University of Cape Town

CENTRE FOR
SOCIAL SCIENCE RESEARCH

AN OVERVIEW OF THE PERFORMANCE AND POTENTIAL OF PUBLIC WORKS PROGRAMMES IN SOUTH AFRICA

Anna McCord

CSSR Working Paper No. 49

SALDRU

Published by the Centre for Social Science Research
University of Cape Town
2003

Copies of this publication may be obtained from:

The Administrative Officer
Centre for Social Science Research
University of Cape Town
Private Bag
Rondebosch, 7701
Tel: (021) 650 4656
Fax: (021) 650 4657
Email: kforbes@cssr.uct.ac.za

Price in Southern Africa (incl. VAT and postage): R 15.00

or it can be downloaded from our website
http://www.uct.ac.za/depts/cssr/pubs.html

ISBN 0-7992-2216-X

CENTRE FOR SOCIAL SCIENCE RESEARCH

Southern Africa Labour and Development Research Unit

AN OVERVIEW OF THE PERFORMANCE AND POTENTIAL OF PUBLIC WORKS PROGRAMMES IN SOUTH AFRICA

Anna McCord

CSSR Working Paper No. 49

October 2003

Anna McCord is an economist working as a Research Associate in the Southern Africa Labour and Development Research Unit on the Public Works Research Project, and a Research Fellow of the Overseas Development Institute in London.

With thanks to Justin Clegg, Martin McCutcheon and Gopane Sam Mabilo, Honours Students in the Faculty of Commerce at UCT, for their contribution to this paper.

An Overview of the Performance and Potential of Public Works Programmes in South Africa

Executive Summary

The South African economy is unable to deliver employment for a growing number of would-be workers, especially among the unskilled. There is a need for state intervention to address this failure, and public works have been identified in the national policy discourse as a central policy response, to address both the problem of unemployment, and also a range of social development and economic objectives. This paper provides a critical review of the evidence base available to policy makers on public works, and an assessment of the performance of public works in South Africa since 1996, in response to the question of whether public works can offer a significant response to the South African employment crisis.

With the data currently available it is not possible to show that the anticipated broader benefits of public works programmes in terms of increased livelihoods, reduced poverty, the creation of sustainable employment, community empowerment, local multipliers, or growth as outlined in the policy rhetoric, have been achieved. It is only possible to assess performance in terms of the scale of employment created. By this criterion, success has been limited. The Community Based Public Works Programme, the major national employment creation instrument, created between 13,000 and 33,000 jobs per annum between 1996 and 2001, representing an estimated 1.5 million to 4.5 million workdays per annum, or 0.2 to 0.5% of total unemployed labour days. The scale of employment creation performance has been limited, due to i) the scale of budgetary allocations, (less than one percent of the annual social security and welfare budget), and ii) institutional constraints, relating to programme conceptualisation and design, and project management capacity, in both the public and private sectors. The multiplicity of programme objectives has also contributed to a lack of focus which has reduced the amount of employment generated.

In this paper simple models are used to estimate the impact and fiscal feasibility of 'expanded' public works programmes using the limited data available. The employment creation potential of a R1.2 billion investment in labour intensive

construction over three-years is found to represent a maximum of 0.5% of unemployed workdays per annum. The cost to the fiscus of an expanded public works programme able to offer part time employment to a significant number of workers (3.2 million) is found to be between R17 and R28 billion per annum.

Irrespective of the fiscal feasibility of this level of expenditure, such a programme is unlikely to meet the wider set of sustainable social development and economic objectives set out in the policy discourse, unless a series of institutional issues relating to project design and implementation are resolved. The limited duration of employment offered under public works may mean that the wage transfer functions as a short term income shock, which is consumed, rather than leading to sustained benefits or livelihoods improvements for participants, a problem which is compounded by lack of access to microfinance. Targeting and rationing problems may be leading to a sub-optimal allocation of employment for the intended beneficiary groups, and the selection of appropriate assets for construction and rehabilitation is hindered by the lack of strategic development plans at local level. Limited project management and social development capacity in the public and private sectors is also serving to constrain performance.

Many workers return to the unemployed labour pool after completing work in short term public works projects, rather than being absorbed into the labour market. The implementation of multiple short term projects may therefore serve only to churn the unemployed, replacing one cohort of the unemployed with another in short term employment projects, and removing them temporarily from the pool of unemployed labour, rather than addressing either the underlying problem of unemployment, or having a significant or sustained impact on livelihoods.

In the light of this analysis it is concluded that while public works programmes are a valid component of a social protection policy, an expanded public works programme sui generis *is unlikely to have a significant impact on the problems of poverty and labour market access, or their associate, growth, unless the proportion of government expenditure allocated to the programme is substantially increased, and the associated institutional constraints are addressed.*

1. Introduction

The South African economy is unable to deliver employment for a growing number of would-be workers, especially among the unskilled, and there is a need for state intervention to address this failure and its consequences. The dominant economic paradigm in South Africa places ideological constraints on the range of policy options under consideration, leading to the favouring of public works programmes over other solutions such as direct transfers (e.g. a basic income grant). Given this context, it is critical to assess the potential of public works, and their adequacy as an instrument for addressing the problems of poverty and unemployment. This paper provides a critical review of the evidence base available to policy makers on Public Works, and an assessment of the performance of public works in South Africa since 1996, in response to the question of whether public works can offer a significant response to the South African employment crisis.

1.1 Trends in Unemployment

Structural unemployment and poverty are persistent and growing problems in contemporary South Africa. Unemployment continues to rise, standing at 4.8 million in September 2002, or 30.5% by the official definition, (compared to a broad rate of 41.8%). Lewis (2001) has estimated that even in the most positive growth scenario, after ten years with projected GDP growth of between 4 and 5% per annum, broad unemployment among the semi and unskilled would not fall significantly below 30 per cent (2001: 55). The central challenge is clear; the structure of the South African economy is such that unemployment will not be significantly reduced in the coming decades without major state intervention. This paper focuses on the issue of state intervention to promote employment creation through public works and labour intensification programmes.

Whether conceptualised as a public good,[1] as a requisite for enhanced growth and investment from a purely functional macroeconomic perspective, or as an essentially moral imperative *sui generis*, there is a need to promote increased access to employment, particularly in the light of the strength of the link between unemployment and poverty in South Africa.[2]

[1]Reducing the negative externalities associated with extreme poverty and inequality (Black *et al*, 1999: 50)

[2] This linkage is attested by Leibbrandt and Woolard (2001) and is largely due to the high reliance on wage income and the underdevelopment of the informal and subsistence sectors in South Africa, compared to other developing countries.

1.2 Assumptions Underlying Public Works Programme Impact

In theory public works programmes achieve social development and economic objectives by creating employment through the creation of infrastructure, providing services or improving access to them, stimulating informal and formal sector economic activity and bringing resources into decapitalised areas. Potentially then, public works are an ideal instrument for deploying in the context of the South Africa of the 21st century, and consequently they have enjoyed considerable policy prominence since 1994. Public works programmes have been ascribed increasingly ambitious objectives in recent years, in terms of both scale and range of impacts. However, economic analysis to date, both in South Africa and internationally has focused almost exclusively on the evaluation of public works programmes in terms of the efficiency of transfers under public works programmes, rather than assessing the efficacy of the transfers in terms of direct or indirect microeconomic impact on participating households, and the ability of such programmes to achieve the anticipated impacts in the social, economic and labour market spheres (see for example Haddad & Adato, 2002).

Likewise there is little evidence to confirm the assumed nexus between the poor and the public works programmes. There is frequently an assumption that if wages are correctly set, the transfer will reach the poor, despite the fact that there is little analysis exploring targeting efficiency in terms of whether programme participants are the poorest, or even the poor. Equally, the non-wage benefits accruing to the poor as a result of the assets created under the programme, and improved labour market access as a result of experience and training received in public works programmes, are often assumed, rather than empirically attested.

Assumptions regarding the potential impact of public works programmes risk undermining evidence based and realistic policy making, and the development of distorted policy objectives and expectations related to public works programming. This paper explores the reality of public works programmes in South Africa, in terms of the scale of job creation to date, the fiscal implications of a large scale 'extended' programme, and the potential of such a programme to absorb unemployment. It then goes on to discuss some of the key policy and implementational issues which this debate provokes, with particular reference to the need for appropriate institutions and social development considerations if public works are to have a sustained and large scale impact on livelihoods.

2. The Economic and Policy Rationale for Public Works Programmes

Bassi and Ashenfelter (1997) have identified three primary economic rationales for government intervention in the labour market; i) the reduction of frictional unemployment, ii) the reduction of cyclical unemployment which would operate on and off in response to fluctuations in the unemployment rate, and iii) the alleviation of structural unemployment which is involuntary and persists over the course of the business cycle. In the case of South Africa it is clearly the latter which is the core rationale for intervention. However in South Africa public works programme objectives also include a range of social development objectives which represent a response to the distortions resulting from apartheid labour market policies (and related policies including education, resource distribution etc). The assertion is frequently made that public works programmes will promote livelihoods by enhancing labour market access, reducing poverty and contributing to economic growth.

The heavy reliance placed on public works to deliver significant responses to the critical challenges of poverty, unemployment and growth in the current South African anti-poverty and employment policy discourse invites an exploration of the existing evidence base, in order to inform a realistic assessment of their potential performance in relation to these ambitious targets. The evidence available in South Africa and internationally suggests that in and of themselves, public works programmes do not necessarily draw participants into the labour market, but offer a temporary employment sojourn; they do not necessarily move participants out of poverty, but offer a temporary respite, reducing the depth of poverty during the period of employment, and they do not offer sustainable livelihood improvements without a range of complementary social development interventions. Furthermore it would be incorrect to assume that assets created under public works schemes contribute directly or indirectly to growth and poverty reduction at either local or national levels, unless the assets created or maintained through public works are strategically selected for their benefits to the poor and/or the wider economy, and their construction is given adequate technical management to ensure they are of acceptable and sustainable quality. Moreover the performance of public works programmes in terms of their various social and economic objectives is highly contingent on the institutional context in which they are executed, and the social development process in which they are embedded. Without adequacy in either the institutional or social development context it is unlikely that public works programmes will meet the objectives set out above.

This paper constitutes a review of some of the evidence for public works programming in South Africa. Prior to an examination of the key determinants of public works performance in relation to poverty reduction and livelihoods promotion, the objectives of the national public works programme are reviewed, the scale of current operation of the National Community Based Public Works Programme (CBPWP) examined, the likely employment impact of an investment of R1.2billion in labour intensive public works appraised (as outlined in the 2003 National Budget), and the fiscal implications of an 'extended' programme modelled.

3. The Objectives of Public Works Programmes in South Africa

The clarification and prioritisation of the objectives of a public works programme is critical for successful implementation. These vary according to a range of factors related to the nature of the labour market crisis the programme is designed to alleviate (chronic or acute), the intended beneficiary population (universal or targeted), the timescale of the intervention (long or short term).[3] All public works programmes however have at their core the joint objectives of poverty alleviation and/or poverty reduction, and asset creation, although the weighting of these components varies according to policy priorities. At their simplest public works programmes alleviate poverty through a transfer to increase household income. This benefits the household in two ways; through the transfer itself, and through the stabilisation effect it induces. Generally this transfer does not move participants out of poverty, but relieves poverty by enabling household consumption smoothing, reducing vulnerability to stochastic shocks, and diminishing the size of the poverty gap.[4] Even when transfer benefits are small, income stabilisation can pre-empt acute distress, and in such cases the insurance or 'risk benefit' function of a transfer may be as important as its transfer function.[5] Such poverty alleviation oriented programmes are the simplest to manage, creating jobs and offering a financial transfer in return. Poverty reduction programmes are more complex, typically also including micro-finance and/or training components in order to address sustainable livelihoods issues. Public works programmes are not only driven by poverty

[3] For a discussion of the range of key factors influencing public works design see McCord, 2002: 25.

[4] The Malawi Social Action Fund Public Works programme is a current example of a simple poverty alleviating public works programme which reduces the intensity of the poverty of participants.

[5] Dev (1995) argues that for the large scale Maharashtra Employment Guarantee Scheme in India, the risk benefit is of greater significance in promoting household welfare than the value of the transfer itself.

objectives however, they also address asset creation and maintenance, and differ critically from simple welfare initiatives in this respect. In theory public works programmes match unmet demand for infrastructure creation with excess labour supply, a consideration that is particularly relevant in the South African context given the inequitable distribution of infrastructure under the previous dispensation, and the political commitment to widespread asset provision (housing, rural road construction etc).

The South African National Public Works Programme was originally conceptualised as an instrument for asset and employment creation, on the basis of a two pronged strategy; promoting a community based public works programme, and changing the rules governing the provision of infrastructure to increase labour intensity across all government departments with responsibility for infrastructural delivery, (Adato *et al*, 1999). The latter entailed 'the systematic re-orientation of public sector approaches to infrastructure provision' (NEF, 1994), and was supported by the Construction Industry Development Programme, which was charged with the development and dissemination of best practice guidelines for labour-based construction in pursuit of the same goal. The merits of this approach were recognised in GEAR (1996), which argued that 100,000 new jobs would be created each year through labour intensive responses to infrastructural development and service provision. However, successive policy shifts in the Department of Public Works reduced the relative priority of employment creation through the labour intensification of infrastructure provision, which has only recently been restated as a central policy objective (see for example the Growth and Development Summit, June 2003, and ANC lekgotla, July 2003). The Department of Public Works focused instead on more conventional public works programmes through the Community Based Public Works Programme.[6]

The objectives of the National Public Works Programme set out by the NEF in 1994, are highly complex and comprise; i) create, rehabilitate, and maintain physical assets that serve to meet the basic needs of poor communities and promote broader economic activity; ii) reduce unemployment through the creation of productive jobs; iii) educate and train those on the programme as a means of economic empowerment; iv) build the capacity of communities to manage their own affairs, strengthening local government and other community based institutions, and generating sustainable economic development. These four objectives can be divided into eight primary and three secondary objectives,

[6] Rather than reorienting infrastructural investment throughout the administration, the Department of Public Works contribution to public works has been focused on the administration of the National Public Works Programme, which in 2000/1 represented only 9% of its total budget. (Department of Public Works, 2001).

set out in figure 1. These objectives will be discussed in the light of programme design in section eight.

Figure 1: National public works programme objectives

Primary	*Secondary*
1. Create/ maintain infrastructure	1.1 Meet basic needs of poor communities 1.2 Promote economic activity
2. Reduce unemployment	
3. Create productive jobs	
4. Educate and train workers	4.1 Achieve economic empowerment
5. Build community capacity	
6. Strengthen local government	
7. Strengthen community based institutions	
8. Generate sustainable economic development	

Source: NEF 1994a

Additional functions such as community empowerment, capacity building and transformation have also been added to the public works concept in South Africa.[7] In some instances this plurality of objectives has hindered progress on the primary job creation objective. This multiplicity of objectives led Adato and Haddad to conclude that 'South Africa's public works programmes have been among the most innovative in the world, with multiple objectives that include not only job creation, poverty reduction, and infrastructure development, but simultaneously job training and community capacity building' (2002: 30).

However, while this ambitious set of objectives gives the programme considerable development potential it also entails trade-offs in terms of employment creation. This is illustrated by the performance of the Community Based Public Works Programme which in 2000/1 created only 918 sustainable and 32,587 'non-sustainable'[8] jobs at a cost of R349 million (Department of Public Works, 2001). The conceptualisation of public works programming as a transformational tool, rather than a tool to address the national employment

[7] This range of objectives is included in the strategy of the National Programme for Public Works, Department of Public Works, 1996.

[8] The term 'non-sustainable jobs' has been used in order to differentiate between the two categories of employment generated under the Community Based Public Works Programme, which are recorded as 'jobs' and 'sustainable jobs' (see for example Department of Public Works, 2001)

crisis goes some way to explaining the poor performance and high cost[9] of South African interventions to date.[10] If public works programmes are given additional objectives related to the more diffuse and complex goal of transformation, the primary goal of job creation may be undermined, and the value of the intervention substantially reduced in terms of poverty alleviation and asset creation.

4. The Scale of Public Works Interventions to Date

The Community Based Public Works Programme (CBPWP) is the primary national mechanism for job creation, although there are a range of other public works programmes currently being implemented in South Africa, most of which fall under the national public works programme, known as the Special Public Works Programme[11] (SPWP). With the exception of the Department of Water Affairs' Working for Water programme, which in 2002/3 created between 3 and 4 million workdays, the other programmes under the SPWP are considerably smaller than the CBPWP, and hence this section of the paper focuses exclusively on the performance of the CBPWP as the main national instrument for employment creation. The performance of the CBPWP is measured in terms of the number of 'jobs' and 'sustainable jobs' created (Department of Public Works Annual Reports, 1997-2002). Use of the terms 'jobs created' and 'sustainable jobs created' is however problematic as they have no common definition (see discussion in McCord, 2002)[12], and the term 'workdays created' is preferred in the international literature as an alternative which provides a comparable indicator of performance. Since data on the number of workdays created each year by the CBPWP are not available[13], estimated workdays have been calculated to provide indicative figures for the employment creation

[9] The cost of public works programmes in South Africa is discussed in detail in Adato *et al* (1999) and McCord (2002).

[10] The former Deputy Director of the Department of Public Works explained the low number of jobs created, and high costs in terms of the fact that 'For us [in South Africa]… it's the issue of content as opposed to necessarily scale, because scale does not address the South African problem which is a transformational problem' (quoted in Adato *et al*, 1999: 232).

[11] The following programmes constitute SPWPs under the Ministerial Determination of 2002; Community Based Public Works (CBPWP), Working for Water, Coastal Care, Sustainable Rural Development (DPLG), Landcare, Community Water and Sanitation, and Arts and Culture poverty relief projects. (Department of Labour, 2002a).

[12] The term job created does not give information on the duration or full/part time nature of employment created, and hence renders performance monitoring and comparison problematic.

[13] Interview with de Bruyn, National Poverty Allocation Programme Manager, South African National Treasury 2002.

performance of the programme. Assumptions were made regarding the number of workdays created per 'job' and 'sustainable job'[14], which yielded the results in Table 1 below.

Table 1: Employment generated by the CBPWP (1996/7 to 2001/2)

Year	*Total number of jobs created*	*Total number of sustainable jobs created*	*Total number of workdays created (estimated)*
96/97	n/a	n/a	1,430,000[15]
97/98	13,000	n/a	1,560,000
98/99	29,194	4,154	4,001,760
99/00	15,665	342	1,920,840
00/01	33,505	918	4,437,480
01/02	25,124	527	3,078,120

Source: Own calculations and Department of Public Works Annual Reports 1997 to 2002

Table 1 indicates that there were considerable fluctuations in the performance of the CBPWP over the 1996 to 2002 period, with the total number of 'jobs' created ranging from 13,000 in 1996/7 to a maximum of 33,505 in 2000/1, and the number of 'sustainable' jobs fluctuating from a high of 4,154 in 1998/9 to only 342 in 1999/2000.[16] These figures represent the creation of between 1.4 and 4.4 million workdays per annum under the CBPWP during this period.

In order to assess the significance of this level of job creation it is necessary to compare the scale of employment created under this programme with the scale of the unemployment problem. Table 2 indicates the incidence of official and expanded unemployment during the 1996 to 2001 period, during which time it has risen significantly.

[14] These workdays are indicative only, as data on workdays created under the CBPWP and the average duration of employment is not available for this period. The figures are calculated on the assumption that a 'sustainable' job offers 12 months full time work, less 20 days per annum holiday/public holiday, and a 'non-sustainable' job offers 6 months full time work, less 10 days per annum holiday/public holiday per annum. It is likely that this calculation will err on the side of overestimating the performance of the programme.

[15] This figure is based on actual rather than estimated workdays of workdays created, as reported in the Department of Public Works Annual Report, 1997.

[16] The expansion of employment creation in 2000/01 reflects the policy imperative to increase spending against budget in the programme during this year, following several years of significant underspending (Department of Public Works, 2001).

Table 2: Official and expanded unemployment 1996-2001

Year	*Official*	*Expanded*
1996	2,224,000	4,566,000
1997	2,451,000	5,202,000
1998	3,163,000	5,634,000
1999	3,158,000	5,882,000
2000	4,082,000	6,559,000
2001	4,525,000	7,698,000

Source: Stats SA 2000, 2001, 2002 and 2003

Table 3 illustrates CBPWP performance against unemployment, presenting the number of workdays created under the CBPWP as a percentage of the unemployment figures in Table 2 converted into workdays. It indicates that when examined in the context of unemployment over this period, the workdays created under the CBPWP represent between 0.23 and 0.48% of total official unemployment during 1996/7 and 2001/2, and 0.11 and 0.27% of broad unemployment. If the employment creation achievements of Working for Water and other major public works initiatives were added to these totals, the total percentage of unemployment accounted for by public works programmes would be unlikely to exceed 1% for 2002/3.[17] This suggests that the scale of job creation over this period has been negligible in terms of the magnitude of current employment, and does not offer a significant response to the problem of mass unemployment.[18]

[17] This estimate is based on figures from the CBPWP, Working for Water, the KwaZulu Natal Zibambele programme, and Budlender (2002). The Working for Water Programme created between 3 and 4 million workdays in 2002/3 while the Zibambele Programme created just over 1 million workdays in 2002/3.

[18] A similar level of employment absorption, between 0.65 and 1.25% was found by Adato *et al* in their study of public works programmes in the Western Cape between 1995 and 1997 (Adato *et al,* 1999: 169).

Table 3: CBPWP performance in relation to unemployment, 1996 to 2001

Year	*Total workdays created (million)*	*Total official Unemployment Workdays (million)*	*Workdays created as % of total official unemploy-ment*	*Total broad Unemploy-ment workdays (million)*	*Workdays created as % of total broad unemploy-ment*
96/97	1.4	587	0.24	1,205	0.12
97/98	1.6	647	0.24	1,373	0.11
98/99	4.0	835	0.48	1,487	0.27
99/00	1.9	834	0.23	1,553	0.12
00/01	4.4	1,078	0.41	1,732	0.26
01/02	3.1	1,195	0.26	2,032	0.15

Source: Own calculations and Department of Public Works 1997, 1998, 2001, 2002 and Stats SA 2002

A comparison with the performance of the Employment Guarantee Scheme (MEGS) implemented in the state of Maharashtra in India since 1970 is instructive in reviewing the scale of South African job creation performance.[19] The MEGS was designed initially as a response to an acute problem, but subsequently offered employment on a cyclical basis for those facing chronic unemployment and underemployment, as a result of the structural composition of the rural Indian economy. The objective of the programme was to 'sustain household welfare in the short run, through the provision of employment, and to contribute to the development of the rural economy in the long run through strengthening rural infrastructure' (Dev, 1995: 109). During the 1980s and 1990s more than 100 million workdays were created each year through the scheme, which absorbed between 10 and 30% of total unemployed workdays (Dev, 1995: 113). Employment absorption through public works reached similar levels in the US during the Great Depression of the early 30s, with the employment of 4 million workers out of a total of 12 million unemployed (for a full discussion of the scale of US employment creation see Garraty, 1979). The performance of the Maharashtra and US programmes, highlight the limited achievements of the South African job creation programme to date.

[19] Maharashtra state has a population of 80 million, roughly twice that of South Africa.

5. The Employment Implications of Increased Expenditure on Job Creation

Given the policy prominence recently afforded to increased expenditure on public works, the impact of increased expenditure on job creation performance is discussed below. As part of the expansion of the public works programme an allocation of R1.2billion over three years was initiated in 2003/4 for labour intensive infrastructure construction, under the Construction of Municipal Infrastructure Programme. Estimating the employment impact of such expenditure is problematic given the limited data available. However, indicative estimates of the employment impact have been modelled using three methods which draw on the evidence available; one based on current performance of the CBPWP, one based on a simulation using NEF performance norms from 1992 to 1998, and one extrapolating from employment creation estimates developed by the construction industry.

A crude estimate of the employment impact of this expenditure may be made by extrapolating from the performance of the CBPWP, which created 25,000 'jobs', or approximately 3 million workdays in 2001/02 with a budget of R374 million. Assuming that job creation performance continues at current costs under the labour intensive allocation, the three year disbursement of R1.2bn between 2003/4 and 2005/6 is likely to create an additional 25,000 temporary 'jobs' each year, or 3 million workdays per annum, totalling 9 million workdays over the three year period, and absorbing approximately 0.26% of unemployed workdays per annum.

To model the impact of a R1.2bn allocation on employment in more detail, a simple simulation may be used, in which different scenarios can be simulated by altering the amount of workdays offered per 'job', and the material cost as a percentage of total cost. The wage has been set at R35 per day[20], the distribution of costs between management, administration and workers has been taken from the NEF public works programme for the period 1992 to 1998[21], and it has been assumed that annual expenditure is phased incrementally (see appendices 1 to 4 for the simulations). Under a full time scenario[22] the total number of jobs for workers created per annum would rise to between 35,000 and 52,000 after three years, depending on material cost as a proportion of total cost[23], representing the

[20] R35 is taken as a typical public works daily wage, following Budlender 2002.
[21] The NEF costings are taken from the Department of Labour 1999.
[22] Assuming 22 workdays/month.
[23] The higher figure assumes only 10% of total expenditure being allocated to materials, as would be the case in rubbish collection, social work programmes (Adato *et al*, 1999) or in rural road maintenance programmes such as Zibambele in KwaZulu Natal (McCord, 2002), while the lower figure is based on the average material cost expenditure for a wide range of

creation of a total of between 19 and 28 million workdays over the period. Under a part time scenario, offering ten workdays per month, the figure would rise to between 69,000 and 103,000 thousand jobs per annum after three years, or a total employment creation over the period of between 17 and 25million workdays.[24] Since the R1.2 billion is to be focussed in the construction sector, where material costs are significant, job creation levels at the lower end of this range are most likely, i.e. 35,000 full or 69,000 part time 'jobs' per annum by the end of the three year expenditure period, totalling approximately 18 million workdays. It is interesting to note that even the lower bounds of the employment creation estimates under this simulation are more positive than extrapolations based on existing CBPWP performance. However, the data on which both sets of figures are based are problematic, and these results can only provide indicative estimates of the level of employment likely to accrue from an expenditure of R1.2bn.

The impact of R1.2bn allocation can also be assessed using job creation estimates developed within the construction sector for labour intensive construction. Job creation through increased labour intensity in the civil engineering sector was outlined in the National Public Works Programme (NEF, 1994a), and was to be promoted through changed rules governing state expenditure on asset creation and maintenance. This approach has few international precedents and is significantly more ambitious than the project-based approach, with the goal of 'fundamentally changing the way in which publicly funded infrastructure is built so that employment and skills transfer are maximised for the unemployed' (Phillips *et al*, 1995: 23).

Formal economic modelling of the job creation impact of the labour intensification of the civil construction sector is required to assess the potential employment impact of this approach. This would require an analysis of line ministry construction budgets at all levels, to identify the proportion of expenditure eligible for labour intensification, and then an assessment of the degree of labour absorption likely to occur in each sub-sector if labour intensive methods were used using the employment ratios calculated by McCutcheon (2003). On this basis the potential employment gains from this level of investment could be modelled. This is a critical area for further work, as

---

public works projects as a percentage of total job creation expenditure under the NEF programme 1992-8, representing 40% of total expenditure (Department of Labour, 1999).

[24] The diminution in the total number of workdays created in the part time scenario is due to the fact that the management and supervision costs per worker in the simulation remain constant, whether a part of full time scenario is modelled, underestimating the cost of management in the case of the full time scenario, and overestimating it in the part time scenario. This problem is an artefact of the NEF public works data on which the simulation is based, as the NEF costings provided only mean management and administrative costs (Department of Labour, 1999).

significantly modifying existing capital/labour ratios within the civil engineering sector requires robust estimates of the employment gains likely to result, particularly in the light of the reluctance of the sector to implement significant shifts in factor intensity (Mabilo, 2003).

In the absence of such detailed analysis it is possible to extrapolate from existing research by McCutcheon, Croswell and Taylor Parkins to gain a third indicative estimate of the potential job creation impact of a R1.2bn allocation.[25] On the basis of labour intensive employment creation norms for the transport sector used by Croswell and McCutcheon (2001) it is possible to infer that the allocation of R1.2bn for labour intensive construction under the LICM would lead to the creation of up to 12,000 'jobs' per annum over the three year period, although the duration of these jobs can not be stated. This would translate into between four and ten million workdays over three years, depending on full or part time nature of employment created.

Hence the CBPWP extrapolation from existing performance suggests that a R1.2bn investment would create a total of nine million workdays over three years, construction industry estimates suggest between four and ten million workdays, and the simulation exercise, based on NEF cost ratios and current payment levels, 18 million workdays. On the basis of these three approaches, the annual employment created ranges from between 1.5 to 6 million workdays, which represents between 0.13% and 0.5% of total unemployed workdays. While this would confer employment opportunities for programme participants, the overall impact on the performance of the labour market, and unemployment in South Africa of a R1.2bn investment in labour intensive public works over three years would not be significant. The level of expenditure represented by an employment creation allocation of this order (approximately R400 million per annum) is less than 1% of the annual social security and welfare budget.[26]

These findings question whether the expectations of proposed job creation programmes are realistic, in terms of reducing poverty, creating sustainable jobs,

[25] The amount of employment generated by shifting government expenditure from capital to labour intensive methods has been subject to extensive technical analysis by McCutcheon, and others (see for example Phillips *et al*, 1995; McCutcheon 2001a and 2001b; Croswell and McCutcheon, 2001; McCutcheon and Taylor Parkins, 2003). McCutcheon argues that labour intensive methods of construction and maintenance have the potential to increase employment generated per unit of expenditure by between 300 and 700% in certain civil engineering sub sectors, such as rural road reconstruction and conveyances. He argues that this may be achieved without compromising cost, quality or time, conditional on adequate skills and institutional capacity development. Using this analysis Croswell and McCutcheon (2001) argue that for an annual expenditure of R15.2 billion in transport infrastructure 460,000 jobs would be created using labour intensive methods.

[26] The 2004/5 social security and welfare budget is projected to be R46 billion (National Treasury, 2002).

improving training and stimulating economic growth, given the proposed level of investment. It is interesting to note that expenditure of R400 million per annum on employment creation represents 0.1% of total government expenditure, [27] while during the employment crisis of the early 1930s, expenditure on public works programmes rose to a maximum of 15.8% of government expenditure (Abedian & Standish, 1985: 75) through a range of large scale government schemes.

6. The Fiscal Implications of 'Extended' Employment Creation

While public works programmes to date have had limited impact in terms of reducing unemployment, current policy discussion is focusing on the role of 'extended' public works as a key instrument to address unemployment and poverty in South Africa, as illustrated in the extract from the report on the July 2003 Cabinet lekgotla below;

> 'Preparatory work has been done in identifying projects for an extended Public Works Programme, both as an instrument of poverty alleviation and a basis for skills development. This programme, cabinet said, is critical for **the inclusion of a great number of South Africans –** many of whom have little possibility for immediate absorption into the formal economy – **in income-generating activity from which they are also able to acquire skills**' (Report on the Cabinet lekgotla, July 2003, ANC Today).

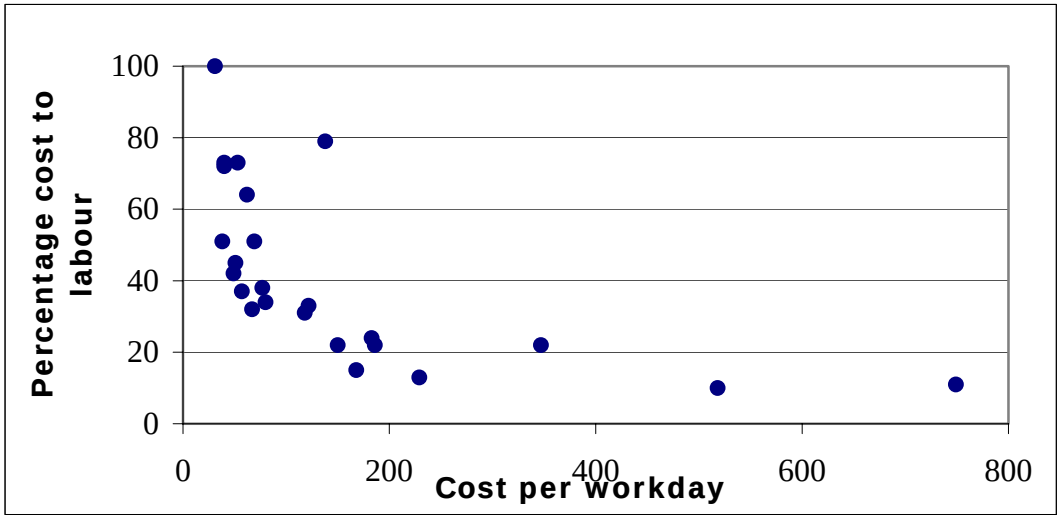
If an extended public works programme is to bring about 'the inclusion of a great number of South Africans … in income generating activity from which they are also able to acquire skills' it is pertinent to examine the fiscal implications of a programme large enough to include a significant number of participants.

In order to estimate the cost to the fiscus of creating a given number of workdays, assumptions must be made regarding the unit cost of each workday created, and the percentage of the total cost allocated to low skilled wages. However these figures vary widely, as illustrated by the findings of Adato *et al*

[27] Government expenditure is projected to total R334 billion in 2003/4 (National Treasury, 2002).

(1999) in the case of the Western Cape.[28] These are reproduced below in Figure 2.

Figure 2: Cost per workday and labour as a percentage of total cost for public works programmes in the Western Cape 1995 to 1997



Source: Derived from Adato et al, 1999: 200

The most efficient programmes, in terms of jobs created per unit of investment, with low cost per workday and a high percentage of total cost transferred as wages, fall in the upper left hand quadrant of Figure 2. The range of percentage of cost accruing to labour varied between 11%-22% for programmes relating to the creation of transport infrastructure, to almost 100% in the case of recreation ground maintenance, at a cost per workday which varied from R31 to R740.[29] These findings confirm analysis at a national level by the National Economic Forum (1994b) which found that simple projects and small scale agriculture related infrastructure entailed a 40-80% spend on labour, compared to spends of as little as 5-15% of total cost for water reticulation, storm water, sanitation, roads and railways projects (quoted in Adato *et al* 1999: 201). This indicates that the percentage of workday creation cost allocated to labour varies according to the capital intensity of the sector, and that the creation of socially desirable infrastructure may not necessarily entail maximum labour absorption, highlighting the potential trade off between the number of jobs created per unit spend, and the nature of the asset created.

[28] Adato *et al*'s 1999 study included seven public works programmes and 101 individual projects in the Western Cape between 1995 and 1997, and is the most extensive study of public works programme performance in South Africa to date.

[29] These figures are actual costs, weighted by the amount of employment generated, not current prices, and are of significance in terms of their range, rather than their rand values.

For many public works programmes in South Africa however, data about the structure of employment created, the number of workdays created, and the wage level are not available[30], and hence the proportion of programme cost allocated to wage transfer and management/materials cannot be calculated in this way. This makes analysis of the cost effectiveness of public works programmes and programme comparisons problematic.

In the light of this the annual cost of creating full and part time employment for 200,000 and 3,200,000 workers is modelled below, based on a series of assumptions regarding the wage rate and the percentage of total costs spent on wage labour, at a wage of R35 a day.[31] The 200,000 scenario represents an expansion of current job creation performance, while the 3.2 million scenario updates the Taylor Commission estimate of the number of unemployed workers living in workerless households spending below R800 per month (Meth & Dias, 2003), and represents a significant level of inclusion in line with the policy aspirations outlined above. The full time work model is based on twenty two working days/month, or 264 working days/annum, and represents a R770 monthly wage transfer to participants. The part time model is based on ten working days/month, 120 working days/annum, a monthly transfer of R350. In both sets of calculations the estimates are bounded by a high (80%) and low (48%) share of expenditure to wages. The 80% figure is likely to occur in an efficient project with limited material costs (such as rubbish collection, social support or access road maintenance), while the 48% figure represents the average share of expenditure to wages under the National Economic Forum (NEF) public works programmes from 1992 to 1998 (Department of Labour, 1999).[32] Table 4 summarises the budgetary implications of large scale job creation under the different scenarios outlined above, for 200,000 and 3.2 million workers.

The cost of creating full time employment for 200,000 workers (52.8 million workdays) for one year would range between R2.31 and R3.85bn, while for 3.2 million workers (844.8 million workdays) it would be between R36.96 and R61.6bn at 2002/3 wage levels, depending on the percentage of total cost allocated to wage. The cost of creating part time employment for 200,000 workers (24.0 million workdays) would range between R1.05 and R1.75bn,

[30] Interview with de Bruyn, National Poverty Allocation, South African National Treasury, 2002.

[31] R35 is a typical public works daily wage conforming to the mean wage offered under the Working for Water programme, (Budlender, 2002), and the KwaZulu Natal Department of Transport's Zibambele programme wage (McCord, 2002).

[32] By comparison during the 1980s and early 1990s the average percentage of the Maharashtra Employment Guarantee Scheme paid as workers wages was 73% (Dev, 1995).

while for 3.2 million workers (384.0 million workdays) it would be between R16.80bn and R28.00bn.[33]

Table 4: Cost to the fiscus of creating large-scale employment through project-based public works (at 2002 prices)

	Full time number of workdays (million)	*Cost (R billion)*	*Part time number of workdays*	*Cost (R billion)*
200,000 jobs				
48% share to wages	52.8 million	R3.85bn	24.0 million	R1.75bn
80% share to wages	52.8 million	R2.31bn	24.0 million	R1.05bn
3,200,000 jobs				
48% share to wages	844.8 million	R61.60bn	384.0 million	R28.00bn
80% share to wages	844.8 million	R36.96bn	384.0 million	R16.80bn

Total annual unemployment in South Africa was 1.28bn or 2.09bn workdays in 2002[34], depending on whether the official or expanded unemployment figures are used. By comparing the amount of workdays created under the scenarios outlined above to these unemployed workday totals it is possible to calculate the proportion of unemployment which would be absorbed, see Table 5 below.

A part time public works programme for 3.2 million workers would absorb 18% of official, or 30% of broad unemployed workdays, at a cost of between R16.8 and R28bn, depending on the cost structure of the jobs created. A full time

[33] It should be noted that the lower cost bound is premised on the average percentage allocation to wage of a programme comprising a variety of project interventions. If a programme were to focus exclusively on one kind of project, for example labour intensive construction, the percentage of wage to total cost would be lower, and the costs of an extended programme commensurately higher.

[34] Calculated on the basis of 264 workdays or work per annum, multiplied by total unemployment.

programme would absorb 40% or 66% respectively, at a cost of between R36.96 and R61.6bn.[35]

Table 5: Large scale public works unemployment absorption capacity 2002/3 (%)

	Number of unemployed (million)	*Total unemployed workdays (million)*	*3.2m jobs (part time) workdays created (million)*	*Percentage of unemployed workdays absorbed*	*Cost range (R billion)*
Expanded	7.9	2,092.2	384.0	18%	16.8-28.0
Official	4.8	1,277.0	384.0	30%	16.8-28.0
			3.2m jobs (full time) workdays created (million)		
Expanded	7.9	2,092.2	844.8	40%	36.96-61.60
Official	4.8	1,277.0	844.8	66%	36.96-61.60

Hence a large scale public works programme could theoretically have a significant impact on reducing unemployment, if a sufficiently large allocation from the fiscus were made. An allocation of between 5 to 8% of total 2003/4 government expenditure would be required for the part time option, and between 11-18% for the full time option, for 3.2 million workers. This level of expenditure compares to the 15.8% budget allocation to employment creation during the height of the unemployment crisis of the early 1930s (Abedian & Standish, 1986).[36] It is important to note that the annual draw down on the fiscus to create this scale of employment represents a significant figure when compared to the social security and welfare budget allocation of approximately R46bn for 2004/5 (National Treasury, 2002). The draw down would be of a similar order to the net amount required for the provision of a universal basic income grant (Le Roux, 2002; Samson 2002), and hence give rise to the same

[35] The inclusion of both the official and broad unemployment figures in this analysis does not imply any judgement regarding which sections of the unemployed should be targeted in public works programmes (e.g. the searching unemployed or the discouraged); the two figures have been used for indicative cost estimate purposes only. The issue of targeting is discussed in detail in section 8.4 below.

[36] The response to the problem of this depression focused almost exclusively on the provision of employment and relief for 'Poor Whites', estimated to number approximately 300,000 (Standish & Abedian, 1986).

concerns regarding the potentially negative fiscal shock (see Bhorat, 2003 and Thurlow, 2002, for a discussion of these concerns).

Regardless of the fiscal feasibility of such a programme however, these estimates are subject to serious institutional capacity constraints which could also undermine the feasibility of large scale employment creation, given the current limited performance levels of the CBPWP. These institutional constraints are discussed below.

7. Institutional Constraints to Large Scale Employment Creation

Success in the implementation of an expanded public works programme is conditional on overcoming three key institutional constraints:

- Institutional capacity and project management skills at government and community and levels;
- Incentives for provincial ministries to use labour intensive techniques, and also
- Skills in the construction industry in labour intensive construction.

Key institutional capacity constraints in the public sector and within communities comprise; lack of project management expertise, lack of norms for processes or procedures, inconsistencies between projects (wage, terms of employment etc), duplication of effort by different line ministries, lack of efficiencies of scale, lack of social development expertise, limited community participation, and the lack of credible Integrated Development Plans to guide strategic asset selection and promote departmental coordination. These problems may be characterised as the lack of a strategic or programme approach to public works, which results in a multiplicity of individual project based interventions. Given the scarcity of management capacity, this multiplicity of small projects is particularly inefficient, and constrains overall employment creation performance. This contributes to an inability to spend funds allocated to employment creation due to difficulties in identifying and implementing appropriate projects, and results in a sub-optimal outcome in terms of employment created per unit of expenditure. This problem is exacerbated by the short time scales of many projects, which entail high set up costs, (recruitment, training, development of procedures etc), and subsequently fail to realise the benefits of operating at the maximum efficient level.[37]

[37] McCutcheon argues that overheads are high during the initial start up phase, but fall significantly once the programme is established, citing experience from the Kenya public

In the absence of credible incentives for the private sector to tender on a labour intensive basis, it is unlikely that major shifts in the factor intensity of infrastructure provision will occur. [38] Despite evidence presented by McCutcheon and others that labour intensive construction can be competitive with conventional capital intensive construction in selected sub-sectors (see for example McCutcheon & Taylor Parkins, 2003), a high degree of scepticism persists within the civil engineering sector regarding labour intensity. A recent study of stakeholder perspectives on labour intensification found that there was a reluctance to 'alter an already optimal production function' or to take what was perceived as a 'backwards step', promoting ' "enslavement" versus cheaper and more efficient alternatives' (Mabilo, 2003: 17). Mabilo also notes that an industry stakeholder argues that construction 'should not be seen as the means to employment creation, but an end, and that employment opportunities are generated by the provision of the infrastructure itself through the widening and deepening of capital within the region served by the road', arguing that this effect 'overshadows the opportunities created by the road building and maintenance activities', assuming that the road as an asset will itself engender growth and employment. The stakeholder also recognises the complexity of intervention in the social development sphere, arguing that in a situation of 'extremely complex social fabric … allocations of employment… are subject to tacit rules that militate against the sustainability and of employment opportunities and other employment objectives'. This concern regarding the incorporation of a social development agenda into the construction work plan may represent an additional disincentive to increased labour intensification.

One key reason for the scepticism within the industry is the lack of skills and experience in labour intensive construction. Despite initiatives such as the training carried out under the auspices of the Research Centre for Employment Creation in Construction [39], the Limpopo Roads Authority's Gundo Lashu programme which is explicitly focussed on developing consultant and contractor skills in labour intensive road construction, or the development of SETA-accredited training in labour intensive techniques, skills in this area remain limited. McCutcheon and Taylor Parkins (2003) argue that if infrastructure provision is to be delivered efficiently using labour intensive methods, training in labour intensive construction is critical at all levels of management, from consultants to contractors, site supervisors and community liaison staff. The lack of skilled personnel in the sector is likely to cause a serious bottle-neck in the

works programme which suffered an initial 84:16 ratio of overheads to direct construction costs during its first three years (1974-76), which subsequently reversed to a 16:84 ratio.

[38] Mabilo (2003) highlights a credibility problem arising from the limited implementation of previous government procurement reform policies and incentives at various levels of government.

[39] This Research Centre functions within the University of the Witwatersrand School of Engineering.

expanded provision of employment through labour intensification of infrastructure provision, and possibly to undermine the quality and labour absorptive potential of this work.

8. Microeconomic and Institutional Challenges to the Realisation of Policy Objectives

As discussed above the assumption is frequently made that the execution of public works programmes will *sui generis* deliver the wide range of objectives set out in figure 1 above, encompassing employment creation, poverty reduction, asset creation and community empowerment, which may be viewed within the broad framework of the promoting livelihoods. However, achievement of these objectives is contingent on programme design, institutional capacity, and most importantly the addition of social development considerations to otherwise essentially technical or administratively conceived and executed projects. In this section the key policy choices and institutional factors that impact on the ability of public works programmes to attain these objectives are examined.

8.1 The Livelihoods Impact of Public Works

The sustainable poverty reduction component of public works may be conceptualised in terms of promoting the livelihoods of participants. Devereux has identified three routes for the transmission of a benefit from income transfer for improved livelihoods; the promotion of trade based, production based or labour based entitlements (2000: 3). Trade based entitlements promotion would occur through the purchase of food, production based through investment in food crop farming, and labour based entitlements through the use of income as working capital to increase profits from informal activities such as petty trading. The critical factor however, constraining achievements under these three sets of entitlements is the value of the income transferred, which is mediated through the wage rate and the duration of the transfer. Achievement of livelihoods benefits is also affected by to whom benefits are conferred, which is determined by the targeting and rationing of jobs created, by access to training and microfinance, and finally by the nature of the assets created. Each of these factors will be examined briefly below, and the main challenges identified.

8.2 Employment Duration

In South Africa public works programmes, known as Special Public Works Programmes (SPWP), are defined as 'a short-term, non-permanent, labour intensive programme initiated by government and funded, either fully or partially, from public resources to create a public asset' (Department of Labour, 2002a). Many programmes offer employment for between one and four months, and an explicit condition of the Special Public Works Programmes (SPWP) is that 'no person may be employed for more than 24-months (*sic*) within a 5-year (*sic*.) cycle' (Department of Labour, 2002b: 3). Hence the length of employment offered under a public works programme is legislatively controlled in order to provide as many people as possible with the opportunity to participate in the programme (*ibid*.), a tacit acknowledgement that demand for employment will exceed supply, and that rationing will be required.

The duration of the employment offered however, is critical in terms of the ability of participation in a programme to have a sustained impact on poverty. By definition, short term employment will limit the total transfer received by a participant, typically in the case of a five week infrastructure rehabilitation project in the Western Cape the total transfer would be R1,225[40], or in the case of three months of road construction employment in Limpopo R1,800 (McCord, forthcoming). This transfer will temporarily increase household income during the employment period, but is unlikely to have a significant poverty reduction impact sustained beyond this period, or affect the realisation of the entitlements which constitute improvements in livelihoods.[41] This assertion is consistent with economic theory, which would suggest that a temporary income shock will not impact significantly on livelihoods and is corroborated by anecdotal evidence on the impact of public works programmes in South Africa, although empirical data on the relative impacts of short and longer term employment is not yet available.

As important as the total amount of the income transfer generated by public works programmes, is the stabilisation effect of a transfer on the income of the poor, and the extent to which this enables consumption smoothing, reducing vulnerability to shocks. This stabilisation effect is contingent on the length of the period over which employment is offered, and is a consequence of sustained employment, provided either through a medium to long term public works programme, or through cyclical employment provision at times of minimum labour market demand. In the case of the Maharashtra Employment Guarantee

[40] This would be the typical remuneration for employment on a labour intensive infrastructure rehabilitation project, personal communication with D. Jooste, of the Provincial Administration of the Western Cape, January 2003.

[41] The exception to this would be a temporary in crease in trade based entitlements, relating to the purchase of food etc.

Scheme (MEGS) Dev has argued that it is the stabilisation effect rather than the immediate transfer which has the most significant impact on sustained poverty reduction, stating that 'reducing fluctuations in income can be as important to the poor as raising average incomes' and that 'Reduction in income fluctuations can prevent acute distress to the poor and preclude the need for costly forms of adjustment, such as selling productive assets' (1995: 126, 136). He goes on to assert that 'even if the increase in income is not very large compared with the aggregate need, the existence of any form of income/employment insurance could be quite significant'. Evidence from the MEGS suggests that the insurance benefits that result from prolonged or guaranteed employment at times of insufficient labour market demand are significant to the poor, and Walker and Ryan (1990) argue that the risk benefit of a public works wage serves to increase and stabilise consumption expenditure across time, suggesting that this may do more to raise food consumption than efforts to enhance income *per se*.

Hence the insurance function is as important as the amount of the transfer itself. However a public works programme can only have an insurance function if employment can be obtained easily, or is available on a sustained basis as an ongoing and regular income source. The concept of public works performing a social insurance function is problematic under South African conditions, given the structural and mass nature of unemployment[42], which would lead to a blurring of the distinction between public works and a social grant (for a detailed discussion of this problem see Meth, Shipman & Naidoo, 1996). However, this insight regarding programme duration nonetheless offers a challenge to the legislative rationale and programme development norms in situations where programme duration is limited by legislation, as in South Africa. It also has implications for the importance of the seasonal provision of employment through public works programmes; if an intervention is to be short term, it should be counter cyclical in terms of local labour demand, in order to offer employment at the times when households are most vulnerable and hence maximise stabilisation benefits.

The focus on part time asset maintenance, rather than creation, is one appropriate option for sustained employment creation, the other alternative being a 'shelf' of pre-planned projects identified at district level, which are implemented counter-cyclically on a continued basis if required, as labour demand fluctuates. This 'shelf' model forms the basis for the MEGS, but is

[42] This is explained by Barr, 'Private insurance requires, first, that the probability of the insured event for any individual is independent of that for anyone else. This condition is necessary because insurance depends on the existence in a given period of a predictable number of winners and losers. If, in the extreme, individual probabilities are completely linked, then if one person suffers a loss so does everyone else. Thus actuarial insurance can cope with *individual* shocks but not with *common* or *systemic* shock (1998 p114).

more complex to administer than a simpler part-time maintenance programme, and presupposes the prior selection of a raft of strategic asset creation projects at local level. The Zibambele labour intensive road maintenance programme in KwaZulu Natal, which currently employs 14,000 workers, is an example of a programme designed to provide a low level, but sustained income transfer (R350 a month, on the basis of 8 days employment), offering the stabilisation benefits discussed above.[43]

One other assumption underlying public works rhetoric in South Africa is that participation in a programme will offer experiential and formal training which will facilitate future absorption into the labour market. However, this supply side orientation does not take into consideration the limited demand for labour in the context of mass unemployment, and it is likely that the shorter the duration of employment, the less likely training or experience is to impact on future labour market success. With reference to the Western Cape, Adato and Haddad concede the tension between skills development and short term employment arguing that 'given some projects last as little as three months and developing marketable skills take longer than this, there is a trade off that must be faced' (2002: 28).

Given the structural and hence chronic nature of unemployment in South Africa, and the continued inability of the labour market to create sustainable employment, many workers return to the unemployed labour pool after completing work in short term public works projects, rather than being absorbed into the labour market (Department of Water Affairs, 2003). The implementation of multiple short term projects may therefore serve only to churn the unemployed, replacing one cohort of the unemployed with another in short term employment projects, and removing them temporarily from the pool of unemployed labour, rather than addressing either the underlying problem of unemployment, or having a significant or sustained impact on livelihoods. Given the critical relationship between the duration of an income shock and its impact, it is unlikely that under short term project there will be a significant multiplier effect or stimulation of informal income generating activity (this is explored further in section 8.7 below). In this context prolonged public works schemes are needed that will offer sustained employment, in order to address the fundamental objective of poverty reduction.

[43] See McCord (2002) for a more detailed analysis of the transfer efficacy and implementation of the Zibambele programme, implemented by the KwaZulu Natal Department of Transport.

8.3 Wage Level

Together with the duration of employment, the wage level in a public works programme is critical in determining the use of the transfer received, and hence its impact on livelihoods.

Devereux (2000) argues that the poor use incremental income to satisfy basic consumption needs first, then invest in human capital (education and health) and social capital, and only then to invest in income generating activities and seeds. In this way the public works wage only impacts on productive investment if it is large enough to cover consumption needs; 'high value transfers are associated with higher propensities to invest in agriculture, social capital, (including in financial assistance to relatives), education and acquisition of productive assets' *(ibid.*: 4). Low value transfers by contrast, are mainly consumed, in the form of food and clothes.

Similar conclusions maybe drawn from recent evidence from Malawi, where investment in income generating activities using income from public works programmes ceased following drought related price rises.[44] This is also confirmed by evidence from recent surveys in Limpopo and KwaZulu Natal (McCord, forthcoming). Devereux summarises this analysis by arguing that whereas 'tiny transfers have tiny impacts… moderate transfers can have major impacts', (2000: 5) a finding also echoed by Dev in relation to the MEGS (1995).

However, the payment of 'moderate' rather than 'tiny' transfers may imply the payment of a wage above the prevailing market wage. This can have three adverse effects. The first is the simple trade off between coverage and impact (this is discussed in detail in Devereux, 2000: 127); given a budget constraint, a higher wage implies fewer participants and greater rationing of employment opportunities. The second is the danger of distorting local labour markets if the wage offered is above the prevailing market wage, possibly attracting workers out of alternative employment and also creating expectations for levels of remuneration for future projects, (the tension arising from this problem is discussed with reference to the Western Cape in Adato *et al*, 1999).

It is the third and related effect which is arguably the most important; wages perform a rationing function and must be set at or below the prevailing wage in order to ensure that self-targeting will occur and prevent the leakage of jobs to the non-poor. Devereux argues that if the wage is set above the prevailing wage

[44] Interview with Malawi Social Fund public works programme participants in Lilongwe, by Sultan and McCord, June 2003.

there is a risk that 'the desperately poor are excluded by those whose poverty is less severe' (130), and he goes on to argue that depending on how the wage is set, public works programmes may be 'seen as a lucrative employment opportunity by virtually all local residents' rendering it difficult to select participants on the basis of genuine need.

However, in the context of massive unemployment, demand for employment exceeds availability among the poor and non-poor alike (and among the more and less poor), and the rationing function of the public works wage is unlikely to be an adequate instrument for ensuring that work is targeted to the poorest, even if set at the prevailing wage. Hence setting the wage at the prevailing wage rate is a necessary, but not sufficient condition for reducing leakage under conditions of mass unemployment. There is a need for additional interventions to ensure a less crude form of rationing access to jobs. Using wage alone as a targeting mechanism risks either including the non-poorest, if set too high, or making a transfer which is of such limited value that it fails to address any but the most basic short term consumption (poverty alleviation) needs of participants, giving only a temporary boost to the trade based aspect of livelihoods, it set too low.

Interestingly, research by McCutcheon (2003) on public works wage setting in two public works case studies, suggests that whether the public works wages are set at the minimum wage, as in the Zibambele programme in KwaZulu Natal, or below, on the basis of the exemptions negotiated under the terms of SPWP (Department of Labour, 2000b), as in the Gundo Lashu programme in Limpopo, both programmes are *de facto* providing wage rates which are in excess of the prevailing wage rates among the lowest deciles. Adato *et al* by contrast found that 79% of the projects in the Western Cape set wages below the comparable district wage (1999: 173). The implication of this finding is that there may be a need to develop location specific public works wage schedules, in order to offer public works wages which correspond to the prevailing wage.

8.4 Targeting

Women, youth and the disabled are the official targets for public works programmes, with the objective being the recruitment of 60% women, 20% youth aged between 18 to 25 years, and 2% disabled (Department of Labour, 2002b). However, the social development discourse suggests that transfers received by women tend to deliver greater human and social capital benefits to households than those received by men. This supposition is supported with reference to South Africa by Duflo (1999), who found that the welfare impact of pensions received by women had a significantly greater impact on household

welfare than those received by men, and also by focus group discussions conducted among public works programme participants in Limpopo[45] where female participants argued that public works wage transfers received by men (and youth) had a more limited impact on household welfare than those received by women (McCord, forthcoming). This challenges the limited participation target for women (60%), given the objective of the poverty reduction, and highlights the tension inherent in the multiple objectives ascribed to the South African public works programme. The explicit targeting of the disabled in the programme is also problematic in terms of economic efficiency, as the as the disabled are already eligible for a transfer under the existing social safety net. The double inclusion of one group within a social safety net which is already highly exclusive, in the context of severe job rationing may not be the most effective way to allocate scarce social protection resources.

Some programmes have recognised these problems, and developed an alternative targeting protocol in response to the perceived incidence of poverty in their programme areas; the Zibambele programme in KwaZulu Natal explicitly prioritises female headed households, and more than 95% of its participants are women. At a national level however targeting remains a critical and unresolved issue given the massive excess demand for employment and transfers.[46]

Targeting performance is also problematic, particularly in programmes in the civil engineering sector, which are technically focused and may have only limited capacity in terms of social development. Under these conditions there is a risk that targeting performance may be poor, with employment being offered to work-seekers, irrespective of their degree of social or economic impoverishment, or conformity with official targeting criteria (McCord, forthcoming). In the light of these problems it may be appropriate to replace the existing broad targeting criteria with alternatives which explicitly focus on poverty.

[45] The reduced household welfare benefits accruing to households where youth and males were the public works programme participants was argued by female participants in the Gundo Lashu ILO/DFID funded Limpopo Roads Authority public works programme in during focus group discussions in Sekhukhune, Limpopo, McCord, April 2003.

[46] It is also important to note however that public works programmes by definition may exclude many of the poorest. Since households with limited labour resources are frequently among the poorest, and that the physically infirm or disabled are in many instances de facto excluded from participation in largely physical public works programmes, the appropriateness of public works as a primary safety net for the poor is open to question. The poorest households, especially female or child-headed households, may not have an adult who is able to work, particularly given the incidence of HIV/AIDS. These households are thereby excluded from the benefits of participation in public works programming. For this reason, among others, it is problematic to posit public works programmes as an alternative to social safety net responses to poverty in South Africa, such as a basic income grant.

8.5 Rationing

As discussed above, the wage rate tends to be the primary mechanism for targeting in public works programmes, on the assumption that this will lead to effective self-targeting. However, rationing through wage-rate mediated self targeting is inadequate when there is excess demand for employment. Devereux argues that 'self-targeting in Zambia's cash for work programme was undermined by the massive scale of rural poverty (estimated at 86%)' (2000: 3). Given the non-urban unemployment rate exceeds 50% in South Africa, and the probable existence of 3.4 million unemployed within the poorest three deciles (Meth, 2003), a similar scenario is highly likely in South Africa.

Setting wages at or below market levels is then a necessary but not sufficient tool for the targeting of employment. Given the severe unemployment levels prevalent in South Africa, the self-targeting function of wage setting may not be adequate to ensure efficient rationing of the extremely limited number of jobs created in employment creation schemes. The assumption in the development of the South African public works programmes was that if 'minimum earnings' were offered, this would 'ensure that jobs go to the poorest of the poor and are not 'hi-jacked 'by the not so-poor' and that this would remove political pressure at the project level, (NEF Targeting Focus Group, 1994, quoted in Adato & Haddad, 2002: 22). However, the scale of unemployment has challenged these assumptions. Jobs represent a scarce resource, and without clear policy guidance on selection criteria or processes, evidence from the social development discourse suggests that it is likely that socio-economic power inequities or the existence of political divisions within communities may lead to the exclusion of the poorest from participation.

Frequently a combination of lottery and community selection techniques are used to ration access to employment, often using criteria of unemployment and poverty (Adato & Haddad, 2002), although a recent survey indicated that based on these techniques up to 30% of the workers recruited by Working for Water (WFW) may have been drawn from the pool of employed rather than unemployed labour market participants (Department for Water Affairs, 2003).

There is a need for both social development inputs and community participation to inform selection procedures if the 'poorest' are to be targeted as anticipated during the rationing process. The technical experts who are frequently responsible for the implementation of public works programmes are unlikely to be skilled in social development or facilitation, and may favour lottery methods or the allocation of employment on a first come first served basis. This is particularly likely when recruitment has been subcontracted to the private sector,

since community participation or the use of poverty or other eligibility criteria represent a cost, and demands skills which may not be readily available. If the community were uniformly poor then this method of employment would be appropriate, but given the differing depths of poverty experienced within communities and the objective of targeting the poorest, a more development-oriented approach is required in order to reach 'the poorest' and reduce leakage.

8.6 Training

'The empowerment of individuals and communities engaged in SPWP through the provision of training' is one of the explicit objectives of the SPWP (Department of Labour, 2002). Under the conditions of the SPWP a minimum of 2 days training should be provided for every 22 days worked, which should incorporate i) life, ii) functional and iii) entrepreneurship training, thereby promoting labour based entitlements and thereby enhancing the livelihood of participants.

The impact of training however is contingent on market demand for skills, and also conditional on the ability of participants to fund job search, their mobility, and also access to capital, if the skills transferred are to be used for individual income generation activity. There is a need to design training in line with needs of different segments of the unemployed labour force; the training needs of youth differ from those of rural female household heads. The youth are likely to have many decades as labour market participants ahead of them, and the mobility to relocate in search of employment thereby increasing potential returns from skills based training, while for rural, non-mobile female household heads an identical training investment may be less productive (Bhorat, 2001).[47]

The provision of training was negotiated in return for a relaxation of the minimum wage under the SPWP. However, the quality and appropriateness of the training offered, has in some cases been questioned by participants.[48] While the provision of training is monitored in the CBPWP management and information system, its impact on future labour market performance of trainees is not routinely recorded, and preliminary case study research suggests that this impact may not be significant (Department for Water Affairs, 2003; McCord, forthcoming). Working for Water has suspended its exit programme due to the

[47] For a more detailed discussion of the training aspect of public works programmes see Goldin 2003.

[48] Limpopo public works participants' focus group discussion, McCord, April 2003. This dissatisfaction is increased by the fact that only 75% of the daily wage is received when participating in training under the SPWP. This can act as a disincentive to participate in training if it is perceived as unlikely to enhance future income streams.

realisation that the training (supply side) component of the programme is not sufficient to guarantee, or even significantly enhance the labour market performance of former Working for Water participants in the face of mass unemployment.[49] Likewise in their study of the Western Cape, Adato *et al* concluded that 'The main constraint identified as to why workers and subcontractors could not get new jobs after the project was there were insufficient new job opportunities in the area' (1999: xix). This questions the assumption which links public works employment to significantly enhanced subsequent employment performance.

8.7 Microfinance

The provision of training as one component of public works programming is problematic without simultaneous access to capital, through either savings or micro-credit facilities. This is particularly important if the low wage and short duration of the employment provided has not enabled participants to accumulate capital directly from wage earnings. Without the provision of capital for formal or informal income generating activity, the livelihoods impact of a training intervention is likely to be limited, as lack of access to capital is a major disincentive to self employment among public works participants. In a recent survey in Limpopo, public works participants cited lack of access to capital as the primary factor inhibiting informal income generating activity (McCord, forthcoming). This consideration is particularly important in the context of South Africa's underdeveloped rural finance sector, and is likely to limit significantly the anticipated multiplier effects of public works investment at community level.

Lack of access to capital restricts the benefit of public works programme participation to the transient, short term wage shock during the period of employment[50], rather than promoting the exploitation of sustainable informal sector employment opportunities. Explicitly linking public works programmes to microfinance initiatives is one potential mechanism to surmount the capital deficit which is inhibiting the utilisation of the experience; training and entrepreneurial skills developed under public works programmes.

[49] Personal communication with. Christo Marais, Scientific Service Manager, Working for Water, 13.8.03.

[50] For the long term unemployed, the receipt of wage income for a short period may be characterised as a positive income shock.

8.8 Assets

The evidence base for assessing the economic benefits, in either micro or macro-economic terms, of the assets created under public works programmes in South Africa is extremely limited. The CSIR's research into the Tshitwe road-upgrading project in Limpopo (Mashiri & Mahapa, 2002) offers anecdotal evidence of the potential for a disjuncture between the aspirations of a project, and its realisation in terms of the quality, appropriateness and strategic value of the assets created. Mashiri and Mahapa argue that despite the ambitious objectives of 'increasing accessibility, reducing the cost of freight and passenger services and assisting agriculture by reducing the cost of inputs, boosting access to extension services and increasing farm-gate prices' which are typical objectives within the public works sector, the anticipated multiplier effects were not realised. Money earned by workers did not circulate within the community and as the anticipated improvement in road passenger services did not materialize; neither did the benefits in terms of improved access to market and other amenities. Mashiri and Mahapa attribute the programme's failure to the lack of genuine participation of local communities in selecting assets and priorities for the programme.[51]

This analysis highlights a broader problem; if strategic and economically significant assets are to be created under the public works programme, asset identification needs to be part of a strategic selection process, involving both communities and local government.[52] If assets are not identified strategically, on the basis of local inter departmental coordination and community preferences, it is likely that a proliferation of non-priority assets will be created, which may not deliver the intended social or economic benefits.[53]

8.9 Accountability

Public works programmes have the potential to promote local democracy through the participation of communities in resource allocation decision making, (in terms of both employment and investment in assets), and to promote

[51] Mashiri and Mahapa argued that the community's priorities of improved non-motorised transportation did not conform to the standard road construction model, and so were over-ridden by the implementing authority.

[52] The recently introduced the district level Integrated Development Plan would be the appropriate institutional mechanism for this task. However, the development of these institutional instrument is a relatively new process, and they do not yet guarantee either community or integrated local government participation, or strategic prioritisation.

[53] For example, objective 1, 'meeting the basic needs of the poor', and objective 8, 'generating sustainable economic benefits' are unlikely to be met unless assets are selected in this way.

democratic accountability by providing a structure for direct communication between local government and communities.[54] An example of the potential of public works programme to promote democratic processes and give a voice to the poor is the Maharashtra Employment Guarantee Scheme (MEGS). Under the MEGS, universal employment provision is guaranteed and the state has a legal obligation to provide employment as a right; 'every adult person in the rural areas in Maharashtra shall have a right to work, that is, a right to get guaranteed employment' (Maharashtra Planning Dept, 1981, cited in Dev, 1995: 109). By making employment an entitlement, the MEGS facilitate collective political action by the poor, and enhance the responsiveness of rural politicians to their needs (Eceverri-Gent, 1988, cited in Dev, 1995: 111).

This illustrates the potential of public works to build community capacity, strengthen local government and strengthen community based institutions[55], but this is contingent on the institutional context and the extent to which these issues are explicitly prioritised in programme design. There is a danger of constructing parallel structures to implement public works, due to an impatience to achieve results in the short term, which carries with it the risk of undermining both local democracy, and the institutional sustainability of programme interventions in the medium to long term (see for example the associated debate relating to the implementation of Social Funds). If public works programmes are integrated with local institutions there is the potential to improve the quality of the assets created and also to promote local democracy, accountability and hence confidence in the democratic process. However there is little basis on which to assess the performance of public works in South Africa to date in this regard.

8.10 Management Information

Existing public works programme monitoring and information systems offer little in terms of an evidence base against which to assess performance on the eleven objectives ascribed to public works in the current policy discourse. Monitoring tends to focus on the creation of 'jobs' *per se*, rather than the social and economic impact of those jobs (see Clegg, 2003, with reference to the CBPWP MIS). Also, the use of 'jobs' created as the central performance indicator, rather than workdays created renders analysis problematic, as does the lack of data on the duration of employment provided to participants.

[54] The Zibambele Programme, implemented by the Department of Transport in KwaZulu Natal is an example of a public works programme designed to create jobs and also promote local democratic participation in this way. For a brief outline of this programme, see McCord (2002).
[55] See objectives 5, 6 and 7.

Where performance indicators are monitored, they tend be quantitative input measures (e.g. units of training delivered, kilometres of road constructed, or number of workers recruited), rather than impact indicators relating to the labour market, social or economic consequences of the intervention. A lack of baseline information on programme participants also renders impact analysis, in terms of the livelihoods of participants, problematic. A small number of detailed studies such as Adato *et al'*s research into public works programmes in the Western Cape (1999), and social research projects related to individual projects[56] have been carried out. However there is little systematic monitoring of socio-economic and social development indicators, and as a consequence there is extremely limited evidence on which to evaluate the impact of expenditure on public works.

9. Conclusion

With the data currently available it is not possible to show that the anticipated broader benefits of public works programmes in terms of improved livelihoods, reduced poverty, the creation of sustainable employment, community empowerment, local multipliers, or growth as outlined in the policy rhetoric, have been achieved It is only possible to assess performance in terms of the scale of employment created, and by this criterion, success has been limited, with less than 0.5% of unemployed workdays absorbed annually through the CBPWP. If all public works programmes implemented nationally are taken into account, (including programmes implemented outside of the SPWP) the total annual employment created is not likely to exceed 1% of unemployed workdays programmes.[57]

While additional allocations will increase the number of 'jobs' created under public works programmes, and the amount of workdays created, it cannot be assumed that this will lead to the attainment of the range of social development and economic objectives outlined in the current policy discourse. Nor can it be assumed that public works, as currently conceptualised, have the potential to play a major role in poverty and unemployment reduction. An expanded public works programme is unlikely to have a significant impact on the problems of poverty and labour market access, or their associate, growth, unless i) a substantially increased proportion of government expenditure is allocated to the

[56] For example social research carried out by the KwaZulu Natal Department of Transport and University of Natal 2002 on the Zibambele Programme, and the Limpopo Provincial Road Authority and University of the Western Cape study of the social context for the Gundo Lashu road construction programme.

[57] This estimate is based on figures from the CBPWP, Working for Water, the KwaZulu Natal Zibambele programme, and SPWP data in Budlender (2002).

programme, ii) the series of policy questions highlighted in section 8 are resolved, and iii) the institutional constraints in both the public and private sectors are addressed.

Appendix 1

Simulation model for public work programme/low cost construction employment estimates.

Simulation 1: Part time, material costs = 40%

Total amount spent over three-year budget period (Rm)	1200				
Proportion spent in 1st year (%)	20				
Proportion spent in 2nd year (%)	30				
Proportion spent in 3rd year (%)	50				
Monthly wages:					
Workers	350				
Supervisors	2500				
Administrators	5000				
Top managers	20000				
Workforce composition					
Ratio of workers to supervisors	55				
Ratio of workers to administrators	170				
Ratio of workers to top managers	2000				
Material costs as proportion of total cost (%)					
1st year	40				
2nd year	40				
3rd year	40				
Convert to standard worker equivalents		Proportion			
Standard worker	1	80.48			
Supervisors	0.130	10.45			
Administrators	0.084	6.76			
Top managers	0.029	2.30			
Cost of employing standard worker (proportion of wage)	1.242	100.00			
Amount spent in 1st year (Rm)	240				
Amount spent in 2nd year (Rm)	360				
Amount spent in 3rd year (Rm)	600				
Check	1200				
Amounts available for payment of wages (Rm)					
1st year	144			3311363	
2nd year	216			4967044	
3rd year	360			8278406	
Numbers employed:	Workers	Supervisors	Administrators	Top managers	Total
1st year	27,595	502	162	14	28,273
2nd year	41,392	753	243	21	42,409
3rd year	68,987	1,254	406	34	70,681
Convert to work days (days per annum)	Assumed number of days per annum:			120	
	Workers	Supervisors	Administrators	Top managers	Total
1st year	3,311,363	60,207	19,479	1,656	3,392,703
2nd year	4,967,044	90,310	29,218	2,484	5,089,055
3rd year	8,278,406	150,516	48,697	4,139	8,481,758
TOTAL	16,556,813				16,963,517
Check total wage expenditure (Rm)					
1st year	115.9	15.1	9.7	3.3	144
2nd year	173.8	22.6	14.6	5.0	216
3rd year	289.7	37.6	24.3	8.3	360

Appendix 2

Simulation model for public work programme/low cost construction employment estimates.

Simulation 2: Part time, material costs = 10%

Total amount spent over three-year budget period (Rm)	1200				
Proportion spent in 1st year (%)	20				
Proportion spent in 2nd year (%)	30				
Proportion spent in 3rd year (%)	50				
Monthly wages:					
Workers	350				
Supervisors	2500				
Administrators	5000				
Top managers	20000				
Workforce composition					
Ratio of workers to supervisors	55				
Ratio of workers to administrators	170				
Ratio of workers to top managers	2000				
Material costs as proportion of total cost (%)					
1st year	10				
2nd year	10				
3rd year	10				
Convert to standard worker equivalents		Proportion			
Standard worker	1	80.48			
Supervisors	0.130	10.45			
Administrators	0.084	6.76			
Top managers	0.029	2.30			
Cost of employing standard worker (proportion of wage)	1.242	100.00			
Amount spent in 1st year (Rm)	240				
Amount spent in 2nd year (Rm)	360				
Amount spent in 3rd year (Rm)	600				
Check	1200				
Amounts available for payment of wages (Rm)					
1st year	216				
2nd year	324				
3rd year	540				
Numbers employed:	Workers	Supervisors	Administrators	Top managers	Total
1st year	41,392	753	243	21	42,409
2nd year	62,088	1,129	365	31	63,613
3rd year	103,480	1,881	609	52	106,022
Convert to work days (days per annum)	Assumed number of days per annum:			120	
	Workers	Supervisors	Administrators	Top managers	Total
1st year	4,967,044	90,310	29,218	2,484	5,089,055
2nd year	7,450,566	135,465	43,827	3,725	7,633,583
3rd year	12,417,609	225,775	73,045	6,209	12,722,638
TOTAL	24,835,219				25,445,275
Check total wage expenditure (Rm)					
1st year	173.8	22.6	14.6	5.0	216
2nd year	260.8	33.9	21.9	7.5	324
3rd year	434.6	56.4	36.5	12.4	540

Appendix 3

Simulation model for public work programme/low cost construction employment estimates.

Simulation 3: Full time, material costs = 40%

Total amount spent over three-year budget period (Rm)	1200				
Proportion spent in 1st year (%)	20				
Proportion spent in 2nd year (%)	30				
Proportion spent in 3rd year (%)	50				
Monthly wages:					
Workers	770				
Supervisors	2500				
Administrators	5000				
Top managers	20000				
Workforce composition					
Ratio of workers to supervisors	55				
Ratio of workers to administrators	170				
Ratio of workers to top managers	2000				
Material costs as proportion of total cost (%)					
1st year	40				
2nd year	40				
3rd year	40				
Convert to standard worker equivalents		Proportion			
Standard worker	1	90.07			
Supervisors	0.059	5.32			
Administrators	0.038	3.44			
Top managers	0.013	1.17			
Cost of employing standard worker (proportion of wage)	1.110	100.00			
Amount spent in 1st year (Rm)	240				
Amount spent in 2nd year (Rm)	360				
Amount spent in 3rd year (Rm)	600				
Check	1200				
Amounts available for payment of wages (Rm)					
1st year	144				
2nd year	216				
3rd year	360				
Numbers employed:	Workers	Supervisors	Administrators	Top managers	Total
1st year	14,037	255	83	7	14,382
2nd year	21,056	383	124	11	21,573
3rd year	35,093	638	206	18	35,955
Convert to work days (days per annum)	Assumed number of days per annum:			264	
	Workers	Supervisors	Administrators	Top managers	Total
1st year	3,705,843	67,379	21,799	1,853	3,796,874
2nd year	5,558,764	101,068	32,699	2,779	5,695,310
3rd year	9,264,607	168,447	54,498	4,632	9,492,184
TOTAL	18,529,213				18,984,368
Check total wage expenditure (Rm)					
1st year	129.7	7.7	5.0	1.7	144
2nd year	194.6	11.5	7.4	2.5	216
3rd year	324.3	19.1	12.4	4.2	360

Appendix 4

Simulation model for public work programme/low cost construction employment estimates.

Simulation 4: Full time, material costs = 10%

Total amount spent over three-year budget period (Rm)	1200				
Proportion spent in 1st year (%)	20				
Proportion spent in 2nd year (%)	30				
Proportion spent in 3rd year (%)	50				
Monthly wages:					
Workers	770				
Supervisors	2500				
Administrators	5000				
Top managers	20000				
Workforce composition					
Ratio of workers to supervisors	55				
Ratio of workers to administrators	170				
Ratio of workers to top managers	2000				
Material costs as proportion of total cost (%)					
1st year	10				
2nd year	10				
3rd year	10				
Convert to standard worker equivalents		Proportion			
Standard worker	1	90.07			
Supervisors	0.059	5.32			
Administrators	0.038	3.44			
Top managers	0.013	1.17			
Cost of employing standard worker (proportion of wage)	1.110	100.00			
Amount spent in 1st year (Rm)	240				
Amount spent in 2nd year (Rm)	360				
Amount spent in 3rd year (Rm)	600				
Check	1200				
Amounts available for payment of wages (Rm)					
1st year	216				
2nd year	324				
3rd year	540				
Numbers employed:	Workers	Supervisors	Administrators	Top managers	Total
1st year	21,056	383	124	11	21,573
2nd year	31,584	574	186	16	32,360
3rd year	52,640	957	310	26	53,933
Convert to work days (days per annum)	Assumed number of days per annum:			264	
	Workers	Supervisors	Administrators	Top managers	Total
1st year	5,558,764	101,068	32,699	2,779	5,695,310
2nd year	8,338,146	151,603	49,048	4,169	8,542,966
3rd year	13,896,910	252,671	81,747	6,948	14,238,276
TOTAL	27,793,820				28,476,552
Check total wage expenditure (Rm)					
1st year	194.6	11.5	7.4	2.5	216
2nd year	291.8	17.2	11.1	3.8	324
3rd year	486.4	28.7	18.6	6.3	540

References

Abedian, I. & B. Standish, B. 1986. An Economic Inquiry into the Poor White Saga. *SALDRU Working Paper No. 64*. Cape Town: Southern Africa Labour and Development Research Unit, University of Cape Town.

Adato, M., Haddad L., Horner, D., Ravjee, N. & R. Haywood. 1999. From Works to Public Works. *The Performance of Labour-Intensive Public Works in Western Cape Province, South Africa*. Cape Town: Southern Africa Labour and Development Research Unit and International Food Policy Research Institute, University of Cape Town.

Adato, M. & L. Haddad. 2002. Targeting Poverty through Community-Based Public Works Programmes: Experience from South Africa. *Journal of Development Studies*, 38 (3), February 2002, 1-36.

ANC. 2003. Cabinet Lekgotla. *ANC Today* 30 (3), 1 August 2003.

Barr, N. 1998. *The Economics of the Welfare State*. Oxford: Oxford University Press.

Bassi, L. & O. Ashenfelter. 1997. The Effect of Direct Job Creation and Training Programs on Low-Skilled Workers. In Hallcock, F. (ed.) *Education Training and Discrimination*, 249-267. Cheltenham: Elgar.

Bhorat, H. 2001. Labour Market Challenges in the Post-Apartheid South Africa. A Country Profile. Cape Town: Development Policy Research Unit, University of Cape Town.

Bhorat, H. 2003. Estimates for Poverty Alleviation in South Africa, with an Application to a Universal Income Grant. *Development Policy Research Unit Working Paper No. 03/75*, April 2003. Cape Town: University of Cape Town.

Budlender, D. 2002. Assessment of Working for Water Wage Rates. CASE.

Clegg, J. 2003. Progress and Monitoring of the Community Based Public Works Programme. *Unpublished Honours Long Paper*. Cape Town: School of Economics, University of Cape Town.

Croswell, J. & R. McCutcheon. 2001. Submission to the Taylor Commission: The Committee of Enquiry into a Comprehensive Social Security System.

Department of Labour. 1999. Department of Labour Annual Report 1999.

Department of Labour. 2002a. Basic Conditions of Employment Act 1997. *Government Gazette* R 63, 25 January 2002. Ministerial Determination: Special Public Works Programmes.

Department of Labour. 2002b. Basic Conditions of Employment Act 1997. *Government Gazette* January 2002. Code of Good Practice for Employment and Conditions of Works for Special Public Works Programmes.

Department of Public Works. 1996. National *Programme for Public Works*.

Department of Public Works. 1997. *White Paper, Public Works towards the 21st Century*.

Department of Public Works. 1997. *Annual Report.*
Department of Public Works. 1998. *Annual Report.*
Department of Public Works. 2001. *Annual Report 2000/1*.
Department of Public Works. 2002. *Annual Report 2001/2*.
Department of Social Welfare. 2002. *Transforming the Present – Protecting the Future*. Report to the Committee of Inquiry into a Comprehensive System of Social Security for South Africa, 72-4.
Department of Water Affairs. 2003. Unpublished Forum Presentation July 2003.
Dev, S. M. 1995. India's (Maharashtra) Employment Guarantee Scheme: Lessons from Long Experience. In von Braun J. (ed.) *Employment for Poverty Reduction and Food Security*, 108-143. Washington, D.C.: International Food Policy Research Institute.
Devereux, S. 2000. *Social Safety Nets for Poverty Alleviation in Southern Africa.* Institute of Development Studies.
Duflo, E. 1999. The Effects of Old Age Pension on Child Health in South Africa. *MIT*, December 1999.
Goldin, J. 2003. Poverty, Labour Markets and Income Inequality in the Post-Apartheid Period: Theme Group: Evaluation of Existing and Post Poverty Alleviation Programmes. Paper presented at TIPS and DPRU Forum *The Challenge of Growth and Poverty: the South African Economy since Democracy*, 8-10 September 2003, Indaba Hotel, Johannesburg.
Haddad, L. & M. Adato. 2002. Maximizing Benefit Transfers to the Poor: Evidence from South African Employment Programmes. *International Labour Review* 141 (3), 2002/3, 203-223.
Leibbrandt, M. & I. Woolard. 2001. The Labour Market and Household Income Inequality in South Africa: Existing Evidence and New Panel Data. *Journal of International Development* 13, 671-689.
Le Roux, P. 2002. Financing a Universal Income Grant in South Africa. *Social Dynamics* 28 (2), Winter 2002, 98-121.
Lewis, J. 2001. *Policies* to Promote Growth and Employment in South Africa. *Discussion paper 16*. South Africa: Southern Africa Department World Bank.
McCord, A. 2002. Public Works as Response to Labour Market Failure in South Africa. *SALDRU/CSSR Working Paper No. 19*. Cape Town: Southern Africa Labour and Development Research Unit / Centre for Social Science Research, University of Cape Town.
McCutcheon, M. 2003. In Search of a Wage. *Unpublished Honours Long Paper*. Cape Town: School of Economics, University of Cape Town.
McCutcheon, R. 2001a. Employment Generation in Public Works: Recent South African Experience. *Construction Management and Economics* 19, 275-284.
McCutcheon, R. 2001b. Using Employment-Intensive Methods to Construct and Maintain Infrastructure. *Municipal Engineer* 145 (4), 273-284.

McCutcheon, R. 2003. Concepts, Potential, Principles, Issues/Lessons and Guidelines. In McCutcheon, R. & F. Taylor Parkins. (eds) *Employment and High-Standard Infrastructure*. Johannesburg: Research Centre for Employment Creation in Construction, University of the Witwatersrand.

Mabilo, G. S. 2003. Exploring Stakeholder Perspectives on the Impact of the Labour Intensification of State Infrastructure Spending. *Unpublished Honours Long Paper*. Cape Town: School of Economics, University of Cape Town.

Mashiri, M. & S. Mahapa. 2002. Social Exclusion and Rural Transport: A Road Improvement Project. In Fernando, P. & G. Porter. (eds) *Balancing the Load: Women, Gender and Transport*. Zed Books.

Meth, C. 2003. What to do until the Doctor Comes: Relief for the Unemployed and for Poorly-paid Workers. Draft manuscript. Durban: School of Development Studies, University of Natal.
http://www.nu.ac.za/csds

Meth, C. & R. Dias. 2003. Increases in Poverty in South Africa, 1999-2002. Paper presented at TIPS and DPRU Forum, *The Challenge of Growth and Poverty: the South African Economy since Democracy*, 8-10 September 2003. Johannesburg: Indaba Hotel.

Meth, C., Shipman, B. & R. Naidoo. 1996. *Unemployment Insurance and Related Coverage Issues*. Report of the Task Team. Pretoria: Department of Labour, 17 December 1996.

National Economic Forum. 1994a. *A Framework for Implementation of a National Public Works Programme Adopted by the National Economic Forum.* Johannesburg: Development Bank of Southern Africa.

National Economic Forum. 1994b. *Pre-Investment Investigation.* Report of the Technical Focus Group.

National Treasury. 2002. Budget Review 2002. Pretoria.

National Treasury. 2003. Budget Speech by the Minister of Finance, 26 February 2003.

Phillips, S., McCutcheon, R., Emery, S., Little, R. & M. Kwesiga. 1995. Technical Analysis of the Employment Creation Potential of a National Public Works Programme. *Journal of the South African Institution of Civil Engineers* 37 (3) Third Quarter 1995, 18-24.

Samson, M. J. 2002. The Social, Economic and Fiscal Impact of Comprehensive Social Security Reform for South Africa. *Social Dynamics*, 28 (2) Winter 2002, 69-97.

Statistics South Africa. 2002. Statistical Release P0210 Labour Force Survey September 2001.

Statistics South Africa. 2003. Statistical Release P0210 Labour Force Survey September 2002.

Thurlow, J. 2002. Can South Africa Afford to Become Africa's First Welfare State? *TMD Discussion Paper No. 101, FCND Discussion Paper No.*

139. Washington: International Food Policy Research Institute, October 2002.

Walker, T. S. & J.G. Ryan. 1990. *Village and Household Economies in India's Semi-arid Tropics*. Baltimore, MD, USA: Johns Hopkins University Press.

The Centre for Social Science Research
Working Paper Series

RECENT TITLES

36/03	*Does Ethnicity Determine Electoral Behaviour*	By P. Norris & R. Mattes
37/03	*What's News: Perspectives on HIV/AIDS Advocacy in the South African Media*	By J. Stein
38/03	*Reservation Wages-Measurement and Determinants: Evidence from the Khayelitsha/Mitchell's Plain(KMP) Survey*	By R. Walker
39/03	*The "Risk Gap", Its Determinants and Economic Implications*	By P. Anderson
40/03	*Highly Active Antiretroviral Therapy and Risky Sex: Is there a Link?*	By N. Nattrass
41/03	*Panel Attrition in Survey Data: A Literature Review*	By U. Lee
42/03	*Providing Antiretroviral Treatment for All Who Need it in South Africa*	By N. Nattrass & N. Geffen
43/03	*Unemployment and Aids: The Social-Democratic Challenge for South Africa*	By N. Nattrass
44/03	*Young People's Social Networks, Confidants and Issues of Reproductive Health*	By A. Bakilana & F. Esau
45/03	*Who Does the Housework? Examination of South African Children's Working Roles*	By R. Bray
46/03	*HIV/AIDS Stigma: The Latest Dirty Secret*	By J. Stein
47/03	*Sorrow makes Children of us all: A Literature Review on the Psycho-Social Impact of HIV/AIDs on Children*	By J. Stein
48/03	*Learning about Democracy in Africa: Awareness, Performance, and Experience*	By B. Mattes & M. Bratton

The Centre for Social Science Research

The CSSR is an umbrella organisation comprising five units:

The Aids and Society Research Unit (ASRU) supports quantitative and qualitative research into the social and economic impact of the HIV pandemic in Southern Africa. Focus areas include: the economics of reducing mother to child transmission of HIV, the impact of HIV on firms and households; and psychological aspects of HIV infection and prevention. ASRU operates an outreach programme in Khayelitsha (the Memory Box Project) which provides training and counselling for HIV positive people

The Data First Resource Unit ('Data First') provides training and resources for research. Its main functions are: 1) to provide access to digital data resources and specialised published material; 2) to facilitate the collection, exchange and use of data sets on a collaborative basis; 3) to provide basic and advanced training in data analysis; 4) the ongoing development of a web site to disseminate data and research output.

The Democracy in Africa Research Unit (DARU) supports students and scholars who conduct systematic research in the following three areas: 1) public opinion and political culture in Africa and its role in democratisation and consolidation; 2) elections and voting in Africa; and 3) the impact of the HIV/AIDS pandemic on democratisation in Southern Africa. DARU has developed close working relationships with projects such as the Afrobarometer (a cross national survey of public opinion in fifteen African countries), the Comparative National Elections Project, and the Health Economics and AIDS Research Unit at the University of Natal.

The Social Surveys Unit (SSU) promotes critical analysis of the methodology, ethics and results of South African social science research. One core activity is the Cape Area Panel Study of young adults in Cape Town. This study follows 4800 young people as they move from school into the labour market and adulthood. The SSU is also planning a survey for 2004 on aspects of social capital, crime, and attitudes toward inequality.

The Southern Africa Labour and Development Research Unit (SALDRU) was established in 1975 as part of the School of Economics and joined the CSSR in 2002. SALDRU conducted the first national household survey in 1993 (the Project for Statistics on Living Standards and Development). More recently, SALDRU ran the Langeberg Integrated Family survey (1999) and the Khayelitsha/Mitchell's Plain Survey (2000). Current projects include research on public works programmes, poverty and inequality.