

WESTERN CAPE PROVINCIAL ADMINISTRATION

DEPARTMENT OF LOCAL GOVERNMENT

SUBMISSION ON MUNICIPAL EQUITABLE SHARE FORMULA

1. INTRODUCTION

The Local Government Equitable Share (LES) was introduced in 1998. It was initially based on a formula that contained two elements, the S-Grant element and the I-Grant element. Since then, and especially during the last couple of years, more components were added that significantly altered the allocations produced by the formula. Moreover, the basic demographic data used in the calculation of shares were obtained from the 1996 Population Census. The 2001 Population Census data will be released soon and it is expected that it may result in some significant adjustments in the LES allocations.

It is appropriate at this time, therefore, to review the LES formula. The Western Cape Department for Local Government (WCLG) consequently submits this report and the proposals in it for consideration during the review of the LES formula.

2. EXTENT OF EQUITABLE SHARE AND UNCONDITIONAL ALLOCATIONS

In terms of the original LES formula, and after the phasing in of the formula by means of guaranteed allocations has been completed (by 2002/03), the shares of the S-Grant and I-Grant components have remained relatively constant. This is reflected in Table 1.

Table 1									
Local Government Equitable Share by Type of Grant^o									
Financial Year ^	S Grant		I Grant		Guaranteed Allocations		Total Equitable Share Allocation		
	Amount Rand	Percent of total %	Amount Rand	Percent of total %	Amount Rand	Percent of total %	Amount Rand	Percent of GDP %	Percent of Govt. Exp. %
1998/1999	428,471,492	42.3%	175,009,019	17.3%	408,469,489	40.4%	1,011,950,000	0.13%	0.50%
1999/2000	870,343,770	68.0%	205,955,624	16.1%	203,450,607	15.9%	1,279,750,001	0.16%	0.60%
2000/2001 *							1,883,506,539	0.21%	0.81%
2001/2002	1,832,480,621	81.1%	260,000,000	11.5%	167,519,379	7.4%	2,260,000,000	0.24%	0.86%
2002/2003	3,177,718,889	89.4%	370,000,000	10.4%	7,284,435	0.2%	3,555,003,324	0.33%	1.23%
2003/2004	3,766,783,510	87.8%	450,000,000	10.5%	71,114,718	1.7%	4,287,898,228	0.35%	1.24%
2004/2005	4,317,950,392	89.6%	472,950,000	9.8%	28,709,881	0.6%	4,819,610,273	0.36%	1.28%
2005/2006	4,849,540,208	90.5%	493,759,800	9.2%	17,327,179	0.3%	5,360,627,187	0.37%	1.31%

^oExcludes allocations for R293 town staff transferred to municipalities.

* Detailed data for 2000/2001 are not available.

^ 2004/2005 and 2005/2006 are indicative (MTEF) years

However, other allocations were increasingly channelled through the LES allocation mechanism. These include the allocations to rural and urban nodes, the transformation grant, additional allowances for small/poor councils, free basic services grant and free energy grant. In Table 2 these grants are added to the guaranteed allocations to get a more comprehensive picture of the unconditional allocations to local authorities made from revenue collected nationally.

Table 2

Local Government Unconditional Allocations by Type of Grant^o

Financial Year ^	S Grant		I Grant		All Other Non-Conditional Grants		Total Equitable Share Allocation		
	Amount	Percent of total	Amount	Percent of total	Amount	Per-cent total	Amount	Percent of GDP	Percent of Govt. Exp.
	Rand	%	Rand	%	Rand	%	Rand	%	%
1998/1999	428,471,492	41.8%	175,009,019	17.1%	420,519,489	41.1%	1,024,000,000	0.13%	0.51%
1999/2000	870,343,770	52.0%	205,955,624	12.3%	596,700,606	35.7%	1,673,000,000	0.21%	0.78%
2000/2001 *							2,330,000,000	0.26%	1.00%
2001/2002	1,832,480,621	70.0%	260,000,000	9.9%	525,519,379	20.1%	2,618,000,000	0.28%	1.00%
2002/2003	3,177,718,889	76.7%	370,000,000	8.9%	597,988,754	14.4%	4,145,707,336	0.38%	1.40%
2003/2004	3,766,783,510	62.8%	450,000,000	7.5%	1,785,385,761	29.7%	6,002,169,271	0.49%	1.74%
2004/2005	4,317,950,392	64.7%	472,950,000	7.1%	1,887,099,611	28.3%	6,678,000,003	0.50%	1.78%
2005/2006	4,849,540,208	67.1%	493,759,800	6.8%	1,885,699,990	26.1%	7,228,999,998	0.50%	1.77%

^oIncludes allocations for R293 town staff transferred to municipalities.
^{*} Detailed data for 2000/2001 are not available. [^] 2004/2005 and 2005/2006 are indicative (MTEF) years

It is clear from the two tables above that the other unconditional operational allocations (capital and infrastructure grants excluded) constitute a significant proportion of the total unconditional allocations operational to municipalities.

The total amount in Table 2 is probably also a better reflection of most local municipalities' perception of the "Equitable Share" allocation made to them. Anecdotal evidence suggests that most municipalities do not really make a distinction between the various components of the total allocation and see it mostly as "Equitable Share" or funds for the financing of free basic services.

In any case, these allocations are all unconditional and can therefore be spent at the municipalities' discretion. In any analysis aimed at a review of the formula, all the unconditional allocations should therefore be considered.

3. STRUCTURE AND COMPONENTS OF CURRENT FORMULA

Following on the observations made in the previous section, it is suggested that the current formula should be seen as a multi-tiered formula of which the original equitable share formula is only one component. This is summarised in Table 3.

The total envelope of national revenues to be allocated to local authorities is determined by the national government. This total is then distributed to the

main components according to the component weights presented in Table 3. It is not known how these weights were determined for 2003/04, but it does not appear to have been done according to any formula.

Table 3
Formula for LES and Unconditional Allocations, 2003/04^o

Main Components	Weight %	Component Formula	Elements of components
S-Grant "S"	62.8	for each municipality i	$\alpha_i \beta L H_i$ α : a phase-in parameter, urban pop.=1, rural pop.=0.7 β : a scaling parameter, to scale S-Grant to budget total, budget net amount after deduction of components below L : a cost parameter, L=1032 (R86 per month/household) H : Number of households spending < R1100 per month
I-Grant "I"	7.5	$\frac{y_i - F}{P_i}$ for each municipality i	γ : a scaling parameter, to scale I-Grant to budget total P : population γ : a scale parameter set at 0.25 y : average monthly per capita expenditure, but not < F (so that $y - F$ is not less than 0) F : a floor parameter set at 250, with $(y_i - 250) \geq 0$
R293 towns "R"	6.3	$(r_i / \sum r_i) R$ for municipality i	C : the minimum council allowance allocated in 2002/03 r : allocation for transfer of R293 town staff in 1998 R : total allocation for transfer of R293 town staff in 2003
Nodal areas "N"	3.6	$(n_i / \sum n_i) N$ for municipality i	n : allocation to selected nodal areas in 2002 N : total allocation to nodal areas in 2003
Free basic services "B"	5.0	$\frac{(\alpha_i H_i) / (\sum \alpha_i H_i) B + [(\alpha_i W_i) / (\sum \alpha_i W_i)] B}{2}$ for municipality i	α : a phase-in parameter, urban pop.=1, rural pop.=0.7 H : Number of households spending < R1100 per month W : Poor population (<R1100 pm) receiving basic services (water, sanitation, refuse), weighted by service B : Total allocation for Free Basic Services component
Free basic energy "E"	5.0	$\frac{[(\alpha_i H_i) / (\sum \alpha_i H_i)] E + [(\alpha_i G_i) / (\sum \alpha_i G_i)] E}{2}$ for municipality i	α, H : Same as above G : Poor population (<R1100 pm) receiving electricity E : Total allocation for Free Basic Energy
Minimum guarantee "M"	1.1	$0.7(T_i)_{2002/03} - (T_i)_{2003/04}$ if >0 for municipality i	$T_{i,2002/03} = S_i + I_i + R_i + N_i + B_i + E_i + M_i$ for 2002/03 $T_{i,2003/04} = S_i + I_i + R_i + N_i + B_i + E_i$ for 2003/04 (S is adjusted by changing β until M is satisfied)
TOTAL "T"	100.0	$S + I + R + N + B + E + M$	

^o LES and other unconditional allocations should be combined to get the local share of national revenues.

It is clear from Table 3 that the comprehensive formula for allocating revenues collected nationally to local authorities is complex and difficult to interpret. This makes it near impossible for most municipalities to verify that their allocations are correct or in compliance with the constitution. It also obscures the allocations actually made towards the financing of constitutionally mandated basic services. This does not promote transparency.

This province is therefore of the opinion that a revision of the formula should not only look at the comprehensive formula, but have as a prime objective the simplification and greater transparency of the formula.

Some of the elements of the components also warrant closer scrutiny.

We start with a closer look at the elements of the S-Grant component. The urban and rural phase-in parameter (α) will reach unity in 2005/06. That is the year in which phase-in will be completed and α (alpha) can therefore fall away.

The scaling parameter in the S-Grant component, β (beta), is required for two reasons. First, the S-Grant component formula is a multiplicative formula that calculates absolute amounts, rather than relative shares. The sum of the absolute amounts need not add up to the available budget for S and therefore needs to be scaled for their sum to be equal to the available budget. Changing this component to calculate relative shares will remove this need for the β elements and make the component more transparent.

Second, the minimum guarantee top-up amount, M, was included as a component because of the big changes in the formula over the last number of years and the disruptive effects of amalgamations. It ensured that a municipality would not receive a total allocation (all unconditional operational transfers) less than 70% of the previous year's allocation. The β , and therefore the S-Grants, thus had to be adjusted through iteration to meet all the minimum guaranteed amounts and keep the sum of all allocations within the budget envelope.

In the MTEF allocations for 2005/06 there are only 18 district municipalities receiving top-up amounts. Most of them receive this top-up because they receive nothing for any of the other components as they deliver no services. They also receive no I-Grant. These district councils apparently only receive these allocations because it was given in the previous year and they now still receive 70% of it. This is a rather odd arrangement. If their own revenue capacity is so limited that they require institutional support, it should rather be done through the I-Grant.

It is therefore our view that the S-Grant component be changed and that the minimum guarantee component be eliminated to remove the need for a β parameter.

The cost parameter, L, in the S-Grant component suffers from a number of shortcomings. Firstly, it does not differentiate with respect to the different cost types that can be identified, such as the differences in cost between urban and rural service standards (e.g. water-borne sewerage and pit latrines), or the differences in cost between municipalities with ample water supplies and those suffering from water scarcity, or whether electricity is provided by the municipality or directly by Escom.

Secondly, L is composed of the estimated costs of providing basic water, electricity, sewerage and refuse removal services to a household. It is R20, R36, R10 and R20 per month for water, electricity, sewerage and refuse respectively. In annual terms this is R240, R432, R120 and R240 respectively, or a total per household for these four services of R1,032 per year. In the Western Cape the comparable numbers for 2002 were R759 for water, R2,237 for electricity, R478 for sewerage and R363 for refuse, or a total of

R3,837. (These were the average annual costs of providing basic services to indigent households.)

Not only does this suggest that the L amount is outdated, but that the relative shares of the four basic services are different from what is assumed in the composition of L. For the latter, the percentage shares in the total cost are 23.3%, 41.9%, 11.6% and 23.3% respectively. The actual shares in the Western Cape are 19.8%, 58.3%, 12.5% and 9.5% respectively. These are significant differences that become particularly relevant for the calculation of the B component. It is discussed in more detail below.

The main driver in the S-Grant component, i.e. the element in the formula that actually determines the relative shares of the municipalities in the total S available, is the number of households with expenditure of less than R1100 per month, H. There are a number of shortcomings to this element. However, as it deals with data that result in different allocations going to municipalities, these are discussed in the next section.

The next component, the I-Grant formula, is also quite complex and presents a number of problems. The first problem is that, like the S-Grant, the I-Grant formula also calculates an absolute allocation (rather than a relative share), thus requiring a scaling parameter to ensure that the sum of the I allocations equal the total I-Grant budget. This adds to the complexity of the formula and reduces its transparency. This complexity can be removed by changing the structure of the formula to one that gives relative shares.

This formula is complicated by the requirement that the I-Grant allocations cannot be less than 70% of the council allowance granted in the previous year. It, therefore, requires an iterative process until the budget constraint and minimum allowance conditions have both been met. However, in 2005/06 there is not a single municipality that benefits from this minimum condition and therefore no longer serves any purpose. It can therefore be dropped from the formula.

The driving factor in the I element of the formula is population, P. It is based on the assumption that the institutional requirements (needs) of a municipality are in some way related to the size of the population it serves. It is recognised, however, that there are scale factors at play ("economies of scale") and that the relationship is therefore not a linear or proportional one. This is brought into the formula by the scale parameter, γ (gamma), an exponent of P, set at 0.25. For example, a town with a population of 16, will have an institutional need of 2 ($P^\gamma = 2$), while a town with a population of 81 (five times as large) will have an institutional need of only 1.5 times as large ($P^\gamma = 3$).

Whether this is an appropriate proxy for institutional need, is difficult to determine. The real question is whether the scaling gives reasonable relative estimates of the institutional spending needs of a municipality. However, given the difficulty in defining and measuring what this is, it may be easier to look at the end result of the formula.

A potential shortcoming of this proxy for institutional needs is that it assumes that the need is the same for rural and urban populations. If institutional needs were to be seen as only the core costs of having a council and a core administration for a municipality to exist, the proxy may well be appropriate. However, as the other major components (S, B and E) are all about the provision of basic services, it is reasonable to assume that institutional needs also include some of the other critical functions such as financial management, including the capacity to bill consumers and exert credit control, maintain infrastructure such as streets and stormwater drainage and provide and maintain certain communal facilities such as community halls and libraries. If so, not differentiating between urban and rural populations may be inappropriate.

The revenue-raising capacity of a municipality is deducted from the institutional needs of a municipality. The objective is that only municipalities without sufficient revenue-raising capacity to generate enough own revenue to cover their institutional costs should get the I-Grant. Average monthly per capita expenditure (y_i) for each municipality comes from the 1996 Population Census and is multiplied by population (P) to serve as a proxy for the revenue-raising capacity of a municipality. Before multiplying by population, however, a floor parameter, equal to 250 in 2003/04, is subtracted from per capita income. The effect of this is to set a floor so that if per capita income is below it no revenue-raising capacity will be deducted from the estimated institutional needs. Revenue-raising capacity can also not be negative. On the other hand, if per capita expenditure is above the floor, the difference is subtracted from expenditure needs. This difference can also not be negative, so that for large or high revenue municipalities the I-Grant will be zero.

The data problems in the I-Grant component are discussed in the next section. The concept of deducting revenue-raising capacity from institutional needs is fine. There are some questions, however, about the floor of 250. Firstly, the rationale for this number is not clear. This reduces the transparency of the formula. Secondly, as an absolute number, it has to be adjusted whenever the population or per capita expenditure data change to avoid inconsistencies in relative shares developing from one year to the next. A restructured component formula that calculates relative shares of I can avoid these problems.

The next two components, compensation for the transfer of R293 staff (R) and allocations to urban and rural nodes (N), are not derived from a formula and are essentially the outcomes of political decisions. It therefore arguably contradicts the equitable requirement of the constitution. If these components are to be phased out over the next two years, they need not be pursued any further. If, however, they are to be retained for a significant period of time, their constitutionality must be questioned.

The next component, Free Basic Services (B), is calculated with a formula and is clearly part of the de facto equitable share allocation. The share of B allocated to each municipality is essentially derived from the average of two elements. The first element uses the same driver as the S-Grant, namely the

number of households spending less than R1100 per month (H), weighted by the urban-rural composition (α) of the population concerned. The issues raised with respect to the S-Grant about H also apply here and need not be repeated.

The second element in the calculation of each municipality's share of B recognises the fact mentioned elsewhere in this document that basic services can only be provided free if they are actually delivered. It therefore uses as driver the population spending less than R1100 per month and being provided with a basic municipal service (W). To give a municipality an allocation for free basic services if it doesn't provide them, does not make sense. It is therefore not clear why the B component does not consist of the second element only and why an average of the first and second elements is used to determine municipal shares.

As far as the second element is concerned, four shortcomings need to be addressed. The first shortcoming is that the implicit assumption is made that it costs the same to provide a basic service to urban and rural residents. This is discussed further in the section dealing with the equitable share and free basic services. The parameter α does not serve the purpose of differentiating between urban and rural costs as it is simply a phase-in parameter that falls away in 2005/06.

The second shortcoming is that to distribute resources on the basis of the distribution of the indigent, will only result in an equitable outcome for municipalities if the allocation is sufficient to cover the full cost of the provision of free basic services to the indigent. If that is not the case, and it will be argued below that it isn't, the outcome is not equitable as it does not result in an equitable burden on the fee-paying residents of municipalities. In other words, the problem arises because the formula does not take the ratio of indigent in a municipal population into account. This issue is discussed in more detail in the section below dealing with free basic services.

The third shortcoming is the implied assumption that a cut-off amount (of R1100 or any other amount that may be chosen) draws a clear and unambiguous distinction between those that can pay fully for basic services and those that cannot pay at all. In reality there is an intermediate category of people who can afford to pay for only part of basic services received. They need to be partially subsidised. For the formula to be equitable, this needs to be factored in. This issue is also discussed in more detail in the section on basic services below.

The fourth possible shortcoming is the weighting of the three basic services (water, sewerage and refuse removal) included in the determination of the population receiving basic services. The Population Census data did not give the cross-tabulations of households receiving different combinations of the three services, thus necessitating weighing the number of people receiving each basic service to arrive at a total number to use in the equation. The weights used in the 2003/04 allocations were derived from the composition of the cost estimate of providing basic services to a household that has been

used in the S-Grant formula since its inception. The estimate of a monthly cost of R86 is made up of service costs of R20, R36, R10 and R20 for water, electricity, sanitation and refuse respectively. This was already discussed above in the context of the S-Grant. It was argued that the cost ratios might in fact be different from these implied weights. These weights need to be reviewed, or Stats SA must be asked to provide a cross-tabulated breakdown of what combination of services are received by poor households in each municipality. The costs of delivering these services, differentiated at least with respect to ruralness, will still have to be revisited.

The final component is Free Basic Energy (E). It is calculated on the same basis as component B, except that the driving element for the second element is the number of poor (<R1100 per month) recipients of electricity from a municipality. No weighting is required as it includes only one service. Otherwise, this component suffers from the same shortcomings as the B component. These have already been discussed in the preceding paragraphs and the discussion need not be repeated here.

4. DATA CURRENTLY USED IN THE CALCULATION OF ALLOCATIONS

As indicated above, the operational element in the S-component that actually determines the relative shares of the total S going to municipalities, is the number of households with expenditure of less than R1100 per month (H). The most serious shortcoming of using this data in the formula is that it assumes that all households, albeit poor as defined, receive the same package of services from the local authority. This is clearly not the case.

There are other grants that address the reasons for households not receiving services, in particular infrastructure and housing grants. The S-Grant should therefore only be aimed at providing municipalities with operational support as far as the provision of basic services are concerned. This principle was already accepted in part in the formulae of the free basic services and energy components. It would seem consistent to apply that to the S-Grant as well.

Another shortcoming of the household data is that it rapidly becomes outdated. In a context of high rural-urban migration rates, using census data that are five years old, not only results in significant lags, but also necessitates big adjustments when the new census data become available. This then prompts something like a 5-year phase-in that means that recipient municipalities that are the end-destination of migrants are continually disadvantaged. Moreover, these new migrant arrivals are more likely to receive basic services from the municipality they migrate to than from the municipality they left, exacerbating the distortions brought about by taking the number of poor households rather than the number of poor households receiving services as the main driver of this component.

Finally, taking R1100 per month as the dividing line between poor and non-poor households can also be questioned. This problem is related to the provision of free basic services and it is therefore discussed in the next

section.

As was discussed in the previous section, two data series are utilised in the component formula for the calculation of I-Grant allocations: the population as the basis for obtaining a proxy for the institutional needs of a municipality and the per capita expenditure per month multiplied by the population to give a proxy for the revenue-raising capacity of a municipality.

Population appears to be an appropriate driver for obtaining a proxy for municipal institutional needs. A problem arises, however, if Population Census data are used without an adjustment for changes in the recipient population. However, it would only make a difference if such adjustments were made on a differentiated basis, i.e. reflecting differential population growth and migration rates. If Stats SA can provide differentiated population growth and migration rates on a municipal basis, it should be used. If not, there may be no alternative but to use unadjusted Population Census data.

A similar shortcoming exists for monthly per capita expenditure. There may likewise also be no alternative but to use unadjusted Population Census data. However, a problem that can be addressed is the shortcoming of using a simple per capita expenditure per municipality rather than a measure of income or expenditure distribution within each municipal jurisdiction. For example, the revenue-raising capacity is not the same for two average incomes as for the average of a low and a high income.

This shortcoming is exacerbated by the fact that the potential revenue is related to the actual provision of services. In other words, if no services are provided no revenue can be collected even if, in terms of household incomes, a revenue potential exists. This implies, for example, that the revenue-raising potential is less for rural populations than for urban populations as the former receive fewer services.

These shortcomings can be addressed by using Population Census data that differentiates on the basis of income or expenditure distribution, urban and rural residence and whether services are actually provided.

5. EQUITABLE SHARE ALLOCATIONS AND FREE BASIC SERVICES

As was indicated above, taking R1100 per month as the dividing line between poor and non-poor households, can be questioned. It can be questioned on two scores: the appropriateness of its absolute level and the implicit assumption that households earning R1 more than that can afford to pay for basic municipal services. One of the difficulties with an absolute level of R1100 per month per household is the absence of household size in determining the capacity of a household to afford basic services. A household consisting of one person earning R1100 per month is not the same as a household of ten earning R1100 per month. This suggests that per capita income or expenditure may be a better measure of ability to pay.

The implicit assumption that households that earn (or spend) R1 more than

the cut-off amount can afford to pay in full for basic municipal services, is arguably inappropriate. If we assume, for the sake of the argument, that R1100 per month is an appropriate cut-off amount because up to that amount all the household's resources must go towards buying food and other essentials for survival, then R1101 has clearly not changed the fundamental poverty of the household. More appropriate would be to phase-in the payment for basic municipal services on the basis of some sliding scale so that the household does not have less than R1100 per month left (after payment for basic municipal services) for food and other essential expenditures. Such an approach should be reflected in the formula.

Another major problem related to the provision of free basic services, is the implicit assumption that it is equitable for municipalities to finance the shortfall of the cost of providing free basic services to the indigent (i.e. the difference between the cost of providing the services free minus the equitable share allocation) through cross subsidisation. This is not the case as a simple example illustrates.

Table 4 gives an example of two municipalities that differ with respect to the percentage of the population that is indigent, i.e. that cannot pay for basic services. The per capita cost of providing basic services to the indigent population is the same (R10) and the Equitable Share allocation (or combined unconditional grants) is also the same on an indigent per capita basis. The shortfall (as defined in the paragraph above) is financed through cross-subsidisation. As can be seen in Table 4, this results in a very unequal per capita burden on the tariff (and rates) paying citizens of the two municipalities.

	Municipality A	Municipality B
Total Population	100	100
Indigent Population	20	80
Tariff Paying Population	80	20
Cost of Free Basic Services per person	10	10
Total Cost of Free Basic Services (indigent)	200	800
Equitable Share/Unconditional Grants (8 x indigent)	160	640
Cost Financed by Cross-subsidisation	40	160
Per Capita burden on Tariff Paying population	0.5	8
Equitable Share for equal per capita burden	40	760

Although hypothetical numbers were used, they illustrate the point clearly. Tariff and rates paying residents of a municipality with four times as many indigent (but the same total population) carry an extra per capita burden (through cross-subsidisation) that is 16 times as high as in the municipality with a smaller indigent population. The last row in the table shows what the Equitable Share allocation ought to be to result in an equitable burden on the tariff paying population.

6. THE CONSTITUTIONAL FRAMEWORK

The Constitution is clear about the need for fiscal resources to be allocated "equitably". By implication this must mean that the combination of national standards and equitable share allocations must also be equitable. It can be argued that an important component of the concept of "equitable" is that of horizontal equity, i.e. people in the same situation (e.g. earning the same income) should be treated in the same way. In other words, the cross subsidisation burden should be equitably distributed across the different sources of income for individuals of the same income level.

The Constitution is also clear about the need to progressively realise the delivery of basic services. This means that if the budget constraint on national government results in the unconditional transfers to municipalities being less than the cost of providing free basic services to the indigent, a municipality may not provide such free services beyond what an equitable distribution of the cross-subsidisation burden would allow. This implies that the pace at which free basic services to the poor are realised must be determined by the rate at which transfers from national revenues can approach the cost of providing such services while maintaining an equitable cross-subsidisation burden.

7. PROPOSALS FOR CHANGES TO THE FORMULA

The preceding analysis and discussion culminates in the proposals below.

Proposal 1: The de facto composite formula must be simplified to consist only of one component, the S-Grant. The I-Grant should be phased out as the total transfers to local government increase. The other components must either be absorbed in the S-Grant (e.g. free basic services and free basic energy) or be phased out in as short a time as possible (nodal allocations, minimum guaranteed amount).

Proposal 2: The S-Grant component must be changed to a linear or additive structure that calculates shares of the total S-allocation rather than absolute amounts that need to be scaled up or down to fit the total budget allocation. An example of such a structure is the following:

$$S_i = S [w(W_i/W) + e(E_i/E) + t(T_i/T) + r(R_i/R)] , \text{ where}$$

S_i : S-Grant to each municipality i

S : Total allocation available for S-Grant component

w : the weight given to the share of water in the formula

W_i : the indigent population actually provided with water services

W : the total indigent population provided with water services, $\sum W_i$

e : the weight given to the share of electricity in the formula

E_i : the indigent population actually provided with electricity services

E : the total indigent population provided with electricity services, $\sum E_i$

t : the weight given to the share of sewerage in the formula

T_i : the indigent population actually provided with sewerage services
 T : the total indigent population provided with sewerage services, $\sum T_i$
 r : the weight given to the share of refuse in the formula
 R_i : the indigent population actually provided with refuse services
 R : the total indigent population provided with refuse services, $\sum R_i$
 such that $w + e + t + r = 1$

Proposal 3: Separate urban and rural weights must be defined for the four basic services in the S-component formula. For example, the formula above can thus be expanded into the following:

$$S_i = S [w_n(W_{n_i}/W_n) + e_n(E_{n_i}/E_n) + t_n(T_{n_i}/T_n) + r_n(R_{n_i}/R_n) + w_u(W_{u_i}/W_u) + e_u(E_{u_i}/E_u) + t_u(T_{u_i}/T_u) + r_u(R_{u_i}/R_u)]$$
, where
 n : non-urban (rural)
 u : urban

Proposal 4: The indigent population receiving any of the four basic services must be defined in a manner that recognises the principle that the payment for basic services should not reduce the net household income/expenditure to below the indigent income/expenditure (i.e. the income/expenditure level below which a household is defined as indigent). For example, if the indigent income/expenditure of a household is defined as <R1100 per per month, and the total cost of basic services actually received by a group of households is R200 per household per month, then households with incomes/expenditures between the indigent income and the indigent income plus the cost of basic services, can be defined as 50% indigent. This implies that a municipality will be able to apply a sliding scale for the introduction of tariffs so that no household will end up with a net income/expenditure of less than the indigent cut-off amount. For example, the elements of the S-formula could be made up as follows:

$W_i = W1_i + 0.5W2_i$, where
 $W1_i$: the population in households with an indigent income/expenditure and receiving water services for each municipality i
 $W2_i$: the population in households receiving water services with an income/expenditure = indigent income/expenditure plus the cost of basic services, for each municipality i , and
 $W_n = \sum W1_{n_i} + \sum 0.5W2_{n_i}$; and $W_u = \sum W1_{u_i} + \sum 0.5W2_{u_i}$
 The same can be done for the other elements in the S formula:

$$S_i = S [w_n((W1_{n_i} + 0.5W2_{n_i})/W_n) + e_n((E1_{n_i} + 0.5E2_{n_i})/E_n) + t_n((T1_{n_i} + 0.5T2_{n_i})/T_n) + r_n((R1_{n_i} + 0.5R2_{n_i})/R_n) + w_u((W1_{u_i} + 0.5W2_{u_i})/W_u) + e_u((E1_{u_i} + 0.5E2_{u_i})/E_u) + t_u((T1_{u_i} + 0.5T2_{u_i})/T_u) + r_u((R1_{u_i} + 0.5R2_{u_i})/R_u)]$$

Proposal 5: The S-Grant must be adjusted so that the shortfall (actual cost of free or subsidised basic services, based on national average cost per household per service, to indigent households, minus the value of the

equitable share transfer to the municipality) places an equitable burden on non-indigent households. For example, this could be achieved by the following addition of A_i to the S-formula:

$A_i = (a_i - a)[W3_i + E3_i + T3_i + R3_i]$, adjustment to initial S-Grant to bring about an equal cross-subsidisation burden on non-indigent households – total for all municipalities will add up to zero, i.e. $\sum A_i = 0$ because $\sum (a_i - a) = 0$

$a = D[W3 + E3 + T3 + R3]$, average subsidisation burden on population in non-indigent households

$a_i = D_i[W3_i + E3_i + T3_i + R3_i]$, subsidisation burden on population in non-indigent households of municipality i

$W3$: Total population in non-indigent households receiving water services

$E3$: Total population in non-indigent households receiving electricity services

$T3$: Total population in non-indigent households receiving sewerage services

$R3$: Total population in non-indigent households receiving refuse services

$D_i = C_i - S_i$, shortfall of municipality i

$D = C - S$, where

D : Total value of deficit (shortfall) and

$C = [C_w + C_e + C_t + C_r]$, where

$C_w = C_{wu} + C_{wn}$: national average cost of providing basic water service to all households

$C_e = C_{eu} + C_{en}$: national average cost of providing basic electricity service to all households

$C_t = C_{tu} + C_{tn}$: national average cost of providing basic sewerage service to all households

$C_r = C_{ru} + C_{rn}$: national average cost of providing basic refuse service to all households

The S-formula could therefore consist of something like the following:

$$S_i = S [w_n((W1n_i + 0.5W2n_i)/W_n) + e_n((E1n_i + 0.5E2n_i)/E_n) + t_n((T1n_i + 0.5T2n_i)/T_n) + r_n((R1n_i + 0.5R2n_i)/R_n) + w_u((W1u_i + 0.5W2u_i)/W_u) + e_u((E1u_i + 0.5E2u_i)/E_u) + t_u((T1u_i + 0.5T2u_i)/T_u) + r_u((R1u_i + 0.5R2u_i)/R_u)] + (a_i - a)[W3_i + E3_i + T3_i + R3_i]$$

Proposal 6: The I-Grant formula component should be phased out. If an I component has to be retained, or while it is being phased out (by e.g. reducing the total I allocation by 30% per year), it must also be changed to a linear or additive structure that calculates shares of the total I-allocation rather than absolute amounts that need to be scaled up or down to fit the total budget allocation. The main drivers of the I-formula should be population (as a proxy for institutional need) and household income distribution (as a proxy for revenue capacity), rather than per capita income as is currently the case. If

I-Grant allocations are to be made to district (category C) municipalities, it is proposed that a separate total I-Grant amount be budgeted for the two categories of municipality. An example of such a (basic) structure is the following:

$$I_{ib} = I_b [P_{ib}/P] - b I_b \{ [y_1(Y_{1ib}/Y_1) + y_2(Y_{2ib}/Y_2) + y_3(Y_{3ib}/Y_3) + \dots + y_j(Y_{jib}/Y_j)] - Y \}$$

$$I_{ic} = I_c [P_{ic}/P] - c I_c \{ [y_1(Y_{1ic}/Y_1) + y_2(Y_{2ic}/Y_2) + y_3(Y_{3ic}/Y_3) + \dots + y_j(Y_{jic}/Y_j)] - Y \}$$

where

I_i : the (non-negative) I-Grant allocation to each municipality i , i_b for category B and i_c for category C municipalities

I : the total budget allocation available for the I-Grant, split between category B (I_b) and category C (I_c) municipalities and applied such that $I_b + I_c = I$

b : $0 < b < 1$, set at a level that will determine the degree of redistribution from "richer" to "poorer" municipalities

c : $0 < c < 1$, set at a level that will determine the degree of redistribution from "richer" to "poorer" municipalities

P_i : the total population of municipality i , i_b for category B and i_c for category C municipalities

P : the total national population

y_j : the weight assigned to the j th income category, e.g. the first income category could be monthly household income <R1100 with a weight $y_1 = 0$, i.e. this income category does not have any revenue capacity for the municipality and the highest income category, e.g. monthly household income >R5000, could have $y_j = 0.5$ (the other income categories could have weights between 0 and 0.5 such that $\sum y_j = 1$)

Y_{ji} : the number of households in income category j in each municipality i , distinguishing between the two categories of municipality

Y_j : the total number of households in all municipalities in income category j , distinguishing between the two categories of municipality

Y : average weighted revenue capacity for all municipalities

i.e. $Y = \sum [y_1(Y_{1i}/Y_1) + y_2(Y_{2i}/Y_2) + y_3(Y_{3i}/Y_3) + \dots + y_j(Y_{ji}/Y_j)]$

Proposal 7: The possibility should be investigated, should an I component be retained, of distinguishing between populations in urban and rural areas, and populations receiving services and not receiving services, as that is likely to affect the revenue capacity of a municipality.

Proposal 8: The S-Grant allocation process should be co-ordinated with the infrastructure grant processes so that municipalities that get low S-Grant transfers because of a low percentage of their populations receiving basic services, must get a higher transfer of infrastructure grant so that access to

basic services can be extended. Once that has happened, the data for the municipality can be adjusted to reflect the increased operational cost of providing free basic services to indigent households.

10/09/03