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Summary Report: Effects of Broadband Connectivity in the Rwandan Tea Sector

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This summary is for **personal use only**. A full report and policy brief will be published in September 2014.

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a) Introduction

East Africa was the world's last major region without submarine fibre-optic broadband Internet access, and until the summer of 2009 had been forced to rely on slow and costly satellite connections for access. However, the region has recently been connected via fibre-optic cable, in theory, allowing much greater speeds at much lower prices.

This rapid transformation in the region's connectivity has prompted politicians, journalists, academics, and citizens to speak of an ICT-fuelled economic revolution happening on the continent. However, while some research has been conducted into the impacts of ICTs on economic processes and practices. But, there remains surprisingly little research into the impacts of changing connectivity on economic processes and practices in East Africa.

Here we summarise research examining the effects of this changing connectivity in the Rwandan tea sector.

b) Media Expectations of connectivity

Prior to the arrival of the fibre-optic cables, we identified three primary ideas promulgated in the media. First, potential access to a **'global marketplace'** where online visibility, and more direct communication at distance would allow firms to build new customers and markets.

Changing connectivity was also perceived to support socio-economic development where previous disconnected **individuals would be able to disintermediate middlemen** and capture better value through the use of connectivity.

A third idea suggested that these **positive outcomes of internet were expected to happen routinely** as an outcome of the better broadband availability in the country.

c) Changing Connectivity

We set out to investigate these ideas and to examine how they fit with practice in the tea sector. We drew on over 50 in-depth interviews to examine information flows and internet and ICT use.

First, in terms of the expectation that Rwandan firms would become better integrated in the 'global marketplace', our evidence suggests that this vision is largely true. Tea firms in Rwanda are increasingly linked into global value chains of production.

However, the idea of independent Rwandan tea firms using improved connectivity to become visible online and directly reach markets did not fit with reality. Rather, connectivity is one element in the private sector reform of the tea sector, through which Rwandan firms are becoming part of a global production of tea. Rwandan firms are increasingly connected into international tea firms and markets, who further package and market tea to customers.

Second, in terms of the expectation that disconnected economic actors would use connectivity to cut out intermediaries and directly access markets, there was much less evidence that changing connectivity has brought about significant transformation.

We found some online information flows amongst farmers and particularly tea co-operatives (e.g. identifying pest and diseases, advice on planting and growing tea bushes). Yet, inconsistent access to connectivity and exclusion from information and knowledge flows meant that connectivity was having a limited effect.

Third, expectations were that positive effects of connectivity would be inevitable once basic infrastructure was installed. We found this was only true in terms of more educated and skilled users and firms in the tea sector (such as tea factories and logistics firms). Gains from using connectivity by tea farmers or co-operatives tended to require further support such as skills building and provision of appropriate ICT which could support their needs.

d) Policy implications

A wider array of policy implications stem from this work

Evidence suggests that **promoting regional teas and branding them in global markets** could potentially drive growth and fit with East African Community agendas. This promotion and branding could build the profile of the region as a viable tea producer (in terms of consumers and buyers).

Further research is needed on **how global services and automation in the tea sector fit into Rwandan tea**. For example, how can Rwanda encourage developers to build and adapt information systems to better consider the unique characteristics of the Rwandan tea sector (e.g. co-operatives, highland tea etc.)? Are generic factory systems and services appropriate for Rwandan activities, and what do these services and systems miss out on?

There are positive potentials in **new markets and products for tea**. For example, new non-European tea markets are growing and lesser known tea niches (i.e. new varieties and products) may not have been fully explored. Clearer information provision about market potential, through surveys, research and online sources could provide the ability for tea firms to more coherently consider new potential as markets.

Rural actors in tea production chains have made the smallest gains from changing connectivity. Yet, there is evidence in research that **policy support for improving information use by farmers and cooperatives** could be vital. This could look to support positive information flows such as cooperative information sharing and farmer knowledge acquisition online through supporting skills and better provision of resources. To maximise goals of improving farming, development of such resources should be as transparent as possible and consider the presence of multiple media in such settings (e.g. PC, mobile, SMS, voice, paper, face-to-face).

e) Insights for ICT and Agriculture

Our research also provides insights into how ICTs and internet connectivity might be best used to improve benefits in wider sectors of agriculture. It also gives us insights into possibilities for new technology development.

As highlighted in the tea sector, Rwandan agricultural firms may already be linked into international supply chains, and here **online visibility** to find markets may be less valuable. Nevertheless, there is potential for smaller firms to use websites or online presence to find new customers or niche products (such as emerging markets or specialist teas). Benefits can also come where firms group together to nationally or regionally brand products and/or improve transparency of their sector.

Automation and integration of tea production has undoubtedly improved the efficiency and manageability of flows of Rwandan tea, where connectivity simplifies the communication and co-ordination of firms. This is particularly relevant for firms who look to co-ordinate the movement of goods through extended supply chains.

An opportunity for Rwanda is that it has a number of unique aspects which should be seen as benefits. For local developers, adaptation and improvement of ICTs to better fit local needs is an opportunity, one already successfully taken in Kenya.

In terms of **information and knowledge flows**, there is an opportunity for the development of ICTs that improve flows of information and knowledge to tea farmers and cooperatives. Opportunities include information provision in terms of sharing agricultural research (fertiliser types, bushes), pest and disease control, provision of global market data and better co-ordination for cooperatives. All these elements offer potential new ICT solutions drawing on connectivity.

f) Conclusion

Digital connectivity is increasingly important to the tea industry in Rwanda. The benefits of changing connectivity are generally being felt upstream in the Rwandan tea industry (for instance, by enabling higher volumes of production). The goal now should be to improve benefits further down the production chain for farmers and co-operatives. This can be done through more active support of connectivity in tandem with skills building and adapting technologies and services to be more appropriate.