



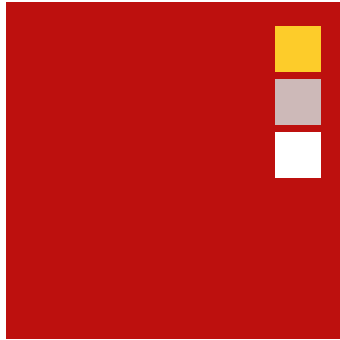
**Research ICT Africa**

6 Beach Road  
Old Castle Brewery  
Woodstock, Cape Town, Cape  
Town 7925

**T** Work Phone  
**F** Work Fax Phone  
[www.researchictafrica.net](http://www.researchictafrica.net)

# 2011 Q2 Fair mobile: Dynamic changes

For further information contact Christoph Stork on [cstork\(at\)researchICTafrica.net](mailto:cstork@researchICTafrica.net)



# Fair Mobile Index

## **Introduction**

The Fair Mobile Index aims at communicating the real value of mobile voice services and at comparing differences in mobile voice services value across the African continent. It allows for the comparison of mobile services tariffs in all African countries in relation to the value of a widely used commodity with which citizens are likely to be familiar such as cooking oil, sugar or tea.

The following report is based on all pre-paid tariffs publicly available (from operators' websites) from all operators of each country on the continent in April, May and June 2011.

## **Local Price Index**

In addition to the Fair Mobile Index a Local Price Index has been developed in order to track changes in pre-paid voice prices in a country across time and across countries. The local price index eliminates the impact of currency conversions and therefore it allows for the comparison of countries' performances without converting local currencies, since it does not compare voice prices across countries but rather it compares changes in voice prices across countries.

The local minute price index is based on the average per minute pre-paid call rates for peak, off-peak and off-off-peak rates for on-net, off-net and fixed-line calls in local currency.

This is expressed as the average of per minute pre-paid voice rate of April/May and June 2011 divided by the average rate for March 2011. March 2011 serves as a reference point from where the increase or decrease of pre-paid voice services is calculated. Therefore, in order to develop an index of the changes of price in pre-paid voice prices across countries, the ratio of prices between May/June 2011 and March 2011 is multiplied by 100.

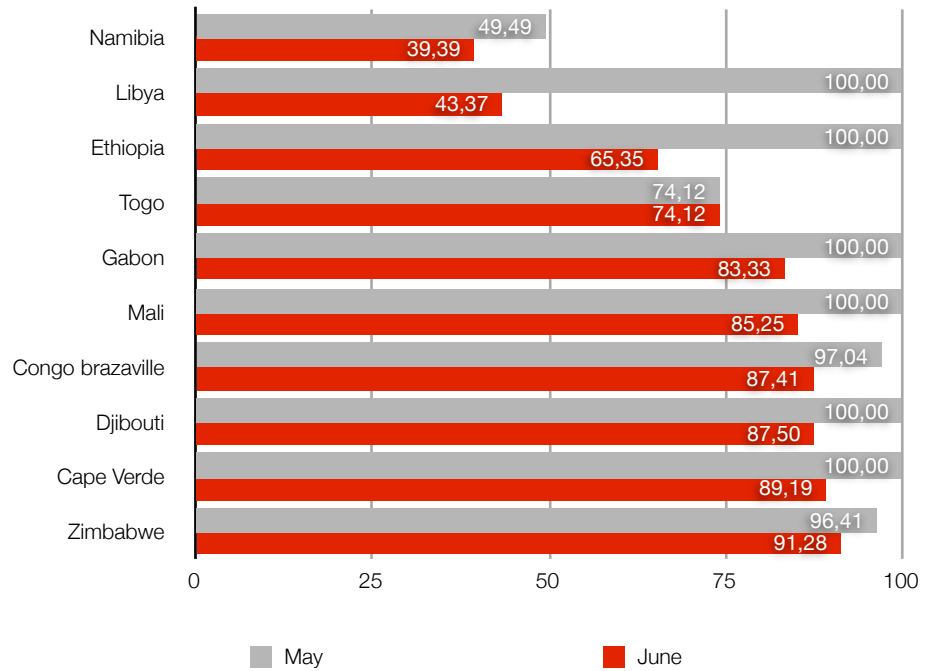


Figure 1: May/June 2011 Local price Index (base = March 2011)

Figure 1 above depicts changes of pre-paid voice tariffs between March 2011 and May/June 2011. A value below 100 is evidence of a price decrease in local currency and a value equal to 100 indicates that the tariffs did not change.

Only a few countries saw a price drop in their pre-paid voice tariffs between May and June 2011. Figure 1 displays changes in an index reflecting price decreases. In Namibia prices plummeted to more than a half of the price they were in March 2011. In March they had already dropped considerably from the previous quarter, following unprecedented reduction in the terminate rate (interconnection charges) that levered the playing field and enabled retail price competition.

Further, from the above index, it is possible to observe that Namibia is the best performing country, among those analysed, in terms of price reduction for mobile pre-paid voice services. The drop in prices is the result of a reduction of the dominant mobile operator (i.e. MTC) pre-paid tariffs having been undercut by its competitors who have been able to reduce their prices with the dramatic cut in the wholesale rate. As a result, the national average price dropped by 49.5 percentage points in May 2011 and by 39.4 points in June 2011 (compared to March 2011). Also Libya and Ethiopia significantly decreased pre-paid voice tariffs, respectively by 43.4 and by 65.4 percentage points in June 2011.

## OECD 2006 Basket Methodology

To overcome comparative pricing complexities, at least partially, the Organisation for Economic Development and Co-operation (OECD) has developed a pricing basket methodology. The OECD basket methodology is at the heart of the price comparison of telecommunications tariffs. The OECD (2006) defined usage baskets are displayed in the Table 1 below. Generally, basket methodologies have strengths and weaknesses. Strengths include the ability to compare products of an operator, comparing cheapest products of operators and comparing cheapest products available in a country. This allows benchmarking of countries, operators and products.

Table 1: OECD mobile basket Definition 2006: Monthly call distribution, minutes and SMS

Destination	Time	Low	Medium	High
Fixed	Peak	4,75	12,29	28,56
	Off Peak	2,48	5,90	9,04
	Off Off Peak	2,67	6,39	10,00
On-Net	Peak	11,98	31,80	80,60
	Off Peak	6,24	15,26	25,52
	Off Off Peak	6,74	16,54	28,21
Off-net	Peak	5,24	15,19	44,60
	Off Peak	2,73	7,29	14,12
	Off Off Peak	2,95	7,90	15,61
SMS On-Net		21,45	32,50	35,75
SMS OFF-Net		11,55	17,50	19,25

There are two main weaknesses in the OECD methodology:

- The OECD 2006 methodology only includes dominant operators, while the 2010 baskets includes only the two largest operators. However, price changes following regulatory interventions would mainly be expected from small operators that attempt to gain market share through lower prices. On the other hand, dominant operators tariffs reflect what people actually pay better than comparing the cheapest product available in a country.
- OECD baskets do not take into account the number of people on each package and actual minutes of use for each package. No one is an average user and actual consumption patterns of an individual might only poorly be reflected. The same basket is used for all operators while subscribers of smaller operators are likely to have a different off-net/on-net ratio compared to larger operators.

The table below addresses this inconsistency by comparing the cheapest basket for a high user (regardless of which operator the basket is based on) and the same basket of minutes from the dominant operator (i.e. using the OECD 2006 basket). The third column of the table compares these two baskets and shows the difference between the cheapest basket of the dominant operator and the cheapest basket across operators in a country.

Several of the countries that are experiencing higher levels of competition show a price difference. For instance, in Algeria, a country with 3 mobile operators, Nedjma (i.e. the smaller operator) is reducing its tariffs in an attempt to gain market share. The operator cut its tariffs between March and June 2011. Its cheapest high user basket went down from 10.42 USD in March 2011 to 9 USD in June 2011. It results in a percentage price difference of 69.7% between Nedjma cheapest high user basket and the cheapest high user basket of the dominant

operator. In Ghana, instead, the dominant operator (i.e. MTN Ghana) reduced its tariffs. The cheapest High User basket decreased from 20.37 USD in March 2011 to 19.38 USD. The reduction in the basket value is the result of an attempt by the dominant operator to reducing the difference price between its tariffs and tariffs of smaller operators. Smaller operators, instead, could not cut tariffs further in June 2011. As a result, the difference percentage price between the cheapest high user and the dominant cheapest high user decreased by 3.1 point percentage between March 2011 and June 2011. In Tanzania, both the dominant and smaller operators increased their prices, although the difference percentage point between the cheapest high-user basket and the dominant cheapest high-user basket increased between March 2011 and June 2011, showing an on-going tariffs war. In South Africa, instead, tariffs did not change, confirming a price matching strategies between operators in a poorly competitive market.

Table 2: June 2011 OECD Basket costs in USD

	Country Name	Cheapest High User USD June 2011	Dominant (OECD) High User USD June 2011	% cheaper than dominant	Cheapest in country in terms of March 2011
1	Egypt	7,63	7,63	0,00%	100,00%
2	Algeria	9,00	29,65	<b>69,7%</b>	85,50%
3	Kenya	9,10	12,35	<b>26,3%</b>	100,00%
4	Sudan	11,53	13,75	16,10%	100,00%
5	Uganda	12,71	20,74	<b>38,7%</b>	100,00%
6	Ethiopia	13,09	13,09	0,00%	83,50%
7	Mauritius	13,15	13,15	0,00%	100,00%
8	Ghana	13,98	19,38	<b>27,9%</b>	100,00%
9	Tanzania	14,24	25,74	<b>44,7%</b>	106,70%
10	Namibia	16,56	16,56	0,00%	39,30%
11	Libya	17,78	17,78	0,00%	46,00%
12	Sierra Leone	19,04	19,04	0,00%	100,00%
13	Rwanda	21,37	27,93	<b>23,5%</b>	100,00%
14	Gambia	23,78			98,00%
15	Guinea	23,93	23,93	0,00%	100,00%
16	Nigeria	26,58	59,69	<b>55,5%</b>	100,00%
17	Tunisia	34,98	38,49	9,10%	100,00%
18	Benin	35,70	46,12	22,60%	100,00%
19	Congo Brazzaville	38,54	38,54	0,00%	89,10%
20	Djibouti	39,41	39,41	0,00%	93,20%
21	D.R. Congo	39,43	49,80	20,80%	100,00%
22	Sao Tome and Principe	40,25	40,25	0,00%	100,00%
23	Botswana	40,60	40,60	0,00%	91,30%
24	Mauritania	40,66			100,00%
25	Angola	41,93	41,93	0,00%	91,80%
26	Liberia	41,97			100,00%
27	Togo	43,26	43,26	0,00%	69,70%
28	Mozambique	43,61	50,51	13,70%	86,30%
29	Cameroon	45,10	45,10	0,00%	103,90%

30	Senegal	46,22	46,22	0,00%	100,00%
31	Madagascar	46,49	48,77	4,70%	100,00%
32	Côte d'Ivoire	46,74	46,74	0,00%	100,00%
33	Burkina Faso	48,18	49,50	2,70%	97,30%
34	Niger	48,39	61,35	<b>21,1%</b>	100,00%
35	South Africa	52,04	55,51	<b>6,3%</b>	100,00%
36	Mali	52,28	52,28	0,00%	88,20%
37	Zimbabwe	56,19	61,84	9,10%	90,90%
38	Zambia	59,73	62,56	4,50%	100,00%
39	Swaziland	59,83	59,83	0,00%	77,30%
40	Lesotho	62,66	85,50	<b>26,7%</b>	100,00%
41	Malawi	63,50	63,50	0,00%	100,00%
42	Seychelles	64,88			100,00%
43	Central African Republic	66,35	66,35	0,00%	100,00%
44	Cape Verde	96,41	96,41	0,00%	91,10%
45	Chad	97,34	97,34	0,00%	100,00%
46	Morocco	114,93	114,93	0,00%	100,00%

Table 3: March 2011 OECD Basket costs in USD

	Country Name	Cheapest High User USD March 2011	Dominant (OECD) High User USD March 2011	% cheaper than dominant	Cheapest in Country In terms of January 2011
1	Egypt	7,63	7,63	0,00%	100,00%
2	Kenya	9,10	12,35	26,00%	100,00%
3	Uganda	10,42	21,24	51,00%	84,00%
4	Algeria	10,52	29,65	65,00%	100,00%
5	Sudan	11,53	13,75	16,00%	100,00%
6	Mauritius	13,15	13,15	0,00%	100,00%
7	Tanzania	13,35	21,59	38,00%	66,00%
8	Ghana	13,98	20,37	31,00%	85,00%
9	Ethiopia	15,67	15,67	0,00%	60,00%
10	Sierra Leone	19,04	19,04	0,00%	
11	Rwanda	21,37	28,45	25,00%	100,00%
12	Guinea	23,93	23,93	0,00%	100,00%
13	Gambia	23,95			99,00%
14	Nigeria	26,58	36,47	27,00%	100,00%
15	Tunisia	34,98	37,81	7,00%	93,00%
16	Benin	35,70	46,12	23,00%	100,00%
17	Libya	38,62	38,62	0%	100%
18	D.R. Congo	39,43	49,80	21%	
19	Sao Tome & Principe	40,25	40,25	0%	
20	Mauritania	40,66			67%
21	Liberia	41,97			
22	Namibia	42,17	66,36	36%	93%
23	Djibouti	42,29	42,29	0%	100%

Table 3: March 2011 OECD Basket costs in USD

	Country Name	Cheapest High User USD March 2011	Dominant (OECD) High User USD March 2011	% cheaper than dominant	Cheapest in Country In terms of January 2011
24	Congo Brazzaville	43,25	52,54	18%	82%
25	Cameroon	43,39	43,39	0%	100%
26	Botswana	44,44	44,44	0%	100%
27	Angola	45,67	56,64	19%	90%
28	Senegal	46,22	46,22	0%	100%
29	Madagascar	46,49	52,57	12%	100%
30	Côte d'Ivoire	46,74	46,74	0%	97%
31	Niger	48,39	61,35	21%	100%
32	Burkina Faso	49,50	49,50	0%	100%
33	Mozambique	50,51	50,51	0%	100%
34	South Africa	52,04	55,51	6%	108%
35	Mali	59,24	59,24	0%	100%
36	Zambia	59,73	65,23	8%	100%
37	Zimbabwe	61,84	61,84	0%	100%
38	Togo	62,07	62,07	0%	100%
39	Lesotho	62,66	92,39	32%	68%
40	Malawi	63,50	63,50	0%	93%
41	Seychelles	64,88			100%
42	Central African Republic	66,35	66,35	0%	100%
43	Gabon	68,15			100%
44	Swaziland	77,42	77,42	0%	100%
45	Chad	97,34	97,34	0%	100%
46	Cape Verde	105,88	115,98	9%	100%
47	Morocco	114,93	114,93	0%	100%

## Commodity Index

Benchmarking tariffs across countries requires a common denominator to compare countries. This is usually done by expressing prices in US\$ or by converting local tariffs in US\$ Purchasing Power Parity (PPP). This is necessary to compare the prices in the macro-economic context of their countries.

The problem with this type of comparison is that it is not easily understood by all. US\$ PPP conversion rates are relatively sophisticated analytical tool. Also, cross-country differences in tariffs for pre-paid mobile voice services are not well reflected even in relative dollar amounts, the value of which many people are not very familiar. In order to make the comparison “more real”, an alternative illustration has been used. The following figure 3, 4, and 5 express the average calling rate as minutes for a kilogram of cooking oil or sugar or tea.

The advantage of this further analysis is that we are now able to assess the level of competition in a country from two different angles: first, as an indicator of the level of recent competition (likely to be the result either of a new entrant into the market or reduction of interconnection charges) via the mechanism of comparing the same basket of minutes from the cheapest operator and the dominant operator (table 2 and table 3). Second, whether competition has delivered more affordable telecommunications by comparing the cost of airtime to a kilogram of cooking oil, tea or sugar, the value of which is clear to most.

In this sense the comparison of mobile prices in relation to cooking oil, sugar and tea is a better cross-country comparison than US\$ PPP. However, the comparison is not without its own shortcomings. It would be highly complex to show the exact quantity of cooking oil, sugar or tea that someone has to give up in a particular geographic location for a particular number of minutes. To make the comparison easier (and to take one step back from price differences within a country) the reference point is a commodity expressed in world market prices.

The indices are compiled based on the following assumptions:

- Cheapest prepaid mobile product available in a country
- US\$ Exchange rate = Average exchange for 2010
- Cooking Oil Price = average price for sunflower and palm tree oil
- Price of 1 kg sunflower oil is based on US export price from Gulf of Mexico, US\$ per metric tonne
- Price of 1 kg palm tree oil is based on Malaysia Palm Oil Futures (first contract forward) 4-5 percent FFA, US\$ per metric tonne
- Price of 1 kg sugar is based on Sugar, Free Market, Coffee Sugar and Cocoa Exchange (CSCE) contract no.11 nearest future position, US cents per pound
- Price of 1 kg tea is based on Tea, Mombasa, Kenya, Auction Price, US cents per kilogram, From July 1998, Kenya auctions, Best Pekoe Fannings. Prior, London auctions, c.i.f. U.K. warehouses

Feedback suggests that we have still not found the product that people can really relate to across the continent and that really has local resonance. Therefore, we are returning to one of the original proposed products, namely a can of Coke. We are in the process of trying to get the recommended retail prices of Coke in each African country. We believe that the Coke Mobile



Index will really capture the cost of communications and the relative luxury it is at current prices in most African countries. Nevertheless, the figures below are a closer approximation of what people are foregoing in order to pay for mobile minutes.

One of the findings is that generally the same countries that have a price difference between a basket from the cheapest operator and a basket from the dominant operator also give more value for money. To go back to the Algerian example, people get 27.72 minutes of talk time for a kilogram of cooking oil, which is the fourth highest figure on the continent compared to Morocco which at only 2.41 minutes of talk time for 1 kg of cooking oil is the worst.

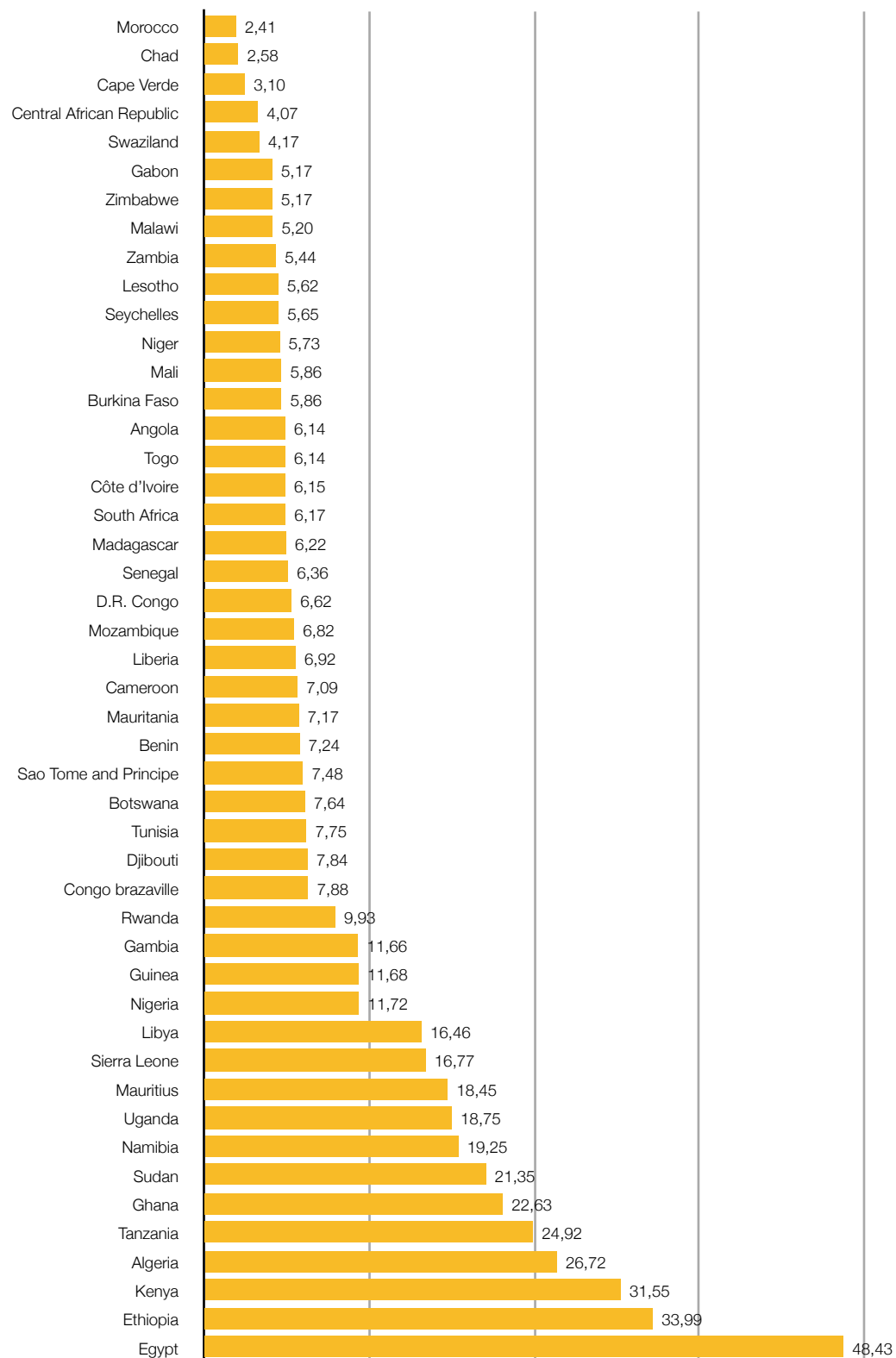


Figure 2: Minutes talk time for 1 kg cooking oil, June 2011. The higher (i.e. Egypt) is the cheaper.

Table 4: Minutes per 1 Kg of cooking oil - Comparison March/June 2011

Country Name	Mar-11		Country Name	Jun-11	Comparison Mar/June 2011
Morocco	2,41		Morocco	2,41	=
Chad	2,58		Chad	2,58	=
Cape Verde	2,76		<b>Cape Verde</b>	<b>3,10</b>	<b>+</b>
Central African Republic	4,07		Central African Republic	4,07	=
Swaziland	4,23		Swaziland	4,17	-
Gabon	4,30		<b>Gabon</b>	<b>5,17</b>	<b>+</b>
Togo	4,55		<b>Zimbabwe</b>	<b>5,17</b>	<b>+</b>
Zimbabwe	4,72		Malawi	5,20	=
Mali	5,00		Zambia	5,44	=
Malawi	5,20		Lesotho	5,62	=
Zambia	5,44		Seychelles	5,65	=
Lesotho	5,62		Niger	5,73	=
Seychelles	5,65		<b>Mali</b>	<b>5,86</b>	<b>+</b>
Niger	5,73		Burkina Faso	5,86	=
Burkina Faso	5,86		Angola	6,14	=
Mozambique	6,05		<b>Togo</b>	<b>6,14</b>	<b>+</b>
Angola	6,14		Côte d'Ivoire	6,15	=
Côte d'Ivoire	6,15		South Africa	6,17	=
South Africa	6,17		Madagascar	6,22	=
Madagascar	6,22		Senegal	6,36	=
Senegal	6,36		D.R. Congo	6,62	=
D.R. Congo	6,62		<b>Mozambique</b>	<b>6,82</b>	<b>+</b>
Djibouti	6,86		Liberia	6,92	=
Congo Brazzaville	6,89		Cameroon	7,09	-
Liberia	6,92		Mauritania	7,17	=
Libya	7,14		Benin	7,24	=
Mauritania	7,17		Sao Tome and Principe	7,48	=
Cameroon	7,20		Botswana	7,64	-
Benin	7,24		Tunisia	7,75	=
Sao Tome and Principe	7,48		Djibouti	7,84	+
Namibia	7,58		<b>Congo Brazzaville</b>	<b>7,88</b>	<b>+</b>

Botswana	7,72		Rwanda	9,93	=
Tunisia	7,75		Gambia	11,66	=
Rwanda	9,93		Guinea	11,68	=
Gambia	11,66		Nigeria	11,72	=
Guinea	11,68		<b>Libya</b>	<b>16,46</b>	<b>+</b>
Nigeria	11,72		Sierra Leone	16,77	=
Sierra Leone	16,77		Mauritius	18,45	=
Mauritius	18,45		Uganda	18,75	=
Uganda	18,75		<b>Namibia</b>	<b>19,25</b>	<b>+</b>
Sudan	21,35		Sudan	21,35	=
Ethiopia	22,21		Ghana	22,63	=
Ghana	22,63		Tanzania	24,92	=
Tanzania	24,92		Algeria	26,72	=
Algeria	26,72		Kenya	31,55	=
Kenya	31,55		<b>Ethiopia</b>	<b>33,99</b>	<b>+</b>
Egypt	48,43		Egypt	48,43	=

Egypt retail tariffs are the cheapest in Africa. In that country, 1 kilogram of oil has the same value of 48.43 minutes of pre-paid mobile voice service. It is followed by Ethiopia (1 Kg of oil is equivalent to 40 minutes of pre-paid voice services) Kenya, Algeria, Tanzania and Ghana. Other than Ethiopia, where prices are politically determined and there is not formal basis to ensure that tariffs are cost-based, these are all market with more than three players. In particular, in Kenya, the combination of four players and an effectively regulated interconnection regime over a period of time brought down prices.

The most dramatic shift in prices is that of Namibia. Namibia moved up both in the Fair Mobile Index and in the OECD basket index in June 2011. In the cheapest high user basket (OECD 2006 High User basket definition), the country gained several positions, moving from the 22nd place in March 2011 to the 10th in June 2011 (see table 2 and table 3 above), while in the Fair Mobile Index it went up from the 17th position in March 2011 to the 8th position in June 2011. The reason of such a good performance, in terms of tariffs, is the aggressive MTC Namibia price reduction, following systematic interconnection price reductions as mentioned. In June 2011, the dominant operator launched a 39 Namibian dollar cents campaign for calls across networks with 100 free SMS a day subject to recharging.

Morocco, Chad and Cape Verde are the most expensive countries in the continent. In Morocco, with the same value of 1 kilogram of oil you can talk for only 2.41 minutes, in Chad for 2.58 minutes and in Cape Verde for 3.10 minutes - three quarters of an hour less than in Egypt!

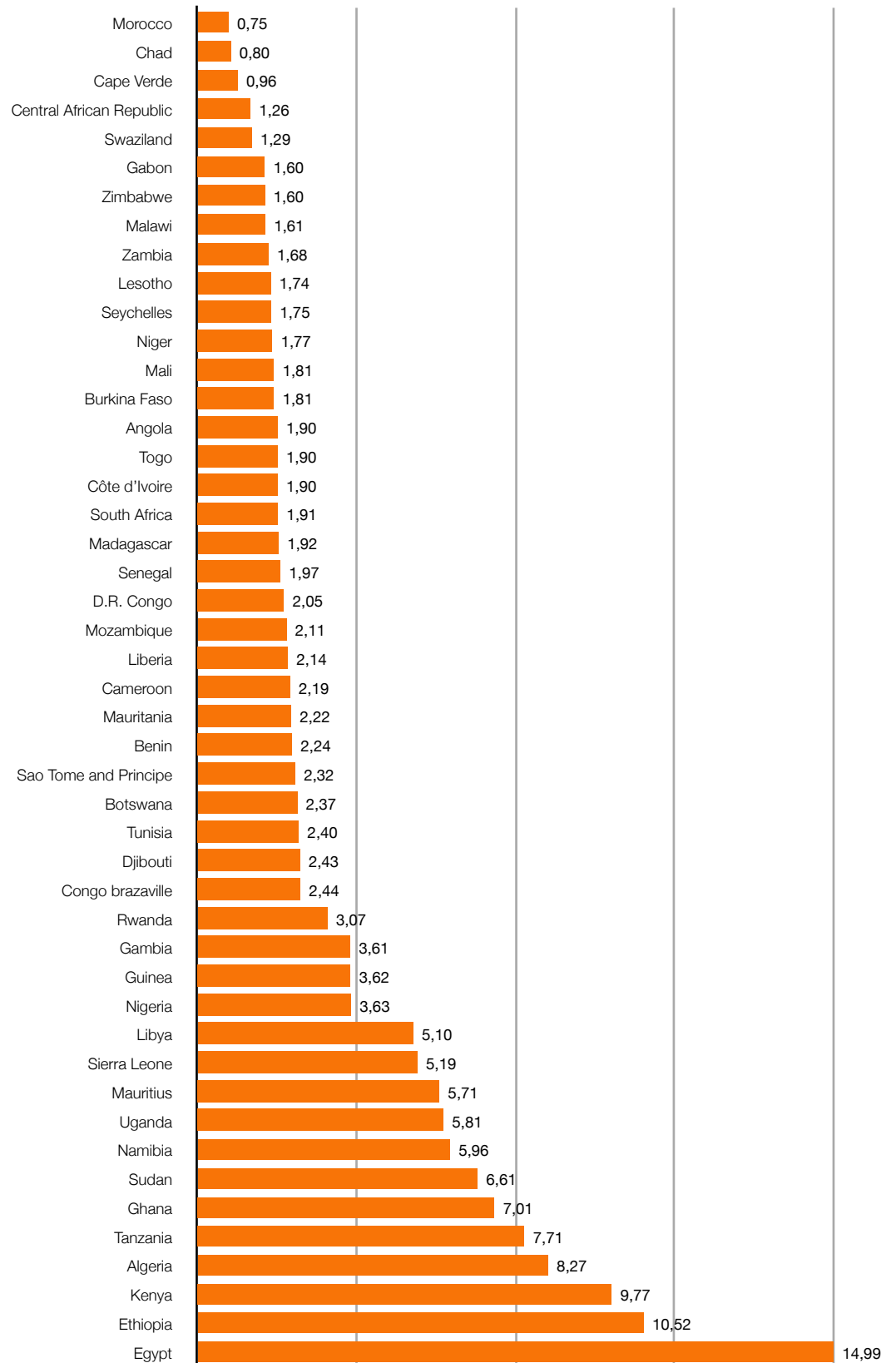


Figure 3: Minutes talk time for 1 kg Tea

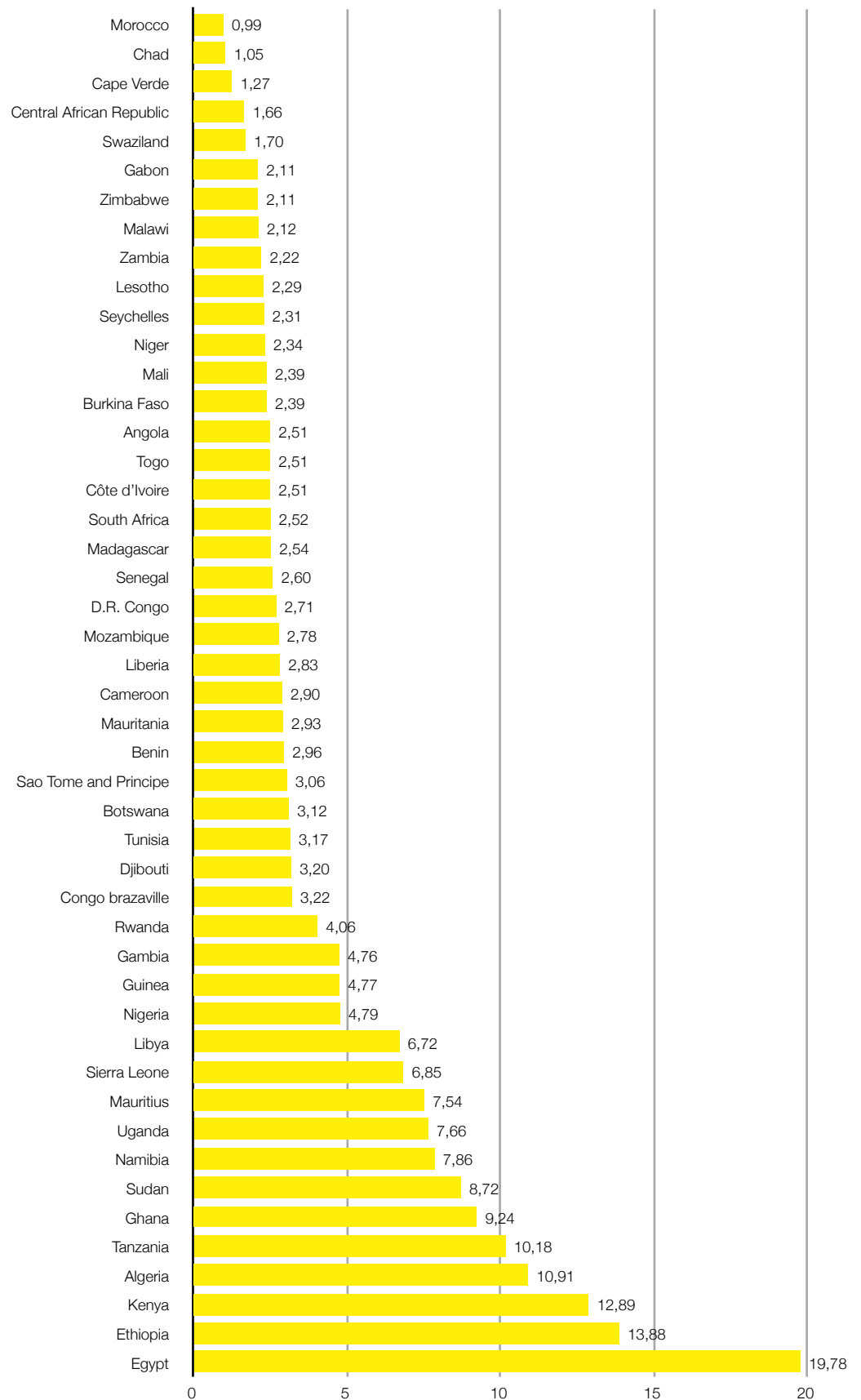


Figure 4: Minutes talk time for 1 kg Sugar

## Conclusion

Feedback suggests that a better cross-country product to compare the “value of calling” in Africa is a can of Coke. However, even if it is our desire to incorporate this suggestion in our analysis, we have been unable to get the retail price of a can of Coke in each African country from Coca-Cola in South Africa. We are still trying the head office in Atlanta but in the meantime we are collecting this data and we hope that we will be able to develop a Fair Mobile Index based on the cost of a Coke can in the next quarterly report. To assist us by filling in the cost of a can of Coke in your country, please go to

<https://twitter.com/#!/stevesong/status/80543454622515201> or

Publicly update-able spreadsheet at:

[https://spreadsheets.google.com/spreadsheet/ccc?key=0AqAluezzFiMFdHI2MGk2RDVtbjFIMXlZRnA1bEpLRUE&hl=en\\_GB&authkey=COai1KMO](https://spreadsheets.google.com/spreadsheet/ccc?key=0AqAluezzFiMFdHI2MGk2RDVtbjFIMXlZRnA1bEpLRUE&hl=en_GB&authkey=COai1KMO)

The cooking oil, sugar and tea comparisons is a partial step towards an index that reflects the “value of calling” to people across the continent and it expresses what actual trade-offs are. Nevertheless, this partial solution to the problem of accurately comparing what people forego for airtime provides insight into the level of competition between countries. Briefly, this insight is achieved through three mechanisms:

- A figure that compares changes in voice prices across countries (i.e. figure 1).
- A table that compares a basket of minutes from the cheapest operator against the same basket of the dominant operator (i.e. table 2 and table 3); and
- The number of minutes that a kilogram of cooking oil or sugar or tea can purchase (i.e. Fair Mobile Index, figure 2, 3 and 4).

Several countries, such as Algeria, Kenya, Uganda, Ghana, Tanzania, Rwanda and Nigeria show a substantial difference between the basket of airtime from the cheapest operator vs. the dominant operator, that in some instances is the same operator, such as in Namibia. These countries are also experiencing increased levels of competition - either from new entrants or from existing entrants that are trying to gain market share against a dominant operator or as a result of termination rate reductions.

Looking at the amount of airtime a kilogram of cooking oil, tea or sugar buys provides further insight into the level of competition in each country and whether the gains from competition have been realised.