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## GIS4FI PROCESS NOTE: ZAMBIA

Author: Abel Motsomi

The i2i data quality team supports Zambia's Financial Sector Deepening Trust (FSD Zambia) in their efforts to make geospatial data accessible to financial inclusion stakeholders, particularly financial service providers. This process note serves to capture key learnings of the journey to date. Process notes will be updated periodically, with the aim of facilitating learning among financial inclusion intermediaries on similar journeys in Africa and beyond.

### Background

In their 2011 commitment under the Maya Declaration<sup>1</sup>, the Bank of Zambia (BoZ) identified both supply- and demand-side measures to improve financial inclusion. Firstly, they committed to improving the financial inclusion rate from 37.3% to 50%. Secondly, they committed to ensure provision of affordable financial services to 74 districts, up from a 2011 baseline of only 7 districts.

Since the original commitment, significant steps have been taken towards these goals. These include the development of a draft framework on branchless banking and the launch of a national financial education strategy in July 2012. To strengthen data and measurement, BoZ developed an index to measure the depth and breadth of financial inclusion. In March 2013, this index was presented to the Special Policy Committee within BoZ.

The Maya Declaration goals were to be achieved through improved financial literacy programmes and effective measurement of financial inclusion. The latest data indicates that both of the goals have been achieved and even surpassed. In March 2013, 86 districts had access to affordable financial services, while the FinScope 2015 data indicate that almost 60% of adults are financially included. This indicates rapid changes in the financial sector in Zambia. The number of bank branches and agencies also increased from 277 in September 2011 to 322 in March 2013.

In times of such rapid change it is important to effectively measure progress and to be able to investigate the statistics at a granular level to ensure that the growth is equitable and truly inclusive.

### Data collection initiatives

There have been two separate rounds of geospatial financial access point data collection in Zambia: the first in 2011 and the second was being completed at the time of writing (December 2015).

#### Financial access point collection round 1 – 2011

The first comprehensive geospatial representation of formal financial institutions was assembled by MIX in 2011. The BoZ provided lists of commercial banks and micro-finance institutions (MFIs) and their location information. Data about NatSave branches and Post Offices were obtained from the respective websites. Finally, they also obtained the number of mobile agents at province and district level for the 4

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<sup>1</sup> <http://www.afi-global.org/library/publications/maya-declaration-commitment-made-bank-zambia>

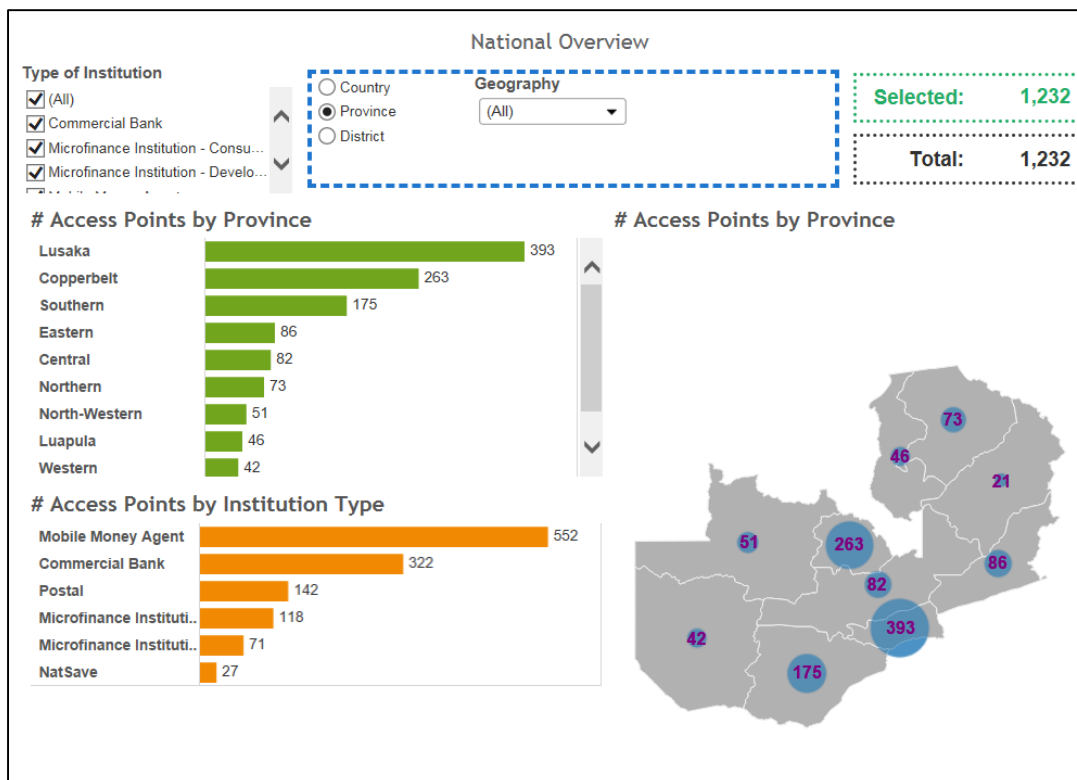


major cell phone providers in Zambia through web scraping<sup>2</sup>. MIX geocoded all the points to the province and district levels.

The MIX Zambia Map of Financial Inclusion provides an in-depth, sub-national perspective of financial inclusion using supply- and demand-side data. The data shows that mobile money agents represent the largest share of access points at 42.6%, compared to commercial banks at 24.8%, and others, including development microfinance institutions, consumer microfinance institutions, and post offices at 32.6%<sup>3</sup>. Aside from mobile money agents, who have the greatest presence in rural areas, Zambia's state-owned National Savings and Credit Bank (NatSave), has the widest physical outreach in rural areas, implying great potential for its role in expanding financial access to these underserved areas.

Figure 1 below visually represents the number of institutions by province. Key findings from 2011 included that Copperbelt and Lusaka provinces accounted for more than 50% of all financial access points while mobile money agents alone accounted for almost 45% of all types of access points.

**Figure 1: National overview of financial access in Zambia 2011**



### Financial access point collection round 2 – 2015 (ongoing)

In 2015, FSD Zambia set out to conduct a census of all financial access points in Zambia. The data is collected through a fieldwork exercise where the whole country is traversed by fieldworkers and all financial access points are physically geo-tagged. A short survey is also completed at each access point to collect additional information such as opening hours, services rendered etc.

<sup>2</sup> Web scraping is a computer software technique of extracting information from websites.

<sup>3</sup> <http://finclusionlab.org/country/Zambia/analytics?title=Key%20Findings>



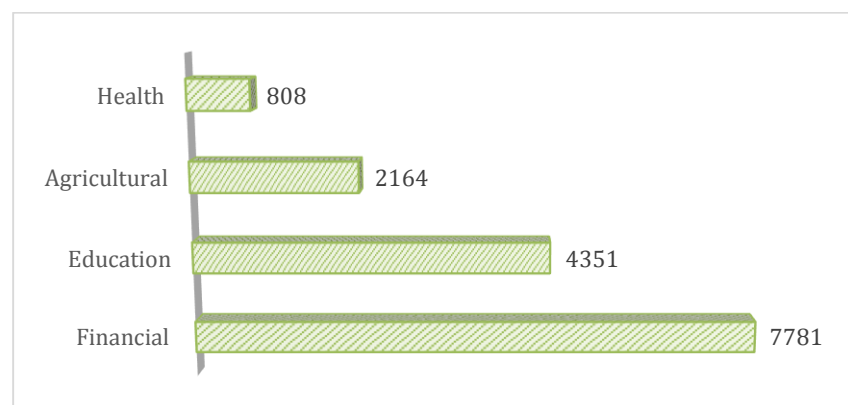
Table 1 shows the full list of the types of financial and non-financial access points that were targeted in the census exercise.

**Table 1: Financial and non-financial access points collected**

Type of access point	Description
Financial access points	Commercial bank, standalone ATM, forex bureau, money transfer service, mobile money agent, bank agent, insurance service provider, microfinance institution, micro money lenders, post office, savings and credit co-operative (SACCO), registered money lenders, savings groups and Shylock/Kaloba.
Health access points	Private clinics, government clinics, urban health centres, rural health centres, specialty hospitals, provincial/general hospitals, district hospitals and health posts.
Education access points	Government primary schools, government secondary schools, private primary schools, private secondary schools, universities and colleges
Agricultural access points	Input providers, processors, markets

As of the fifth week of data collection (28 October 2015) the number of data points collected is illustrated in Figure 2 below.

**Figure 2: Number of data points collected after 5 weeks**



The kinds of obstacles experienced in the 2015 fieldwork data collection round are common to largescale studies of this nature. Briefly, the following issues were found and have led to some delays and other obstacles:

**Access to surveying rural destinations** – since this is a census, every part of the country has to be covered. The challenge of transportation routes, distance and time to reach many destinations was greater than initially anticipated;

**Delay in obtaining necessary letters of authority** – Ministerial letters of authority were required to be sent to regional administrators before data collection of schools and health centers was permissible;

**Access point survey refusals** –some money transfer service points do not want to share information.



### Comparing data collection rounds 1 and 2

The 2011 round of data collection provided an overview of the supply-side picture that is very useful to the private sector and policymakers. While the method of data collection was cost-effective, it has a number of drawbacks. Firstly, web scraping relies heavily on the data being available digitally. Secondly, addressing systems have to be relatively sophisticated to allow automatic geocoding. This method will therefore be heavily biased to formal financial services as informal access points have very little online presence. Finally, the biggest limitation of this approach to data collection is the granularity at which the data is available. In order to perform detailed analysis of the distribution of financial access points relative to the population one needs exact location addresses, not only district and province.

By contrast, the advantages of the 2015 census collection round include the fact that the data was collected at a very detailed level, namely GPS co-ordinates for every access point. This round also included collection of both formal and informal financial access points. Finally, a wider variety of points were collected (specifically education, health and agricultural points).

## Stakeholders, roles and responsibilities

The table below highlights the main stakeholders taking part in Zambia's second data collection round.

Stakeholder	Description of function and possible contribution to GIS sustainability
Financial Sector Deepening Trust - Zambia (FSDZ)	FSDZ produces and analyses data that is relevant to increasing access to financial services in Zambia. It is also a close partner to BoZ's financial inclusion implementation efforts. FSDZ is currently the primary coordinator of GIS collection in Zambia: they are overseeing the second GIS collection round (2015) and are in a good position to lead subsequent rounds. FSDZ is also planning to invest resources (time and money) in building the necessary capacity at BoZ for future data collection initiatives.
Bank of Zambia (BoZ)	BoZ is a key player in Zambia promoting the improvement of financial access. BoZ provided practical support by sharing the known providers and outlets, as it is reported to them, to assist with the planning and verification of the data. In future, BoZ may also be part of sustainable collection efforts such as mandatory regulatory reporting.
UN Capital Development Fund (UNCDF)	The UNCDF's has been contracted by FSDZ to oversee the Digital Financial Services research and programs in Zambia. This is being implemented through the UNCDF program, Mobile Money for the Poor (MM4P). They have a special interest in the locations of mobile money agents and are a key research partner and user of the data.
Microfinance Information Exchange (MIX)	MIX has been contracted by MM4P to develop a dashboard to display and analyse the GIS data. They are developing these dashboards to address a number of public, donor and private use cases.
insight2impact   i2i	i2i partnered with FSDZ to learn more about the data collection process and to disseminate those lessons in the FSD Network. This includes: having frequent conversations with the other players involved to keep abreast of developments, reviewing and providing feedback on documents and providing suggestions where appropriate or requested.



## Looking ahead

The following four aspects are key to sustainable GIS implementation in Zambia:

### Concluding the second round of data collection

The second round of data collection was completed in December 2015. FSDZ and research house BrandWorx will engage financial service providers to validate and verify the collected data points.

### Data use

Once the collected data has been validated and verified, it needs to be organised in a GIS database. Specific tasks for this part of the process include: securing other relevant data layers (e.g. population data); cleaning the full GIS database; selecting a software portal for housing and enabling public engagement with the data; and creating and implementing a GIS data dissemination strategy that resonates with the needs and capacity of financial providers. The latter will focus on communicating specific, relevant use cases.

### Future data collection

FSDZ is already thinking about sustainably funding data collection going forward. Rather than all future rounds of collection being obtained through a census and a contracted third party, FSDZ will be exploring alternatives. These include:

**Self-reporting through BoZ** – As part of its capacity-building activities with BoZ, FSDZ will explore a scenario where BoZ mandates self-reporting by financial services providers (FSPs). In this scenario, FSPs would be required to report their financial points to BoZ, which will feed into a database used to update the existing dashboard and datasets. Similarly, since self-reporting as a collection method needs some kind of verification, FSDZ proposes to supplement that process by contracting a service provider to validate a sampled selection of the reported points through fieldwork geocapturing visits.

**Funding through the private sector and/or other government departments** – Should the private sector be motivated by the potential of GIS data and want regular future rounds, they may be interested in funding fieldwork through a syndicated funding approach. This would first require input from FSDZ and i2i to assist FSPs in deriving use and value from the data. Similarly, the ministries of education, agriculture and health, which benefited from their points being collected in the 2015 round, may also consider funding future rounds so as to ensure the continued collection of their points.

**Adoption of emerging data collection technologies** – i2i is tracking pilot initiatives that combine emergent technologies and approaches for collecting access points. One such approach is the development of a mobile app that FSPs can use to geotag their access points, with the aim of collating the data/coordinates and housing it in a central and accessible database. The second approach is to test the collection and validation of data by incentivised crowd-sourcing such as initiatives run by Open Street Maps. These examples have the potential to be adopted in Zambia as options for lower cost sustainable data collection and if adopted, will yield interesting learnings to share.

### Ownership and housing of data

We envision that a sustainable GIS environment would include access to a central repository of data for interested users. This introduces the question of where the data would be housed and who would be charged with ownership (updating and cleaning the data and ensuring that it is available to all stakeholders). As a regulatory authority over many of the financial services providers, BoZ will need to endorse the final decision and may want to have this authority. Alternatively, FSDZ or a third party could host it.