



# Madagascar

**EquityTool: Update released December 19, 2025**



The EquityTool has been updated based upon new source data. The original version is no longer active but is available upon request.

**Previous version released: May 14, 2018**

**Source data:** [Madagascar DHS 2021](#)

**# of survey questions in full wealth index: 42**

**# of variables in full index: 145**

**# of survey questions in EquityTool: 11**

**# of variables in EquityTool: 12**



## Questions:

	Question	Option 1	Option 2	Option 3
Q1	Does your household have electricity?	Yes	No	
Q2	...a television?	Yes	No	
Q3	... a sofa?	Yes	No	
Q4	...a DVD/ DivX player?	Yes	No	
Q5	... chair?	Yes	No	
Q6	... radio?	Yes	No	
Q7	Does any member of your household have an account in a bank or other financial institution?	Yes	No	
Q8	... a watch?	Yes	No	



Q9	What type of cooking fuel is mainly used for cooking?	Wood	Other	
Q10	What is the main material of the roof of your dwelling?	Metal sheet	Thatch/leaves/grass	Other
Q11	What is the main material of the walls of your dwelling?	Cement	Other	

### Technical notes:

The standard simplification process was applied to achieve high agreement with the original wealth index. Kappa was greater than 0.75 for the national and urban indices. Details on the standard process can be found [in this article](#). The data used to identify important variables comes from the [factor weights](#) released by ICF.

### Level of agreement:

	National Population (n=20510)	Urban only population (n=5146)
% agreement	84.8%	84.1%
Kappa statistic	0.763	0.752

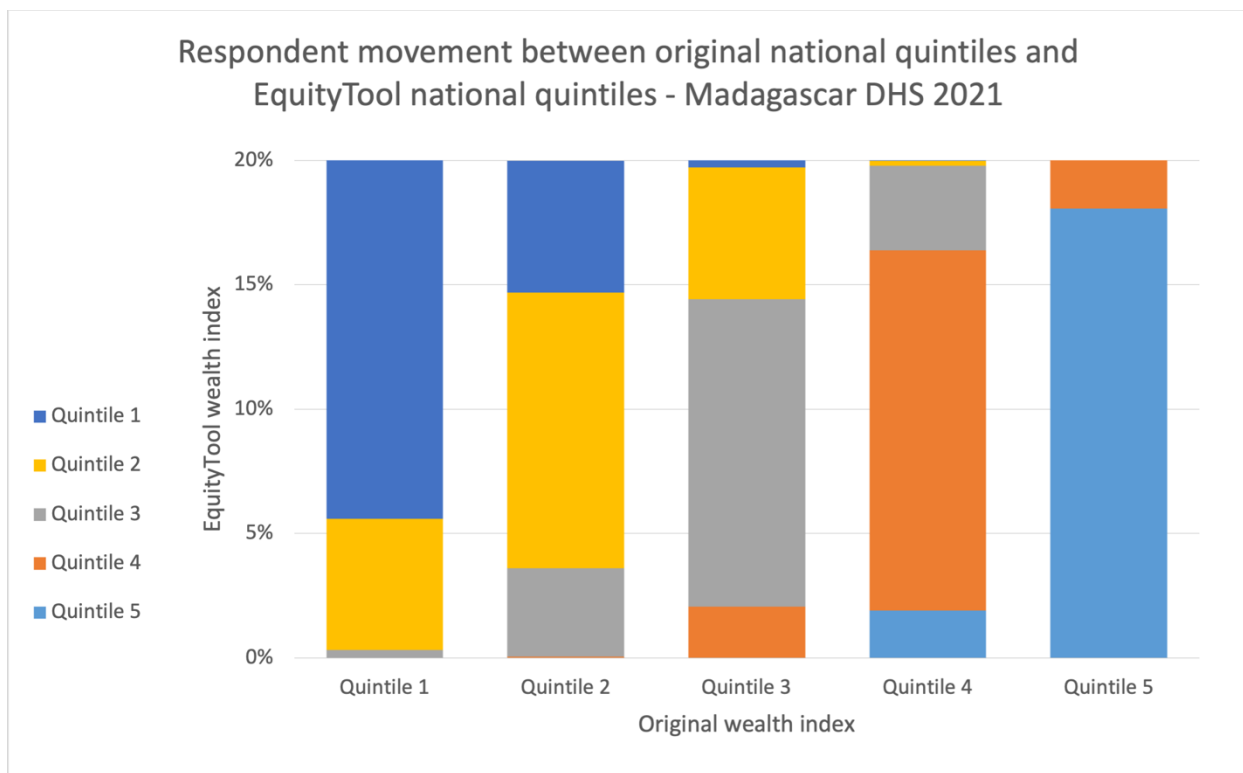
Respondents in the original dataset were divided into three groups for analysis – those in the 1<sup>st</sup> and 2<sup>nd</sup> quintiles (poorest 40%), those in the 3<sup>rd</sup> quintile, and those in the 4<sup>th</sup> and 5<sup>th</sup> quintiles (richest 40%). After calculating their wealth using the simplified index, they were again divided into the same three groups for analysis against the original data in the full DHS. Agreement between the original data and our simplified index is presented above.

### What does this mean?

When shortening and simplifying the index to make it easier for programs to use to assess equity, it no longer matches the original index with 100% accuracy. At an aggregate level, this error is minimal, and this methodology was deemed acceptable for programmatic use by an expert panel. However, for any given individual, especially those already at a boundary between two quintiles, the quintile the EquityTool assigns them to may differ to their quintile according to the original DHS wealth index.



The graph below illustrates the difference between the EquityTool generated index and the full DHS wealth index. Among all of those people (20% of the population) originally identified as being in the poorest quintile, approximately 72% are still identified as being in the poorest quintile when we use the simplified index. However, approximately 26.5% of people are now classified as being in Quintile 2. From a practical standpoint, all of these people are relatively poor. Yet, it is worthwhile to understand that the simplified index of 11 questions produces results that are not identical to using all 42 questions in the original survey.



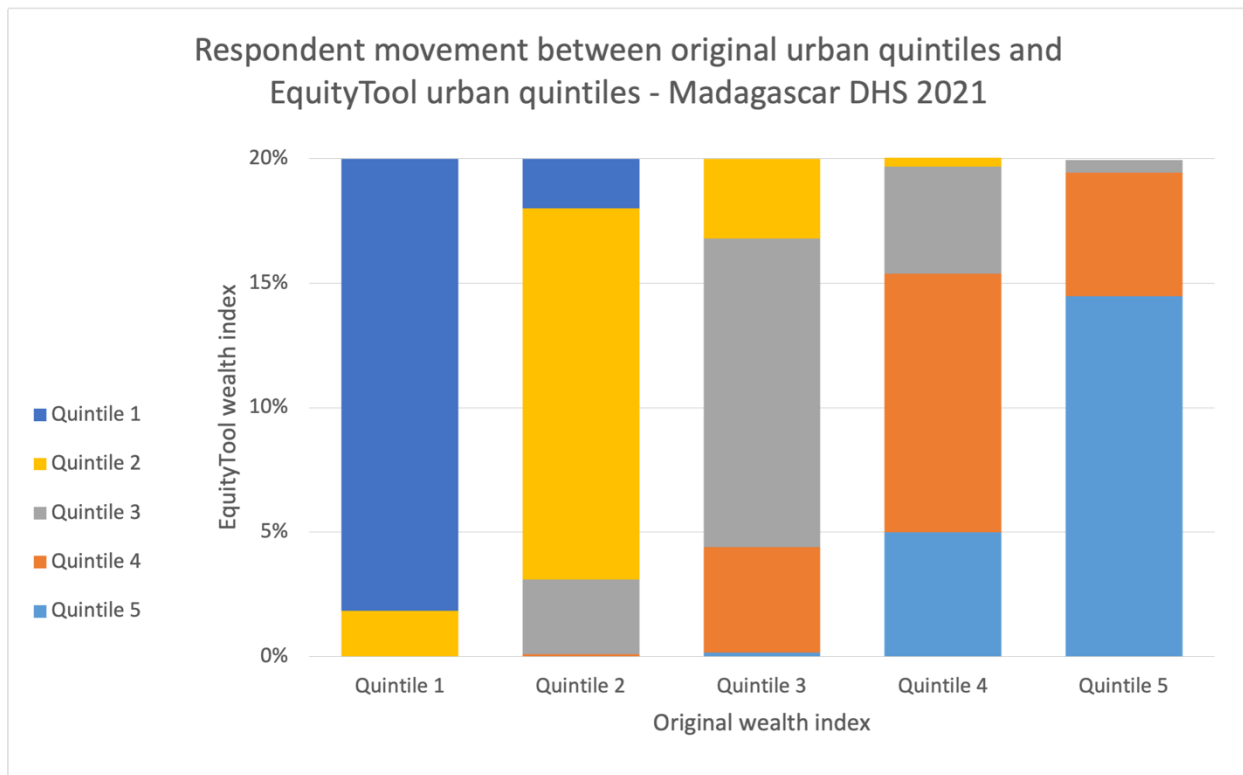
The following table provides the same information on the movement between national quintiles when using the EquityTool versus the original DHS wealth index:

		EquityTool National Quintiles					Total
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Original DHS	Quintile 1	14.4%	5.3%	0.3%	0.0%	0.0%	20%
	Quintile 2	5.3%	11.1%	3.6%	0.0%	0.0%	20%



<b>National Quintiles</b>	Quintile 3	0.3%	5.3%	12.4%	2.1%	0.0%	20%
	Quintile 4	0.0%	0.2%	3.4%	14.5%	1.9%	20%
	Quintile 5	0.0%	0.0%	0.0%	1.9%	18.1%	20%
	<b>Total</b>	<b>20.0%</b>	<b>21.9%</b>	<b>19.6%</b>	<b>18.5%</b>	<b>20.0%</b>	<b>100%</b>

The following graph provides information on the movement between urban quintiles when using the EquityTool versus the original DHS wealth index:





The following table provides the same information on the movement between urban quintiles when using the EquityTool versus the original DHS wealth index:

		EquityTool Urban Quintiles					
		Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Original DHS Urban Quintiles	Quintile 1	18.2%	1.8%	0.0%	0.0%	0.0%	20%
	Quintile 2	2.0%	14.9%	3.0%	0.1%	0.0%	20%
	Quintile 3	0.0%	3.2%	12.4%	4.2%	0.2%	20%
	Quintile 4	0.0%	0.3%	4.3%	10.4%	5.0%	20%
	Quintile 5	0.0%	0.0%	0.5%	5.0%	14.5%	20%
	Total	20.2%	20.3%	20.2%	19.7%	19.6%	100%

**Data interpretation considerations:**

1. This tool provides information on relative wealth – ‘ranking’ respondents within the national or urban population. The most recent available data from the WorldBank indicates that 69.2% of people in Madagascar live below \$3.00/day[1]. This information can be used to put relative wealth into context.
2. People who live in urban areas are more likely to be wealthy. In Madagascar, 66% of people living in urban areas are in the richest national quintile, compared to only 10% of those living in rural areas[2].
3. If your population of interest is predominantly urban, we recommend you look at the urban results to understand how relatively wealthy or poor they are, in comparison to other urban dwellers.
4. If the people you interviewed using the EquityTool live in rural areas, or a mix of urban and rural areas, we recommend using the national results to understand how relatively wealthy or poor they are, in comparison to the whole country.
5. Some regions in Madagascar are wealthier than others. It is important to understand the country context when interpreting your results.
6. In most cases, your population of interest is not expected to be equally distributed across the five wealth quintiles. For example, if your survey interviewed people exiting a shopping mall, you would probably expect most of them to be relatively wealthy.

**Changes from the previous EquityTool**



We released an EquityTool on May 14, 2018, which compared user data to a benchmark of 2016. A new source survey, the Madagascar DHS 2021 was recently released, and allows us to benchmark results to a more recent population. This is important, because wealth generally increases over time, and comparing your respondents to an old benchmark population will lead to over-estimating the relatively wealthy in your survey. The new EquityTool was generated using the exact same methodology as the previous version, and in generating the new EquityTool, no attempt was made to account for the fact that a previous version existed. In other words, we did not explicitly try to keep the same questions or response options as the previous tool.

### Practical Considerations

For those who have not previously conducted an EquityTool based study in Madagascar, the remainder of this section is not particularly relevant. For those who have used the previous EquityTool, you may be interested to know how the two versions compare.

	Previous	Current
Source Data	MIS 2016	DHS 2021
# of questions in EquityTool	12	11
# of questions in full wealth index	32	42
# of variables in EquityTool	15	12
# of variables in full wealth index	122	145
Kappa statistic (EquityTool vs full wealth Index) for 3 groups	National: 0.761 Urban: 0.759	National: 0.763 Urban: 0.752

Compared to the previous EquityTool, some of the questions and variables included have changed.

The previous EquityTool included 15 variables. Of those 15 variables, 9 are still included in the current EquityTool.

1. Electricity	6. Cooking fuel: wood
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2. Television	7. Roof material: metal sheets
3. Watch	8. Roof material: Thatch/Palm
4. Radio	9. Wall material: cement
5. Bank account	

Three variables are included in the new EquityTool that were not included in the previous EquityTool.

1. Sofa	3. Chair
2. DVD/ DivX player	

It is generally best to use the current version of the EquityTool, since it will give a more accurate quintile estimate. If you are currently collecting data, it is best to continue to use the previous tool. Note that if you have created a survey in the EquityTool web application using the previous EquityTool, that survey will continue to use the previous EquityTool.

If conducting a follow-up survey to a baseline that used the previous EquityTool, and the most important result is change from the baseline, it may be preferable to continue to use the previous EquityTool for comparability. If you need to do this, please contact us at [support@equitytool.org](mailto:support@equitytool.org).

### **Contextualizing Changes in the EquityTool**

Comparing the results of surveys that used the previous EquityTool against those that use the current EquityTool is difficult. It will not always be clear whether any difference is because of actual differences in the wealth level of the respondents or because the EquityTool has changed.

The section below provides relevant contextual information that may help a user understand why the EquityTool has changed from the previous tool.

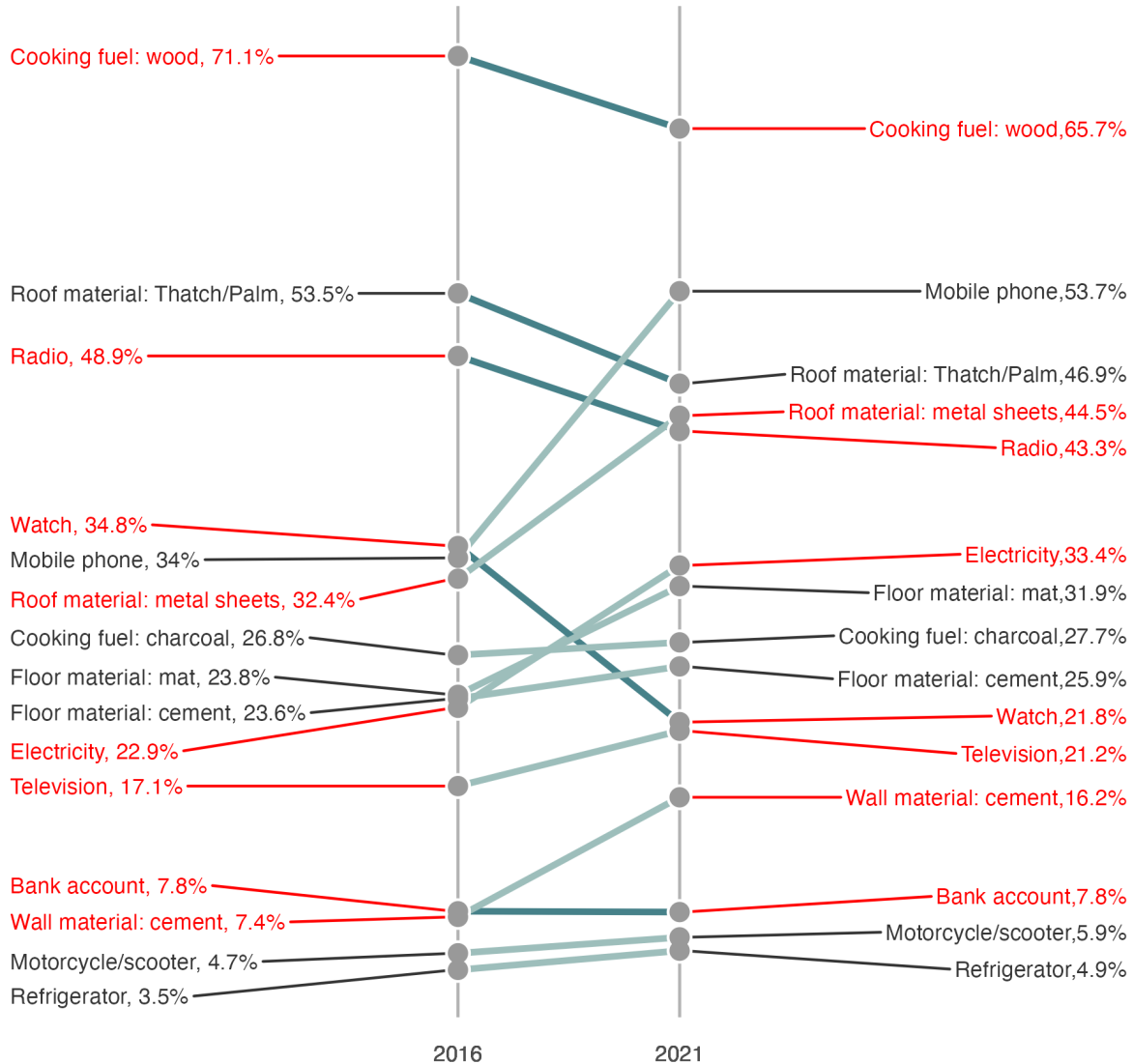
### ***Changes in Asset Ownership***



Over time, patterns of asset ownership change. This may reflect the fact that an asset which previously was quite expensive has become more affordable over time, making it more accessible to a large population or that the population has grown wealthier and now a larger portion of the population is able to afford more expensive goods. Likewise, some assets may simply become more or less prevalent due to technological changes. As asset ownership patterns change, their ability to help us distinguish between wealth quintiles may also change.

In Figure 1 we show how ownership of the assets in the original benchmark survey and the current benchmark survey have changed [2]. Variables that are not included in both DHS or MIS surveys are not shown in this graph. Assets in red appear in both the current and previous versions of the EquityTool.

**Figure 1: Change in Asset Ownership from 2016 MIS to 2021 DHS**



Between 2016 and 2021, there were some notable changes in Madagascar's asset ownership rates. For example, the percentage of households owning mobile phones increased by 20 percentage points. However, the percentage of households with a watch declined by 13 percentage points.

### **Changes in Country Context**

Changes in the EquityTool often reflect changes in the economic well-being of the population. As the population wealth changes, the prevalence of different assets may change.



The following table provides a summary of some key indicators that illustrate how the economic well-being of the population of Madagascar has changed from 2016 to 2021.

	Previous Survey: MIS 2016	Current Survey: DHS 2021
Percent of the population living below the poverty line [1]	67.3% (2012)	69.2% (2021)
Percent of the population that is multidimensionally poor [3]	68.63% (2018)	65.71%
GDP per capita [4]	\$1,649	\$1,577
Average annual GDP growth from 2016 to 2021 [5]	2.2%	

The Madagascar economy shrank between 2016 and 2021. Accompanying this economic decline has also been an increase in the poverty headcount as measured by the international poverty line, although the Multidimensional Poverty Index showed a decrease over the same period. This economic decline, over time, will reduce the previous Madagascar EquityTool's ability to accurately assign households to their most correct wealth quintiles.

Metrics for Management provides technical assistance services to those using the Equity Tool, or wanting to collect data on the wealth of their program beneficiaries. Please contact [support@equitytool.org](mailto:support@equitytool.org) and we will assist you.

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[1] From [pip.worldbank.org](http://pip.worldbank.org), reporting poverty headcount ratio at \$3.00/day at 2021 international prices.

[2] From the Madagascar dataset household recode, available at <http://dhsprogram.com/>

[3] From Oxford Poverty and Human Development Initiative (October 2024). "Madagascar Country Briefing", Oxford Poverty and Human Development Initiative, University of Oxford.

[4] From [data.worldbank.com](http://data.worldbank.com), reporting GDP per capita, PPP (constant 2021 international \$)

[5] From [data.worldbank.com](http://data.worldbank.com), reporting average of GDP growth (annual%)

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