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# PARLIAMENTARY ELECTIONS IN ZAMBIA — AN ALTERNATIVE

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## On this paper

The first version of this paper was finalized before the draft for a new constitution for Zambia was published. The topic and discussion of the paper has not been changed in view of the proposals, and there is no discussion of the proposed constitution. However, the main topic of the paper can be read as a description of how a system for “an open list proportional representation system” as proposed in paragraph 135 (i), can be conducted.

In this second version changes have been done to take accommodate comments received. Additionally, calculations and tables were redone using information from the 2010 census and separating the Muchinga province out of the Eastern and Northern provinces.

The document is a working paper, and should not be published or distributed.

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# Parliamentary elections in Zambia – An alternative

*by Gunnvald Grønvik<sup>o</sup>*

## Abstract

The present system of parliamentary elections and governance in Zambia is largely inspired by the system in the UK and in the US. The paper points out some differences relative to the systems that prevails in the Nordic countries, and aims at stimulating to a debate on alternative designs of the electoral system in Zambia.

The thrust of the paper is a detailed explanation on how a parliamentary election in Zambia would have turned out if the votes had been cast as in the presidential election in 2011, and the electoral system had been like the Norwegian.

Summing up it is maintained that the electoral systems of Norway and the other Nordic countries have many good properties and have contributed to stable and well-functioning democracies. However, they are not identical, and issues that need to be addressed in an adaption of a system similar to those used in the Nordic countries are mentioned.

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## Content:

Parliamentary elections in Zambia – An alternative .....	2
Abstract .....	3
1. Introduction .....	5
2. The electoral process .....	7
2.1 Voter register .....	7
2.2 Preparation of political parties.....	8
2.3 Organizing the voting and counting of votes .....	8
3. Translating votes to parliamentary seats .....	11
3.1 The distribution of seats to electoral districts.....	11
3.2 The election and the count of results .....	13
3.3 The distribution of seats in the districts .....	14
3.4 The calculation of parties eligible to participate in the national distribution.....	15
3.5 The national correction to receive (almost?) national proportionality .....	17
3.6 The allocation of national seats to districts .....	18
3.7 The national allocation of seats.....	19
4. Summing up.....	21
Appendices .....	23
A. The effect of the ‘area-factor’ on the seat allocation to provinces.....	23
B. A lower national threshold for national representation.....	24
C. Lower regional and national threshold for national representation .....	24
References:.....	25
Tables: .....	26
Table 1: Distribution of seats to provinces .....	26
Table 2: The election result .....	26
Table 3: Allocation of directly elected seats in Western province.....	27
Table 4: Allocation of directly elected seats in Eastern province (shortened) .....	27
Table 5: Directly distributed seats in all provinces.....	28
Table 6: The political allocation of national seats .....	28
Table 7: The regional allocation of national seats.....	29
Table 8: The allocation to parties and provinces for all seats.....	29
Appendix table A: Alternative distributions of seats to provinces.....	30
Appendix tables B: Seat allocation with low national threshold .....	31
Appendix tables C: Seat allocation with low regional and national threshold .....	33

## 1. Introduction

The basic constitutional set-up in Zambia is at present heavily inspired by the institutions of the former colonial power, the UK. Considerable inspiration has been collected from the US.

Some elements reproduced from the UK are:

- Parliamentary elections through single member constituencies and the 'first past the post' way of selecting the candidate.
- All members of the cabinet have to be members of parliament.
- In case of death or other withdrawal from the position of an MP, supplementary by-elections are held in the constituency concerned.

Some elements inspired from the US are:

- a strong president who appoints the government (no need for parliamentary approval)
- politically appointed leaders in a large number of government agencies. These leaders are changed with the political leadership of the country.

Alternatives to this exists and is practiced in many (in some cases most) European countries. I do not have sufficient detailed knowledge of all European countries to be able to give a comprehensive overview of this. However, in most Nordic countries the following applies:

- Parliamentary elections are held with larger geographical areas as electoral districts and several MPs are elected from each district. Candidates are nominated on party lists and representatives are elected according to rules securing proportional representation in the district. Four out of five Nordic countries have additional national seats to contribute to national proportional representation.
- Supplementary members are appointed from the list of candidates that was standing for elections.
- MPs who are appointed members of the cabinet have to vacate their parliamentary seat. In the period the MP serves in government the representation of the party in parliament is left to the first available supplementary member.<sup>1</sup>
- The head of state (King or president) that has to appoint a government that the parliament accepts.
- The recruitment of leaders of government agencies is merit based, and these leaders are not changed after elections.

Finland deviates regarding bullet points one and three. In Finland individual candidates affiliated with parties compete in multimember constituencies. The vote will be for the

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<sup>1</sup> In case of death of an MP, the first supplementary member takes over the seat permanently without by-election. Thus only national elections are held.

party, but also for the candidate within the party. In Finland MPs appointed as ministers maintain their duties as members of parliament while serving in the cabinet.

This paper does not go through the pros and cons of all elements listed above, but it can be argued that what is listed here as elements of the Nordic solution contribute to

- more efficient legislative and budgetary work in parliament,
- better parliamentary control with the executive,
- a smaller room for development of corruption and nepotism in the executive (incl. government agencies), and
- more honest expression of political preferences from the voters (less tactical voting).

The way the political vote is translated to elected members of parliament is important for other reasons too. The Nordic solution contributes to political election campaigns more concerned with competing policies and less with the personalities of the candidates, and there is no meaning to 'horse-trading' on withdrawing from the race in some constituencies for cooperating political parties. The system with supplementary MPs does away with by-elections. An impression from other countries (mainly the UK) is that these elections that are held without a national political debate and mobilization and therefore often have a low voter-turnout.

As indicated, the very interesting topics mentioned above will not be discussed systematically in this paper. What will be gone through in detail is the electoral process, i.e. the translation from votes cast to the appointment of the elected MPs and supplementary MPs. There are differences between the detailed rules in the Nordic countries, and the rules of Norway, is adhered to in the paper. As a starting exercise a brief description of the electoral process in Norway is given.

## 2. The electoral process

For Norway the start of the parliamentary electoral process is stipulated through the election act. The election-day is fixed to a Monday in September, and the government decides on what Monday it should be (normally around the 15<sup>th</sup>). An important early event in the process occurs prior to every second parliamentary election when the number of MPs to be elected from each county is reviewed based on the development in the population since the previous calculation. The details of this calculation will be presented in section 3.1 below.

Prior to the election there is a need to produce a register of eligible voters, the political parties must nominate their candidates, and an organization to take care of the actual voting on the election-day and for absentee ballots must be in place. A brief description of these processes is given in the subsections below, but first a short overview of how the votes cast translate to appointing MPs in Norway is given.

The Norwegian parliament has 169 members out of which the majority is elected from multi-member electoral districts and the rest nationally so as to achieve national proportionality. The translation from votes to members of parliament has a number of steps. First the electoral board in each county calculates the seats to be distributed solely based on the votes from the county. A total of 150 MPs are found in these calculations. The number of votes cast in favour of each party and the calculation of seats, are reported to the national electoral board. The national electoral board sums up the votes cast and seats won for each party, and finds out what parties are eligible for participation in the national proportionality distribution of seats. The national electoral board then proceeds to calculate the party distribution of these seats and finally the seats are distributed to counties so as to determine the last MP from each county. The remaining 19 MPs are found in this calculation.

### 2.1 Voter register

In Norway there is a register of the population that is kept up to date at all times by the tax authorities. It contains all residents (Norwegian and foreign citizens) and Norwegian citizens living outside Norway. It is used for a number of purposes, amongst them are

- to make sure everyone (residents above the age of 18) is fill in their yearly income statement to calculate the correct income tax,
- to pay out old age pension to all that are qualified for that,
- to pay out child allowances to all parents according to the number of children below sixteen years of age that they take care of, and
- to produce a list of eligible voters before every election.<sup>2</sup>

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<sup>2</sup> Parliamentary elections are held every fourth year and next time in September 2013. Municipal and county elections are also held in September every fourth year, but in the middle of the parliamentary term, i.e. last time in September 2011. In the local elections residents who are not Norwegian citizens are eligible voters.

Information from the register may also be made available for businesses provided legitimate interest exists.<sup>3</sup>

The list of eligible voters is made public shortly after July 1<sup>st</sup> in election years. With elections in September this gives time for control from voters so that possible mistakes can be corrected.

## **2.2 Preparation of political parties**

Knowing in good time when the election is due the parties have prepared themselves through passing electoral manifestoes. This can in Norway be done the year prior to the elections. With the election manifesto in hand the parties will train their campaigners in their defense of the manifesto and in the arguments against the other manifestos.

Early in the election year the political parties will nominate their list of candidates in each county. The list is numbered and representatives and supplementary representatives are in practice in Norway fixed through the party nomination.<sup>4</sup> The list should at least contain as many persons as there are candidates to be elected from the district, and there can be an additional six persons. To have a list of candidates that appeals to all groups of voters the parties will seek to balance age, sex, geography within the electoral district and occupation of their candidates. The last elections most parties have tried to have their list of candidates in all counties fully balanced as regards the sex of the candidates.

The campaign is thus based on a national political manifesto, and separate numbered lists of candidates for each of the nineteen counties of Norway. All votes cast in favour of parties that passes a threshold of four percent of the national vote, are counted in the final and proportional distribution of parliamentary seats. Thus very few votes are cast that do not influence the political representation in parliament.

## **2.3 Organizing the voting and counting of votes**

As stipulated in the election act, each municipality and each county of Norway elects one electoral board to take care of their part of the election. In practice, these boards are elected by consensus and will normally have one member from each party that is represented in the elected board of the municipality (county). In addition one would invite representatives from parties running for parliament, but not represented in the local body.

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<sup>3</sup> The register of the population also contain the address of all residents, and one is obliged to report a change of address. The financial institutions use the register the register to keep their list of customers updated. They also get information of deaths and can send out life insurance or stop payment of pensions based on information from the register.

<sup>4</sup> The election law in principle opens for voters changing the list. However, the requirements to produce a change are such that it in practice never will occur. In other Nordic countries voters can – within the choice provided for by the party – influence the selection of the persons who actually will get the seat in parliament.



The political parties have to send their list of candidates to the county election board for approval. The approval relates mainly to controlling that the information given about each person on the list is correct. Candidates are also given a chance to object to the nomination.<sup>5</sup> The county election boards print and distribute voting material to the municipality election boards. After the count of votes is done in the municipalities, they review the reports from the municipalities and sums up the total vote for the county. They send their reports to the national electoral board.

The municipal election board has the overall responsibility for the voting process in the municipality. They must see to it that a sufficient number of suitable localities are in available, and that the necessary equipment is brought to the polling stations. Before the election-day, they must make sure that at least one polling station is open in each municipality in the weeks leading up to election-day so that absentee votes can be cast.<sup>6</sup> To take care of the activity on the election-day, they will elect a polling station committee to serve each polling station. These committees are responsible for the electoral act at each polling place (setting up the electoral room, controlling identities of voters, advising the voters to go to the polling booth, making sure that each voter only delivers one vote in the ballot box, ceiling the ballot box when the polling station closes, transport of the ballot box to the municipal counting place). On the eve of the election when the ballot boxes are returned from the polling stations, the municipal electoral board is responsible for organizing and revising the counting and for the subsequent reporting of the municipal result both to the county election board and to the computer company that services the media and the public at large through the election-night.

In practice both the early preliminary, revised and final count are made available for the public at large through the reports given to the computer firm<sup>7</sup>. Municipalities compete in presenting their results as early as possible. Votes may be reported by media as soon as they come in, but not before all polling stations are closed nationwide. The latest closing time for the elections is decided nationally by law, but municipalities may choose an earlier closing time based on local circumstances. The voting in most large cities closes at 21.00 hrs., the latest closing time that is allowed. Immediately after this the first forecasts of election results, based on exit polls, will be presented on radio, on TV and on line. The computer firm will – according to a contract with media and authorities – add value to their reporting

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<sup>5</sup> This is not an issue for the serious political parties, but some minor movements that do not have a sufficient number of well-respected candidates to field, may include names of persons they would like to see in their movement. Such nominated candidates can withdraw their name from the lists.

<sup>6</sup> Absentee votes can be cast in your own municipality if you plan to be away on the election-day. You can also cast absentee ballots in any other municipality or if you are abroad in a Norwegian diplomatic representation (embassy, consulate). The vote must be cast early enough to reach the voters Norwegian municipality before the voting starts on election-day.

<sup>7</sup> Preliminary results normally cover all votes cast by voters on election-day. Final results include pre-cast votes and votes there may be doubts about. Through liberal rules on pre-casting of votes, around ten percent of the votes cast in the major cities are not part of the preliminary results.

through supplementing the numbers with national and regional forecasts based on trends and comparisons with previous elections. As the counting goes on and results are reported, these forecasts will be revised.

Politicians from all political parties will by media be asked to comment results and trends throughout the counting and reporting process. The national result is normally known after five to six hours, and in the middle of the night (often around 02.00 hrs.) the leaders of the political parties will participate in a televised debate on the political situation. If it is not clear which political parties will cooperate to form a parliamentary majority and the government, this topic will be the major question of the debate.<sup>8</sup>

In the days and weeks that follow, reports on the organization of the elections and the counting are written and reviewed at all levels. They typically highlight issues of doubt in the election process, i.e. if all voters (including Norwegian citizens temporarily residing outside the country) have had a chance to cast their votes, if certain votes should be declared valid or not. The summary report from the election is one of the first things the new parliament debates and approves when they meet in October.

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<sup>8</sup> The counting of absentee ballots, votes that may be disputed, and a revision of the counting takes place in the days after the election night. Margins are often small, and it is not infrequent that seats change during these processes. In tightly fought elections even the final outcome (i.e. what parties will be in a position to form a government) may change.

### 3. Translating votes to parliamentary seats

As said the main theme of this paper is the translation from votes cast to the naming of the MPs and supplementary MPs. To make the reading more interesting for the Zambian reader, the system is presented with an illustration from Zambia. It is assumed that a copy of the Norwegian electoral law was in place in Zambia prior to the elections in 2011, and the votes cast at the presidential elections will be used. In the design of the system the presidential quota of appointed MPs<sup>9</sup> is abolished, and the size of the parliament is reduced by one from 158 to 157 (so that there is no chance for two equally large and competing blocs).<sup>10</sup> The ten provinces serve as electoral districts. In appendices the effect of changing some of the debatable aspects of the Norwegian electoral law is shown.

It can be said that there is five steps to the calculation of the representation in parliament in the Norwegian system. In addition there is the actual election and the counting of votes. In chronological order these six events are:

1. The distribution of seats to electoral districts
2. The election and the count of results
3. The distribution of seats in the districts
4. The calculation of parties eligible to participate in the national distribution
5. The national distribution to receive (almost) national proportionality
6. The allocation of the nationally won seats to districts

The topics will be covered in this order.

#### 3.1 The distribution of seats to electoral districts

The distribution of seats between districts should reflect the size of the population or the number of voters in each district. In some countries the geographical outskirts of the country are given some additional representation as a compensation for being far away from the country's center of political power. This is the case in Norway and the precise law describing how it is done is part of the constitution. First each electoral district (i.e. county) is given a

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<sup>9</sup> The presidential quota allows for the president to appoint some ministers that are not MPs at the outset. In the Norwegian system no minister is an MP at the same time. In Norway, the ministers have to meet in Parliament and answer for their activity, but they cannot themselves be MPs. When MPs are appointed ministers they (temporarily) leave their parliamentary seat and a supplementary member takes up the seat. Under this system the head of state (at a proposal from the prime minister) is free to appoint ministers, but appointing a minister from the opposition would not change the number of MPs supporting the government as the supplementary member would represent the same party and be bound by the same electoral manifesto as the appointed minister.

<sup>10</sup> In Sweden in 1973 the 350 seats in parliament were split evenly (i.e. 175 / 175) to the socialist and non-socialist block of parties. In the period that followed some decisions were decided by lottery (i.e. flipping a coin). This was by all parties viewed as embarrassing and the number of seats has later been reduced to 349.

point score, and then seats are distributed between districts based on the 'District points' using the St. Laguë's method.

The formula for the district points is:

$$\text{District points } i = \text{Number of citizens } i + \text{Factor} * \text{Area in sq.km } i$$

The index (i) indicates that the variable is specific for each electoral district. The 'Factor' is defined in the constitution to be 1.8. As the area factor has a constant national value, population growth has implied increased relative weight to population over time.<sup>11</sup> A similar formula using provinces as electoral districts and with the weights 80 percent for population and 20 percent for area, is applied for Zambia and the calculations are shown in table 1. The implied value of 'Factor' in the formula above is then 4.35. Due to large population growth in Zambia, there will as time passes be an important difference between a decision to fix the area factor to account for 20 percent of the total district points, or to fix the area factor at some number (for instance 4.35).

The population numbers are from the 2010-census with the division of provinces from 2012. The area of the provinces in square kilometers, are also numbers found in publications from the Central Statistical Office. The sum of the area points for Zambia is weighted so that the sum is 20 percent of the total point number. Based on the sum of points the seats are distributed between the provinces. The number of parliamentary seats in each province can be found through dividing the total point number for each province by 104 122.6<sup>12</sup> and rounds off to whole numbers using standard rounding techniques (i.e. Muchinga's 10.502 rounds up to 11 whereas Central's 16.496 rounds down to 16).

The last column is included to illustrate the effect of the area factor in the point calculation. It can be read out of the numbers that the area points of North-western province are 75 percent of the population number. The similar number for the populous Lusaka and Copperbelt provinces are 4-7 percent. The effect of the area factor is to increase the number of MPs elected from sparsely populated areas.

However, this formula favours sparsely populated provinces to a less degree than what actually was the case through the seat allocation used in the last election in Zambia. The actual number of parliamentary seats in the 2011 election is shown in the table, and the actual distribution of seats in fact favours the rural areas, and probably even more so than the rule used here for Zambia. The column for change in seats shows that more than all the new seats to be elected by the voters go to Lusaka province. It is also some redistribution of

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<sup>11</sup> Details on this can be found in the appendix.

<sup>12</sup> This number can be said to be the number of points necessary for one representative. How this number was found will be explained in section 3.3.

seats between the other provinces. The densely populated and large Western and Luapula provinces are the relatively speaking largest 'losers' when population is given increased weight through the application of the formula.<sup>13</sup>

The main purpose of a rule like this is to have some automated system for seat readjustments according to population changes. However, it will be advantageous if the chosen rule is robust to deal with other events too. The rule used here has this property and cover changes such as creation of new provinces or changes in boundaries between the provinces.

The parliament of Norway has 169 members elected from 19 counties. 150 of the MPs are elected directly from the counties, and one from each county is elected through a national corrective system aiming at national political proportionality. The electoral system assumed for Zambia will be similar and province will be used as electoral district. Out of the 157 members it will be assumed that 147 are elected directly from the provinces and one from each province is elected based on national votes and the prior distribution in the provinces.

### **3.2 The election and the count of results**

As said at the outset the results from the presidential election in Zambia in 2011, are used to illustrate the method. It is assumed that the votes were cast to parties identically with what actually was done in the presidential elections.<sup>14</sup> In addition, the smaller parties have been merged to one. The four parties participating in the election illustrated here are PF, MMD, UNDP and 'Other'. Votes from the new Muchinga province is compiled as the sum of votes from the ten constituencies the province contains, and the votes from Eastern and Northern provinces are adjusted accordingly so that the national totals remain unchanged.<sup>15</sup>

One reason to use the results from the presidential rather than the parliamentary election is in the electoral system used here political parties will have party lists to use for the supporters in each and every electoral district. Since the presidential election was nationwide the candidates competed and campaigned in all constituencies and the votes cast related to a fully national agenda. In the Zambian parliamentary elections, not all parties field candidates in all districts, and in some districts the parliamentary election was held at a later stage. Thus the votes cast in the parliamentary elections are in some ways not suitable for the purposes of this paper. A weakness in using the presidential election results is that the voting may not have related to the voters primary political choice, but related to the most likely outcome, i.e. did the voter want Rupiah Banda or Michael Sata as president for

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<sup>13</sup> Appendix A contains a discussion of this area factor, and the effect it has.

<sup>14</sup> The source for the results down to the voter count by constituency is Electoral Commission of Zambia (2011).

<sup>15</sup> The constituencies of the Muchinga province are '39 Chama north', '40 Chama south', '83 Chinsali', '84 Shiwang'andu', '85 Mafinga', '86 Isoka', '87 Nakonde', '98 Kanchibiya', '99 Mfue' and '100 Mpika'. The two first were formerly in the Eastern and the remaining belonged to the Northern province.

the coming five years. Thus smaller political parties may be underrepresented in the votes cast.

For the purpose of this paper, i.e. to illustrate how another system for translating votes to political representation in parliament the presidential election is best suited. Under the assumptions used here, the votes for the four parties in each of the ten provinces are as shown in table 2.

### 3.3 The distribution of seats in the districts

The distribution of seats in the electoral districts should reflect the popular vote in that district. The method used to achieve this in the three Scandinavian countries is a modified version of the St. Laguë's method.<sup>16</sup> The representation can never be totally fair. Some voters will be overrepresented while other will be underrepresented. The St. Laguë's method is based on the principle that too good representation and too poor representation are equally large evils. It can be shown this principle leads to a distribution of the N seats in a province to the N largest quotas obtained through division of the number of votes for each list by the odd numbers (i.e. 1, 3, 5, 7, ...). The Scandinavian countries have modified this method somewhat through replacing the division by 1, with a division by 1.4. The effect of this will be explained below.

The application of this method to distribute the 13 seats from the Western province is illustrated in table 3. The first line shows the number of votes to each of the four parties, and below there is one line for each of the thirteen seats to be allocated. In each line there are two columns for each party. To the left is the divisor that applies for the party at this stage of the distribution. To the right is the quota coming out of this division.

To win the first seat all a parties compete with a quota that is the number of votes in the province divided by 1.4. Thus the first seat will always be won by the largest party, and in the Western province that was MMD. To get a second seat MMD will have to compete with the quota 20 864 that is the result of division of the MMD votes by 3. Before MMD wins its second seat, UNDP (quota 37 111) and PF (quota 31 222) have won their first seats. They are the second and third seats from the province. When a party has won a seat the quota for further possible seats will fall as the divisor increases from 1.4 to 3 and after that by two for each seat won. In the table the largest quota in each line is highlighted and the party winning that seat is listed to the right in the table. At the bottom the composition of locally elected Eastern province bench in parliament is summed up. In addition there will be one representative whose party affiliation will be decided through the national distribution seeking to attain national political proportionality.

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<sup>16</sup> Finland and Iceland awards the seats using d'Hondt's method. This method is less favorable for small parties. However, in Finland some of the electoral districts elect very many MPs, implying that the percentage of voters needed to get one seat in that particular district is smaller than the corresponding percentage is for the largest districts of Norway.

To understand what is achieved through this distribution, one can divide each party's votes in the province with the sum of the last quota to win a seat and the first quota not to win a seat. Normally this will be the two largest quotas on the bottom line<sup>17</sup>. This sum is in this example 14 551.2 and the division gives the result [ 3.0 / 4.3 / 3.7 / 1.8 ] for [ PF / MMD / UNDP / Other ] respectively. The seats distributed were [ 3 / 4 / 4 / 2 ], and it can be said that the number found is such that division and use of normal rounding rules to get integers will give the correct allocation of seats.<sup>18</sup> With the Scandinavian modification of the St. Laguë's method this is not entirely true. The increase of the first divisor from 1 (as it was suggested by St. Laguë) to 1.4 implies that rounding up to 1 shall only be done for quotas larger than 0.7. Thus the effect of the modification is that it is more difficult to win the first seat than it would have been using a clean version of the St. Laguë's method.

This modification also had an effect for the distribution of seats in this Zambian example. This is shown in table 4 that contains – for the Eastern province – parts of the information corresponding to what was given in Table 3. Here the summation of the quotas for the last winner and the first challenger (MMD's 13<sup>th</sup> and 14<sup>th</sup> seats) gives 17 042.9. The division gives the result [2.85 / 12.98 / 0.58 / 0.58] for [PF / MMD / UNDP / Other] respectively. The seats distributed were [3 / 13 / 0 / 0].

Without the increase of the first divisor, the number to divide with would have been 19 326.1. The division would then have given the result [2.51 / 11.45 / 0.51 / 0.51] for [PF / MMD / UNDP / Other] respectively. Without the modification the seats would have been distributed [3 / 11 / 1 / 1].<sup>19</sup>

With an election result like the one in table 2, and a the number of seats distributed between provinces as shown in table 1, the distribution of seats directly allocated from the provinces would have been as shown in table 5. Behind each line of the table there is a calculation entirely according to the same principles as shown in table 3.<sup>20</sup>

### 3.4 The calculation of parties eligible to participate in the national distribution

The independent distribution of seats in the provinces opens for discrepancies between the national popular vote and the national representation. There are three main reasons for this:

1. The geographic division of seats to the districts includes an area-factor that will favour parties with relatively stronger support in rural than in urban districts.

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<sup>17</sup> The exception from this will be the cases where the party that has won the last seat also would have won the next if the province had an additional seat in parliament. Then the two quotas will be in the same column.

<sup>18</sup> The number of point the province needed to get one full seat, as mentioned in note 12, is found with the method explained here.

<sup>19</sup> The national result without the Nordic modification with increased first divisor is shown in appendix C.

<sup>20</sup> An Excell spread-sheet with the calculations done for this paper can be ordered from the author.

2. The modification of the distributional method through increased first divisor will often lead to a situation where small parties are too small for representation in many provinces so that they end up grossly underrepresented on a national scale.
3. Parties may be unlucky or lucky in the distribution of seats in districts. A party that gets many seats in the provinces in one election, will typically be better represented nationwide than with a fully proportionate national distribution.

These factors are stronger if the electoral districts are small than if they are large. In Norway 150 seats are allocated in 19 counties, each of them a separate electoral district. The smallest of them only elects three representatives to parliament directly, and a fourth is found through the national distribution aiming at proportionality. 19 seats are distributed in this national distribution (one for each district). The factors leading to lack of national proportionality are also stronger when there are many small parties that do not get representation from the electoral districts. In Norway there are at present seven nationwide political parties, and four of them have obtained less than 10 percent of the national vote in the last few elections.

To attain nationwide proportional representation a nationwide correction is needed. As the number of seats in the provinces is quite large, the need for the national correction is smaller with the electoral system used for Zambia in this paper than in the actual case for Norway. Additionally, in the example used here, there is only one small party. That contributes to a reduction of the problem the national adjustment seeks to rectify. Thus, even if only ten representatives are elected through this procedure, chances are good that the national proportionality is attained.

A major issue when constructing a national electoral system is the fear for creating a system that opens for many small political parties. This may in turn lead to situations where the nation becomes difficult or impossible to govern. This is often used as an argument in favour of the English 'first past the post' system that has created majorities in parliament even if the governing party seldom (if ever) has attained a majority of the popular vote.

This argument is not without merit, and most countries with national proportionality also have some kind of threshold that has to be passed to be allowed to participate in the distribution aiming at national proportionality. The rules differ considerably between countries. The rules may be specified according to the votes cast nationally, to the number of seats won locally or districts where the party has achieved representation. They may also relate to combinations of these rules. In Sweden the national threshold also has an effect for the distribution in the districts. All parties that have passed the national threshold participate on equal terms with the other national parties in the allocation of seats in the districts. Parties that have not passed the national threshold of four percent of the national vote may win seats in the districts, but they then have to pass a local threshold of twelve



percent of the votes in the district. If they pass the national threshold the vote needed to get a seat in the district is considerably lower than twelve percent in most districts.

In Norway the threshold for participation in the national distribution of seats is that the party has obtained four percent of the votes cast in the election. This rule has not prevented smaller parties from getting representation from counties. In the 2009 election one party with 3.88 percent of the national popular vote got two MPs elected directly from the counties. They did not qualify for participation in the distribution of national seats and have a parliamentary group of two. In the Zambian example the 'Other' party has won two representatives (both from the Western province) but will be excluded from the national distribution of seats as they do not have four percent of the national vote.<sup>21</sup>

**3.5 The national correction to receive (almost?) national proportionality**

The principle of the allocation of seats to national parties in the national distribution is the same as for the counties, taking into account the number of seats already won straight from the districts. It can be done through as many divisions of the national vote of the parties in question as there are seats to be distributed plus the number of parties that compete for them. In the counties the second seat is won after a division of the party vote in the county by three. The third is won after a division by five, and so on. The rule coming out of this is that seat number  $N+1$  is won through a division of the vote by  $2*N+1$ .

Thus a national electoral board can sum up the number of votes for eligible parties, and the number of seats won by each of these parties from the provinces. They can then calculate the relevant quotas and determine the parties to win the national seats. The major facts in the two first parts of the work of the national electoral board, is summed up in table 6.

The first block of lines contain the number of votes to each political party on a national scale, the number of seat won by the parties in the provinces and the percent of the national vote to each party. Based on this information the electoral board can conclude that three parties – PF, MMD and UNDP – will participate in the competition for the national seats. The party 'Other' is excluded from this distribution as it did not get four percent of the national vote.

The second group of lines shows the divisions that each leads to the distribution of the national seats. In the first line the national vote of the three parties are divided by two times the number of province mandates already won by the party plus one. The quota is largest for PF, and thus the first national seat is won by PF. On the next line the PFs national vote is divided by the same number with an addition of two, and the PF-quota is the largest once more. This way the distribution continues until all ten seats are distributed.

The last group of lines sums up the allocation of seats both from the provinces and through the national distribution. The sum of the national allocation is 8 seats to PF, two to UNDP

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<sup>21</sup> In the appendices B and C the effect of a threshold that allows the party 'Other' to participate in this national distribution is shown.

and none to MMD. The main reason for this is that PF has a strong voter support in Copperbelt and Lusaka provinces. These provinces have as pointed out in section 3.1 the relatively smallest area factors and therefore relatively the lowest number of seats in the parliament (highest number of voters per seat). In this national distribution there is no area factor weighing the votes and PF gets compensated. The number of votes behind a full seat in this national distribution is 17 263.0.

MMD won no national seat, and one may wonder what it means to be a participant in the national distribution when no seats are won. The answer is increased security for a fair representation. Studying the details of the calculation reveal that MMD won one seat more than their fair share of the parliamentary seats in the national elections from the provinces. Dividing the parties national vote with 17 263.0 shows that PF / MMD / UNDP had enough votes to get 67.381 / 57.224 / 29.355 seats respectively. With normal rounding rules the parties get 68, 57 and 29 seats. If MMD had lost a seat to UNDP or PF in one of the provinces, the total national distribution would have been fully proportional between the three parties nationwide. An additional loss by the MMD would then have been compensated in the national distribution of seats if the national vote was unchanged. The national margin between MMD and UNDP for the last national seat would have been a few hundred votes. This is typical and emphasizes the importance of the accuracy of counting of votes throughout the country. It will also give voters a feeling that their vote counts in the national outcome, and thereby stimulate voter participation.

A loss of an MMD seat to 'Other' would not have changed the distribution of the national seats. Thus it is under the system as it is designed in this paper possible for a party to get more seats than a fully proportional distribution amongst the parties that passes the national threshold would result in. Thus, it can be discussed if one seat per province gives the right level for the national distribution to attain national proportionality. If Zambia were to adopt a system like the one shown here, this is a point that should be given consideration.<sup>22</sup>

### **3.6 The allocation of national seats to districts**

At this stage a number of parliamentary seats have been distributed to parties and provinces (8 PF and 2 UNDP) and provinces (1 to each), but the matching between party and province for these ten seats have not yet taken place.

The system used in Norway at this point is to calculate a quota for each of the county-parties that compete in this distribution. Seats are allocated one by one to the largest of the county-party quotas when the limits of seats to be allocated to parties and counties, is taken into consideration.

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<sup>22</sup> A similar problem occurs in the Norwegian system, and I have argued that number of seats distributed to achieve national proportionality ought to be increased. A rule by which the number of seats to the national distribution was larger for the counties with many MPs is suggested by Grønvik (2010).

The Zambian rule would replace 'county' by 'province'.

The formula for the quota is

$$\text{Quota for province-party} = \frac{[\text{'Party votes in province'} / (2 * \text{'Party seats in province'} + 1)]}{[\text{'Total votes in province'} / \text{'Seats in province already distributed'}]}$$

Thus one would for instance find

$$\text{Quota for UNDP Southern} = \frac{[266\ 754 / (2 * 13 + 1)]}{[368\ 913 / 18]} = 0.4821$$

The formula looks complicated, but the first line is the quota the party would compete with in the province if another seat were to be distributed (when the Scandinavian correction from 1 to 1.4 as the first divisor is disregarded<sup>23</sup>). The second line corrects for the fact that seats won in provinces are not equally expensive measured in votes. Thus the quota expresses the part of the votes for an extra seat in that province the province-party obtained. For province-parties that already have won at least one seat in the province the quota will be in the range [0.0 , 0.5] and for province-parties that have not won any seat in the province the quota will be in the range [0.0 , 0.7].<sup>24</sup>

All the quotas for this distribution (including the ones for MMD and 'Other') are shown in table 7. In the distribution one need not consider the quotas calculated for MMD and 'Other' as these parties are not entitled to seats in this distribution. The largest of the quotas for PF and UNDP, is the quota 0.5448 for UNDP in the Eastern province. Thus the first province-party to get a seat is the Eastern province UNDP. In the table the quota is highlighted, and in the column to the right the number 1 indicate that this was the first seat to be allocated in this distribution. The next two largest coefficients are from PF in the Copperbelt and Luapula provinces respectively, and then follow UNDP in the Southern province. The rest of the seats are won by PF, and the order of the allocations is shown in the column to the right.

**3.7 The national allocation of seats**

As a last stage the national allocation of all seats will be noted, and it is shown in table 8. In Norway the national electoral board writes the letter of appointment for all MPs, and they also inform the supplementary members of their position.

<sup>23</sup> This correction is introduced to avoid representation to small parties. This argument is irrelevant at this stage of the allocation of seats. The issue here is to allocate seats to parties who have passed the national threshold. Maintaining it would place province-parties in provinces that not already have won a seat at a disadvantage relative to other province-parties within the same national party.

<sup>24</sup> The intervals should be understood as rules of thumb. In a multiparty tightly fought district even a losing large party may get a quota slightly above 0.5.

When the government is formed, a number of the supplementary members will take a permanent seat in Norway. This is because a minister cannot at the same time be an MP. They have to meet in parliament to answer for their policy and the executive practice of the ministry, but are not themselves MPs. They are on leave from the parliament for the time they serve as ministers.<sup>25</sup> Supplementary members are called to serve in parliament so that the parliamentary balance is not changed. The supplementary members serve in the number-order for all MPs elected from their county-party and may be called in when MPs have approved leaves of absence.

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<sup>25</sup> In April this year 14 out of 20 cabinet members are elected members of parliament. A later small reshuffle of the government has reduced this number to 13.

## 4. Summing up

The big debate on electoral system concerns what in general is best for the country in securing good governance according to the will of the people. One phrase that frequently turns up is 'proportional representation'. There are many dimensions to this issue. The two that most often is discussed pertains to geography and politics. In the US they have a system for redistribution of seats in the House of Representatives that secure geographical proportionality. However, they have no system for proportionality according to the political preferences of the voters. In Israel the whole country is one electoral district and political proportionality is secured, but the parliament need not reflect the geography of the electorate. The Nordic countries (and Germany) have different systems that all aim at creating proportionality both in the geographical and the political dimension.

The system in Zambia does not secure political proportionality, and the geographical dimension probably reflects the situation when the system was established. Considerable domestic migration, in particular urbanization, has led to a system that does not reflect the population in a systematic way.

This paper contributes to the big debate on electoral systems in two ways. In the introductory section some arguments to the discussion is mentioned without any attempt to deliver a complete set of arguments in favour of or against proportional representation. The major contribution is to show how one system securing political proportionality and geographical representativeness can be constructed and function.

The big question Zambian politicians (and the Zambian people) need to ask and answer is whether they want proportional representation in Zambia or not. In case they do want it, what dimensions should be covered through the electoral law. The discussion here has been concerned with geography and policy, but other dimensions such as sex and tribe could be considered. The more dimensions one seeks to cover, the more complicated the system as a whole will be.

I think the system used in the Nordic countries have many good properties and have contributed to stable and well-functioning democracies. In the Nordic countries the electoral acts are aiming at proportionality in the political and geographical dimension whereas other dimensions – sex, occupational or educational background, geography within the electoral districts, etc. – are left to the political parties through their nomination of candidates.

The systems used in the Nordic countries have many similarities, but are not identical. Here the effect of a replication of the Norwegian system is shown. If one were to adapt a system like this there are a number of minor issues that need to be addressed, and some arguments have been presented.

Some of these questions are:

- Should there be an area quota or some other mechanism to favour the sparsely populated areas in the distribution of seats to electoral districts.  
In case yes:
  - How strong should it be, and should it maintain its absolute or relative importance?
- Is the province a suitable electoral district?
- Should you have measures to avoid representation from small parties?  
In case yes:
  - At province level, at national level or both?
  - How high should the hurdle be nationally and locally?
- How far is it right to pursue the goal of national political proportionality, i.e. how large a portion of the MPs should be nominated only based on the vote in the province?
- How should voter influence on the selection of MPs be secured when votes are cast at party lists?<sup>26</sup>

It is hoped that the paper can contribute to an enlightened debate both of the big and the small questions.

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<sup>26</sup> As explained in footnote 4 above, the voter in the polling booth have in practice no direct power within the party of her choice in Norwegian electoral law. Other Nordic countries have systems that give voters a say in the selection of candidates within the parties.

## Appendices

### A. The effect of the 'area-factor' on the seat allocation to provinces

The use of the area factor in the distribution of seats between electoral districts has proved to be controversial in Norway. The rule was introduced in 2005, and in fact it implied a much greater weight to population than previously had been the case when there was no automatic adjustment of seats between districts. To secure the necessary majority in parliament for a constitutional change such as introducing the rule on automatic adjustment according to changes in population, the rule would have to favour sparsely populated areas to a certain degree. The rule which is now written into the constitution was originally proposed in Grønvik (1988), and calculations were based on the population and area in 1972. This was the last year of substantial changes in the number of members to be elected prior to the working out of the proposal.

Before the election in 2009 there was some discussion on the rule, i.e. whether it is fair or not to attach any weight in relation to the distribution of seats in parliament to any other factor than measures of how many persons that are represented by or that elect the members of parliament. One must assume that children under the voting age are represented by the members of parliament, so it may be a question as to whether the whole population or only the voting population should count.<sup>27</sup> Through population increase the importance of the area factor has fallen from 12.9 percent as in the calculations proposing the factor, via 11.3 when the rule was passed into law, to 10.5 as it will be in the 2012 redistribution of parliamentary seats prior to the 2013 elections.

Table A-1 reproduces the numbers from table 1, but includes also a column that shows the distribution of seats in parliament if only the population counted and a column showing the change relative to the present allocation of seats in parliament. It can be seen that the allocation of seats to the provinces will change considerably more without the 'area factor', and all four provinces with an area factor larger than the national average will all lose one or more seats in parliament relative to the distribution applying the 'area factor'.

One way of measuring the changes from the present distribution of seats to provinces, is through the formula for the standard deviation. This standard deviation of the change relative to the present seat allocation when applying the rule with the area factor is 3.44 whereas it is 5.06 when applying the rule when only population counts. The mean of the change is 0.7. Thus, the rule with the area factor represents a considerably smaller change from the present than a rule only based on population would do.

If it is decided to apply a system with an area factor, it must be decided if this factor should retain its relative strength as the population grows, or whether it should be a factor with constant absolute value. If it is set at 4.35 points per square kilometers it will give the distribution of seats as shown in the table, but the relative importance will diminish. If it is said that the area points at all times should

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<sup>27</sup> In Norway there is also a discussion on whether foreign citizens living in Norway should count in the allocation of seats between counties. They are part of the population in the standard UN definition of the word, but they are not citizens of Norway and are unable to vote in parliamentary elections. The question is of some importance because at present more than ten percent of the population of Oslo and the neighboring county of Akershus do not have a Norwegian citizenship. On the national basis this percent is around five. The calculation prior to the 2013 and 2017 elections have been made using population. If only citizens had been included in the calculation Oslo would have had two fewer parliamentarians than the city actually will get.

account for 20 percent of the total points in the calculation, the relative importance will be maintained. In Norway the first solution is chosen and the rule will decrease in relative value with population growth. If an absolute value is chosen, its relative importance will decrease rapidly due to the high population growth of Zambia.

## **B. A lower national threshold for national representation**

As discussed in section 3.4, the national threshold for participation in the national distribution of seats varies between the Nordic countries as they do in other countries. In the main text the Norwegian rules are followed, but it is worthwhile to explore the implications of a threshold such that the 'Other' party passes it. The party has won two seats in one province and achieved just below 2.5 percent of the national vote. The threshold rule can be formulated in a number of ways such that 'Other' passes it. The threshold can open for parties

- with more than 2 percent of the popular votes
- that has won at least two seats in the electoral districts
- with district seat and at least 2 percent of the popular vote

The formulation of the rule is an important issue relating to how easy it will be for small political groups to establish a political organization.

In this paper another reason for distributing national seats to 'Other', is that it will give additional insights in how an electoral system as the one discussed here will tackle many and small parties that passes the national threshold.

When 'Other' participates in the national distribution of seats aiming at national proportionality, the distribution of seats directly from the districts will not be affected. Thus, table 5 still applies and is here renumbered B-5. Tables B-6 – B-8 replaces tables 6 – 8 with this alternative assumption.

Table B-6 shows that 'Other' would win two seats in the national distribution, and PF stands to win six seats in this distribution, two less than in the previous distribution. UNDP keep its two seats in the national distribution. MMD have under this assumption won two more mandate in the districts than it would under a fully proportionate system. Thus a system with one seat in each province allocated to the national distribution does not have sufficient mandates to guarantee a fully proportionate representation. Even if the system, as designed in this paper, will go a long way towards securing political proportionality, one should carefully consider how many seats that should be distributed in the national allocation of seats.

In the matching of winning province parties there are some changes as shown in Table B-7. 'Other' will take the national mandate allocated to the Eastern province. This set is at the top of the list for UNDP also, but 'Other' has more votes in the province, and thereby a larger quota. The UNDP will get its seat in the Central province, a province in which the party already has won three seats. The PF will pick up the seats one by one, and leave the province with its lowest coefficient, the Southern province to 'Other'.

## **C. Lower regional and national threshold for national representation**

Another variation to the scheme for the transformation from votes to parliamentary representation would be to use the St. Laguë's method in its clean form in the provinces. As mentioned in the text,



MMD would then lose two seats in the Eastern province to UNDP and Others respectively. These two parties would then lose a seat in the national distribution between parties. The two national seats would have been picked up by PF and MMD respectively. The net national winner would have been PF as they are in line for picking up the next national seat. The national allocation of seats between the four parties involved would have been complete. With both UNDP and Other picking up district seats in the Eastern province, the geographic distribution of the nationally won seats would have changed. The combination of using the clean St.Laguë's method in the provinces combined with the low threshold for participation in the national allocation of seats is shown in tables C-5 to C-8.

In table C-7 one can note that MMD gets a seat in the Eastern province as a 'national' seat. As explained in the main text the margins in the direct distribution in the province is very small. It is a good property of the system for allocation of seats that a party that loses in the direct distribution with a tiny margin prevails in the national distribution in the same district. One concern one may have over the distributional method at this final step of the distribution is the very low quota behind the last seat (to 'Other' in North-western province). To avoid this one would have to use considerably more complicated (and computer intensive) allocation methods.

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## Tables:

**Table 1: Distribution of seats to provinces**

	Population year 2010	Area sq.km	Area points	Sum points	Seats under rule	Seats 2011	Ch.	Area points in % of population
Central	1 307 111	94 394	410 527	1 717 638	16	14	2	31,4
Copperbelt	1 972 317	31 328	136 248	2 108 565	20	22	-2	6,9
Eastern	1 592 661	51 476	223 873	1 816 534	17	17	0	14,1
Luapula	991 927	50 567	219 920	1 211 847	12	14	-2	22,2
Lusaka	2 191 225	21 896	95 227	2 286 452	22	12	10	4,3
Muchinga	711 657	87 806	381 875	1 093 532	11	10	1	53,7
Northern	1 105 824	77 650	337 706	1 443 530	14	13	1	30,5
North Western	727 044	125 826	547 227	1 274 271	12	12	0	75,3
Southern	1 589 926	85 283	370 902	1 960 828	19	19	0	23,3
Western	902 974	126 386	549 662	1 452 636	14	17	-3	60,9
Zambia	13 092 666	752 612	3 273 167	16 365 833	157	150	7	25,0

**Table 2: The election result**

	PF	MMD	UNDP	Other	Province	Seats
Central	63 890	108 912	47 037	2 644	222 483	16
Copperbelt	341 505	131 897	17 948	5 320	496 670	20
Eastern	48 537	221 230	9 857	9 861	289 485	17
Luapula	151 822	47 289	1 758	2 492	203 361	12
Lusaka	224 925	123 653	45 397	5 375	399 350	22
Muchinga	87 412	56 208	904	3 343	148 867	11
Northern	165 897	77 572	1 878	3 315	248 662	14
North-western	18 790	86 994	61 054	2 630	169 468	12
Southern	24 609	71 519	266 754	6 031	368 913	19
Western	43 579	62 592	53 176	26 056	185 403	14
Totalt	1 170 966	987 866	506 763	67 067	2 732 662	157
Percent	42,85	36,15	18,54	2,45		

<b>Table 3: Allocation of directly elected seats in Western province</b>									
PF		MMD		UNDP		Other		Western province	
43 579		62 592		53 176		26 056		185 403	
								Seat no	Won by
1.4	31 127.9	1.4	44 708.6	1.4	37 982.9	1.4	18 611.4	1	MMD
1.4	31 127.9	3	20 864.0	1.4	37 982.9	1.4	18 611.4	2	UNDP
1.4	31 127.9	3	20 864.0	3	17 725.3	1.4	18 611.4	3	PF
3	14 526.3	3	20 864.0	3	17 725.3	1.4	18 611.4	4	MMD
3	14 526.3	5	12 518.4	3	17 725.3	1.4	18 611.4	5	Other
3	14 526.3	5	12 518.4	3	17 725.3	3	8 685.3	6	UNDP
3	14 526.3	5	12 518.4	5	10 635.2	3	8 685.3	7	PF
5	8 715.8	5	12 518.4	5	10 635.2	3	8 685.3	8	MMD
5	8 715.8	7	8 941.7	5	10 635.2	3	8 685.3	9	UNDP
5	8 715.8	7	8 941.7	7	7 596.6	3	8 685.3	10	MMD
5	8 715.8	9	6 954.7	7	7 596.6	3	8 685.3	11	PF
7	6 225.6	9	6 954.7	7	7 596.6	3	8 685.3	12	Other
7	6 225.6	9	6 954.7	7	7 596.6	5	5 211.2	13	UNDP
Composition of locally elected Western province bench in parliament:									
3		4		4		2		= 13	
PF		MMD		UNDP		Other		Total	

<b>Table 4: Allocation of directly elected seats in Eastern province (shortened)</b>									
PF		MMD		UNDP		Other		Eastern province	
48 537		221 230		9 857		9 861		314 393	
								Seat no	Won by
1.4	34 669.3	1.4	158 021.4	1.4	7 040.7	1.4	7 043.6	1	MMD
									...
5	9 707.4	23	9 618.7	1.4	7 040.7	1.4	7 043.6	14	PF
7	6 933.9	23	9 618.7	1.4	7 040.7	1.4	7 043.6	15	MMD
7	6 933.9	25	8 849.2	1.4	7 040.7	1.4	7 043.6	16	MMD
Composition of locally elected Eastern province bench in parliament:									
3		13		0		0		= 16	
PF		MMD		UNDP		Other		Total	

	PF	MMD	UNDP	Other	All provinces
<b>Central</b>	4	8	3	0	15
<b>Copperbelt</b>	13	5	1	0	19
<b>Eastern</b>	3	13	0	0	16
<b>Luapula</b>	8	3	0	0	11
<b>Lusaka</b>	12	7	2	0	21
<b>Muchinga</b>	6	4	0	0	10
<b>Northern</b>	9	4	0	0	13
<b>North-western</b>	1	6	4	0	11
<b>Southern</b>	1	4	13	0	18
<b>Western</b>	3	4	4	2	13
<b>Sum provinces</b>	60	58	27	2	147

	PF	MMD	UNDP	Other	Zambia			
Votes in nation	1 170 966	987 866	506 763	67 067	2 732 662			
Seats from provinces	60	58	27	2	147			
National share of vote	42.9	36.2	18.5	2.5	100.0			
Qualified for national seats	Yes	Yes	Yes	No				
	Div. by	Quota	Div. by	Quota	Div. by	Quota	No	Won by
	121	9 677,4	117	8 443,3	55	9 213,9	1	PF
	123	9 520,0	117	8 443,3	55	9 213,9	2	PF
	125	9 367,7	117	8 443,3	55	9 213,9	3	PF
	127	9 220,2	117	8 443,3	55	9 213,9	4	PF
	129	9 077,3	117	8 443,3	55	9 213,9	5	PF
	129	9 077,3	117	8 443,3	57	8 890,6	6	PF
	131	8 938,7	117	8 443,3	57	8 890,6	7	UNDP
	133	8 804,3	117	8 443,3	57	8 890,6	8	PF
	133	8 804,3	117	8 443,3	59	8 589,2	9	PF
	135	8 673,8	117	8 443,3	59	8 589,2	10	MMD
<b>Summary report:</b>								
Province seats	60		57		28		2	147
National seats	8		0		2		0	10
Sum seats	68		58		29		2	157

<b>Table 7: The regional allocation of national seats</b>					
	PF	MMD	UNDP	Other	Number
Central	0,4786	0,4319	0,4530	0,1783	5
Copperbelt	0,4839	0,4587	0,2289	0,2035	2
Eastern	0,3832	0,4529	0,5448	0,5450	1
Luapula	0,4831	0,3654	0,0951	0,1348	3
Lusaka	0,4731	0,4335	0,4774	0,2826	6
Muchinga	0,4517	0,4195	0,1279	0,2246	8
Northern	0,4565	0,4506	0,0982	0,1733	7
North-western	0,4065	0,4344	0,4403	0,1707	10
Southern	0,4002	0,3877	0,4821	0,2943	4
Western	0,4365	0,4876	0,4143	0,3654	9

<b>Table 8: The allocation to parties and provinces for all seats</b>					
	PF	MMD	UNDP	Other	Country
Central	5	8	3	0	16
Copperbelt	14	5	1	0	20
Eastern	3	13	1	0	17
Luapula	9	3	0	0	12
Lusaka	13	7	2	0	22
Muchinga	7	4	0	0	11
Northern	10	4	0	0	14
North-western	2	6	4	0	12
Southern	1	4	14	0	19
Western	4	4	4	2	14
Total	68	58	29	2	157

**Appendix table A-1: Alternative distributions of seats to provinces**

	Population				Area points in % of population	Seats in 2011	Area and population		Population only	
	year 2010	Area sq.km	Area points	Sum points			Seats	Ch.	Seats	Ch.
Central	1 307 111	94 394	410 527	1 717 638	31,4	14	16	2	16	2
Copperbelt	1 972 317	31 328	136 248	2 108 565	6,9	22	20	-2	24	2
Eastern	1 592 661	51 476	223 873	1 816 534	14,1	17	17	0	19	2
Luapula	991 927	50 567	219 920	1 211 847	22,2	14	12	-2	12	-2
Lusaka	2 191 225	21 896	95 227	2 286 452	4,3	12	22	10	26	14
Muchinga	711 657	87 806	381 875	1 093 532	53,7	10	11	1	8	-2
Northern	1 105 824	77 650	337 706	1 443 530	30,5	13	14	1	13	0
North Western	727 044	125 826	547 227	1 274 271	75,3	12	12	0	9	-3
Southern	1 589 926	85 283	370 902	1 960 828	23,3	19	19	0	19	0
Western	902 974	126 386	549 662	1 452 636	60,9	17	14	-3	11	-6
Zambia	13 092 666	752 612	3 273 167	16 365 833	25,0	150	157	7	157	7
							Mean	0,70	0,70	
							Std. Dev.	3,44	5,06	

Appendix tables B: Seat allocation with low national threshold

	PF	MMD	UNDP	Other	All provinces
Central	4	8	3	0	15
Copperbelt	13	5	1	0	19
Eastern	3	13	0	0	16
Luapula	8	3	0	0	11
Lusaka	12	7	2	0	21
Muchinga	6	4	0	0	10
Northern	9	4	0	0	13
North-western	1	6	4	0	11
Southern	1	4	13	0	18
Western	3	4	4	2	13
<b>Sum provinces</b>	<b>60</b>	<b>58</b>	<b>27</b>	<b>2</b>	<b>147</b>

	PF	MMD	UNDP	Other	Zambia					
Votes in nation	1 170 966	987 866	506 763	67 067	2 732 662					
Seats from provinces	60	58	27	2	147					
National share of vote	42.9	36.2	18.5	2.5	100.0					
Qualified for national seats	Yes	Yes	Yes	Yes						
	Div.	Quota	Div.	Quota	Div.	Quota	Div.	Quota	No	Won by
	121	9 677.4	117	8 443.3	55	9 213,9	5	13 413.4	1	Other
	121	9 677.4	117	8 443.3	55	9 213,9	7	9 581.0	2	PF
	123	9 520.0	117	8 443.3	55	9 213,9	7	9 581.0	3	Other
	123	9 520.0	117	8 443.3	55	9 213,9	9	7 451.9	4	PF
	125	9 367.7	117	8 443.3	55	9 213,9	9	7 451.9	5	PF
	127	9 220.2	117	8 443.3	55	9 213,9	9	7 451.9	6	PF
	129	9 077.3	117	8 443.3	55	9 213,9	9	7 451.9	7	UNDP
	129	9 077,3	117	8 443,3	57	8 890,6	9	7 451,9	8	PF
	131	8 938,7	117	8 443,3	57	8 890,6	9	7 451,9	9	PF
	133	8 804,3	117	8 443,3	57	8 890,6	9	7 451,9	10	UNDP
<b>Summary report:</b>										
Province seats		60		58		27		2		147
National seats		6		0		2		2		10
Sum seats		66		58		29		4		157

<b>Table B-7: The regional allocation of national seats (low threshold)</b>					
	PF	MMD	UNDP	Other	Number
Central	0,4786	0,4319	0,4530	0,1783	5
Copperbelt	0,4839	0,4587	0,2289	0,2035	2
Eastern	0,3832	0,4529	0,5448	0,5450	1
Luapula	0,4831	0,3654	0,0951	0,1348	3
Lusaka	0,4731	0,4335	0,4774	0,2826	6
Muchinga	0,4517	0,4195	0,1279	0,2246	8
Northern	0,4565	0,4506	0,0982	0,1733	7
North-western	0,4065	0,4344	0,4403	0,1707	10
Southern	0,4002	0,3877	0,4821	0,2943	4
Western	0,4365	0,4876	0,4143	0,3654	9

<b>Table B-8: The allocation to parties and provinces for all seats (low threshold)</b>					
	PF	MMD	UNDP	Other	Country
Central	5	8	3	0	16
Copperbelt	14	5	1	0	20
Eastern	3	13	0	1	17
Luapula	9	3	0	0	12
Lusaka	12	7	3	0	22
Muchinga	7	4	0	0	11
Northern	10	4	0	0	14
North-western	1	6	4	1	12
Southern	1	4	14	0	19
Western	4	4	4	2	14
Total	66	58	29	4	157



Appendix tables C: Seat allocation with lower regional and national thresholds

**Table C-5: Directly distributed seats in all provinces using clean St.Laguë method**

	PF	MMD	UNDP	Other	All provinces
Central	4	8	3	0	15
Copperbelt	13	5	1	0	19
Eastern	3	11	1	1	16
Luapula	8	3	0	0	11
Lusaka	12	7	2	0	21
Muchinga	6	4	0	0	10
Northern	9	4	0	0	13
North-western	1	6	4	0	11
Southern	1	4	13	0	18
Western	3	4	4	2	13
<b>Sum provinces</b>	<b>60</b>	<b>56</b>	<b>28</b>	<b>3</b>	<b>147</b>

**Table C-6: The political allocation of national seats**

	PF	MMD	UNDP	Other	Zambia					
Votes in nation	1 170 966	987 866	506 763	67 067	2 732 662					
Seats from provinces	60	56	28	3	147					
National share of vote	42.9	36.2	18.5	2.5	100.0					
Qualified for national seats	Yes	Yes	Yes	Yes						
	Div.	Quota	Div.	Quota	Div.	Quota	Div.	Quota	No	Won by
	121	9 677,4	113	8 742,2	57	8 890,6	7	9 581,0	1	PF
	123	9 520,0	113	8 742,2	57	8 890,6	7	9 581,0	2	Other
	123	9 520,0	113	8 742,2	57	8 890,6	9	7 451,9	3	PF
	125	9 367,7	113	8 742,2	57	8 890,6	9	7 451,9	4	PF
	127	9 220,2	113	8 742,2	57	8 890,6	9	7 451,9	5	PF
	129	9 077,3	113	8 742,2	57	8 890,6	9	7 451,9	6	PF
	131	8 938,7	113	8 742,2	57	8 890,6	9	7 451,9	7	PF
	133	8 804,3	113	8 742,2	57	8 890,6	9	7 451,9	8	UNDP
	133	8 804,3	113	8 742,2	59	8 589,2	9	7 451,9	9	PF
	135	8 673,8	113	8 742,2	59	8 589,2	9	7 451,9	10	MMD
<b>Summary report:</b>										
Province seats	60		56		28		3		147	
National seats	7		1		1		1		10	
Sum seats	67		57		29		4		157	

	PF	MMD	UNDP	Other	Number
Central	0,4786	0,4319	0,4530	0,1783	5
Copperbelt	0,4839	0,4587	0,2289	0,2035	2
Eastern	0,3832	0,5316	0,1816	0,1817	1
Luapula	0,4831	0,3654	0,0951	0,1348	3
Lusaka	0,4731	0,4335	0,4774	0,2826	6
Muchinga	0,4517	0,4195	0,1279	0,2246	8
Northern	0,4565	0,4506	0,0982	0,1733	7
North-western	0,4065	0,4344	0,4403	0,1707	10
Southern	0,4002	0,3877	0,4821	0,2943	4
Western	0,4365	0,4876	0,4143	0,3654	9

	PF	MMD	UNDP	Other	Country
Central	5	8	3	0	16
Copperbelt	14	5	1	0	20
Eastern	3	12	1	1	17
Luapula	9	3	0	0	12
Lusaka	13	7	2	0	22
Muchinga	7	4	0	0	11
Northern	10	4	0	0	14
North-western	1	6	4	1	12
Southern	1	4	14	0	19
Western	4	4	4	2	14
Total	67	57	29	4	157