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Multidimensional Poverty in Morocco

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Acknowledgments

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Abbreviations

A	Poverty Intensity
AF	Alkire-Foster
BMI	Body Mass Index
DHS	Demographic and Health Survey
ESCWA	Economic and Social Commission of Western Asia
FHHs	Female Headed Households
GDP	Gross Domestic Product
GNI	Gross National Income
H	Headcount Ratio
HDI	Human Development Index
HHs	Households
MHHs	Male Headed Households
MPI	Multidimensional Poverty Index
OPHI	Oxford Poverty and Human Development Initiative
UNDP	United Nations Development Program
USAIDS	US Agency for International Development
WI	Wealth Index

I. CONTEXT

1.1 Morocco is a lower middle-income country[1] in the Maghreb region of Western Africa. Morocco is located in Northern Africa, bordering the North Atlantic Ocean and the Mediterranean Sea, between Algeria and Western Sahara. Table shows some of the main socio-economic indicators for Morocco. The Human Development Index (HDI) – a measure of basic human development achievements in a country – for Morocco in 2015 was 0.647, which puts the country in the medium human development category, positioning it 123rd out of 188 countries and territories. However, the value of the Inequality Adjusted HDI is 29.5% lower than the HDI value, which indicates high inequality. Morocco shows the greatest inequality between the two indices of all countries of the same human development group. The GINI coefficient is also very high at 40.9. Money metric poverty is very low in Morocco, with 8.9% of the population below the national poverty line in 2007 (the most recent year for which data is available).

Table 1: Main socio-economic indicators for Morocco

Indicators	Value (2015 unless otherwise indicated)
Population	34,377,511
GDP	US$ 100,6 billion
GNI p.c. Atlas Method (current US$)	US$ 3,000
Life expectancy at birth	74.3 years
Poverty headcount ratio at national poverty lines (% of population)	8.9% (2007)
Human Development Index (HDI[2])	0.647
Human Development 2014 rank	123 (over 188 countries)
Expected years of schooling	12.1
Gross enrolment ratio (primary)	116%
Gender Development Index	0.828
Income inequality, Gini coefficient	0.456 (40.9)

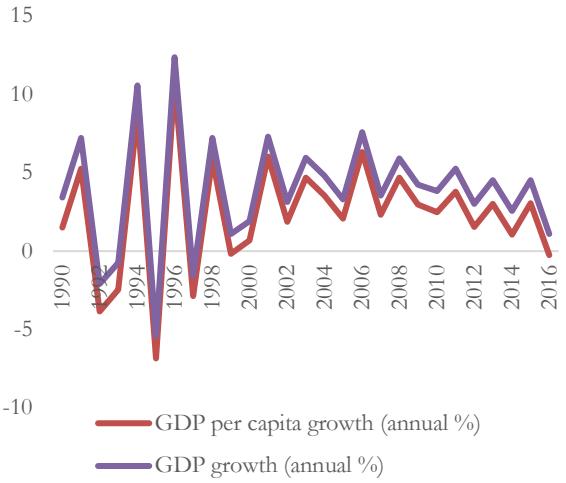
Sources: for population, GDP, GNI p.c. poverty headcount: World Bank World Development Indicators data accessed January 2017. For HDI, expected years of schooling, life expectancy, gross enrolment ratio, gender development index and Gini coefficient: UNDP Human Development Reports accessed January 2016.

1.2 This study is based on data collected in 2011. However, in order to place the findings in the current context, this paragraph quickly summarises the most recent socio-economic developments. Figure one shows the GDP and GDP per capita since 1990. The growth rate fluctuated widely, especially in the middle of the 1990s. However, during the period 2001-2013, Morocco experienced a period of favourable economic growth which also impacted positively on poverty and fostered shared prosperity although inequality remains high, Morocco having among the highest GINI coefficients in the MENA region in 2011[3]. The Moroccan GDP still relies heavily on agriculture and is thus prone to extreme weather conditions such as droughts or flooding. Morocco's population growth has been slowing down since the 1990. Especially the growth of the urban population slowed down between 1994 but picked up again in 2004.

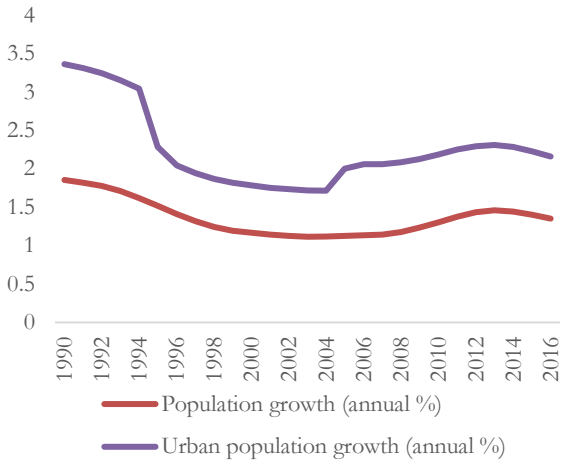
1.3 The objective of this country poverty profile is to assess the prevalence, distribution (by spatial and other socio-economic characteristics) and severity of multi-dimensional poverty in Morocco. It is one of several country profiles prepared by ESCWA as background papers for the Arab Multidimensional Poverty Report (ESCWA, LAS, OPHI, UNICEF 2017).

Figure 1: GDP, GDP p.c. and population growth (%)

GDP and GDP p.c. annual growth (%)



Population and urban population growth, annual (%)



Source: World Bank data.

II. METHODOLOGY AND DATA

2.1 Multidimensional poverty captures multiple deprivations in basic services and capabilities, such as poor health, lack of education or illiteracy, and lacking access to safe drinking water. The multidimensional poverty approach complements monetary measures of poverty by considering these multiple deprivations and their overlap. The conceptual framework of multidimensional poverty measures draws from Sen's capability approach which states that development is realised not only through increased incomes and share in assets, but also through people's increased capabilities to lead lives that they have reason to value. Sen contends that capability deprivation is a more complete measure of poverty than income as it captures the aspects of poverty which may get lost or hidden in aggregate statistics (Sen 1985, 1999). In recent years, this conceptual framework was translated into practice to measure household poverty through the Multidimensional Poverty Index (MPI).

2.2 The methodology of the MPI is based on the Alkire-Foster (AF) Method (Alkire, Foster 2011) offering a comprehensive methodology for counting deprivation and analysing multidimensional poverty. The AF-methodology builds on the Foster-Greer-Thorbecke poverty measure, but it considers multiple dimensions. The AF-methodology includes two steps: first, it identifies the poor using a dual cut-off approach and by "counting" the simultaneous deprivations that a person or a household experiences across the different poverty indicators. And the second step is to aggregates this information into the adjusted headcount ratio (or MPI value) which can be decomposed and disaggregated geographically, by socio-economic characteristics, and by indicator.

2.3 Under the first step, to identify multidimensionally poor people, the AF-methodology uses a dual cut-off identification approach. The first cut-off sets a deprivation threshold for each indicator which determines whether a household or a person is considered as deprived or non-deprived in the respective indicator. After the cut-offs have been applied for each indicator, the deprivations of each person in all indicators are counted to calculate a deprivation score for that household or person. Weights are assigned to the indicators which reflect a normative value judgement to assess the relative importance of a given indicator as

compared to the other indicators in constructing the deprivation score for a household or person. As a result, the deprivation score is a weighted sum of all deprivations. The second cut-off (the poverty cut-off) is set at a value say 20% or 30% against which the deprivation score is compared to in order to define and distinguish multidimensionally poor (those whose deprivation score is equal to or more than the poverty cut-off) from non-poor (whose deprivation score falls below the poverty cut-off).

2.4 In the aggregation step of the AF Method, two indices are calculated; the headcount ratio and poverty intensity. The headcount ratio (H) is the proportion of multidimensionally poor people to the total population. The headcount ratio is a useful measure to learn about the incidence of poverty, but it is insensitive to increases in the number of deprivations a poor person is deprived in. However, utilizing the information on the number of deprivations that poor people experience, the poverty intensity can be calculated. The poverty intensity (A), is the average deprivation score that multidimensionally poor people experience. The product of the poverty headcount and poverty intensity is the MPI, which "adjusts" the headcount for the average poverty intensity that poor people experience.

2.5 The use of Multidimensional Poverty Index (MPI) to describe the application of AF Method was coined with the Global MPI launched in 2010 by OPHI and the United Nations Development Program (UNDP). However, the Global MPI has a major shortcoming: it is not very effective in capturing the less severe forms of poverty that characterise many Arab middle-income countries such as Jordan, Egypt or Morocco and thus underestimates the prevalence of less severe forms of multidimensional poverty. However, the AF-Method offers flexibility and it can be tailored to a variety of situations by selecting different dimensions, indicators of poverty within each dimension, and poverty cut offs.

2.6 In order to capture a broader spectrum of level and intensity of deprivation that better reflects the conditions of Arab countries, ESCWA and OPHI proposed an Arab MPI with two different levels: poverty and acute poverty. The Arab MPI is composed of three dimensions and twelve indicators. The education dimension has two indicators: school attendance and years of schooling. The health dimension includes three indicators: nutrition, child mortality, and early pregnancy combined with female genital mutilation. The living standard indicators are: access to electricity, improved sanitation facility, safe drinking water, clean cooking fuel, having suitable floor and roof, no overcrowding, and minimum assets of information, mobility, and livelihood (the deprivation cut-offs for the Arab MPI are presented in Table 2). Each of these indicators has two associated deprivation cut-offs, one reflects the deprivation of acute poverty which is similar (but not identical) to the global MPI. And the other, a higher cut-off denoting a slightly higher standard to measure poverty which is inclusive of acute poverty. While the cut offs usually vary across indicators for acute poverty and poverty, in case of the aggregate score for identifying a poor household, the cut off is the same. A household is considered acutely poor or poor if its total level of deprivation (total of weighted deprivations in all indicators) is higher than one-third of the total possible deprivation (k=33.3%). Similar to the Global MPI, the Arab MPI assigns equal weights to the three dimensions (one third), and indicators within each dimension are equally weighted. To obtain the set of multidimensionally poor people only, all information of deprivation of non-poor persons is censored from the data. Thus, the focus of the MPI measure is purely on the profile of the multidimensionally poor people and the indicators/dimensions in which they are deprived.

2.7 The MPI can be decomposed by population sub-groups, such as sub-national regions, or any socio-economic characteristic of a household that is available from the data. Another feature of the MPI is that it can be decomposed to show how much each indicator contributes to poverty. Furthermore, the MPI can also give insight into the percentage of people that are deprived in multiple indicators, but below the

poverty cut-off. This percentage of the population is considered vulnerable to poverty. In the case of the Arab MPI, population whose deprivation score is between 20-33.3% is considered as vulnerable to poverty. On the other side of the scale, the MPI can also give insight into how many people are deprived in for example more than half of all the weighted indicators. This percentage share of the population is considered to be in severe poverty. In the Arab MPI, poor people who are deprived in 50% or more of the indicators are considered as severely poor.

2.8 The results of this study are based on data from the Pan Arab Project for Family Health (PAPFAM), a survey conducted by the League of Arab States[4]. The survey for Morocco, conducted in 2011, covers 15.343 households with 75.061 individuals. It provides data on socio-economic conditions of the household such as education, health; nutrition status of children and women; child mortality; housing conditions (availability of safe drinking water, sanitation facilities, electricity, cooking fuel etc.); and information on ownership of assets (refrigerator, motorbike, cattle, radio, TV etc.). Some of the information in this country profile is reported by "head of household", which is the individual in the household who identified themselves or was identified as such in the survey.

Table 2: Arab MPI Dimensions, Indicators, Deprivation Definitions, and Indicator Weights

Dimension	Indicator	Acute poverty if	Poverty if	Weight
Education	Years of Schooling	No household member has completed primary schooling[5].	No household member has completed secondary schooling.	1/6
	School Attendance	Any child of primary school age is not attending school.	Any school-age child is not attending school **or** is 2 years or more behind the right school grade[6].	1/6
Health	Child Mortality	Any child less than 60 months has died in the family during the 59 months prior to the survey.	Same as acute poverty	1/9
	Child/adult Nutrition	Any child (0-59 months) is stunted (height for age < -2 SD) **or** any adult is malnourished (BMI < 18.5)[7].	Any child (0-59 months) is stunted (height for age < -2 SD) **or** any child is wasted (weight for height < -2 SD) **or** any adult is malnourished (BMI < 18.5).	1/9
	FGM/Early Pregnancy	A woman less than 28 years old got her first pregnancy before 18 years old **and** has undergone a female genital mutilation (FGM)[8].	A woman less than 28 years old either got her first pregnancy before being 18 years old **or** has undergone a female genital mutilation (FGM).	1/9
Living Conditions	Electricity	Household has no electricity.	Same as acute poverty	1/21
	Sanitation	Household sanitation is not improved, according to MDG guidelines, **or** it is improved but shared with other household.	Same as acute poverty	1/21
	Water	Household does not have access to safe drinking water, according to MDG guidelines, **or** safe drinking water is 30-minutes roundtrip walk or more away from home.	Household does not have piped water into dwelling or yard.	1/21

	Floor/Roof	Floor is earth, sand, dung or roof is not available **or** made of thatch, palm leaf or sod	Floor is earth, sand, dung, rudimentary (wood-planks, bamboo, reeds, grass, canes), cement floor (not slab or tiles/asphalt strips) **or** roof is not available **or** made of thatch, palm leaf, sod, rustic mat, palm, bamboo, wood plank, cardboard.	1/21
	Cooking Fuel	Household cooks with solid fuels: wood, charcoal, crop residues **or** dung **or** no food is cooked in the household.	Household cooks with solid fuels: wood, charcoal, crop residues or dung **or** no food is cooked in the household **or** does not have a separate room for cooking.	1/21
	Overcrowding	Household has 4 or more people per sleeping room.	Household has 3 or more people per sleeping room.	1/21
	Assets	Household has either not access to information **or** has access to information **but** no access to easy mobility **and** no access to livelihood assets[9].	Household has either less than two assets for accessing information, or has more than one information asset **but** less than two mobility assets **and** less than two livelihood assets.	1/21

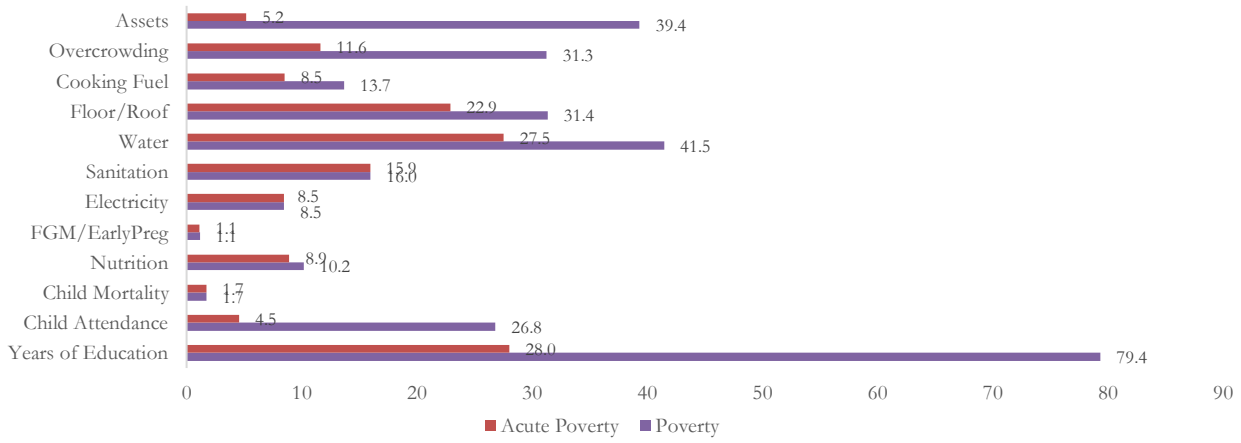
III. POVERTY ANALYSIS

3.1 Incidence of Deprivation in the indicators of the Arab MPI

3.1.1 First, we examine the prevalence of deprivation among the Moroccan population in each of the Arab MPI indicators using the poverty and acute poverty respective cut-off points as shown in Figure 2. This percentage share is also called the uncensored headcount ratio, as it considers the deprivations of the total population before identifying the poor. At acute poverty, Moroccans are particularly deprived in years of education, followed by water and floor/roof. For poverty, the deprivation with the highest headcount is years of education, followed by water and assets.

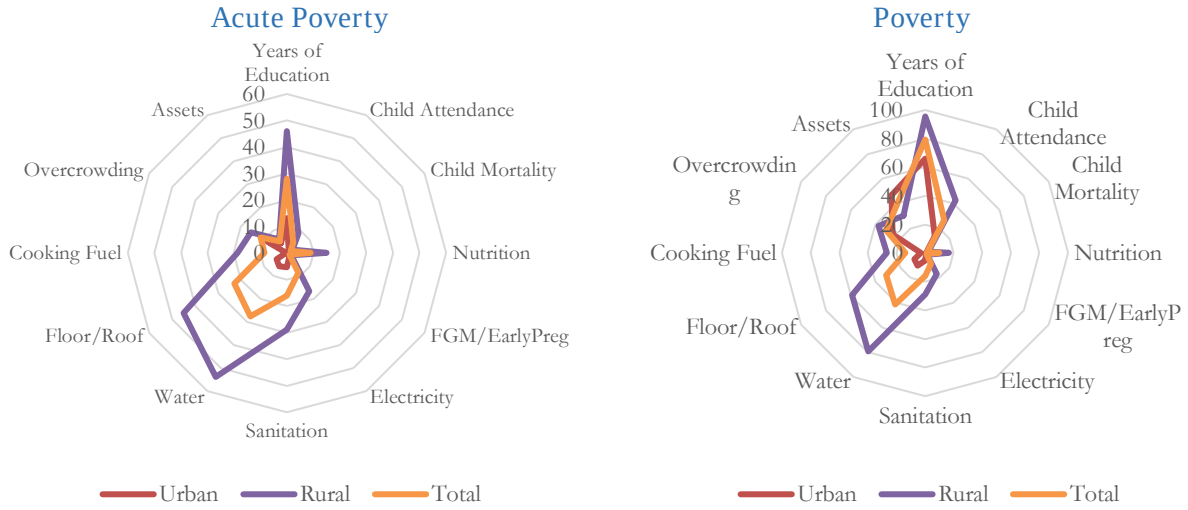
3.1.2 The indicators with the main differences in deprivation headcount between acute poverty and poverty are both indicators of the education dimensions, assets, overcrowding, and water. The deprivation in child attendance increases drastically when moving from acute poverty to poverty which indicates that many children do not to attend school in the preparatory and secondary stage of education or children lagging two grades or more behind the age-appropriate school grade.

Figure 2: Incidence of Deprivation in the Arab MPI indicators (% of population)



3.1.3 As shown in Figure 3, Moroccans are particularly deprived in the indicator years of education. The deprivation in the water indicator is especially widespread for the rural population whose line is the furthest from the centre at both poverty levels, with 53.9% of households deprived at acute poverty and a staggering 79.3% at poverty. At acute poverty, other widespread deprivations for the total population are years of education (28%) and sanitation (15.9%). For poverty, the highest deprivation rate is found in the indicator years of education: 79.4% of the population live in households where no member has reached a secondary degree. In rural areas, this number reaches to 95.5%.

Figure 3: Deprivation by indicator at Acute Poverty and Poverty for urban and rural areas (% of population)



3.2 Incidence of censored Deprivation in each of the 12 indicators

3.2.1 The prevalence of deprivation in Table 3 compares the incidence of uncensored and censored deprivations. As we saw above, the uncensored deprivation rates give the percentage of population who is deprived in an indicator regardless of being multidimensionally poor or not. The censored headcount ratio measures the share of the population who are deprived in a given indictor and are classified as multidimensionally poor (or acutely poor). The censored headcount helps in focusing the analysis on the multidimensionally poor and in assessing the extent of their deprivation in the different indicators. Furthermore, assessing the difference between censored and uncensored headcount allows the assessment of the overlap between deprivation and multidimensional poverty.

Table 3: Uncensored and Censored Headcount Ratio

Indicator	Acute Poverty		Poverty	
	% of total population deprived in…	% of poor people deprived in…	% of total population deprived in…	% of poor people deprived in…
Years of Education	28.03	8.24	79.37	36.29
Child attendance	4.55	2.99	26.82	25.39
Child Mortality	1.72	0.57	1.72	1.40
Nutrition	8.92	3.89	10.17	8.26
Early Pregnancy	1.14	0.38	1.14	0.94
Electricity	8.46	3.88	8.46	7.20
Sanitation	15.95	6.01	15.97	12.25
Water	27.54	7.01	41.47	26.42

Floor/Roof	22.92	6.15	31.37	21.30
Cooking Fuel	8.53	3.49	13.70	10.82
Overcrowding	11.62	3.32	31.29	17.79
Assets	5.18	1.70	39.35	3.69

3.2.2 At acute poverty, the indicators water, years of education and floor/roof, show the largest gap between the censored and uncensored headcount ratios. This means that deprivation in these indicators are widespread and do not only affect the multidimensionally poor population. On the other hand, indicators such as Early pregnancy, child mortality, and child attendance show the lowest gaps which indicates that most people that are deprived in this indicator are actually also considered multidimensionally poor.

3.2.3 At poverty, the indicators years of education, assets and water show the biggest gaps between the censored and uncensored headcount ratio. Thus, deprivations in years of education and living conditions are widespread among the Moroccan population, regardless if they are considered multidimensionally poor or not. Whereas, the indicators early pregnancy, child mortality and electricity show the lowest gaps between the ratios. Thus, deprivations in these indicators are mainly found among the multidimensionally poor population.

3.3 Poverty Headcount, Intensity and MPI

3.3.1 In Morocco, 8.9% of the population suffer from acute poverty. However, the poverty headcount increases to 36.6% when moving to the poverty measure (Table 4). The poverty intensity is 43.83% for acute poverty and slightly higher for poverty (45.83%). There are sharp disparities in headcount poverty and intensity of deprivation between rural[10] and urban areas: for acute poverty, the rural population is 23 times more likely to experience poverty than the urban one. For poverty, the ratio decreases, but the rural population is still 4 times more likely to be poor than the urban population.

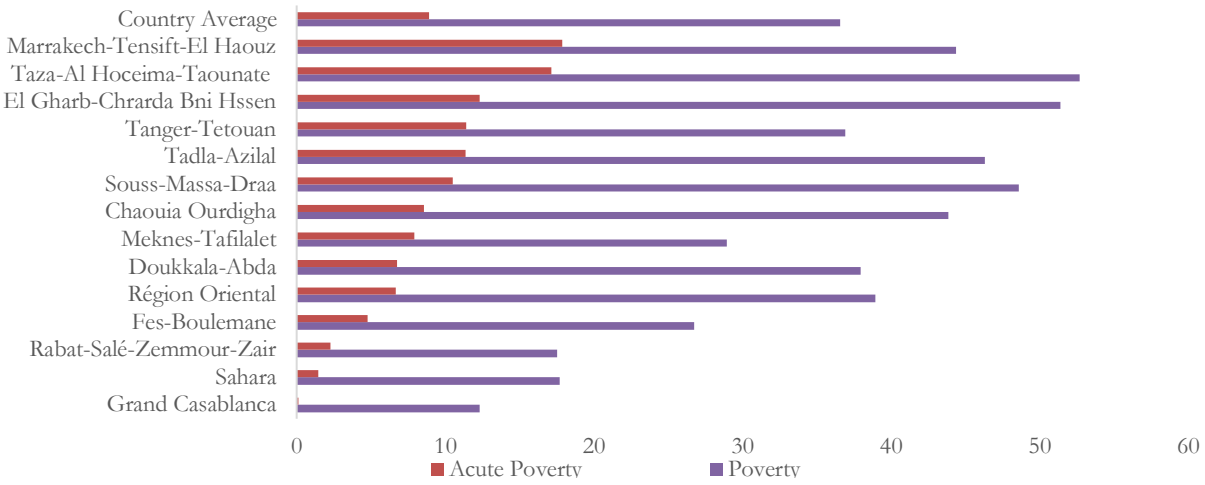
3.3.2 The poverty headcount varies more significantly between rural and urban areas than the poverty intensity does. However, the difference in intensity is quite large between the two groups at the poverty level. The MPI value, which ranges from 0-1, is moderate in Morocco, at 0.039 for acute poverty and 0.168 for poverty.

Table 4: Poverty headcount, intensity and MPI value at national level and in urban and rural areas for acute poverty and poverty

	Headcount (%)	Intensity (%)	Multidimensional Poverty Index (MPI) (H*A)
Acute poverty			
Total	8.93	43.83	0.039
Urban	0.80	41.18	0.003
Rural	18.75	43.97	0.082
Poverty			
Total	36.58	45.83	0.168
Urban	15.13	40.72	0.062
Rural	62.51	47.32	0.296

3.3.3 As shown in Figure 4, the region Marrakech- Tensift El Haouz shows the highest acute poverty headcount, followed by several regions that are all located in the north west of the country (Taza-Al Hoceima-Taounate, El Gharb-Chrarda-Beni Hssen, Tangier-Tetouan.). The Sahara region and the region around Casa Blanca show relatively very low levels of acute poverty headcount. At poverty, it is interesting to note that there is a sharp increase in the poverty headcount with changes in the ranking of the regions as compared to the ranking at acute poverty. The poverty headcount exceeds 50% in the regions of …. Several regions, such as Chaouia Ourdigha and Region Oriental, show a much higher poverty headcount ratio.

Figure 4: Headcount Poverty (%) in Morocco Regions at Acute Poverty and Poverty



3.3.4 Table 5 shows the distribution of the population and of acutely poor and poor people across the regions of Morocco. The last two columns of the table calculate the ratio of each regions share of the acutely poor and poor people over the share of the total population. States with a ratio above 1 carry a disproportionate amount of multidimensionally poor people relative to their share of national population (i.e. are overrepresented among the acutely poor/poor). In the case of acute poverty, this is the case in four states. However, moving to poverty the number of states doubles. The geographical disparity of poverty across states is considerable, with ratios ranging from a maximum of 2.03 in Marrakech Tensift-El Haouz to 0.01 in Grand Casablanca at acute poverty. However, looking at poverty the state with the lowest ratio is Sahara, while Taza-Al Hoceima-Taounate shows the highest ratio of 1.45.

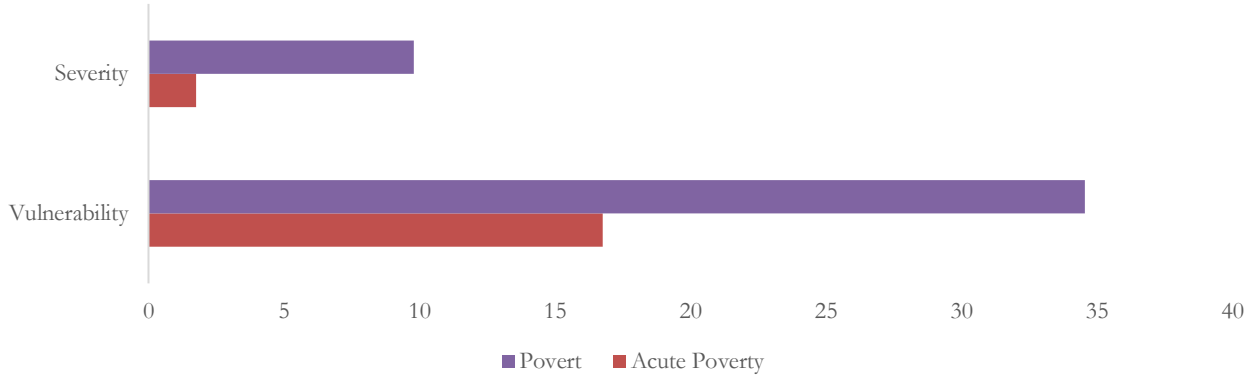
Table 5: Population and headcount poverty shares by area

	Share of survey population (%) (1)	Share of acutely poor population (%) (2)	Share of poor population (%) (3)	(2)/(1)	(3)/(1)
Sahara	2.82%	0.47%	0.96%	0.17	0.34
Souss-Massa-Draa	10.81%	12.89%	5.27%	1.19	0.49
El Gharb-Chrarda Bni Hssen	5.87%	8.18%	2.83%	1.40	0.48
Chaouia Ourdigha	5.31%	5.16%	3.91%	0.97	0.74
Marrakech-Tensift-El Haouz	10.55%	21.39%	11.30%	2.03	1.07
Région Oriental	7.17%	5.41%	7.48%	0.75	1.04
Grand Casablanca	9.26%	0.11%	7.37%	0.01	0.80
Rabat-Salé-Zemmour-Zair	9.11%	2.34%	10.98%	0.26	1.21
Doukkala-Abda	7.16%	5.49%	9.56%	0.77	1.34
Tadla-Azilal	4.75%	6.13%	6.06%	1.29	1.27
Meknes-Tafilalet	7.05%	6.33%	7.16%	0.90	1.02
Fes-Boulemane	5.55%	3.01%	7.85%	0.54	1.41
Taza-Al Hoceima-Taounate	6.45%	12.53%	9.34%	1.94	1.45

Tanger-Tetouan	8.15%	10.56%	9.95%	1.30	1.22

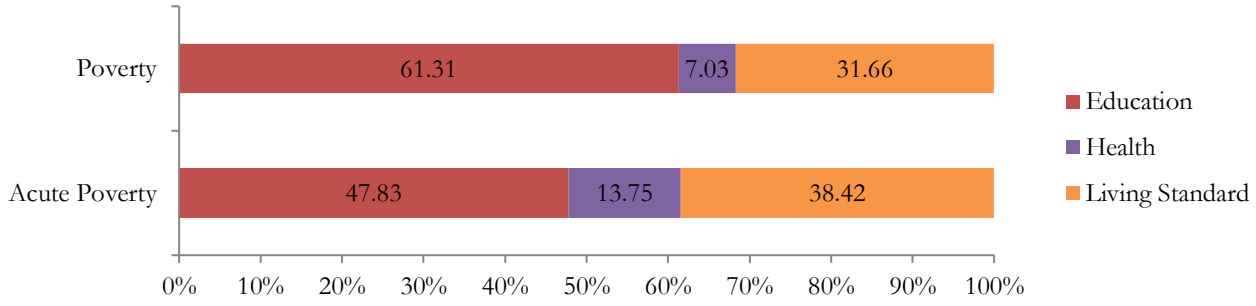
3.3.5 As shown in Figure 5, a significant 26.2% are severely poor using the poverty measure. This implies that, at poverty, more than one quarter of the population suffers from a deprivation level higher than 50% of the total possible deprivation. For acute poverty, only 1.75% are considered as severely poor. Looking at the share of population that is vulnerable to falling into acute poverty (experiencing a deprivation level between 20% and 33% of total possible deprivation) shows that 16.77% are vulnerable to falling into acute poverty, while over one third of the population (34.57%) is vulnerable to fall into poverty.

Figure 5: Vulnerable and severely poor population at acute poverty and poverty definitions (%)



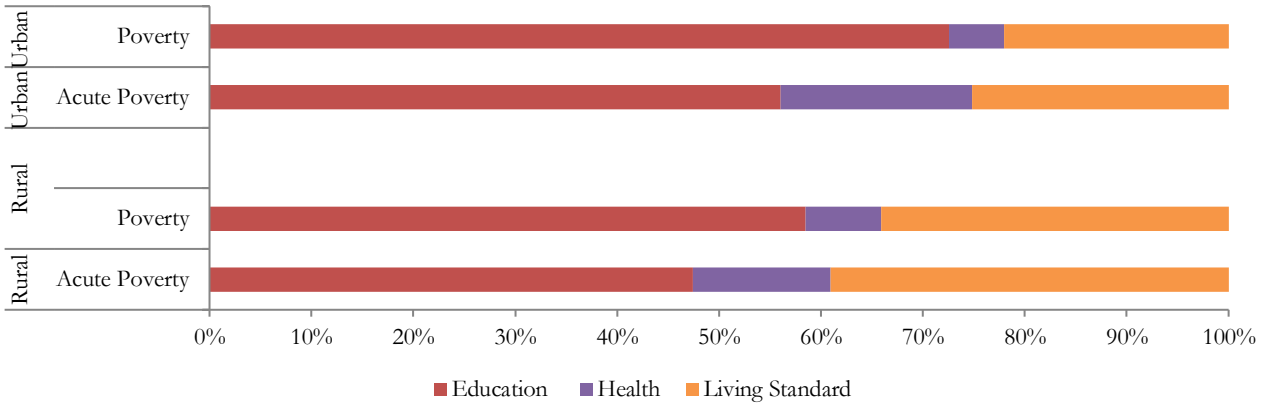
3.3.6 The percentage contribution of each of the three dimensions to the overall poverty value (taking into consideration both headcount and intensity)[11] for acute poverty and poverty is a useful summary indicator. As shown in Figure 6, at acute poverty, the education dimension contributes nearly half of total deprivation (47.8%), while at poverty the contribution increases to 61.3%. The contribution of living standards and health is higher at acute poverty as compared to poverty.

Figure 6: Contribution of dimensions to acute poverty and poverty value (%)



3.3.7 As shown in Figure 7, there are some differences in the contribution of dimensions to poverty between rural and urban areas. The contribution of education at both levels of poverty is much higher in urban areas, while rural areas are characterized by a higher contribution of the living standard dimensions. At acute poverty, urban areas show a higher health contribution (18.81%) than rural areas. However, at using the poverty shows that rural areas have a higher contribution of health than urban areas. It is remarkable to see that the education dimension contributes 72.57% to poverty in urban areas.

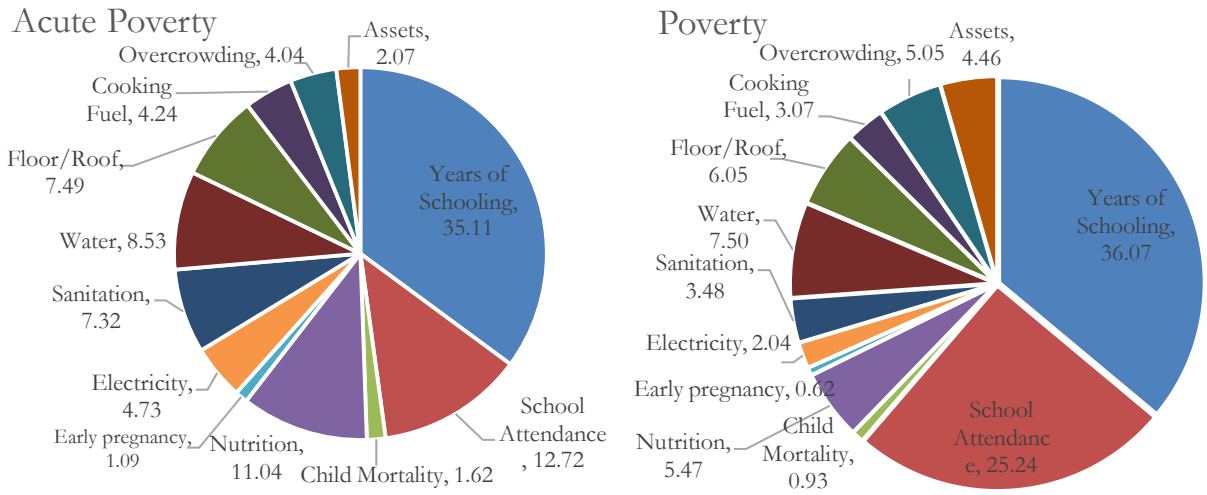
Figure 7: Contribution of dimensions to acute poverty and poverty by rural and urban areas (%)



3.3.8 Figure 8 shows the percentage contribution of each indicator to acute poverty and poverty. Years of education make the highest contribution at both levels, followed by child attendance. This means that education should be a priority area for poverty-reduction interventions in the country. When looking at poverty, the contribution of years of education remains almost them same, while that of child attendance doubles relative to their contribution to acute poverty. At poverty, water is the third most significant contributor to deprivation.

3.3.9 At acute poverty, the indicator with the third highest contribution to poverty is nutrition, meaning that stunting and malnourishment are significant issues in Morocco.

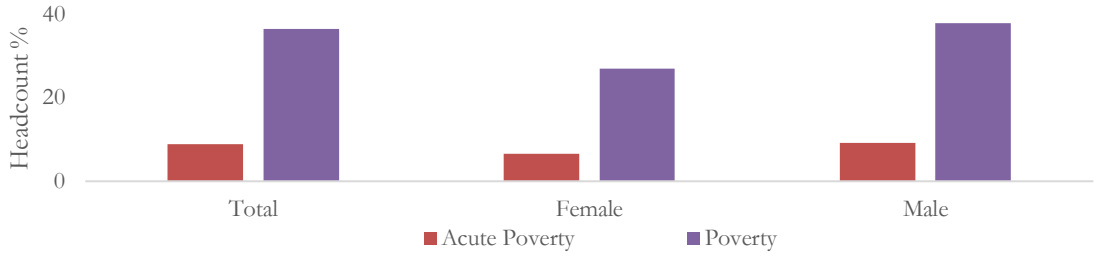
Figure 8: percentage contribution of indicators to acute poverty and poverty



IV. INEQUALITY IN DEPRIVATION

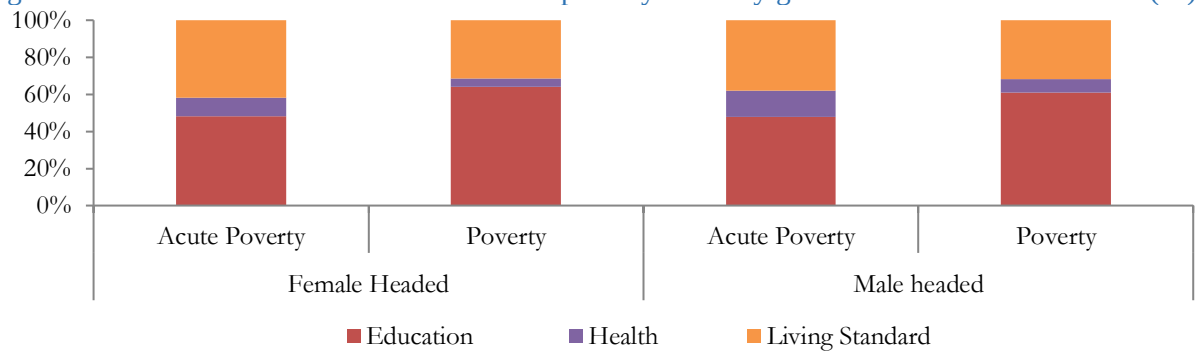
4.1 Figure 9 shows the incidence of multidimensional poverty for male-headed households (MHH) and female-headed households (FHH). In Morocco, FHH have a slightly lower poverty headcount at both levels of poverty. The ratio of MHH/FHH is 1.4 for acute poverty and poverty which means that MHH are 1.4 times more likely to be poor than their female counterparts.

Figure 9: Poverty headcount by gender of household head (%)



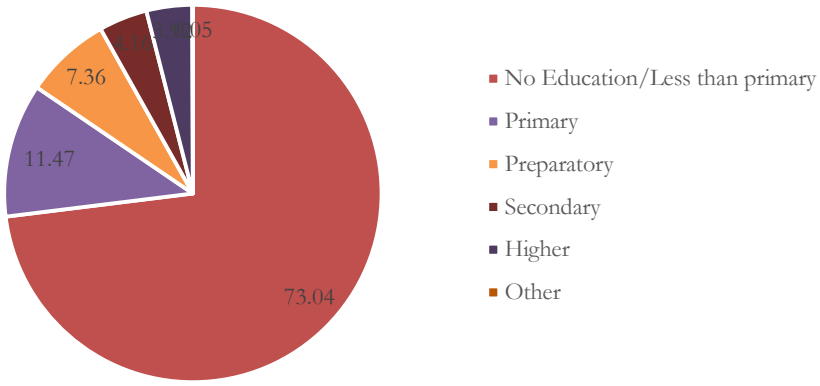
4.2 Figure 10 shows the contribution of each dimension to poverty by the gender of the household head. In Morocco, education makes a slightly higher contribution in FHHs than in MHHs at both levels of poverty, but the health dimension makes a lower contribution in FHHs at both levels of poverty. Living standards contribute more to FHHs' deprivation than they do to that of MHHs at acute poverty, while the contribution of living standards is almost the same.

Figure 10: Contribution of each dimension to poverty value by gender of the household head (%)



4.3 Figure 11 shows the distribution of education of the head of household in Morocco. The majority of head of households, 73.04% has not received any formal education or less than primary education. Overall, only 26.94% of households in Morocco have a head with more than primary education.

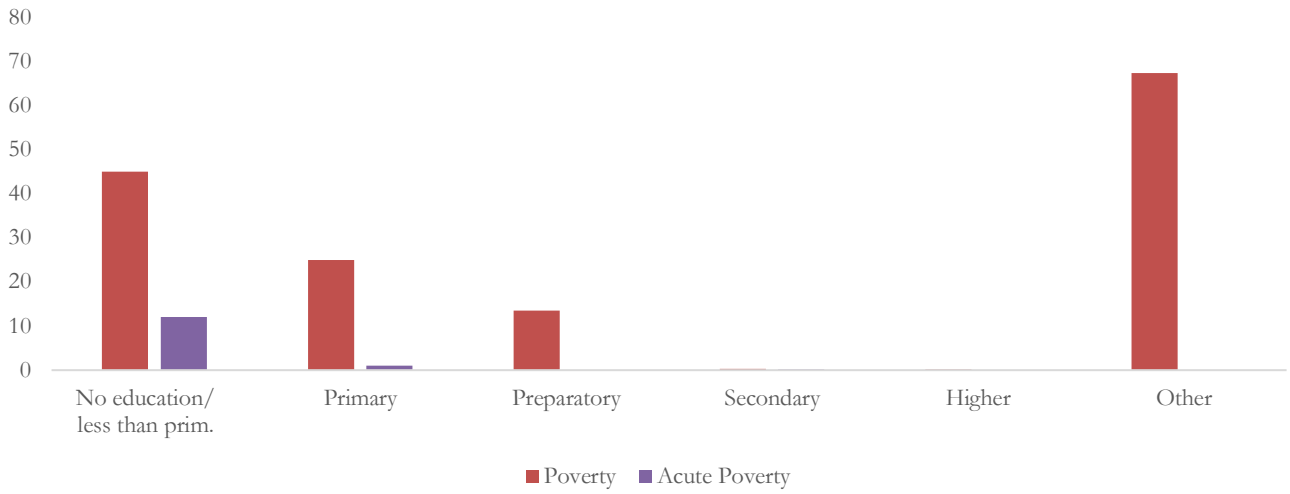
Figure 11: Education level of household head (%)



4.4 As shown in Figure 12, multidimensional poverty decreases dramatically as the education of the head of household increases. However, for acute poverty no data is available for preparatory, higher, and other, but the trend shows that if the head of household has received primary education, the poverty headcount ratio drops from 12.11% to 1.09%. The disparities between the groups at the poverty level are also big, although the drop from having no education to primary education is smaller: while 44.96% of all people living in a household whose head has less than primary education are considered poor, 25.03 live in a household where the head has

received primary education. Less than 1% of all people whose head has received secondary or higher education live in poverty. The category other shows a very high poverty headcount. However, it should be considered that the population share of this group is only 0.05%.

Figure 12: Headcount poverty at acute poverty and poverty by education of household head (%)



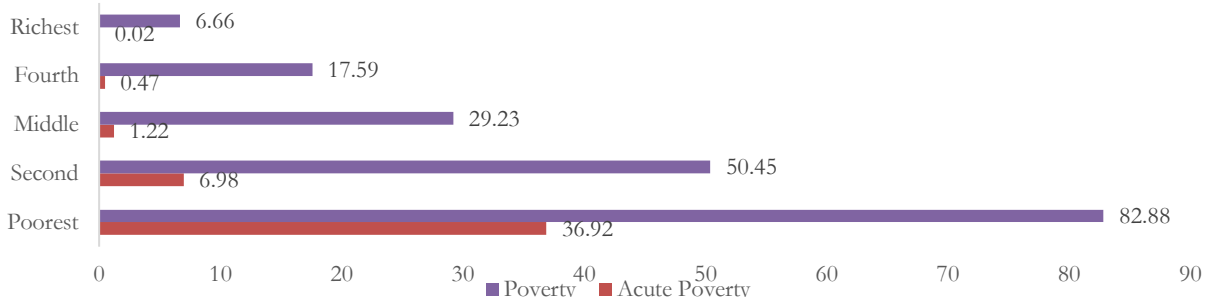
4.5 As shown in Figure 13, large households (with more than 8 members) are poorer than households with a small (1-4 members) or medium size (5-7 members). People living in households with more than 8 members are 2.5 times more likely to be poor than people living in households with 1-4 members.

Figure 13: Headcount poverty (A) and intensity (B) for acute poverty and poverty by household size (%)

4.6 The PAPFAM survey also provides information about the Wealth Index (WI) of each household, which is an indicator of the economic situation of a household. The WI measures the household's ownership of assets and the quality of some of the assets. As shown in Figure 14, this information allows us to map the incidence of poverty across the different wealth quintiles. The numbers illustrate the depth of inequality in Morocco: while it is expected for multidimensional poverty to have a different incidence in the highest and lowest wealth quintiles of the population due to the overlap between the WI and some indicators of multidimensional poverty (in particular assets), the ratio between the top and bottom quintiles is staggering. Households in the bottom quintile are over 12.4 times more likely to be poor, and at cute poverty while virtually no household in the richest quintile is poor, 36.9% of household in the bottom quintile are. At acute poverty the graph shows that the poverty headcount drops sharply when comparing households from the poorest quintile to the second

quintile. At poverty we can see that there is a sharp decrease in the poverty headcount when comparing households from the poorest quintile to better-off households. Nonetheless a significant share of household is multidimensionally poor in the middle and fourth quintiles. These facts underline the large disparities in multidimensional poverty by household wealth especially at acute poverty, while diminishing yet significant poverty prevalence among better-off households.

Figure 14: Headcount poverty (%) by wealth quintiles

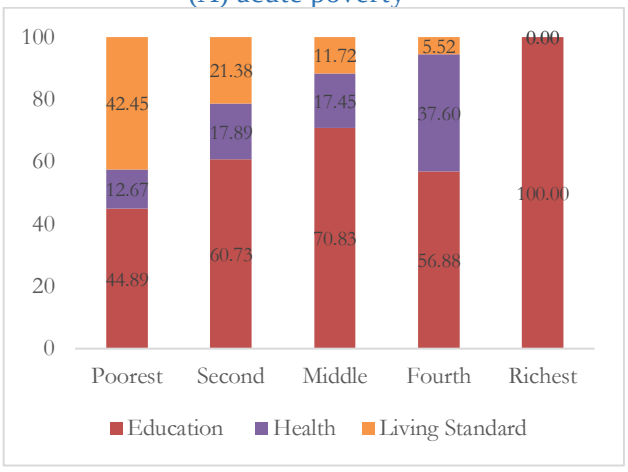


4.7 Figure 15 presents the contribution of dimensions by wealth quintiles. The contribution of living standards to overall deprivation declines as the wealth of the household increases. This is expected as the WI overlaps with the living standards dimension (for example through assets ownership). As the contribution of living standards goes down with wealth, it is interesting to look at which dimension, education or health, fills the gap more. In Morocco, the contribution of health to poverty increases with wealth. This is especially the case for acute poverty. However, Figure 13 A reveals an interesting pattern: the contribution of health doubles when moving from the middle to the fourth quintile,but falls to an insignificant level when moving to the richest quintile. The education dimension shows the opposite pattern: when moving from the middle to the fourth quintile, the contribution of education decreases. However, education becomes the single contributor to poverty when moving to the richest quintile.

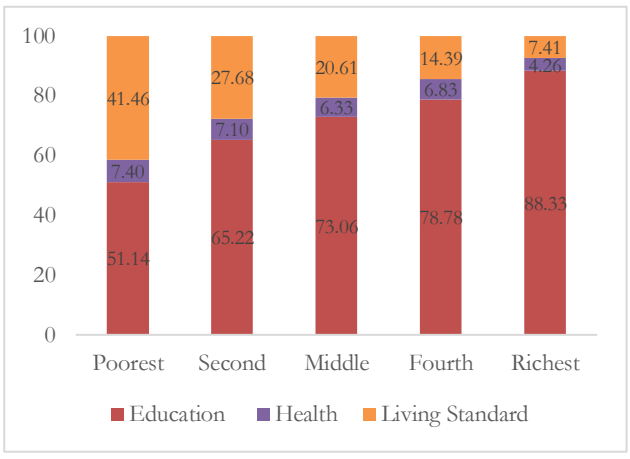
Looking at poverty, the contribution of health and living standards decrease the wealthier the household is. On the contrary, the education dimension increases with wealth. However, living standard and health also contribute around 11.6% in the richest quintile.

Figure 15: Contribution of dimensions to multi-dimensional poverty by wealth quintiles

(A) acute poverty



(B) Poverty



V. POLICY CONSIDERATIONS

5.1 In Morocco, 8.9% are acutely poverty and 36.6% are poor. The poverty intensity is moderate, at 43.8% for acute poverty and 45.8% for poverty. However, there are striking disparities between the rural and urban areas in Morocco, both in terms of the headcount ratio and poverty intensity to the disadvantage of rural areas.

5.2 People in rural areas of Morocco are 23.4 times more likely to be acutely poor than people in urban areas. This difference is striking, implying that poverty-reduction strategies should prioritise rural areas. Rural areas show an exceptionally high deprivation in the years of schooling indicator (95.5%) and the indicators water (79.3%) and roof/flooring (58.9%). Thus, rural development policies could focus on promoting secondary education and improving the living standard conditions of households.

5.3 In Morocco, 9.7% are severely poor at poverty (suffer from a deprivation level higher than 50% of the total possible deprivation). An additional 34.6% of the population are vulnerable to falling into poverty. Thus, at the poverty level, 71.2% of the population are either considered poor or vulnerable to poverty.

5.4 The high contribution of the years of schooling indicator suggests that poverty reduction strategy in Morocco should focus on keeping children in secondary education. This is also confirmed by the increase in the school attendance indicator when moving from the acute poverty to the poverty level. Besides education, nutrition and water/sanitation are main areas of concern.

5.5 Geographic disparities are sharp in Morocco, with some states exhibiting strikingly higher levels of poverty than the country average. While these geographic differences point to the need for a targeted approach to poverty reduction, it is important to keep in mind that poverty is widespread in Morocco. Therefore, while potentially intervening more in areas particularly affected by deprivation, poverty reduction strategies in Morocco need to be inclusive and encompass the vast majority of the population.

5.6 Inequality in multidimensional poverty between the highest and lowest wealth quintiles in Morocco is sharp, suggesting an enormous gap in access to resources and capabilities between rich and poor households. While 82.9% of the bottom wealth quintile is poor, less than 6.7% of the top quintile is poor.

Table 1: Acute Poverty: Standard Errors and Confidence Intervals

		Mean	Standard error	95% confidence interval	
Headcount	Total	8.93	0.1542	8.62592	9.23043
Intensity	Total	43.83	0.1632	43.50998	44.14975
MPI	Total	0.0391	0.0007	0.03777	0.04050
Headcount	Urban	0.80	0.0500	0.70331	0.89913
Intensity	Urban	41.18	0.4335	40.33032	42.03010
MPI	Urban	0.0033	0.0002	0.00288	0.00372
Headcount	Rural	18.75	0.3172	18.13224	19.37571
Intensity	Rural	43.97	0.1699	43.63357	44.29989
MPI	Rural	0.0825	0.0014	0.07963	0.08528

Table 2: Poverty: Standard Errors and Confidence Intervals

		Mean	Standard error	95% confidence interval	
Headcount	Total	36.58	0.2381	36.11617	37.04958
Intensity	Total	45.83	0.0806	45.67135	45.98738
MPI	Total	0.1677	0.00115	0.16541	0.16991
Headcount	Urban	15.13	0.2075	14.72352	15.53706
Intensity	Urban	40.72	0.0912	40.53749	40.89502
MPI	Urban	0.0616	0.00086	0.05993	0.06328
Headcount	Rural	62.51	0.3754	61.76931	63.24093
Intensity	Rural	47.32	0.0967	47.13547	47.51442
MPI	Rural	0.2958	0.00189	0.29211	0.29950

Table 3: Acute Poverty Headcount: Standard Errors and Confidence Intervals for different characteristics

		Mean	Standard error	95% confidence interval	
Gender of the Head of Household	Female	6.63	0.4014	5.84795	7.42128
	Male	9.25	0.1666	8.92738	9.58042
Education of the Head of Household	None	12.12	0.2069	11.71392	12.52511
	Primary	1.09	0.1416	0.81574	1.37085
	Preparatory	0.00	(omitted)		
	Secondary	0.15	0.0606	0.02968	0.26738
	Diploma/University	0.00	(omitted)		
	Non Standard	0.00	(omitted)		
Household Size	"1-3"	6.69	0.2543	6.18879	7.18573
	"4-7"	9.02	0.2301	8.57147	9.47351
	"8+"	11.41	0.3363	10.74920	12.06740
Wealth Quintile	Poorest	36.92	0.6007	35.74283	38.09756
	Second	6.98	0.2876	6.41326	7.54053

	Middle	1.22	0.1151	0.99670	1.44771
	Fourth	0.47	0.0612	0.35489	0.59489
	Richest	0.02	0.0082	0.00033	0.03264

Table 4: Poverty Headcount: Standard Errors and Confidence Intervals for different characteristics

		Mean	Standard error	95% confidence interval	
Gender of the Head of Household	Female	27.09	0.6324	25.84992	28.32889
	Male	37.93	0.2560	37.42833	38.43169
Education of the Head of Household	None	44.97	0.2878	44.40164	45.52994
	Primary	25.03	0.6158	23.82235	26.23645
	Preparatory	13.52	0.5851	12.36837	14.66210
	Secondary	0.27	0.0761	0.12081	0.41917
	Diploma / University	0.20	0.0747	0.05121	0.34411
	Non Standard	67.40	9.7409	48.30857	86.49298
Household Size	"1-3"	21.66	0.3907	20.88969	22.42105
	"4-7"	36.06	0.3379	35.39500	36.71949
	"8+"	55.47	0.5086	54.47614	56.46998
Wealth Quintile	Poorest	82.88	0.4592	81.97791	83.77794
	Second	50.45	0.5796	49.31022	51.58212
	Middle	29.23	0.4685	28.31344	30.15004
	Fourth	17.59	0.3807	16.84764	18.33999
	Richest	6.66	0.2416	6.18720	7.13411

Table 5: Acute Poverty: Population deprived by indicator (%), Standard Errors and Confidence Interval

	Mean	Standard error	95% confidence interval	
Years of Education	28.03	0.1781	27.68185	28.38004
Child attendance	4.55	0.0826	4.38667	4.71057
Child Mortality	1.72	0.0515	1.61836	1.82043
Child Nutrition	8.92	0.1130	8.69975	9.14285
FGM/Early Pregnancy	1.14	0.0421	1.05971	1.22489
Electricity	8.46	0.1103	8.24176	8.67431
Sanitation	15.95	0.1452	15.66484	16.23399
Water	27.54	0.1771	27.19477	27.88920
Floor/Roof	22.92	0.1667	22.59452	23.24791
Cooking Fuel	8.53	0.1108	8.31027	8.74442
Overcrowding	11.62	0.1271	11.37579	11.87403
Assets	5.18	0.0879	5.00530	5.34973

Table 6: Poverty: Population deprived by indicator (%), Standard Errors and Confidence Interval				
	Mean	Standard error	95% confidence interval	
Years of Education	79.37	0.1605	79.0574	79.6868
Child attendance	26.82	0.1758	26.4800	27.1690
Child Mortality	1.72	0.0516	1.6210	1.8233
Child Nutrition	10.17	0.1199	9.9383	10.4085
FGM/Early Pregnancy	1.14	0.0422	1.0614	1.2268
Electricity	8.46	0.1104	8.2445	8.6774
Sanitation	15.97	0.1454	15.6854	16.2552
Water	41.47	0.1955	41.0877	41.8540
Floor/Roof	31.37	0.1841	31.0139	31.7356
Cooking Fuel	13.70	0.1364	13.4301	13.9648
Overcrowding	31.29	0.1840	30.9280	31.6491
Assets	39.35	0.1938	38.9739	39.7338

Table 7: Acute Poverty: Poverty Headcount (%) by State				
	Mean	Standard error	95% confidence interval	
Sahara	1.46	0.1874	1.09658	1.83130
Souss-Massa-Draa	10.51	0.5884	9.35790	11.66455
El Gharb-Chrarda Bni Hssen	12.30	0.5963	11.13229	13.46971
Chaouia Ourdigha	8.57	0.4151	7.75149	9.37864
Marrakech-Tensift-El Haouz	17.89	0.7889	16.34162	19.43405
Région Oriental	6.65	0.4194	5.83264	7.47650
Grand Casablanca	0.11	0.0179	0.07025	0.14049
Rabat-Salé-Zemmour-Zair	2.27	0.1594	1.95526	2.58005
Doukkala-Abda	6.76	0.4142	5.94951	7.57323
Tadla-Azilal	11.37	0.6409	10.11063	12.62303
Meknes-Tafilalet	7.92	0.4279	7.08509	8.76242
Fes-Boulemane	4.78	0.2961	4.19875	5.35951
Taza-Al Hoceima-Taounate	17.13	0.7830	15.59926	18.66855
Tanger-Tetouan	11.42	0.5968	10.25445	12.59391

Table 8: Poverty: Poverty Headcount (%) by State				
	Mean	Standard error	95% confidence interval	
Sahara	17.72	0.7369	16.27680	19.16554
Souss-Massa-Draa	48.62	0.8580	46.94085	50.30419

El Gharb-Chrarda Bni Hssen	51.41	0.8218	49.79563	53.01722
Chaouia Ourdigha	43.86	0.7219	42.44320	45.27305
Marrakech-Tensift-El Haouz	44.39	0.9241	42.58328	46.20569
Région Oriental	38.98	0.7719	37.46377	40.48948
Grand Casablanca	12.34	0.5222	11.31280	13.35998
Rabat-Salé-Zemmour-Zair	17.52	0.5685	16.40951	18.63791
Doukkala-Abda	37.99	0.7673	36.48572	39.49339
Tadla-Azilal	46.34	0.9956	44.39278	48.29539
Meknes-Tafilalet	28.95	0.7651	27.45543	30.45448
Fes-Boulemane	26.76	0.7091	25.37467	28.15448
Taza-Al Hoceima-Taounate	52.73	0.9562	50.85406	54.60219
Tanger-Tetouan	36.94	0.8636	35.24627	38.63140

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[1] Country classification corresponds to the Word Bank standards as follows: lower middle-income economies are those with a GNI per capita between $1,026 and $4,035; upper middle-income economies are those with a GNI per capita between $4,036 and $12,475; high-income economies are those with a GNI per capita of $12,476 or more (World Bank).
[2] The HDI is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. A long and healthy life is measured by life expectancy. Knowledge level is measured by mean years of education among the adult population, which is the average number of years of education received in a life-time by people aged 25 years and older; and access to learning and knowledge by expected years of schooling for children of school-entry age.
http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf
[3] World Bank 2015
[4] Morocco National Survey on Population and Family Health 2010-2011
[5] According to UNESCO guidelines, the definition of primary schooling and secondary schooling is country-specific, as different countries have different durations of primary and secondary schooling. Therefore, our thresholds change according to the definitions of primary and secondary schooling of each country found on the UNESCO website.
[6] As the PAPFAM 2011 survey does not include a variable for the current school grades, the indicator considers only the attendance of school age children (6-18years).
[7] Anthropometric measurements were only collected for children under 5 years.
[8] No Data for FGM was collected in Morocco.
[9] Assets of information are: phone (mobile or fixed), radio, TV, internet, computer. Assets of mobility are: motorbike or car. Assets of Livelihood are: refrigerator, agricultural land, air condition, water, heater, and livestock (either livestock or chickens).
[10] The definition of rural and urban areas follows the sample distribution applied in the PAPFAM 2011 survey (Urban 55.35% and rural 44.65%).
[11] Refer to the technical note of the Human Development Report 2014 for a complete explanation of how the percentage contribution of each dimension is calculated.