the business of selling second-hand clothing	Purchase a landline for cheaper communication to create a job (in its management) for a community member; buy a mill to produce animal feed to use and sell	Buy dairy cows; purchase a landline for cheaper communication to be housed in a central meeting point; discussing the idea of buying and selling second-hand clothing	Buy a mill for the group; wish to purchase a landline for cheaper communication

Note: The four groups represented here are those who attended the July 2010 follow-up evaluation meeting.

Farmers in this community have to travel 20km to get there, so they tend to send their mobiles for recharging (at nominal cost) with anyone who is going to town. However, solar chargers are now inexpensive (available for about US\$30). That technology would be an ideal solution to this problem for each community, and it would also provide a further income-generating opportunity for small businesses.

### 5.3 Mobiles and Choice

As is already evident from the preceding sections on economic growth and empowerment, in the four years since first having access to mobiles, members of the Thulare Dairy Farmers Cooperative have had increasing access to choice. Furthermore, it is reasonable to argue that the choices they have made have contributed to the extent of economic growth

and empowerment they have experienced over the past four years. This is perhaps best summarized by a quotation from the manager of the Thulare cooperative, who said, "We turned the mobiles into a business."

The most recent follow-up evaluation visit, in July 2010, showed that the range of choices available to group members has grown substantially with time. Table 2 summarizes each group's experience in terms of the impact of mobiles and their plans for the future. A fairly universal wish is for the installation of wireless telephones. Like mobiles, these wireless telephones do not require fixed-line telephone infrastructure, though they do need to be connected to a power supply (which can be provided by a solar charger or car battery in non-electrified areas). Airtime is prepaid and purchased in vouchers, similar to mobiles, but the advantage is that call

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rates are cheaper, thus facilitating the level of communication to which they have become accustomed at lower costs. The main office of the Thulare cooperative has already purchased one of these, at a cost of ZAR330, and it is making a profit of between ZAR150 and ZAR200 per month by selling call time to community members.

Even greater availability of communications, through mobile and wireless telephones, might also act to facilitate the cooperative's latest development, the creation of a savings and credit association. The majority of cooperative group members do not fit the profile of typical bank clients in that they do not receive regular, fixed salaries, and most are unbanked. This inhibits their access to credit and their ability to take the risks necessary to further their growth and development. However, the various capitals that are being raised through the mobiles have facilitated the cooperative acting as a de facto bank, where both individual members and groups are able to save money and access loans.

The savings and credit scheme is financed by each of the six member groups paying ZAR200 per annum to the cooperative (which is added to the account holding their ZAR500 one-time membership fee). The policy is that 20% of the total funds must remain in the bank, while 80% of the funds should be loaned out to members of member groups at a rate of 2.5% per month. At the same time, each member of a member group is entitled to use the cooperative as a savings scheme for their own personal funds. Savings lodged with the cooperative earn 1.5% per month interest. Furthermore, the Thulare cooperative is undertaking banking training for its members. At the July 2010 follow-up evaluation meeting, ZAR680 was invested by individual members, highlighting the trust in and support for the initiative. The cooperative foresees employing a permanent “teller” to handle transactions in the future.

## 6. Conclusion

Criticisms have been raised that impact assessments of the role of mobiles in development have been both lacking in analytical rigor and restricted to considering only certain elements of development. This article has added empirical weight to the argument that mobiles do, indeed, promote development, as defined in broad terms to include economic growth,

empowerment, and choice. It also contributes to methodological debates on how to define and evaluate development. The qualitative and longitudinal case study of women-led farming cooperatives in Lesotho shows that many more developmental outcomes can arise some time after the end of the intervention, particularly relating to empowerment and choice, and that these impacts might be overlooked by the standard quantitative evaluation that takes place immediately at the end of an intervention. In this case, access to mobiles has been both progressive, in terms of improving the ease and efficiency of existing operations, as well as transformational, in extending the range of activities chosen by the cooperative and its members themselves, as opposed to being externally led. It is, however, important to note that, in this case, many of the benefits accruing relate to the communication aspect, as opposed to the instrument—and thus would likely have occurred should landline telephones have been provided. In fact, this explains why landline telephones are now requested—to reduce the costs of dependence on more expensive mobile communications. Arguably, one of the reasons for this is that the initial provision of 10 mobiles to the cooperative was part of a small intervention by RHVP, which imposed no conditions whatsoever, including no demands for reporting back on progress. As a result, all the progress observed and development that has taken place have been driven entirely by the enthusiasm and capacity of the cooperative leadership, together with member commitment. Thus, it is thus fair to say that, in this case, the “ten seeds” have blossomed, bringing about economic growth, empowerment, and choice to the Thulare Dairy Farmers Cooperative in Lesotho. ■

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