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# Tax and Inequality in North Africa

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# Summary

- I. Introduction
- II. Analysis of Income Inequality in North Africa
- III. Structure of inequalities in North Africa
- IV. Extreme inequalities in North Africa
- V. Fiscal and Social Redistribution in North Africa
- VI. Income tax progressivity
- VII. Conclusion
- VIII. Bibliography
- IX. Annexes

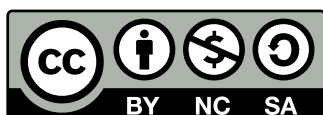
## Introduction

This Briefing Paper examines the situation on income inequality in the North African region. Income inequality is a priority concern for many countries around the world. Indeed, the 2008 financial crisis failed to serve as a lesson against financial capitalism, and since then inequalities have only increased. For instance, it led to the 2011 Arab revolutions as well as the Occupy Wall Street movement in the West- being the first social movement to accuse the richest 1% for perpetuating income inequalities. Following this, a decade later, quantitative analyses of income inequality in the North African region have not improved. This is mainly due to the lack of relevant information required to assess such inequalities and also because some countries do not collect the requisite information while others, being the majority, with the assistance of certain international financial institutions, only carry out surveys on household consumption but not on income<sup>1</sup>. An analysis based on the inequalities on consumption substantially masks inequalities. This is because the rich consume proportionately less than the poor, while the poor are often forced to take on debt in order to meet their needs and to make up for the lack of income. To overcome these shortcomings, several studies were conducted in order to build homogeneous databases for a coherent analysis of inequalities in the North African region. This study utilised the World Inequality Database (WID), created in January 2011 by the Piketty research teams, for its data. It used the database on inequalities in Africa that was created for the first time in October 2019 by the WID research teams<sup>2</sup>. These data allowed us to analyse the structure of inequalities as well as extreme inequalities in the five North African countries, namely; Morocco, Algeria, Tunisia, Libya and Egypt. We also attempted to analyse these inequalities with regard to the efforts made to reduce them, particularly through the redistributive effects of the fiscal and social policies of these countries. In order to do so, we relied on the latest work of the Standardized World Income Inequality Database (SWIID) of Harvard University<sup>3</sup>. Finally, we sought to analyse the specificities of each inequality reduction model in North Africa.

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<sup>1</sup> Ben Rouine, C., 2015, 'Regional inequality caused strong protest' NPAID (voir l'exemple de la Tunisie que nous avons étudié).

<sup>2</sup> Chancel C., Cogneau D., Gethin A., Myczkowski A., 2019, "How large are African inequalities? Towards Distributional National Accounts in Africa, 1990-2017", WID.world Working Paper 2019/13

<sup>3</sup> Solt F., 2019, «The Standardized World Income Inequality Database, Version 8», <https://doi.org/10.7910/DVN/LM4QWF>, Harvard Dataverse, V3

## I. Analysis of Income Inequality in North Africa

The economies of the North African countries are quite diverse. Algeria and Libya are very rich in natural resources, Morocco and Tunisia have adopted a similar model of attracting European industries, and Egypt stands between the two models. Moreover, the governance practices of these five countries fundamentally differ as a result of their different colonial heritages. The French influenced Morocco, Algeria and Tunisia, the British influenced Egypt and Libya developed out of its traditional governance. Under these conditions, the analysis of inequalities is of particular interest as governance practices and the economic and social conditions within North Africa are quite diverse.

The WID data, which serve as the basis for our analysis, were constructed from administrative surveys, tax data and national accounts. They are based on significant transformations, particularly in the transition from consumption data to income data. Relatedly, given that these data are still very recent, the conclusions of our analysis must be taken with caution and will be subject to change in the future as the quality of the data improves. In this study, the structure of inequality is measured as the share of national income before taxes and is broken down into three groups: the Bottom 50, which corresponds to the poor class and includes the five deciles from 0 to 50; the Middle 40, which corresponds to the middle class and includes the four deciles from 50 to 90; and the Top 10, which corresponds to the rich class and includes the decile from 90 to 100. As a comparison, we present the results of the studies carried out by the WID at the international level in order to be able to compare with North Africa (Figure 1). As shown in Figure 1, only in Europe and China does the middle class (Middle 40) hold the largest share of national income, while in the Middle East the richest hold the largest share.

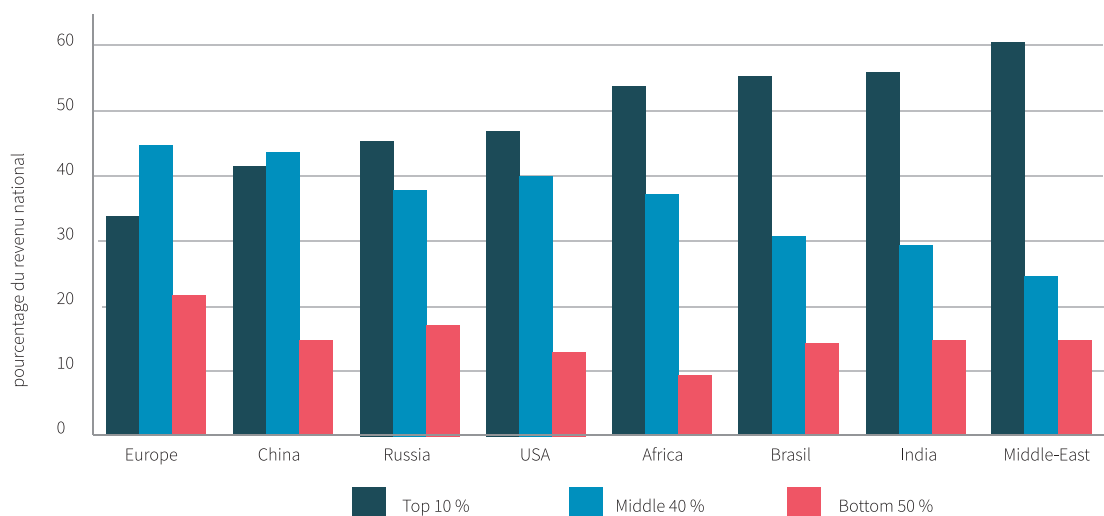


Figure 1 : Structure of inequality in the world. WID WP2019/13

Source: WID WP2019/13

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## II. Structure of inequalities in North Africa

In North Africa, the results are mixed (see Figure 2). On the one hand, we have Algeria and Tunisia, which are close to the European and Chinese models, where the middle class (Middle 40) has a larger share than the rich class (Top 10) with a clearer difference in Algeria. On the other hand, Libya, Egypt and Morocco are closer to the Russian model in terms of the inequality structure with a particularity for Morocco where the poor hold a much smaller share than the other two countries. However, this share does not fall below 10% as part of the overall African continent. In the five North African countries, the rich class does not exceed 50% of the national income, as is the case of the entire African continent and in the Middle East. This is despite the fact that North Africa is at the crossroads between Africa and the Middle East. In North Africa, the middle class holds more than 35% of the national income, separating the region from the Middle Eastern model. The region's poor class holds between 15 and 20% of the national income, drawing the region far from the African model. These results justify analysing North Africa as a bloc that differs from the groupings in which it is generally included (be it the African continent or the MENA region).

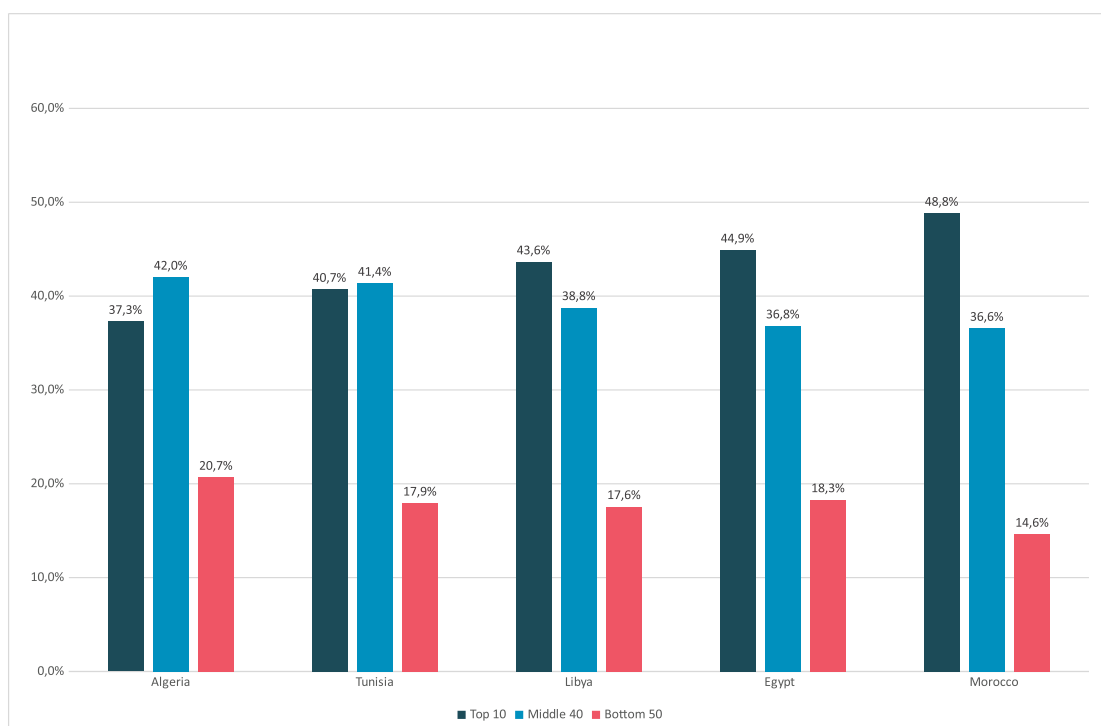


Figure 2 : Share of national income in North Africa in 2017.

Source : *WID*

Figure 2 reveals that Algeria is the least unequal country in North Africa while Morocco is the most unequal country. Historically, as early as 1998 in Algeria, the share held by the middle class exceeded that held by the richest, whereas for Tunisia it was not until 2014 that such a similar level was reached (see Annex 1). A substantial redistributive effort has been made by these two countries, since the share of the richest 10% exceeded 50% of the national income before the 1990s, whereas it barely exceeds 40% today. For Tunisia, it is interesting to note that the stagnation in the percentage share of both the middle class and the rich class corresponded to the decades of structural adjustment<sup>4</sup> (between 1990-2000 and 2010-2017) while the reduction in inequality took place outside these decades. The same is true for Egypt, where inequality increased sharply during the years of structural adjustment in the second half of the 1990s. We also see a trend of increasing inequality in Egypt between 2012 and 2015. In Morocco, the greatest increase in inequality took place between 1998 and 2007 when the country was not

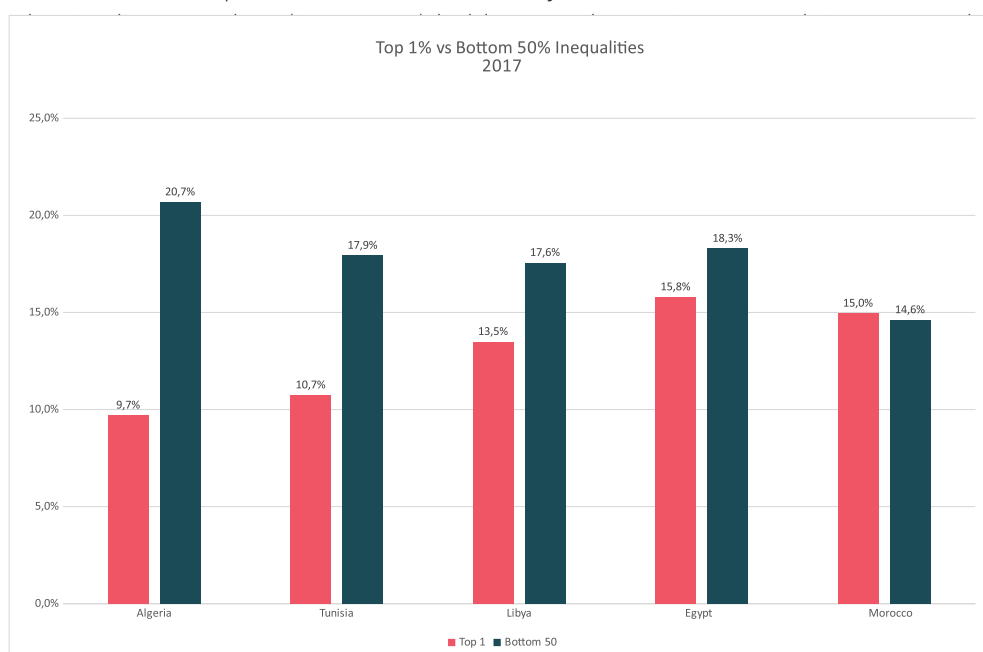
<sup>4</sup> The structural adjustment period covers the period under agreement with the IMF as well as the period of liberalisation in the framework of the free trade agreements with the European Union following the period under agreement with the IMF.

<sup>5</sup> Even if this inflection could be explained by the war that Libya has been undergoing since that date, the lack of data in Libya does not make it possible to conclude on the evolution of inequalities in this country in the midst of the war.

under structural adjustment but rather entered into a process of structural integration with the European Union within the framework of the association agreements. A slight decrease in the inequalities took place between 2007 and 2013 for Morocco. Finally, for Libya, there has been no major historical evolution except from 2012, when a shift towards a deepening of inequalities appears<sup>5</sup>.

### III. Extreme inequalities in North Africa

Another way of analysing inequalities is to adopt an approach based on what we can call extreme inequalities. This approach - adopted by the Occupy Wall Street social movement and the international NGO Oxfam - tends to focus on the richest 1%. The objective is to compare what share of the national income is held by the richest 1% (Top 1) compared to the poorest 1% (Bottom 50). In North Africa, a striking contrast can be observed in terms of extreme inequality (see Figure 3). Although there may be imperfections related to the quality of the data in the context of the richest 1%, where it is most difficult to have accurate data, this figure allows us to highlight the disparities in the profile of extreme inequalities in the region. Indeed, on the one hand, Morocco is the only country in the region where the richest 1% have more income than the poorest 50% of the country. On the other side of the border in



**Figure 3 : Share of income held by the richest 1% Vs poorest 50% in 2017.**

**Source :** *WID*

It is also interesting to look at the historical evolution of extreme inequalities in North Africa (see Annex 2). We can see three distinct groups emerging. The first group brings together Algeria and Tunisia where extreme inequalities have been sharply reduced, with a share of the richest 1% being around 20% and a share of the poorest around 13-14% at the end of the 1980s. The share of the richest 1% fell below that of the poorest 1% in 1992 for Algeria and in 2002 for Tunisia. This is the only group where the trend of extreme inequality has been reversed. The second group includes Egypt and Libya, where extreme inequalities have not changed significantly but where the share of the poorest has always been several points higher than that of the richest 1%. Finally, the last group concerns Morocco where, contrary to Egypt and Libya, the share of the richest 1% has always been higher than that of the poorest 1%, with a peak in 2007 when the richest held 20% of the national income against only 14% for the poorest.

Having described the situation of inequality and extreme inequalities in North Africa, we will now turn our attention to the efforts made to reduce inequalities in each of

the countries. Thus, in the second part of this study, we will focus on the redistributive effects of fiscal and social policies on the reduction of inequalities.

#### IV. Fiscal and Social Redistribution in North Africa

What redistributive policies have been put in place by North African countries to reduce inequalities? Generally speaking, we can distinguish two types of income redistribution policies. On the one hand, progressive taxation on income makes it possible to play an essential role in income redistribution and is thus an indispensable tool for reducing inequalities. On the other hand, a social policy through social transfers (unemployment, retirement, health, etc.) also makes it possible to effectively reduce inequalities. However, these two levers do not act in the same way on the reduction of inequalities. Indeed, research<sup>6</sup> has shown that income tax progressivity acts on inequalities mainly «from the top» by reducing the income of the richest, whereas social transfers act on inequalities mainly «from the bottom» by transferring benefits to the poorest (see Figure 4). In France, for example, the national statistics institute (INSEE) calculates the contribution of these two levers to inequality reduction every year and the latest figures for 2019<sup>7</sup> show that social transfers (called benefits) contribute 63.4% to inequality reduction while taxation (mainly income tax) contributes 36.6% to inequality reduction.

<sup>6</sup> Zemmour, M., Guillaud, E. & Amoureux, V. (2019). *Take from the rich or give to the poor? Sources of monetary redistribution according to countries. Regards*, 55(1), 157-169. doi:10.3917/regar.055.0157.

<sup>7</sup> Insee Références, 2019 edition - Fact sheets - Living standards and redistribution

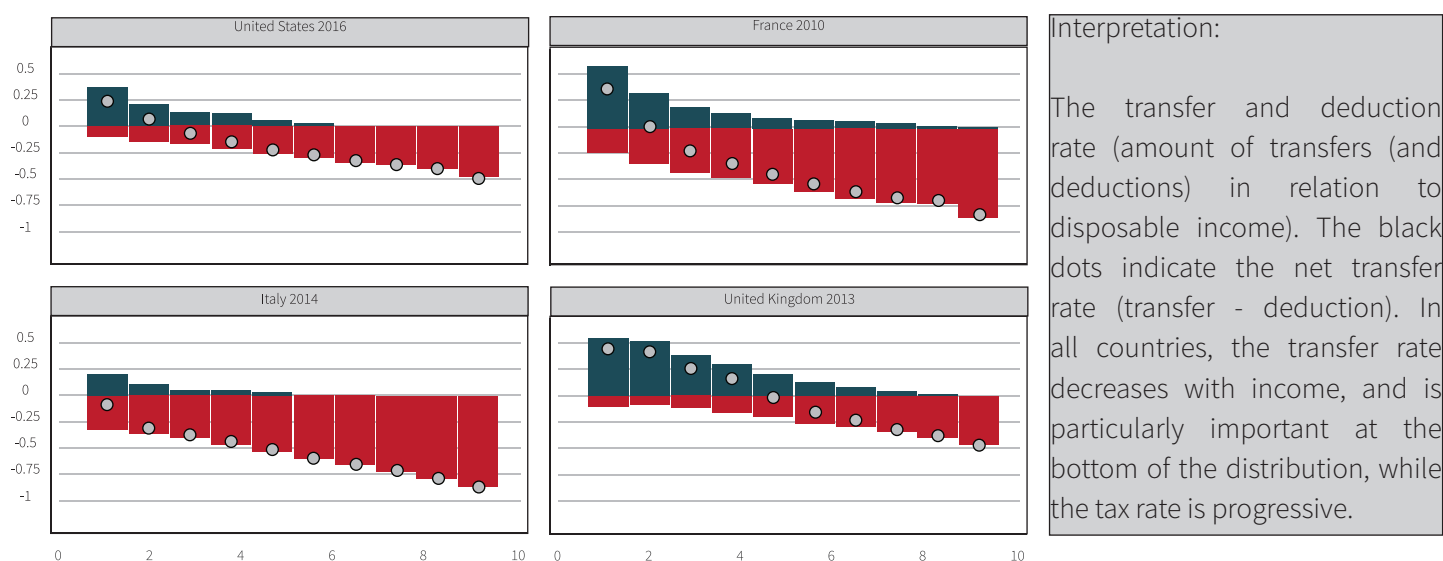


Figure 4 Effects of transfers and levies on inequality.

Source : Zemmour & Al. (2019)

For North Africa, it is still difficult to obtain such fine results due to the lack of data produced by the national statistical institutes. It is nevertheless possible to present a preliminary analysis of inequality reduction efforts for these countries by analysing changes in the structure of inequality and extreme inequality, the progressivity of income taxes, and finally, the redistributive effect of fiscal and social policies on inequality.

## V. Income tax progressivity

Personal income tax, when progressive, allows the transfer of income from the wealthiest to the less wealthy through the action of the State. As the work of Alvaro, Atkinson, Piketty and Saez has shown,<sup>8</sup> the top marginal income tax rate plays a key role in reducing the share of the richest 1%. A high number of brackets, specifically for high wages, also allows for a more gradual redistribution. More and more countries are exempting the first bracket so as not to put the burden of redistribution on the more modest who are the actual target of this redistribution. In North Africa, the structure of the tax schedule is disparate (see Table 1). Most countries have a progressive income tax with a number of brackets ranging from 4 to 6, with the exception of Libya, which has only two brackets and is difficult to classify as progressive. Similarly, all countries except Libya exempt the first bracket, which corresponds to the lowest incomes. Finally, the top marginal rate highlights a group of countries, Morocco, Algeria and Tunisia, with a fairly high rate of 38% for the first and 35% for the other two. On the other hand, Egypt has a much lower top marginal rate of 22.5%, while Libya is closer to a proportional tax schedule than to a progressive one with a top marginal rate of 10%.

<sup>8</sup> Facundo Alvaredo & Anthony B. Atkinson & Thomas Piketty & Emmanuel Saez, 2013. «The Top 1 Percent in International and Historical Perspective», *Journal of Economic Perspectives*, American Economic Association, vol. 27(3), pages 3-20, Summer.

Tax schedule 2019	Number of brackets	Upper marginal rate	1st bracket exemption
Morocco	6	38 %	Yes
Algeria	4	35%	Yes
Tunisia	5	35 %	Yes
Libya	2	10%	No
Egypt	5	22,5 %	Yes

Table 1 : Structure of the income tax scale in North Africa in 2019

Source : PWC

En reprenant la thèse selon laquelle le taux marginal supérieur permet une meilleure redistribution et notamment à partir de la part des 1% les plus riches, nous pouvons comparer ces taux avec l'évolution de la part des 1% les plus riches dans les pays d'Afrique du Nord (voir Annexe 2). Il est remarquable de noter qu'avec des taux marginaux assez faibles, la part des 1% les plus riches en Libye et en Egypte n'a que très peu évolué. Une tentative d'augmentation du taux marginal supérieur en Egypte durant la présidence de Morsi a par la suite été abandonnée<sup>9</sup>. De l'autre côté, avec un taux marginal supérieur de 35%, l'Algérie et la Tunisie ont réussi à faire baisser drastiquement la part des 1% les plus riches qui se situe autour de 10% pour les deux pays en 2017.

<sup>9</sup> Sherif N, Ghannam O., (2018) 'Rise and fall of fiscal justice after January's Revolution'. ANND, Social Justice Platform, Egyptian Center For Economic and Social Rights.

By taking up the assumption that the higher marginal rate allows for better redistribution, particularly from the share of the richest 1%, we can compare these rates with the evolution of the share of the richest 1% in North African countries (see Annex 2). It is remarkable to note that with fairly low marginal rates, the share of the richest 1% in Libya and Egypt has changed very little. An attempt to increase the top marginal rate in Egypt during Morsi's presidency was subsequently abandoned<sup>1</sup>. On the other hand, with a higher marginal rate of 35%, Algeria and Tunisia succeeded in drastically reducing the share of the richest 1%, which is around 10% for both countries in 2017.

The case of Morocco is a little peculiar. Morocco is the only country in the region where the richest 1% has historically had more income than the poorest 50% (Bottom 50).

It is also the country with the highest top marginal rate and the largest number of brackets in the region. At first glance, this runs counter to the idea that the higher the top marginal rate, the lower the share of the richest 1% will be. How can this contradiction be explained for Morocco? A first element to take into account comes from the fact that this high inequality is located upstream with an income distribution of 30% for labour against 60% for capital (based on an Oxfam report) and for which «Morocco is among the most unequal countries on this issue»<sup>10</sup>. Another element brought out by Oxfam concerns the fact that «in 2018, the three richest Moroccan billionaires alone held 4.5 billion dollars»<sup>11</sup>. These facts indicate that research should not only focus on the richest 1%, but also on the more restricted basis (0.1%, 0.01% or 0.001% the richest) in order to understand the dynamics of inequality in Morocco. Future research on Morocco should also include an analysis of wealth inequality in order to explain the inability of the tax schedule to reduce inequalities from the top, as is the case in Algeria and Tunisia.

<sup>10</sup> *Un Maroc égalitaire, une taxation juste* », Oxfam, 2019, p14.

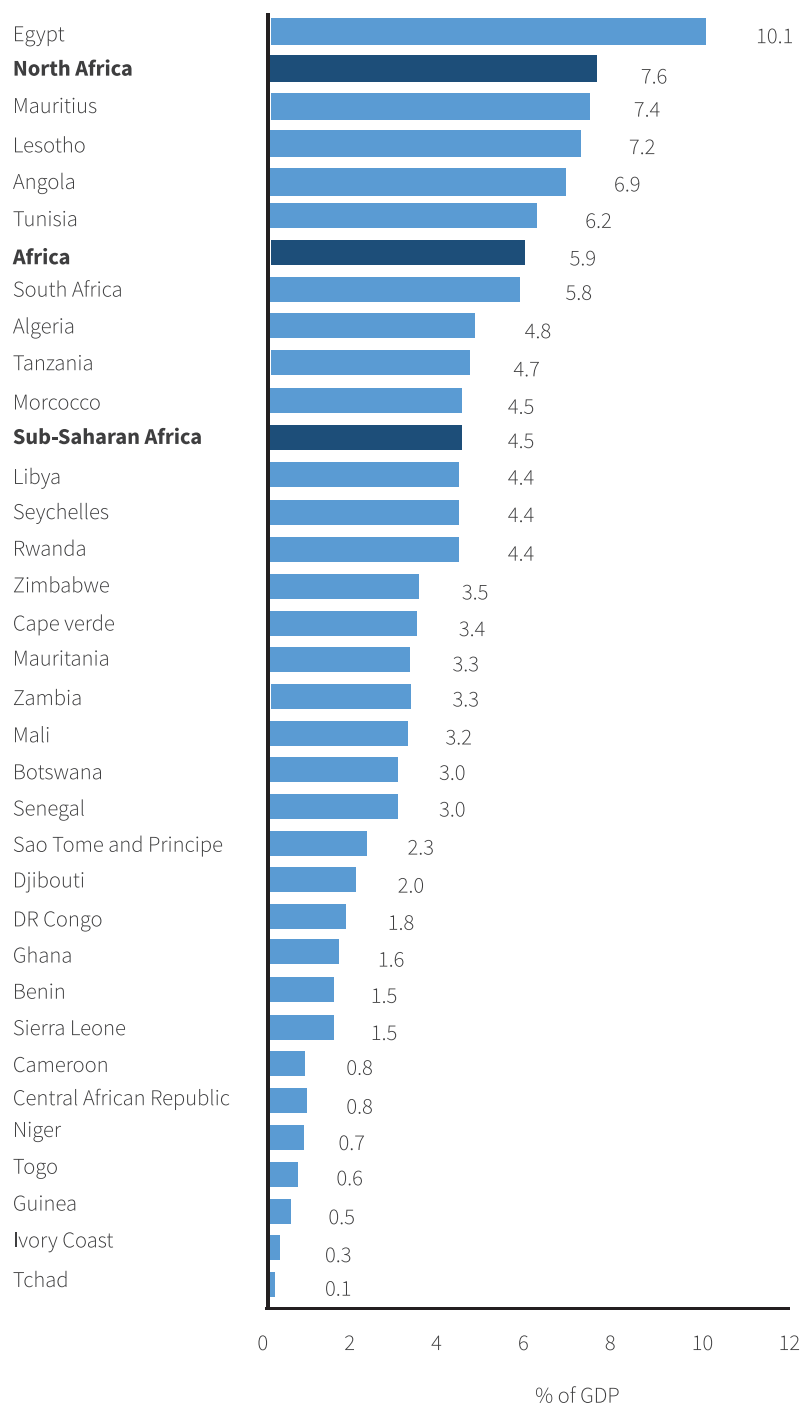
<sup>11</sup> *Ibid.*, p2

## VI. The redistributive effect of fiscal and social policies

As we have previously seen, inequality is reduced from the top through a progressive income tax and from the bottom through social transfers as part of a social protection policy. A recent study<sup>12</sup> by the International Labour Organization (ILO) has estimated social protection expenditure for African countries as a percentage of GDP (see Figure 5). For North African countries, Egypt spends the most on social protection, at around 10% of its GDP, far ahead of other African countries. Tunisia is the fifth African country with social protection expenditure of 6.2%, followed by Algeria, Morocco and Libya with social protection expenditure of 4.8%, 4.5% and 4.4% respectively. These figures largely explain why in Egypt the poor class (Bottom 50) has a relatively high share with 18.3% of national income in 2017.

<sup>12</sup> *World Social Protection Report 2017-19: Universal social protection to achieve the Sustainable Development Goals* International Labour Office – Geneva: ILO, 2017



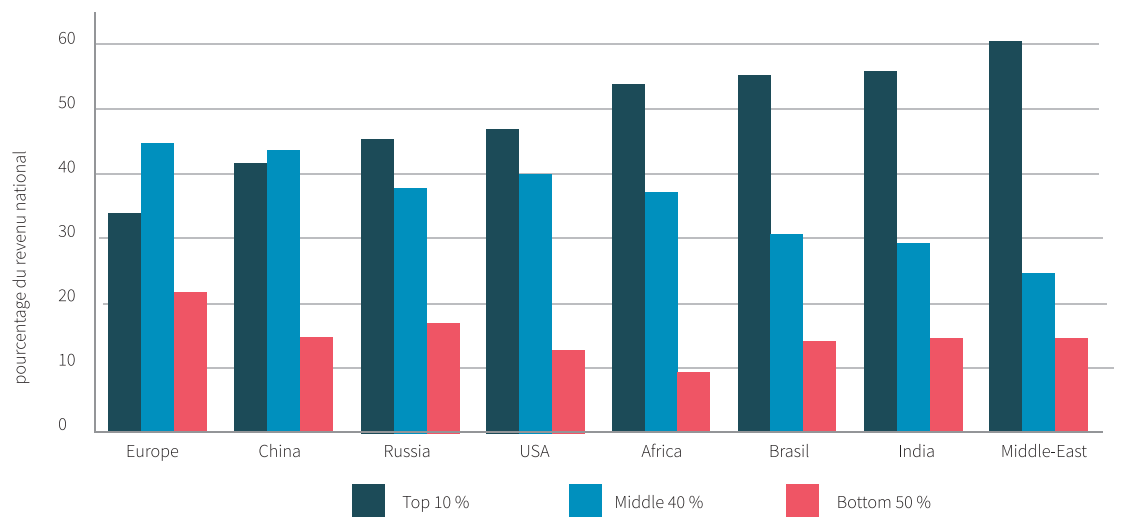


**Figure 5: Social protection expenditure as a percentage of GDP in Africa.**

**Source : ILO**

In order to be able to estimate the redistributive effort of fiscal and social policies, we used the SWIID database, which collects data on the Gini index<sup>13</sup> based on before and after taxes and transfers. By calculating such difference we can measure the redistributive effort of these policies and their impact on the measurement of inequalities (see Figure 6). Since, the SWIID database does not allow us to separate taxes and transfers, the redistributive effort will therefore have to be measured globally and analysed separately in the light of the elements we discussed above.

<sup>13</sup> The Gini index (or coefficient) is a synthetic indicator that makes it possible to account for the level of inequality for a variable and over a given population.



**Figure 6: Redistributive effect of fiscal and social policies on the Gini index.**

*Source : SWIID*

Note that we only have one measure for Libya for 2003 with a positive effect of 1.2 points on the Gini index. We observed that the most consequent redistributive effort is provided by Egypt with a difference between the Gini index before and after taxes and transfers that was between 3.5 and 4 points until around the 2000s which then increased to reach almost 5 points between 2010 and 2015. In view of the structure of the income tax schedule in Egypt and the ILO figures, it is clear that Egypt's strategy has been to reduce inequalities from the bottom up through substantial social protection (transfers). Nevertheless, as Figure 7 shows, this substantial effort has not been sufficient to reduce inequalities in Egypt. On the contrary, we observed that the Gini index increased continuously in Egypt during the period when its effort was constant between 1975 and 2000 and it is only when the effort increased drastically that the increase in the Gini index was lower. However, despite all these efforts, inequalities almost never decreased in Egypt, except between 2012 and 2015.

For Morocco, we observed an almost constant redistributive effort with a difference between the Gini index before and after taxes and transfers of around 2.5 points. A slight increase in the redistributive effort appeared in 2003, but this also corresponded to a slight increase in the Gini index before taxes and transfers, as shown in Figure 7.

According to the structure of the tax schedule and the ILO figures, Morocco's redistributive effort links the reduction in inequality from the top (progressive tax) and also from the bottom (social transfers) with a relatively greater effort from the top (the highest top marginal rate in the region) compared with the other countries in the region. However, in view of the structure of inequalities and the evolution of the Gini index, this effort has so far not been sufficient to reduce inequalities in Morocco. For Algeria and Tunisia, we observed similar trends. For Tunisia, the redistributive effort measured by the difference between the Gini index before and after taxes and transfers was greater than or equal to that of Morocco until 2002, and then this effort began to decrease as the Gini index decreased. The same trend is observed in Algeria with a lower redistributive effort than in Tunisia but in parallel with a lower Gini index. It is quite remarkable to note that, in the cases of Tunisia and Algeria, the redistributive effort decreased at the same time as the share of the richest 1% fell below that of the poorest 50%, in 2002 and 1993 respectively. In view of their income tax schedule and ILO figures on social protection, it appears that Algeria and Tunisia have adopted a strategy of reducing inequalities from the top (progressive tax) and from the bottom (transfers) in line with their inequalities levels (the effort in Tunisia is higher because inequalities are higher than in Algeria). In both cases, the strategy

has been rather successful since both countries have reduced their Gini index before taxes and transfers (see Figure 7) and currently have an inequality structure close to that of European countries and China where the middle class (Middle 40) holds the largest share of income.

Finally, as regards Libya, we do not have enough data to analyse its historical trends. However, with a Gini index before taxes and transfers of 34.8 and a redistributive effort of 1.2 points in 2003, it appears that Libya was the most egalitarian country with the lowest redistributive effort in 2003. Because of the structure of its tax schedule and the ILO figures, Libya has adopted an almost exclusive strategy of reducing inequalities from below, with an almost proportional tax on personal income.

It emerges from all these figures that the redistributive effort of North African countries is proportional to inequalities levels and that for the two countries with the highest inequalities, Egypt and Morocco, these efforts have been insufficient to reduce inequalities.

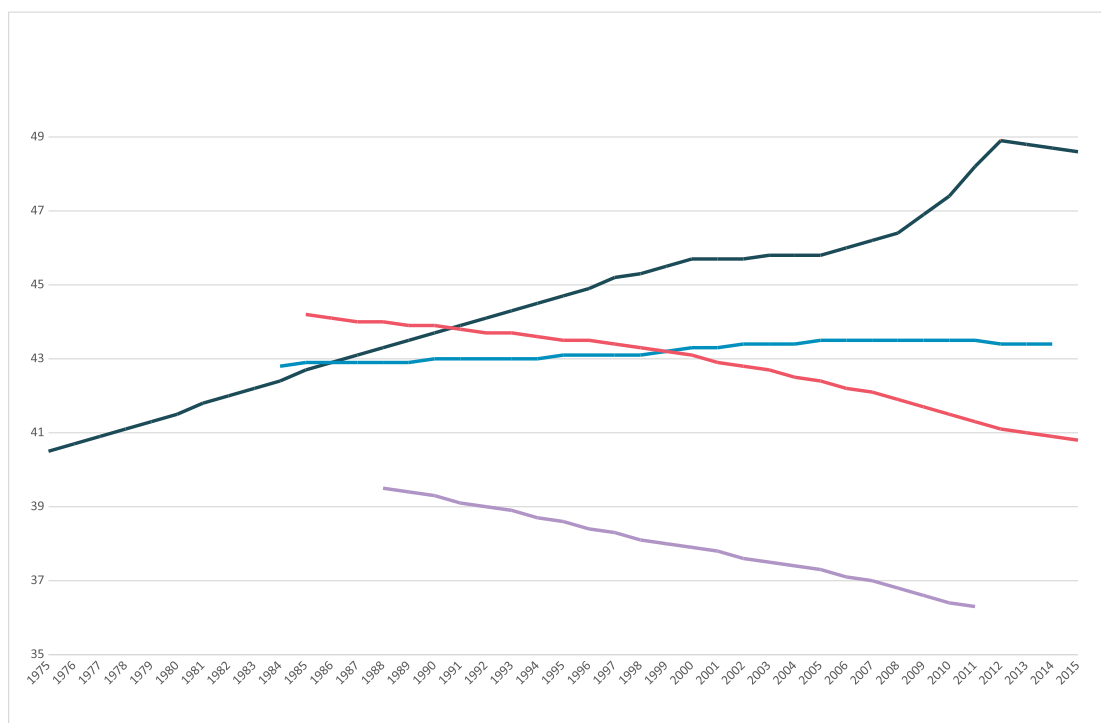


Figure 7: Gini index before taxes and transfers in North Africa

Source : SWIID

# Conclusion

An analysis of North African countries separately from the MENA region or from the rest of the African continent while justified based on exclusive examination of the inequality structure of these countries, it is difficult to find an exclusive North African model from which to study the inequality structures. In fact, only Algeria and Tunisia can be grouped according to the same model, either in terms of inequality structure or in terms of the strategy to reduce the inequalities. Indeed, both countries have a structure close to that of Europe and China where the middle class holds the largest share of national income. They have adopted a similar strategy combining a reduction of inequalities from the top with a progressive income tax (with the same top marginal rate of 35%) and a reduction from the bottom through social protection for the most vulnerable populations. For its part, Libya is a relatively egalitarian country with the lowest Gini index in the region where the redistribution effort through fiscal and social policies is quite low compared to other countries in the region. One of the explanations probably comes from a strong redistribution of oil rent for political purposes in the country, but the lack of data on Libya does not allow us to produce definitive conclusions. On the other hand, Egypt and Morocco are quite similar in some aspects but differ in others. The two countries are the most unequal in the region, with extreme inequalities in Morocco especially on the share of the richest 1% that remains higher than that of the poorest 50%. This has never been the case in Egypt. The two countries are the ones making the greatest redistributive effort in the region but without these reducing inequalities in their respective countries. Egypt has adopted a strategy of reducing inequalities from the bottom up through a generous social protection policy towards the poorest. However, Egypt's Gini index has continued to rise, indicating the inadequacy of the inequality reduction strategy adopted. For its part, Morocco has adopted a strategy similar to that of Algeria and Tunisia, but without lowering its Gini index. This strategy has enabled Morocco not to see its Gini index increase as has been the case in Egypt, notably through a more progressive income tax, but since extreme inequalities are so high in Morocco this strategy is insufficient to reduce inequalities. While Algeria, Tunisia and Libya are on the right track in terms of inequality, Egypt would benefit from strengthening the reduction of inequality from the top through a more progressive income tax in the upper income brackets, and Morocco would benefit from reducing extreme inequality through a more proactive policy towards the richest 1%.

## Bibliography

Alvaredo, Facundo, Anthony B. Atkinson, Thomas Piketty, et Emmanuel Saez. 2013. « The Top 1 Percent in International and Historical Perspective ». *Journal of Economic Perspectives* 27 (3): 3-20.

« ANND - Report on Taxes and Social Justice in the Arab Countries ». s. d. <http://www.annd.org/english/itemId.php?itemId=599>.

« Chancel et al. - Towards Distributional National Accounts in Africa.pdf ». s. d. <https://wid.world/document/cgm2019-full-paper/>.

Chancel, Lucas, Denis Cogneau, Amory Gethin, et Alix Myczkowski. s. d. « Towards Distributional National Accounts in Africa », 73.

« Inequality\_Watch-IIa.pdf ». s. d. [https://folkehjelp.no/files/Inequality-Watch/Inequality\\_Watch-IIa.pdf](https://folkehjelp.no/files/Inequality-Watch/Inequality_Watch-IIa.pdf).

« Revenu disponible brut et pouvoir d'achat des ménages – France, portrait social | Insee ». s. d. <https://www.insee.fr/fr/statistiques/4238365?sommaire=4238781>.

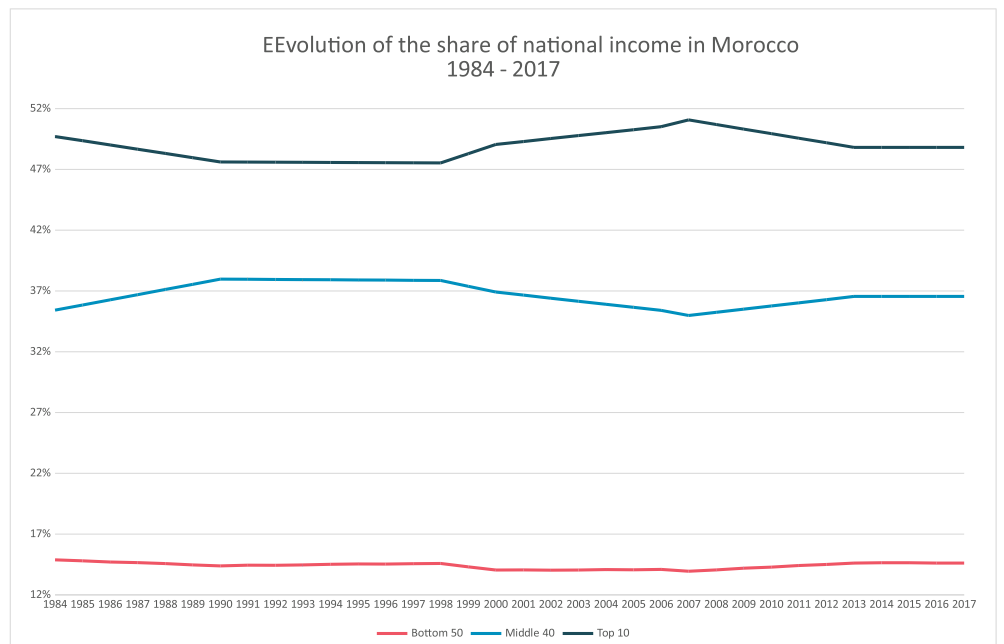
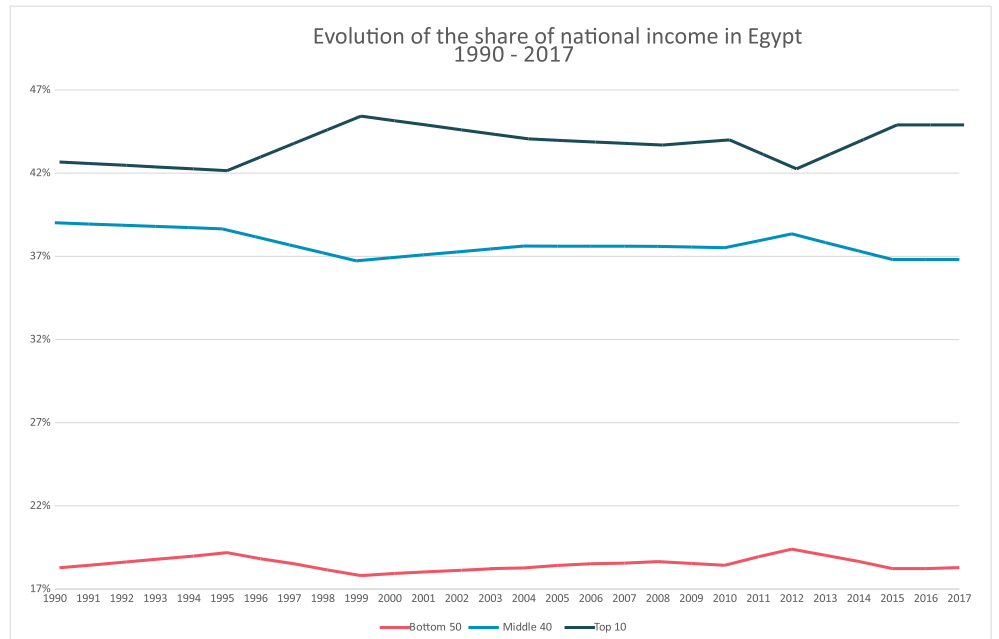
Solt, Frederick. 2019. « The Standardized World Income Inequality Database, Version 8 ». <https://doi.org/10.7910/DVN/LM4OWF>.

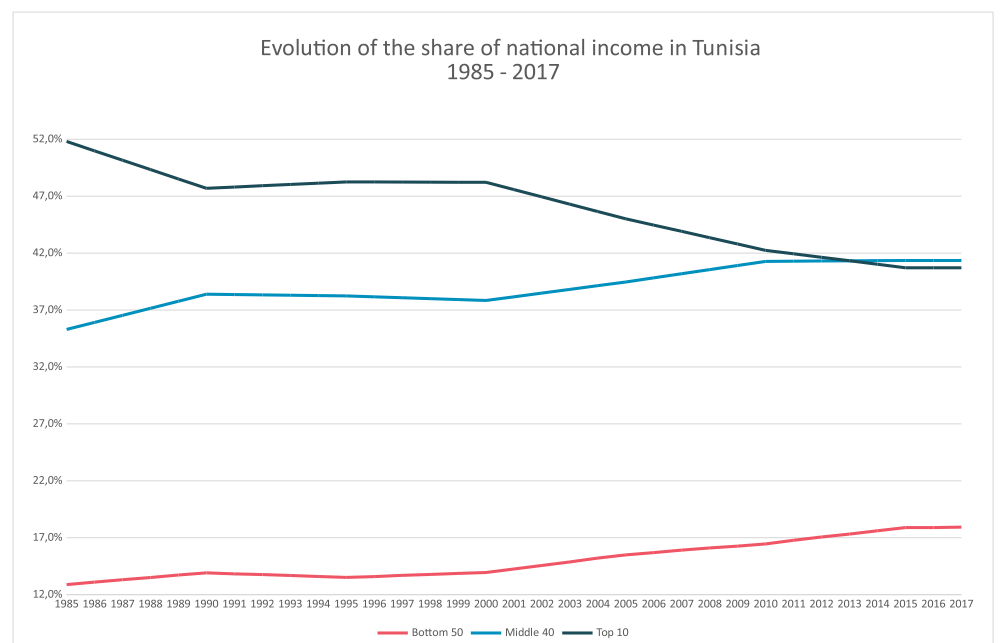
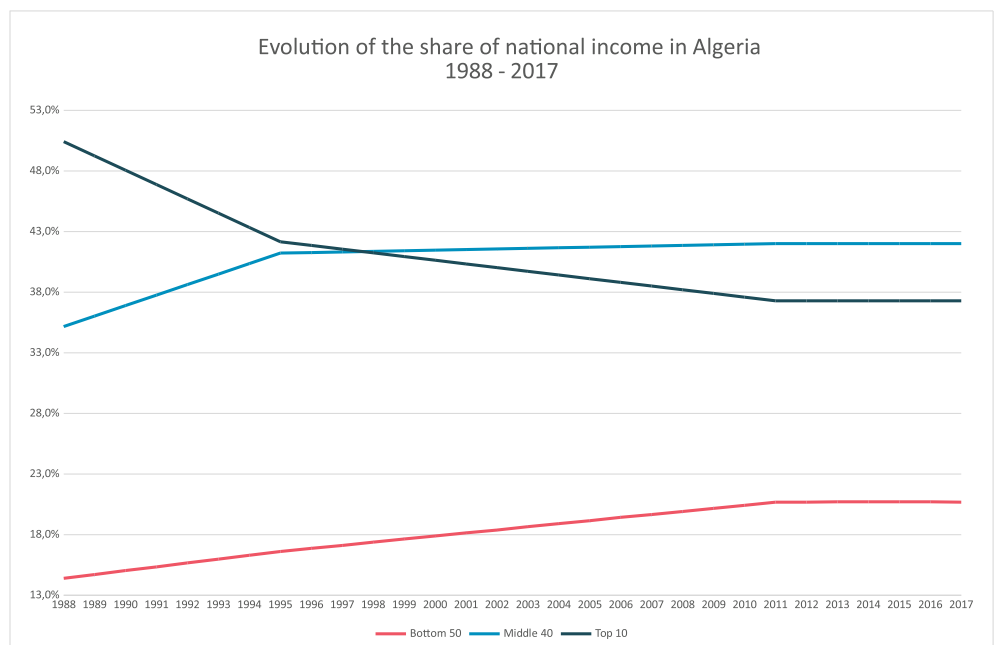
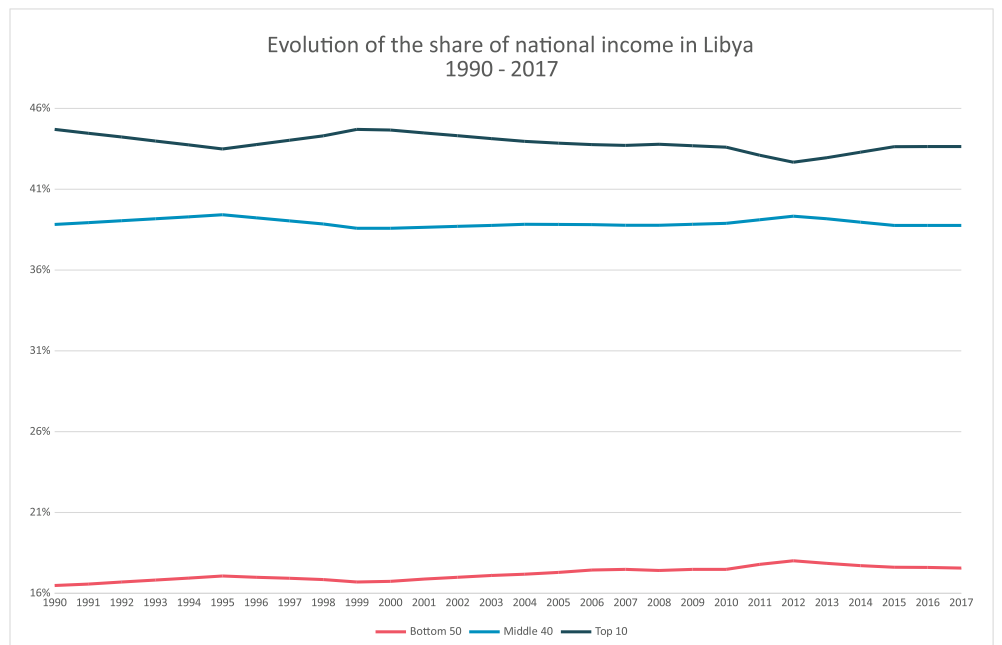
« Un Maroc égalitaire, une taxation juste ». 2019. Oxfam International. 29 avril 2019. <https://www.oxfam.org/fr/publications/un-maroc-egalitaire-une-taxation-juste>.

« World Social Protection Report 2017-19: Universal Social Protection to Achieve the Sustainable Development Goals ». 2017. Report. [http://www.ilo.org/global/publications/books/WCMS\\_604882/lang--en/index.htm](http://www.ilo.org/global/publications/books/WCMS_604882/lang--en/index.htm).

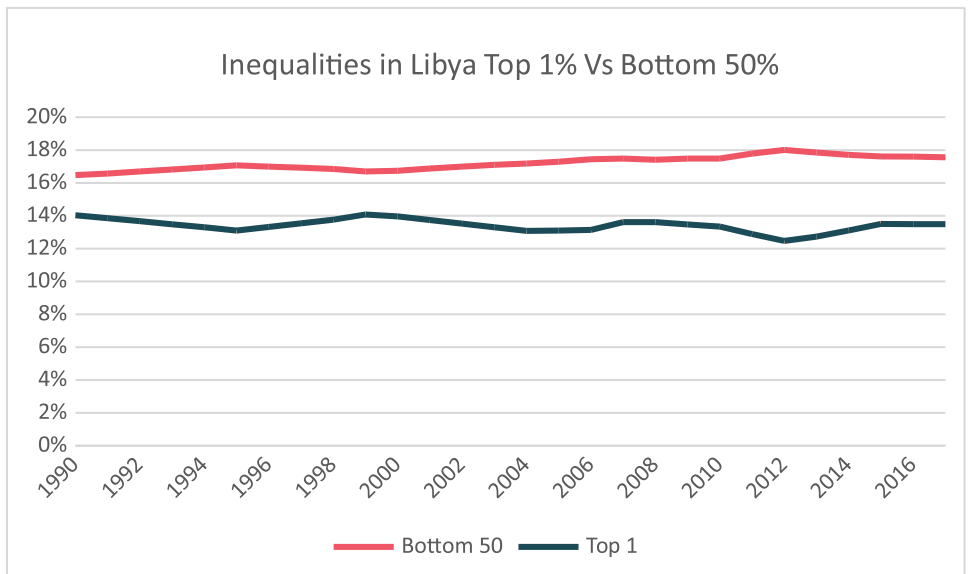
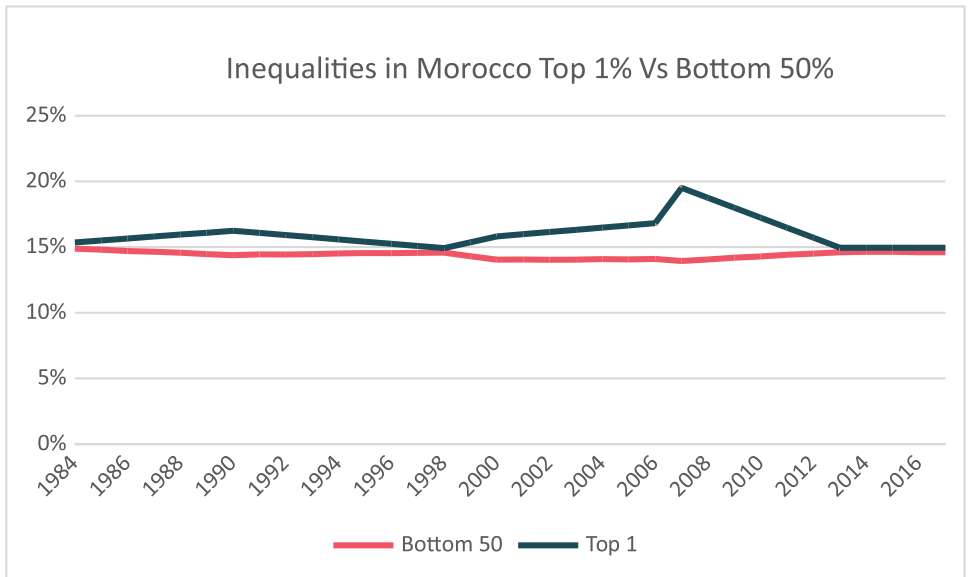
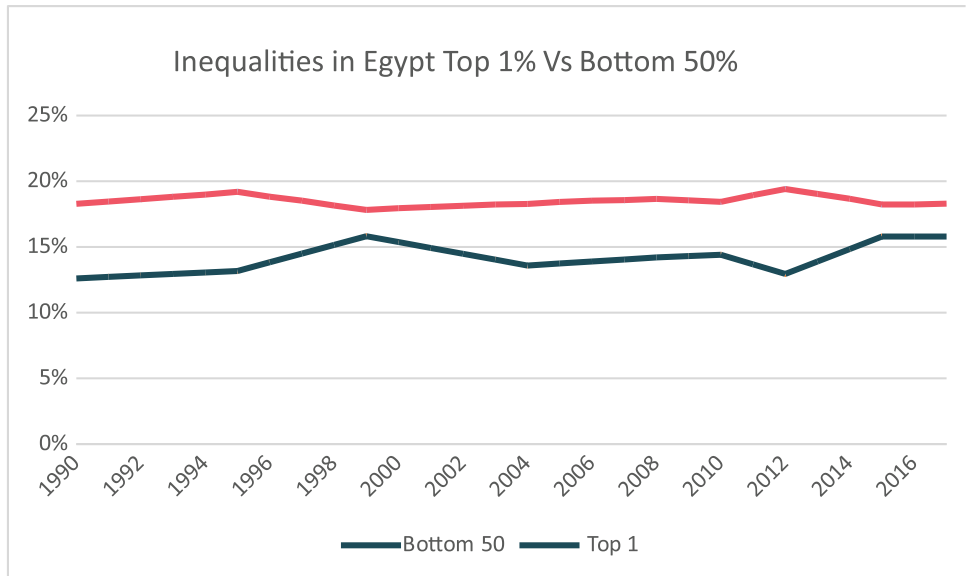
Zemmour, Michaël, Elvire Guillaud, et Victor Amoureux. 2019. « Prendre aux riches ou donner aux pauvres ? Les sources de la redistribution monétaire selon les pays ». *Regards* N° 55 (1): 157-69.

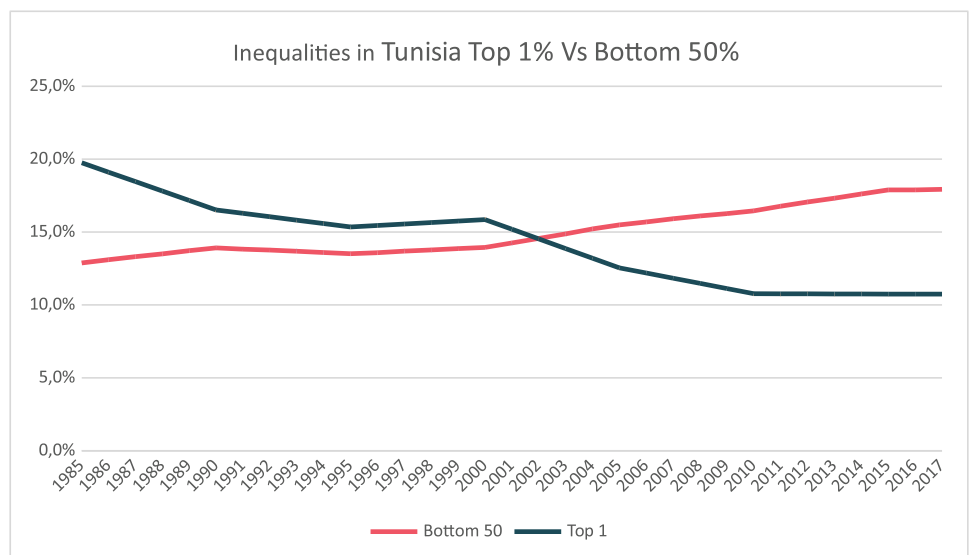
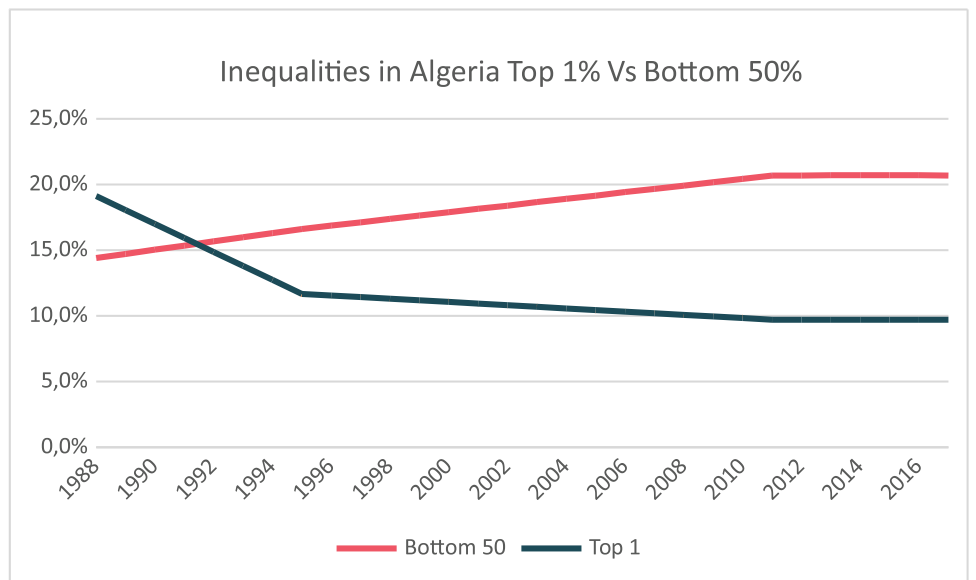
## Annex 1 : Historical evolution of the share of income in North Africa





Annexe 2 : Trends in extreme inequalities in North Africa





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