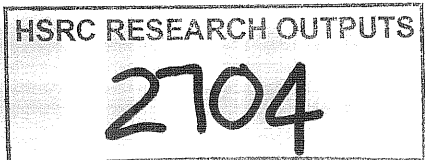# THE SOCIAL WAGE IN SOUTH AFRICA

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A review on behalf of the
Social Cluster Task Teams on Free Basic Services and the
Comprehensive Social Security Framework

Interim Report – Draft 4

9 December 2003

1   Overview of the review

This review of the social wage system in South Africa was commissioned to provide an input to the development of a comprehensive social security framework. In its second phase, it will also develop proposals to improve the current system.

This has involved:

-   a study of the different components of the social wage in South Africa;

-   an estimate of the value of the social wage by component; and

-   a determination of whether and how the distribution of the social wage needs to be improved.

The sectors considered are:

-   housing,
-   electricity,
-   water,
-   sanitation,
-   solid waste/refuse removal,
-   healthcare, and
-   education.

2   Purpose of this interim report

This interim report provides initial commentary on the methodology, interpretation, and usefulness of the concept of the "social wage" as a means of gauging the extent and distribution of government activity and its impact on poverty, and makes rough estimates of the present value of social wage components.

3 Conceptual, methodological, and policy considerations

3.1 Background to the concept of the 'social wage'

The social wage was a popular concept during the post-World War II economic expansion in the West. It was not so much an approach to measurement as a principle of public policy and macroeconomic management. In terms of public policy, the idea was that the state had a duty to reduce income inequalities through a redistributive tax-benefit system; this would simultaneously serve to promote an expansion of aggregate demand, which was deemed a necessary part of the macroeconomic strategy for resuscitating Europe's war-torn economies (Wilkinson, 2001).

With the dissolution of the consensus on macroeconomic management and changes in thinking about the role and obligations of the state in protecting the welfare of its citizens, this approach to the "social wage" largely fell out of use in the late 20th century. However, the social wage concept remained important as a practical concern relating to the measurement of poverty and government performance.

This remains the primary place of the social wage in contemporary economic practice. However, the social wage concept still evokes politicised debates relating to the concept's origins and to the fact that no approach to poverty measurement is entirely neutral. For example, some observers object to a focus on social wage spending on the grounds that it can be used by government to individualise class struggles and stifle industrial conflict.

3.2 The current use of social wage measures internationally

The social wage is typically measured for one of two inter-related reasons: first, to gain a more complete picture of the incidence of poverty than is possible by only considering private consumption or 'income poverty'; and/or second, to gauge how successfully government is directing its public goods and services to the poorer members of society. These are discussed in turn.

3.2.1 The social wage and measures of poverty incidence

Poverty measurement is an area of intense debate, and there is a large literature on the relative merits of different approaches. It is widely recognised that 'income poverty' is only one limited dimension of poverty, and thus that measures of poverty that focus exclusively on the inadequacy of people's income (or expenditure, which is a common proxy for income) fail to render a complete picture of poverty. The relative ease of measuring income poverty, however, probably accounts for the persistence of income-based calculations.

One way to correct for the deficiency of income measures of poverty is to take in-kind benefits into account. A general rule-of-thumb, however, is that the more inclusive is the poverty measure, the more sophisticated the necessary measurement tools, and thus the more open to dispute and interpretation of the findings.

For example, the 1993 SALDRU living standards survey in South Africa sought to establish a complete measure of household well-being by taking into account the use-value of people's own housing. In rural areas in particular, this often accounted for a significant proportion of households' total income. SALDRU also attempted to include the value of households' agricultural production for own consumption. Although less controversial than the imputed value of own housing, this proved to be difficult and the results tenuous.

More typically, in-kind benefits are limited to those provided by government, such as those that are the focus of this review. Part of the rationale is that taking such in-kind benefits into account is a straightforward extension of taking social security grant income into account – i.e. if poverty measures reflect the cash received through unemployment benefits, aid to mothers with dependent children, etc., then why should the non-cash benefits of government programmes not also be taken into account?[1]

In Australia, for example, analysis that takes into account the non-cash (social wage) benefits of government services, reveals a qualitatively different trend than if one only takes cash incomes/receipts into account: "although there was an increase in inequality of private income there was a decrease in inequality when the impact of taxes, government income support and the social wage was taken into account" (Howe and Pidwell, 2001:5). In UK, the value of the social wage is also substantial relative to cash income:

> In 2000/01, benefits in kind from publicly funded welfare services were worth an average of £1,700 per person or nearly £4,000 per household.... This represents a very substantial addition to people's incomes, especially for those in lower income groups (Sefton, 2002:46).

In the United Kingdom, the social wage has attained an official status, in that the Office of National Statistics produces annual estimates of the value of social services rendered by government such as housing, health, and education. However, debates continue about how to measure the social wage and whether the measures regularly put out by the government are reliable (*ibid*.: 2-3).

3.2.2 The social wage and measures of government performance

The social wage is also a measure to evaluate government performance, and in particular government performance in respect of addressing poverty. As such, social wage measures are a variation on 'benefit incidence studies,' which seek to establish the distribution of benefits from government programmes.[2]

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[1] It is also important to point out that in calculations of the social wage, public goods are typically excluded. By 'public goods' is generally meant those benefits that government provides that are enjoyed freely by people by virtue of the fact that it is technically difficult (or otherwise undesirable) to ration them by user-fees. Local roads, for example, may constitute a public good in the sense that many people benefit from their use, but for which individuals do not pay according to their level of use.

[2] The main distinction between assessing the social wage and assessing benefit incidence in general is that, when measuring the social wage, the value of service delivery that principally involves the allocation of capital goods (e.g. houses, toilets, etc.) is converted into flows, i.e. to make it comparable to other types of services received, and indeed analogous to cash income. This also allows the value of subsidies on the various goods, services, and even income subventions, to be aggregated into one figure, whether at household, sub-group, or national level.

A key concern with government social programmes is whether they are well targeted. Two specific questions are, first, what share of benefits meant for the poor 'leak' to the non-poor, and second, how many of the poor are missed or under-served.

A study of the social wage in the UK revealed that, at least in terms of government-funded welfare services, expenditure is indeed well targeted: "On average, individuals in the bottom two fifths of the income distribution receive around twice as much as those in the top fifth, 50% more than those in the fourth quintile, and 25% more than those in the middle quintile" (2002: 46).

Incidence/social wage studies can also examine whether particular categories of people are being served or missed, e.g. women-headed households, members of particular race groups, etc. (Coady *et al.*, 2002). As such, benefit incidence/social wage studies can assist a government determine whether and how its administration of social programmes is deficient and inform decisions about different strategies for rationing.

In societies with a high degree of inequality, benefit incidence studies have an added importance in that they can demonstrate the commitment of government to address those inequalities. This is particularly important for countries such as South Africa where present-day inequalities reflect a history of systematic discrimination that the present government must move aggressively to correct. Thus Van den Berg's study of the fiscal incidence in South Africa, which supports the conclusion of a very strong pro-poor bias of government social expenditure generally (2002), is not merely a statement about good targeting, but a measure of the South African's government's commitment to transformation.

3.3   The question of 'measurement'

The meaning of the 'social wage' is unambiguous: it is the total value of in-kind benefits received by a person or household from government, to that person or household. However, the means of calculating that total value is not straightforward.

There are two main approaches. The approach used for most of the components covered in this exercise is the 'cost-apportionment method', by which the marginal cost to government of providing the various in-kind benefits is estimated and the sum of these presented as the "social wage". The alternative is the more complex 'behavioural approach' which estimates the value to the benefits to the recipient. These approaches are described and compared in the appendix.

The following points need to be made about the methodology used here:

i) For the cost-apportionment method, estimated marginal cost is used as a proxy for value;[3] the question then is, how is the marginal cost (benefit) distributed among members of the population?

ii) Regardless of the approach one uses, calculations of the social wage are order-of-magnitude *estimates* that can rarely be considered definitive;

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[3] This is also arguably the single largest weakness of the cost-apportionment method, in that expenditure need not be a good reflection of value, especially if expenditure is inefficient or misplaced.

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iii) The quality of estimates of the social wage depends in some measure on the quality and detail of data on both government expenditure and households' access to services; and

iv) Measures of the social wage relate to the private, direct benefits enjoyed by individuals and households, and exclude the social benefits or externalities, which are often of even greater social or economic significance (such as the economic growth that may result from an investment in education), particularly in the medium and long-term; thus social-wage measures are not suitable for evaluating the total value for society of government expenditure in a given sector.

v) Finally, for a society like South Africa which faces enormous service backlogs, there is an argument for including capital expenditure in estimating the social wage, even where the capital is merely the vehicle for the service rather than the service itself. This departs from customary practice, which typically would not take such capital investment into account. For example, water delivery in South Africa includes both subsidised capital expenditure for, say, bulk infrastructure, as well as a quantum of free (subsidised) water to low-income households. In developed countries the bulk infrastructure generally already exists and thus its value would not be taken into account in estimating the social wage to households receiving subsidised water services; in South Africa the investment in bulk infrastructure is the most important way in which access to potable water can be extended to low-income households and considering only the price subsidy on water consumption would be perverse. Thus for the present exercise, the social wage components for services such as water, electricity, education, health care, etc., are estimated by adding together the direct social wage benefit of the subsidised service and the "per-period value" of the subsidy on the capital investment that made delivery of that service possible in the first place. This is measured as the capital depreciation over that period.[4]

3.4 The relationship of the social wage to the proposed Comprehensive Social Security Framework (CSSF)

The approach to the Comprehensive Social Security Framework (CSSF) has advocated a 'package approach' in which poverty and social security are approached simultaneously from different angles. Drawing on the Taylor Committee's report, the team tasked with the development of the CSSF has advocated a 'social security package' incorporating five main 'areas of need', each of which in itself requires a number of initiatives. These five 'areas of need' are: income poverty, service poverty, asset poverty, special needs, and social insurance. The social wage focuses on efforts to address service poverty.

The CSSF is considered to have three pillars of which the first addresses basic universal protection; the second the contributory cover paid for by income earners; while the third is purely discretionary for those who can and wish to pay for it. The social wage is part and parcel of the first pillar.

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[4] It should be noted that housing is intrinsically different, in that access to the capital good (the house) constitutes the service itself. Thus the per-period value of the capital subsidy would be used normally. On the other hand, electricity is different in a different way, in that capital investment in the electricity expansion is enabled through cost-recovery via cross-subsidies; in this case, capital was not separated out as a distinct element of the subsidy.

The other main components of the first pillar on basic universal protection are
i) social grants; ii) laws and regulations that protect the interests of all South Africans
and in particular the poor; and, presumably, iii) public goods. Consideration of these
other elements of the first pillar leads to two observations. Of these three, the social
wage is most comparable in nature to social grants, and indeed the value and
distribution of the social wage is best considered in conjunction with the value and
distribution of social grants.

Since the short-term, private value of both regulation and public goods is extremely
difficult to estimate and by definition almost impossible to target (except, say,
geographically), it is the social wage and social grants that comprise that part of the
first pillar which lends itself to quantification and targeted delivery. This suggests that,
for the purposes of any future CSSF, periodic estimation of the distribution of the
social wage, is essential for monitoring government's performance in effecting the
universal protection promised by the first pillar.

4   Estimation of the household social wage in South Africa

Estimates of the direct monetary value and distribution of the social wage are
summarised below. In order to understand the distribution of the social wage,
different groupings of households are considered, namely the 40% of households
with the highest incomes (those earning R1 900 per month or more), the poorest
60% of households (those earning R1 900 per month or less), and the poorest 40%
of households (those earning R1 200 per month or less). The figures are for the
value of the social wage in 2002 and are presented in 2002 Rand. The main data
sources were budget figures taken from various documents published by the National
Treasury, and the *Labour Force Survey* (2002) and *Income and Expenditure Survey*
(2000) of Statistics South Africa. The figures are order-of-magnitude estimates.
Where data were not available in sufficient detail, it was not possible to differentiate
the benefits accruing to poor households versus better-off households. Details as to
assumptions, data sources, method of calculation, and problems related to these, are
provided in the appendix.

Five tables are presented:

- Table 1 indicates the gross annual value of the social wage;

- Table 2 reports the average monthly value of the social wage per household,
  taking in account all households whether or not they receive subsidies;

- Table 3 reports the percentage of households that benefit from the different
  types of subsidies;

- Table 4 indicates the average monthly value of the social wage per household,
  taking into account only households that receive that particular subsidy; and

- Table 5 reports the average monthly contribution of capital to the value of the
  social wage for households that receive that particular subsidy.

The tables also report values of social grants received, as well as the total of the social wage and social grants.

Table 1: Gross value of the social wage in millions of Rand per year

Component	Top 40% of households	Poorest 60% of households	Poorest 40% of households
Electricity	144	552	528
Health	8 184	21 384	14 256
Water	288	732	576
Sanitation	504	1 308	948
Housing	48	2 856	2 856
Education	12 432	22 812	19 752
Solid waste	312	876	744
Total value	21 900	50 532	39 648
Social grants	5 328	21 468	18 000
Total social wage + social grants	27 240	71 988	57 660

Table 1 indicates that the total value of social wage payments amounts to over R72 billion per year. About 55% of this gross social wage value is directed at households in the poorest 40%, and 70% to households in the poorest 60%. This suggests that, taken as a whole, the programmes are progressively targeted, although perhaps not as much as they might be.

Table 2: Average value of social wage per household per month

Component	Top 40% of households	Poorest 60% of households	Poorest 40% of households
Electricity	3	7	10
Health	155	270	270
Water	5	9	11
Sanitation	10	17	18
Housing*	1	36	54
Education	235	266	357
Solid waste	6	11	14
Total value	415	616	734
Social grants	101	271	341
Total of social wage + social grants	516	887	1 075

Table 2 shows that the average social wage 'payment' to households in the poorest 40% of all households is R734 each month. Given that the *upper* limit of the income level that defines this income group is approximately R1 200 per month, and that pensions and other grants are major components of income for these households, it is apparent that the in-kind benefits received via subsidised services are large relative to poor households' earnings from their own economic activity. Moreover, the average benefits of the social wage for the 'typical' household in the poorest 40% is 77% greater than the average received by households in the top 40%.

Table 3: Share of households receiving subsidised service

Component	Top 40% of households	Poorest 60% of households	Poorest 40% of households
Electricity	7%	25%	36%

Health	57%	100%	100%
Water	31%	43%	52%
Sanitation	31%	55%	58%
Housing	2%	31%	45%
Education	77%	92%	95%
Solid waste	16%	30%	38%
Social grants	16%	40%	48%

In Table 3, the lower the percentage, the lower the 'coverage' of the subsidy in that component, meaning that the social wage is concentrated in a relatively small number of households. Low coverage is of particular concern for the poorer household categories. It should not however be assumed that 100% coverage is necessarily the goal; in housing delivery, for example, the goal is to accommodate poor households that need housing, whereas some poor households already have housing. For education the percentage reflects access to subsidised education relative to the number of households with school-age children. The figures of 100% coverage for healthcare do not strictly mean that universal health coverage has been achieved for poor households; rather it is considered a reasonable approximation in the absence of data with which to properly determine the number of beneficiary versus non-beneficiary households.

Table 4: Average value of social wage per household per month for households that receive the particular subsidy

Component	Top 40% of households	Average value to poorest 60% of HHs	Average value to poorest 40% of HHs
Electricity	38	28	28
Health	270	270	270
Water	18	21	21
Sanitation	31	31	31
Housing	53	115	121
Education	307	288	374
Solid waste	36	37	37
Total value**	831	790	882
Social grants	640	684	708
Total of social wage + social grants**	1 531	1 474	1 590

** The summing of conditional averages has no meaning in terms of describing the situation 'out there'; rather the sum represents the total value of the social wage that would obtain *if* households were able to benefit from each of the components at the average level of those who presently do benefit.

Table 4 reports the average value of the social wage accruing to those households who actually do benefit from that particular subsidy. It must be noted that the figures in the 'Total value' and the 'Total of social wage + social grants' rows have a different meaning than the corresponding values in Table 2. For example, among the 36% of households in the poorest 40% category who benefit from subsidised electricity, the average monthly benefit is R28; similarly, among the 52% of households in the poorest 40% category who benefit from subsidised water, the average monthly benefit is R21. However, these are not necessarily the same households. From the data presently available, it is not possible to know how many households receive some measure of all of the subsidies; rather it is only possible to calculate the coverage and average values per subsidy. The sums in the second-to-last row of Table 4 therefore represent the average social wage benefits for an imaginary

household that was able to access subsidies for *all* of the services, at the typical level presently enjoyed by households that do receive subsidies for that service. These totals therefore represent the social wage benefits that would be available on average if coverage was expanded. One implication is that these totals are not commensurate with the gross social wage envelopes presented in Table 1.

Table 5: Average contribution of capital to values of social wage per household per month for households that receive the particular subsidy

Component	Top 40% of households	Average value to poorest 60% of HHs	Average value to poorest 40% of HHs
Electricity	0	0	0
Health	0	10	15
Water	6	6	6
Sanitation	0	0	0
Housing	53	115	121
Education	0	3	4
Solid waste	0	0	0
Total value	59	134	146

Table 5 shows that capital expenditure makes a significant contribution to social wage payments. However, almost all of this contribution can be attributed to the value of housing supplied, whereas the capital element of the social wage from other components is relatively modest.[5]

From these tables it is evident that:

- The gross annual value of the social wage is about R72 billion, which translates to about R132 per month for each South African. Of this R72 billion, about 70% is directed at the poorest 60% of households, and 55% at the poorest 40% of households. The gross value of the social wage directed at the poorest 40% of households translates to about R206 per South African individual in these households.

- The gross monthly value of the social wage exceeds that of social grants; however, the social grants are better targeted, in that 80% is directed at the poorest 60% of households, and 67% at the poorest 40% of households.

- Taking the social wage and social grants together, 73% is directed at the poorest 60% of households, and 58% at the poorest 40% of households.

- Health and education together account for about 85% of the total social wage for poorer households; housing accounts for another 7% of the total social wage for the poorest 40% of households.

- The average total monthly value of R734 for the social wage of households in the poorest 40% category is large relative to the average monthly household income of about R600 of households in this category (which includes income from social grants).

- The average total social wage among households in the poorest 60% of households is 49% greater than that for the top 40% of households; the

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[5] The absence of figures for the capital values for sanitation is due to a lack of data, but the value would be expected to be very modest; for electricity, the social wage value of the capital investment is not distinguished due to the manner in which capital expansion is paid for on a cost-recovery basis.

average total social wage among households in the poorest 40% of households is 77% greater than that for the top 40% of households.

- Different components of the social wage differ significantly in the extent of coverage for poor households. If all poor, eligible households were able to access each subsidised service to the same extent as the average household that does have access, the average total social wage for poor households would increase by 20% to 30%.

- Capital expenditure contributes about 17% of the social wage to poor households; of this share, about 85% is due to housing.

In sum, the value of the social wage in South Africa is significant, not least as a principal component of the 'universal protection' contemplated by the CSSF. Moreover, the distribution of the social wage is progressive in that it benefits poorer households more than better-off households. The fact that the social wage is not as progressive as the social grant system is largely due to the fact that better distribution of the social wage depends upon addressing the service backlog. However, it should be pointed out that the figures above do not take into account tax incidence and cross-subsidisation via user charges, which disproportionately affect non-poor households, and thus in effect renders the distribution more progressive than it appears above.

5   Further work

This interim report ventures preliminary estimates as to the value of the social wage – taking into account seven distinct types of subsidised services – accruing to broad categories of households in South Africa. The findings suggest that, particularly for poorer households, the value of the social wage is significant, both in relation to social grants and private incomes. The findings also suggest that the distribution of the social wage is generally progressive.

Nevertheless, the present report has numerous limitations. Foremost among these is the very aggregated level of analysis. Although three categories of households are considered (top 40% of households, poorest 60%, and poorest 40%), each of these categories is very heterogeneous. Although some indication of the size of the gaps is provided (see Table 3), further work would be required to improve our detailed understanding of these gaps, and to quantify them. For instance, for specific components, more can be learned as to what types of households are especially apt to lack access, for instance rural versus urban, by province, by gender of household head, etc. For the total value of the social wage, a particular problem is determining how many households actually benefit from different combinations of subsidised services, or indeed from all of the subsidised services. Presently, the analysis is primarily component-by-component, with the total value of the social wage being calculated for some imaginary 'average' household.

The existing exercise can be pushed further, but only to a limited extent. The *Labour Force Survey* and *Income and Expenditure Survey* do not allow one to make inferences as to the combinations of services accessed by particular households or particular types of households. The Census 2001 sample, once it is released, might assist in this regard, but largely depending on the manner in which one will be able to access the data. The value of a tailor-made household survey would be to provide an

on-the-ground perspective on households' access to social wage services. The function would be threefold: to understand the aggregate access of households to services; to identify what accounts for some types of households accessing more or less of these services; and to assist in developing the methodology for assigning values to service subsidies. The key constraint of any such survey is that, assuming it would not be national in scope, it would remain an illustration from a few selected communities. The value of this for policy purposes would likely be great, however the short-term value of such an exercise for the Social Cluster Task Team is difficult to assess.

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Appendix

A. Overview of approaches to the measurement of the social wage

Following in the same vein as benefit incidence studies, the value of the social wage can be estimated using the *cost-apportionment method*, by which one tries to establish the marginal *cost* to government of providing that in-kind benefit. In other words, cost is used as a proxy of value. The question then is, how is the marginal cost (benefit) distributed among members of the population? To take one example, one can use survey data to determine how many people have frequented public clinics over a certain period, and then assume that the marginal cost is distributed equally among all these people. Alternatively, one can try to take into account the fact that different categories of people are likely to 'benefit' more than others, in the sense that they may require more medical attention than others. Taking into account other sources of information, e.g. Ministry of Health records or secondary studies, one can then develop a model that relates the value of health care benefits received (i.e. marginal costs incurred) to a person's observable characteristics such as age, gender, and income category.

Alternatively, there are a number of *behavioural approaches* that seek to establish value by looking at individuals' or households' willingness-to-pay or by otherwise measuring demand. This is typically done by seeking to estimate demand functions, in other words, the level of demand that exists for different prices of that good or service. The value of this approach is that it provides the analyst with an estimate – albeit hypothetical – of the demand for that particular good or service *in the absence of the subsidy*. This is deemed important because people's uptake of subsidised goods and services is generally conditioned by the subsidies themselves, and by failing to take this effect into account, one cannot construct an accurate measure of the impact of that subsidy on their welfare, i.e. one does not have a counterfactual in relation to which the present value of the subsidised service can be compared.

As a gross generalisation, the cost-apportionment method is far simpler to apply, in that the data requirements are more manageable and the sophistication of the modelling is less demanding; but the conceptual deficits are more serious. Even assuming one does it well, there are significant reasons for worrying that it does not produce a good proxy of value. By contrast, the behavioural approaches aim to resolve these conceptual limitations of the cost-apportionment method, but at the cost of introducing a degree of complexity that calls into doubt the robustness of the estimates themselves.

Simplified versions of the behavioural approach are also available, and share some of the advantages and disadvantages of both approaches. In short, these simplified versions seek to estimate subjective value by looking at comparable markets. This does not allow the comparison to the counterfactual allowed for when estimating the demand function, but it does serve as a meaningful alternative to using marginal costs, and depending on the 'comparability' of the comparable markets can serve as a useful benchmark. The main drawback, however, is that the meaning of 'willingness-to-pay' among poor and very poor households may also be a questionable measure of value, since willingness-to-pay is strongly conditioned by ability-to-pay.

Regardless of the method one employs to estimate the value of the social wage and its components, the estimates produced must be used with caution. In reviewing a large number of benefit incidence studies employing various versions of these two approaches, Van de Wall concludes:

> Provided one is aware of their deficiencies, much of the data and methods commonly used in practice can be useful and informative. The (few) studies that have attempted to compare results on incidence have found that the methodologies are broadly in agreement.... *Still, the results should be taken as indicative of likely directions of benefit incidence rather than as precise magnitudes* (1995:600; emphasis added).

The advantages and disadvantages of the different methods are summarised below.

Table 4: Summary of advantages and disadvantages of the different methods

Method	Advantages	Disadvantages
Cost-apportionment method	▪ conceptually straightforward ▪ data requirements relatively modest	▪ absence of a counterfactual ▪ marginal costs may be difficult to establish ▪ marginal costs may be poor reflection of (subjective) value ▪ sometimes unclear how to
Behavioural approaches	▪ can explicitly estimate comparison to counter-factual ▪ more directly linked to subjective value	▪ 'willingness-to-pay' among poor households may have little meaning ▪ technically challenging; modelling open to debate ▪ onerous data requirements
Simplified behavioural approach	▪ technically less demanding ▪ more directly linked to subjective value ▪ data requirements relatively modest	▪ absence of a counterfactual
General/common		▪ difficult to make appropriate cost-of-living adjustments, thus e.g. rural-urban comparisons can be spurious ▪ can be difficult to convey meaning to policy makers ▪ failure to capture 'social benefits', i.e. externalities

B. Sectoral detail on social wage calculations

Introduction

The intention of the social wage is to accord benefits to individuals and households who are vulnerable while denying similar payments to those who are not in need. This ensures that some social need is fulfilled while the providing the services with some efficiency. There are consequently three variables of interest required when estimating the number of beneficiaries. These are:

1) the value of the service
2) the extent to which benefits are accessed by those who are not vulnerable, and
3) the extent to which the vulnerable are unable to access the benefits they are entitled to.

A prime example of the second point is the extent to which relatively "affluent" households access state health services. Only the wealthiest 20% of the population have medical insurance. This suggests that many households in the most affluent 30% of the population rely, to at least some extent, on state clinics, hospitals and other medical facilities. If such affluent households access state services to a significant extent then expenditure on the service becomes a poor reflection of the value of the service to the poor and vulnerable. The extent to which non-poor households access services thus has to be incorporated into the estimates.

The converse of this problem is the extent to which the intended beneficiaries of a service are unable to access the benefit. The state has insufficient resources to ensure that all intended beneficiaries receive the service (and thus the implied social wage). This is reflected, for example, in the number of poor households who do not yet have formal housing or free basic water and electricity allocations to which they are entitled. The extent to which the intended beneficiaries are not able to access each service is as important an aspect of estimating the social wage as is estimating the extent to which non-poor households benefit.

It is imperative that a distinction be drawn between the social wage paid to beneficiaries and the social wage paid to those entitled to receive the benefit. The former indicates the payment received by beneficiaries, the later reflects the situation had the social wage been shared equally among all eligible for the benefit. Obviously how the poor or vulnerable are defined then becomes central to estimating the social wage.

In this study the poor are typically defined as those households that belong in the poorest two quintiles of the income distribution, i.e. the poorest 40%. These households typically have a regular income of less than R1 000 a month (in 2000 Rand). A distribution profile of income, as derived from the *Income and Expenditure Survey* of 2000, is presented in the graphic below. The vertical line (located at R12 000 per annum) separates the poorest 40% from the rest of the population. In addition, households in the poorest three quintiles are also considered, i.e. the poorest 60%, for whom regular monthly income is less than R1 900, or annual income less than R22 800.

Figure 1: Household income distribution in 2000
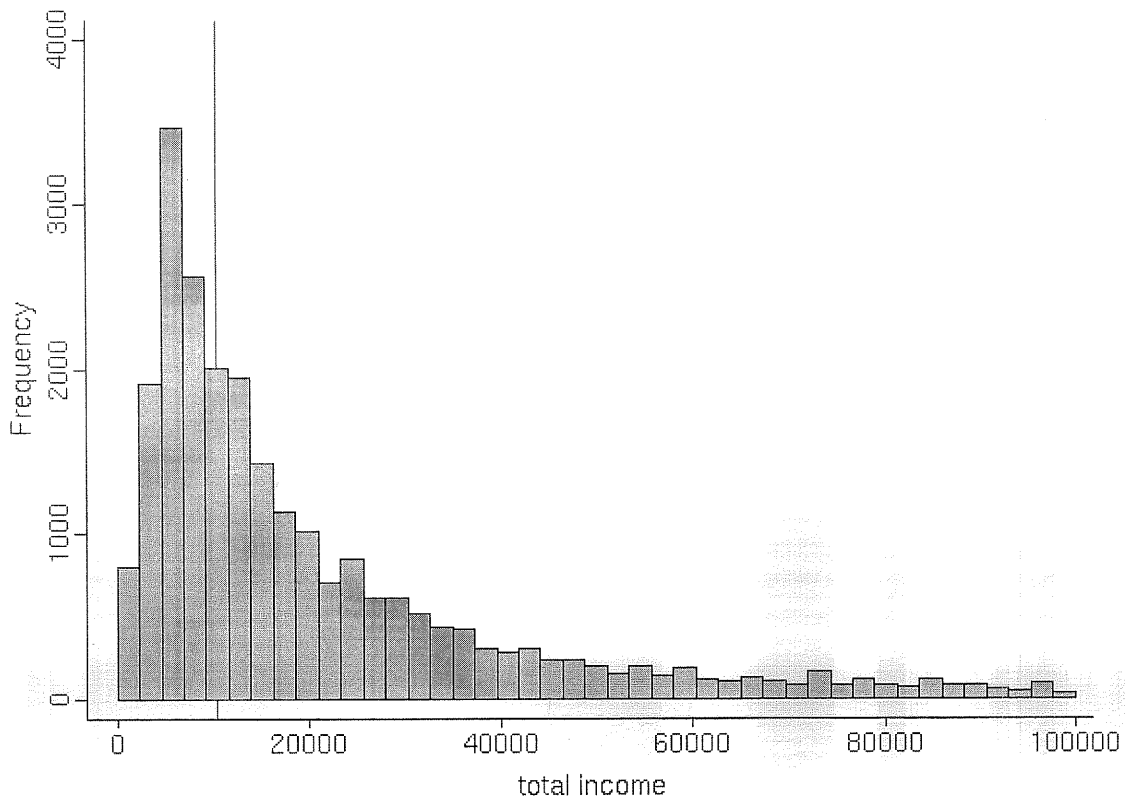
Source: calculated from Statistics SA, *Income and Expenditure Survey*.

Electricity

Unlike the provision of free basic water services, there is little standardisation of the criteria for receipt of free electricity allocations. Municipalities allocate free electricity on the basis of their own needs. This results in both differing qualification criteria and the amount of free electricity supplied. The typical amount of electricity supplied free of charge ranges from 10 to 100 kWH. To estimate the implied social wage it is expedient to examine the intentions of the policy. The policy seems to hinge qualification for the "subsidy" on the user being connected to a reduced 10 Amp supply. Other than this it is not clear what level of poverty is required for the benefit. It seems that the intention of the policy is to supply 50 kWH per month per household free. This implies a social wage of R25 per household each month (based on current electricity charges). A National Treasury/DPLG survey indicates that approximately 1.3 million households benefit from the free allocation.

Another 200 000 households currently benefit from non-grid electricity, e.g. in the form of solar panels, etc., and do not receive the above subsidy. However users of Solar Home Systems do benefit from a capped subsidy of R48 per month. In the absence of further information, it is assumed that this reflects an average benefit (implied social wage) for all of the 200 000 households. Combining the subsidies to grid and non-grid consumers results in an average social wage payment of R28 per month to 1.5 million households.

16

As with the other social wage payments the implied wage needs to be discounted if it is to reflect average payments to all households. Assuming the "poor" constitute the poorest 40% of households, then the average benefit is only 34% of the amount indicated above as only 34% of the "poor" receive the subsidy.

Unlike water services, electricity provision is financially sustainable, consequently the value of capital subsidies do not have to be added to the estimates, i.e. it does not represent an additional subvention from government.

Health services

Health services are a public good and can not be monopolised by beneficiaries (in contract to housing – see below). The graphic below is derived from the IES of 2000. It indicates that only in the top three income deciles is a significant uptake of private health insurance evident. Presumably the rest of the population is serviced, at least in part, by public facilities. This implies that most households earning less than approximately R2 500 per month rely on public facilities and that the available public health facilities service a far greater population than the poor (i.e. the poorest 40%).

Figure 2: Percentage uptake of medical insurance by income decile
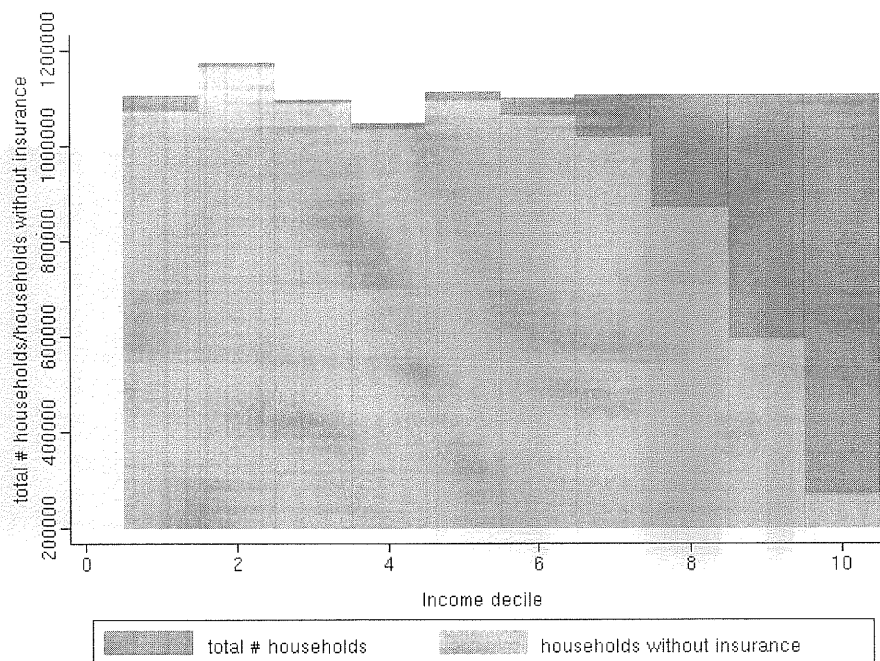
Source: National Treasury, *Intergovernmental Fiscal Review*, 2003.

If it is assumed that households in the bottom seven income deciles are equally likely to benefit from state health services then, using the cost-apportionment method, state expenditure on health services has to be evenly distributed among approximately 7.7 million households.[6] Conversely, households in the highest three income deciles are deemed able to pay for commercial services. Data from the

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[6] This is an example where the absence of data leads to less differentiation in the analysis than would be desirable. The assume of equal benefits among the bottom seven deciles is presumably incorrect, but for lack of information is the most defensible approach.

Intergovernmental Fiscal Review indicates that in the year 2000 approximately R26 billion was "paid" to those 7.7 million households. This implies an average payment of R270 per month. In this period health services finances are heavily dominated by variable costs (particularly labour) and thus the low level of expenditure on capital (5% of the total) was ignored.

This method rides on the assumption that the service is generally efficient in terms of market prices. This may not be a reasonable assumption and a situation arises in which a less efficient service (more wastage, poor management) is reflected as an *increase* in the social wage.

Water services

Two dimensions relating to water services are considered:

1. The explicit subsidy (or social wage) derived from the free basic water allocation. These subsidies are complemented by progressive water tariffs which essentially force heavier (and wealthier) consumers to subsidise lighter (and poorer) consumers; and,

2. A subsidy on capital infrastructure that facilitates water delivery. This is an additional subsidy in the sense that the costs are not recovered through water tariffs.

In 2002 a survey of 99 randomly selected municipalities revealed that 13% of consumers rely on free basic water allocation in some guise (O'Donovan, 2003). If it is assumed that only the free basic water allocation (i.e. the 6KL per household per month) is subsidised and that a reasonable value can be given to that water, it is possible to estimate the implied social wage. However, water tariffs are a misleading indicator of value as they include (via the progressive tariffs) a subsidy. This subsidy is paid by heavier consumers in support of the poor, and consequently the commodity is overvalued. Fortunately the above survey also reveals an average cost of water. As the average includes both the subsidised rate and the subsidising rate it 'averages out' the cross-subsidies and reflects a more justifiable estimate of actual value. The survey suggests that the 13% of households relying on free basic water are in effect receiving a monthly 'social wage' benefit of R15 a month in the form of the free 6Kl of water.

In addition to making water cheaper the state also invests considerable resources in making water available to under-serviced communities. As the costs of these investments are unlikely to be recouped from water sales they are, in essence, a further subsidy on water. In the absence of more detailed information it must be assumed that all households, indigent or otherwise, benefit equally from the capital subsidies. This discounts, *inter alia*, the notion that heavier consumers benefit more from the investment, but also that the expansion of bulk water infrastructure is concentrated in areas where low-income households reside. An estimate of the implied social wage is made on the basis that the capital investment will depreciate 'in a straight line' over an appropriate period. Assuming that the capital investments in water infrastructure have a life of 20 years the capital costs have to be amortised over the same period. The total capital investment since 1994 implies that every household receives an additional social wage of R6.20 each month. This amount

must be added to the R15 above. Note that this estimate is restricted to new infrastructural development, i.e. that which took place after 1994[7]. To summarise, the social wage payment with respect to water services are:

Total monthly water subsidy for indigent households R21.
Total monthly subsidy for other households R6.

The allocation of capital costs equally to households regardless of their consumption level downplays the social wage paid to the poor. Over the last ten years or so much of the infrastructural development was specifically focussed on providing the poor with services. That is, the capital investment is a greater subsidy of the consumption of the poor than what is presented above. In more remote areas in which full pressure water services are provided for the first time an implied social wage of about R80 per month is probably more reasonable. However this rate is offset by the much higher number of households who have not benefited from state capital subsidies.

If it is assumed that all recipients of free basic water are among the poorest 40% of households, then the average social wage paid to the poor can be calculated. Only one-third of poor households receive the free basic allocation of water and the volumetric subsidy of R15 has to be allocated pro-rata to three times as many households (reducing the value to one third of the R15). However, the capital subsidy was calculated on the basis of all households benefiting equally and this amount does not have to be similarly reduced. This indicates that the average social wage received by all poor households is R5 plus the R6 capital subsidy – giving a social wage of R11.

Sanitation services

According to the IES only 4.8% of poor households pay for sanitation services. Those that do pay, pay on average R25 per month. Non-poor households, by contrast, pay a mere R10 more. This indicates that differences in charges are due less to differential tariffs between income groups than they are due to the variation in tariffs between municipalities. Notwithstanding the origin of the discrepancy in rates, the amounts paid provide a fair reflection of the value of the service and thus of the social wage implied by households having the cost of their sanitation borne by the state.

The low payment rate is in sharp contrast to the prevalence of the service among the poor. The LFS of 2002 indicates that all but 16% of poor households have some form of sanitation service in or close to their dwelling. The most likely system is a flush toilet connected to a public sewage utility (42% of households). The next most likely system is a pit latrine (33% of households). Other services provided are bucket toilets, chemical toilets, etc. Unlike flush toilets linked to the sewage utility, there is little information on which the value of the alternative services can be based. For the estimates the cost of septic tanks, chemical, bucket and VIP latrines are arbitrarily set at 50% that of a flush toilet. It is further assumed that the cost of non-VIP pit latrines are borne by the household themselves.

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[7] It is assumed above that since 1994 annual expenditure has maintained at the nominal value as that budgeted for 2002/03.

Consequently it is assumed that 42% of households benefit from a full payment of the implied social wage, 10% received a half payment and 49% of poor households receive no implied social wage payment for sanitation services as they have no toilet or rely on a non-VIP pit latrine. This leaves the perplexing question as how to value the services provided. As with refuse removal, the range of tariffs charged by municipalities varies dramatically. According to the Intergovernmental Fiscal Review of 2003, charges for 'small' households ranged from R6 to R68 in 2001/02. In 'large' households, charges ranged from R17 to R107 per month. Once again the presence of cross-subsidies may be implied by the charge differential. Any such cross-subsidy needs to be eliminated from the price as it devalues the service. When only those municipalities without large tariff differentials between small and large households are considered (and thus do not have a cross subsidy), a social wage of R38 per month is implied. This estimate corresponds closely to the prices reported in the IES.

When this value is weighed to reflect the lower level of service received by the 10% of households receiving a lesser service (as indicated above), an average social wage to beneficiaries of R31 per month is indicated. When the value of the service is spread equally among poor households, then there is an average social wage payment of R18 per month.

Housing

Housing subsidies formed the mainstay of the RDP programme in the mid 1990s. There were a number of strategies employed in providing housing. The most prominent strategy was the allocation of housing subsidies – usually to the value of R16 000 or less. Housing subsidies were complemented by the sale or transfer of existing housing stock (usually council houses) to occupants.

A number of imperfect measures of the value of the housing subsidies are available. One unsatisfactory measure is the value of rental paid by poor households. The IES of 2000 indicated that housing tenants in the poorest two quintiles of the population paid, on average, less than R85 per month. This figure is unrealistically low and almost certainly undervalues housing – partly because RDP housing may be of a higher standard than the rental housing available to members of this income group.

An alternative measure of the value of housing is to amortise the subsidy over the expected life of the dwelling. However, this method, wrongly, implies that there is no residual value to the subsidy after 20 years. It thus also undervalues housing. For example a subsidy of R16 000 depreciated 'in straight line' over 20 years implies a monthly payment of R66 per household each month. If the recently increased value of subsidies (R20 300 for households earning less than R1 600 per month) is used, then a social wage of R85 is implied.

The method adopted here was to treat the subsidy as an interest bearing capital payment. The pertinent interests rate was the current mortgage rate – 12% per annum in 2002. A subsidy of R16 000 would thus imply a monthly social wage payment to beneficiaries of R160. However inflation ensures that a R16 000 subsidy awarded in 1995 was still "earning interest" and was worth more than a R16 000 subsidy awarded in any subsequent year. To better estimate the value of the housing subsidy it was necessary to reflect all subsidies at constant 2002 values. Once this

correction was made it was evident that subsidies awarded to households in the poorest 40% of the population after 1994 are worth, on average, R18 200 in constant 2002 values. This implies a monthly social wage of R175.

Although approximately 1.2 million houses had been completed under the subsidy scheme before 2002, not all of the beneficiaries were in the poorest 40% of the population. Data released by the Department of Housing indicates that 893 000 of the subsidies were allocated to the poorest income category – a category that broadly approximates the poorest 40% of the population.

Housing benefits accrue only to an individual household, i.e. the beneficiary can monopolise the dwelling to the exclusion of others. In order to estimate the social wage payment it is necessary to distinguish between beneficiaries and non-beneficiaries. However, if one hypothesises that payments are distributed equally to all of the poor then the value of the housing payments is reduced to one fifth of the R175 indicated above. This is because only one-fifth of poor households received a housing subsidy.

Many of those who did not benefit from a housing subsidy benefited from the sale of council housing to occupants. The transfer of existing housing stock resulted in another 1 060 000[8] households receiving discounts of up to R7 500 when they purchased their council houses. Using the interest rate as a guide these transfers imply a social wage of up to R75 per household per month. A weighted average of the two subsidies indicates an average value to beneficiaries in the bottom two quintiles is R121 per month.

If it is assumed that all beneficiaries of housing transfers fall into the poorest 40% of the population then it can be seen that only 44% of the 4.4 million poor households have benefited from either of the two subsidies. Again, if one hypothesises that payments were distributed equally among the poor then the value of the housing payments is only 44% of the weighted average payment of R121, i.e. R54.

Education

Inequitable access to education facilities is widespread with urban and 'formerly white' areas still enjoying relatively privileged access to state resources. Consequently the first step in estimating the implied social wage involves overcoming deficiencies in information so that the value of services received by poor households can be calculated. Part of the impact of the mal-distribution of resources can be taken into account by a consideration of the differences in provincial expenditure on education. To estimate the value of education services, state expenditure on each student was derived at a provincial level. The figures derived thus acknowledge the disproportionate extent to which impoverished students tend to be located in those provinces with low per capita expenditure on education.

To improve estimates, a distinction is drawn between personnel costs (which typically make up almost 90% of education expenditure), the costs of teaching aids, textbooks, etc. (non-capital, non-personnel costs) and capital expenditure. It was

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[8] It is merely assumed that all those able to purchase their council houses were in the poorest 40% of the population.

then assumed that, within each province, both poor and non-poor scholars received the same benefit from the state. It was further assumed that capital investment after 1999/00 (the period in which capital investment in education again became significant) was exclusively focused on the delivery of infrastructure to the poor. This investment was amortised over 20 years and included in the social wage paid to the poor. Combining these figures reveals that each poor student was 'paid' a social wage of R298 in 2001.

As many of the services associated with the social wage are provided to households rather than to individuals, it is necessary to express the value of education services (which are provided to individuals rather than households) as a household payment. This entails estimating the average value per beneficiary and the average number of beneficiaries per household. To do this the LFS was used to estimate the average number of scholars in different categories of households in each province. These estimates (which also revealed dramatically varying trends by province) were coupled with the *per capita* estimates derived above to compute the average social wage paid to households. In 2001/02 the social wage implied by expenditure on education on households in the poorest 40% of the population was R357 per month averaged across all households with school-aged children, and R374 averaged among those households whose children did attend primary or secondary school.

Solid waste removal

The LFS indicates that the solid waste of 45% of poor households is removed by the local authority on a regular basis. By contrast the IES indicates that only about 16% of poor households pay for such a service. This indicates that most poor households who benefit from refuse removal services do not pay for them. Some of the discrepancy between service levels and payment rates may be due to respondents not being able to differentiate refuse removal payments from other municipal services, rates and other taxes. This issue is subsequently ignored.

Estimating the value of the service is more challenging. The IES indicates that charges for refuse removal ranged from R18 for households in the poorest decile to R36 for households in the highest decile. Data from the National Treasury's Local Government Database suggests that this variation in charge may be due less to tariff discrimination between income groups than to the variations in tariffs between municipalities. In 2001/02 municipal refuse tariffs ranged from R4.72 to R63.23 among 'small households'. In 'large' households the tariffs ranged from R14 to R63. Given that the distinction between large and small household tends to reflect the level of service rather than the number of household members, the tariff for 'small' households is more useful in estimating the value of services received by the poor.

In several municipalities there are significant differences in charges levelled at 'large' and 'small' households suggesting that a degree of subsidisation in taking place. When those municipalities are excluded from consideration an average charge of R37 per household per month is indicated. This estimate – falling as it does in the mid-range of the Treasury's Data – is taken to be the value of the service.

Only 45.2% of poor households receive refuse removal services and about 16% of these households pay for the service. The implied social wage can be considered equal to the value of the service provided to poor households who do not pay for the

service. This results in an implied social wage payment of R37 to beneficiaries and a payment of R14 to the poor at large. The capital expenditure component is treated as insignificant.