

LEVY INSTITUTE



Research Project No. 34

**THE IMPACT OF PUBLIC EMPLOYMENT GUARANTEE STRATEGIES
ON GENDER EQUALITY AND PRO-POOR ECONOMIC DEVELOPMENT**

SOUTH AFRICA

**SCALING UP THE EXPANDED PUBLIC WORKS PROGRAMME:
A SOCIAL SECTOR INTERVENTION PROPOSAL**

**Rania Antonopoulos
and
Kijong Kim**

January 2008

Annandale-on-Hudson, New York

**This project has received generous support by the United Nations
Development Programme, Bureau for Development Policy, Gender Team**

TABLE OF CONTENTS

TABLES.....	2
FIGURES.....	3
ACKNOWLEDGEMENTS	4
ACKNOWLEDGEMENTS	4
ACRONYMS & BRIEF DEFINITIONS.....	5
I. EXECUTIVE SUMMARY.....	8
II. SOUTH AFRICA: EXPANDED PUBLIC WORKS, A SOCIAL SECTOR INTERVENTION ...	20
1. INTRODUCTION TO THE STUDY	20
2. GENDER, UNEMPLOYMENT AND POVERTY STRUCTURE OF THE SOUTH AFRICAN ECONOMY THROUGH THE LENS OF A SAM.....	22
2.1 Introduction.....	22
2.2 The Economy According to the Gendered Social Accounting Matrix (SAM-SA).....	25
<i>a. Labour Factors and Activities</i>	25
<i>b. Activities: A Macro View of the Economy with a Focus on Male-Female Employment</i>	28
<i>c. Hourly Wages</i>	30
<i>d. Household Types</i>	32
<i>e. Unemployment</i>	35
<i>f. Income Distribution</i>	36
<i>g. Expenditure Patterns</i>	40
3. DISTRIBUTION OF TIME SPENT ON UNPAID WORK.....	43
3.1 Water and Firewood Collection.....	45
3.2 Social Care	46
3.3 Home and Community Maintenance	49
4. SCALING UP EPWP SOCIAL SECTOR JOB CREATION.....	53
4.1 Policy Space for Social Sector Interventions within EPWP	53
<i>a. Background on Early Childhood Development (ECD)</i>	54
<i>b. Background on Home- and Community-Based Care (HCBC)</i>	56
4.2 Gender Dimensions of the EPWP Social Sector.....	57
4.3 Our Proposal for Scaling Up the EPWP Social Sector Job Creation	58
4.4 Financing Options for the Proposed Expansion	62
4.5 Input Composition of the Simulation.....	67
4.6 The Fixed Price Multiplier Approach	70
5. SIMULATION RESULTS	73
5.1 Introduction.....	73
5.2 The Impact on GDP and Output Growth.....	74
5.3 The Impact on Government Income.....	74
5.4 The Impact on Labour Factors: Employment Creation and Unemployment Effects.....	75
5.5 Exploring Direct and Indirect Employment	76
<i>a. Direct Job Creation</i>	76
<i>b. Indirect Job Creation</i>	78
5.6 Impact on Households: Income and Poverty	79
<i>a. Global Impact</i>	80
<i>b. Participating EPWP Household-Level Impacts</i>	81
5.7 Beyond the Multiplier Analysis	84
6. SUMMARY AND CONCLUSIONS	85
APPENDICES	90

TABLES

Table 1. International Experience of Government Job Creation: Selected Programmes.....	11
Table 2. Employment Guarantee Schemes and the Millennium Development Goals.....	13
Table 3. Simplified Schematic Social Accounting Matrix.....	24
Table 4. Educational Attainment by Population Group.....	25
Table 5. Female and Male Workers by Education and Occupation.....	27
Table 6. Structure of the South African Economy by Gender and Skill (in percent).....	29
Table 7. Real Average Monthly Earnings by Gender, Education Level and Population Group (in South African Rand).....	30
Table 8. Real Average Monthly Earnings by Gender and Education among the African Population (in South African Rand).....	32
Table 9. Average Hourly Wages by Skill Level and Gender (in South African Rand).....	32
Table 10. Population Distribution by Household Type (in percent).....	33
Table 11. Distribution of the Population across Income Groups and Race (in percent).....	34
Table 12. Summary of Household Types.....	35
Table 13. Male and Female Unemployment Rates (in percent).....	35
Table 14. Income Distribution by Household Type and Source of Income (in percent).....	37
Table 15. Labour Income Earned by Gender (in percent).....	40
Table 16. Model Coefficient and Average Expenditure Shares by Household Type.....	41
Table 17. Commodity Expenditure Shares by Household Type (in percent).....	42
Table 18. Time Spent on Water and Fuel Collection by Skill, Gender and Employment Status.....	46
Table 19. Time Spent on Social Care by Skill, Gender and Employment Status.....	47
Table 20. Time Spent on Home Maintenance by Gender and Skill Level.....	50
Table 21. Food Security Workers: Incorporating Nutrition and Emergency Food Relief Workers.....	61
Table 22. Number and Types of Jobs for Home- and Community-Based Care— Estimated Households Served and Total Cost of Service Delivery.....	62
Table 23. Matching Activities and Annual Wage Expenditure Allocation.....	68
Table 24. Poverty Share and Unemployment Rates by Households Type (in percent).....	69
Table 25. Detailed EPWP Social Sector Intervention—Input Composition.....	70
Table 26. Sectoral Output Growth (in million Rand).....	74
Table 27. Impacts on Tax Revenue (in million Rand).....	74
Table 28. Job Creation as a Consequence of Scaling Up EPWP Social Sector.....	75
Table 29. Employment Impact of EPWP Social Sector Intervention.....	76
Table 30. Direct Job Creation.....	77
Table 31. Effects of Direct Job Creation on Unemployment—Bottom 50th Percentile.....	77
Table 32. Population Distribution of Households—Bottom 50th Percentile.....	78
Table 33. Indirect Job Creation.....	78
Table 34. Effects of Indirect Job Creation on Unemployment—Bottom 50th Percentile.....	79
Table 35. Proportion of Wage Income Distributed to Top 50th Percentile (in percent).....	79
Table 36. Income Changes by Household Types (in million Rand).....	80
Table 37. Change in Annual Income by Household Type.....	82
Table 38. Change in Depth of Poverty by Household Type.....	83

FIGURES

Figure 1. Female and Male Share	28
Figure 2. Female and Male Share.....	28
Figure 3. Employment Status of Adult Females.....	39
Figure 4. Time Spent on Total Unpaid Work by Men and Women: Selected Countries.....	43
Figure 5. Average Time Spent on Social Care by Income Groups (in hours)	48
Figure 6. Average Time Spent on Social Care by Employment Status (in hours).....	48
Figure 7. Average Time Spent on Unpaid Work Activities by Residence (in hours).....	48
Figure 8. Average Time Spent on Unpaid Work Activities by Employment Status (in hours).....	49
Figure 9. Time Spent on Unpaid Work.....	51
Figure 10. Unpaid Work by Employment Status.....	51
Figure 11. Average Time Spent on Unpaid Work Activities by Income Groups.....	52
Figure 12. Average Time Spent on Unpaid Work Activities by Employment Status	52
Figure 13. Average Time Spent on Unpaid Work Activities by Geographic Location	52
Figure 14. Consolidated National Budget Balance, South Africa (Percent of GDP).....	63
Figure 15. GDP Growth, South Africa (Percent, Constant Prices)	64
Figure 16. Surplus/Deficit, South Africa (Percent of GDP).....	65
Figure 17. Total Government Debt (Percent of GDP)	65

ACKNOWLEDGEMENTS

This study is a part of the Levy Economics two-country project (on South Africa and India) entitled “The Impact of Public Employment Guarantee Strategies on Gender Equality and Pro-poor Development” The aim of the project is to examine the economic and gender equality implications of public job creation in economic activity areas currently served by unpaid work, including unpaid care work. First of all, I would like to extend my sincere thanks to the United Nations Development Programme, Bureau for Development Policy, Gender Team for lending us their generous support and encouragement for this project. The gender input-output SAM for South Africa was a collaborative project between the Levy Economics Institute and the PROVIDE team, Department of Agriculture, University of Elsenburg, South Africa. I am indebted and must acknowledge the valuable contributions of the authors of the technical report who are, in alphabetical order, my colleague Kijong Kim, Rosemarie Leaver, Kalie Pauw, Cecilia Punt and Melt van Schoor. I must also thank Emel Memis for help with statistical analysis, Rudi von Arnim for baseline simulations and Haider Khan for his supervision in the first phase of the project; and Marzia Fontana, for her contributions during the earlier phases of the project and a draft she prepared on Social Accounting Matrix and Time Use Survey data findings for South Africa. Kijong Kim, my colleague at the Levy Institute has contributed to the technical parts of this project immensely and participated in writing, reading and discussing with me sections of this report at all times of day and night. Above all, my gratitude and many thanks go to colleagues from South Africa. This project could not have been completed without their enthusiastic support, generosity of spirit and helpful comments. First and foremost, to Ms. Jean Msiza, Director of Social Sector, EPWP, Government of South Africa, and her staff, Pearl Mugerwa, Buyiswa Sibenya, and Pari Pillay (EPWP), for providing documentation and for their kindness in making information and people available to me; to Dr. Irwin Friedman, Research Director of Health Systems Trust for his extraordinary generosity in sharing information and significant encouragement for this project; to many government officials and other colleagues for sparing their time and meeting with me including Juliana Seleti (Department of Education); Edith Vries (IDT); Imraan Valodia (UKZN); Glen Robbins (UKZN); Francie Lundt (UKZN); David Hemson (HSRC); Neva Makgetla (Office of the Presidency); Mastoera Sadan (Office of the Presidency); Bongani Gxilishe (EPWP, Deputy Director General); Maikel R. Lieu-Kie-Song (EPWP, Chief Director); Cinderella Makunike (EPWP); D.J. Nchebeleng (EPWP). Last but not least, many thanks go to Steve Miller, Amelita King-Dejardin of the ILO and Emma Allen of the CoffEE centre for data sharing, friendship and encouraging words. Finally, I am truly grateful to Elizabeth Dunn for her editing, valuable assistance and attention to detail; to Mac McLean for his help in compiling bibliographies and annotating them; and to Taun Toay for his extraordinary research and management skills, and ability to decipher and summarize information like no other individual I know.

Dr. Rania Antonopoulos
Project Director
The Levy Economics Institute

ACRONYMS & BRIEF DEFINITIONS

Accredited training provider – A training provider who has obtained accreditation through the relevant Education and Training Quality Assurance body and whose courses are aligned with NQF standards and requirements.

CBPWP – Community-Based Public Works Programme

CHW – Community Health Worker

Code of good practice for special public works programmes – The Minister of Labour gazetted a code of good practice for special public works programmes in 2002. This allows for special conditions to facilitate greater employment on public works programmes. The code guides the EPWP and provides for a training entitlement of at least two days per month of service for workers in this programme, as well as a gender and disabled person quota.

Conditional grants – The Departments of Education, Health and Social Development provide ring-fenced grants to provinces on specific conditions for specific purposes.

Credit – One credit is equal to 10 notional hours that contribute to a qualification. Credits can be obtained through structured learning or workplace learning.

DOTS – Directly Observed Treatment

ECD – Early Childhood Development

EGP – Employment Guarantee Programmes

EGS – Employment Guarantee Schemes

EPWP – Expanded Public Works Programme: Nationwide programme that will draw significant numbers of the unemployed into productive work so that workers gain skills while they work and increase their capacity to earn an income.

Expenditure per work opportunity – Total project cost divided by work opportunities created.

EPWP government expenditure – Money actually transferred to projects and supporting infrastructure, excluding government administration costs.

HCBC – Home- and community-based care

HSRC – Human Sciences Research Council

HST – Health Systems Trust

IES – Income and Expenditure Survey

ILO – International Labour Organisation

KZN – KwaZulu-Natal Province

Learners – Unemployed persons participating in the learnership programme.

Learnerships – A learnership combines work-based experience with structured learning and results in a qualification that is registered within the National Qualifications Framework (NQF) by the South African Qualification Authority (SAQA). A learner who completes a learnership will have a qualification that signals occupational competence and is recognised throughout the country. Each learnership consists of a specified number of credits and takes at least one year to complete. The learning may consist of a number of NQF-aligned short courses, which make up the learnership curriculum. A learnership requires that a trainer, a coach, a mentor and an assessor assist the learner.

LFS – Labour Force Survey

MP – Mpumalanga Province

National Skills Strategy – The National Skills Strategy has various targets in terms of the NQF framework. A large proportion (38 percent) of SA's workforce has less than NQF level one (Std 6) or its equivalent, so the first target is that by March 2005, 70 percent of all workers should have a NQF level one qualification.

NPO – Nonprofit Organisation

NQF – The National Qualifications Framework: The NQF is set up in terms of SAQA. It is a pathway offering many branches of learning with different levels going from the bottom to the top. All types of learning and career paths have their own place on the framework. The NQF framework has eight levels—level one is the simplest and level eight is the most difficult. The levels can also be related to the formal education system. For example NQF levels one, two, three and four can be related to grades nine, ten, eleven and twelve in the education system.

Person year of employment – Forty-four weeks of work. For task-rated workers, tasks completed should be used as a proxy for forty hours of work.

PLWHA – People living with HIV/AIDS

PROVIDE – Provincial Decision-Making Enabling Model, University of Elsenburg

Rand – South African monetary unit, also denoted as R and/or ZAR.

SAQA – The South African Qualifications Authority. This body oversees a single unified system of education and training in the country in order to reduce the gulf between education and training. Education is not only academic and training is not only about practical skills. The SAQA sets up the National Qualifications Framework.

SETA – Sector Education Training Authority

SMSE – Small- and Medium-sized Enterprises

Skills programme – A skills programme is occupationally based training that, when completed, constitutes credits towards a qualification registered in terms of the NQF as defined by the SAQA. Only accredited training providers may provide the training.

Social Sector Cluster – National Departments of Health, Social Development and Education

Training day – At least 7 hours of formal training. Formal training is further categorised as literacy and numeracy, life skills, vocational skills and business skills. This includes the assessment of prior learning of work seekers.

TUS – Time Use Survey

Unit standard – Registered statements of desired education and training outcomes and their associated assessment criteria, together with administrative and other information as specified in these regulations.

VCT – Voluntary Counselling and Testing

Work opportunity – Paid work created for an individual on an EPWP project for any period of time. The same individual can be employed on different projects and each period of employment will be counted as a work opportunity.

WPA – Work Progress Administration

I. EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Levy Economics Institute, with generous support provided by UNDP Gender Team, coordinated a two-country research project during 2007, titled the “Impact of Public Employment Guarantee Strategies on Gender Equality and Pro-poor Development.” The countries selected as case studies were South Africa and India. The research director of the project and team leader for South Africa was Rania Antonopoulos, Research Scholar at the Levy Economics Institute; the team leader for the India case study is Indira Hirway, director of the Centre for Development Alternatives and Research Associate at the Levy Institute. Two reasons motivated the specific country selection. First, despite healthy growth rates, both countries continue to face high unemployment and poverty rates. As private sector demand has not been sufficient to absorb surplus labour, policy responses have included public job creation through the *Expanded Public Works Programme* in South Africa and the *National Rural Employment Guarantee Act* in India. We hope the results of this study to be of practical use in informing the selection of future projects. Second, from a data availability standpoint, both countries have conducted time use surveys, the only instrument that sheds light on the distributional implications of existing patterns of the unpaid/paid work division of labour. Data on unpaid work burdens, which disproportionately tax the time of poor households and women’s time in particular, provide critically important information for this study. A key policy objective of the public employment scheme we propose in this study is that in addition to job creation it promotes gender-equality by reducing the time-tax unpaid work imposes on women. This present document covers the South Africa study and the India study is available in a separate report.

1.2 MOTIVATION OF THE STUDY

There is widespread recognition that in most countries, private-sector investment has not been able to absorb surplus labour. This is all the more the case for poor, unskilled people. In such instances, public works programmes ameliorate the plight of the unemployed by providing job opportunities to those ready and willing but unable to find work, whereby the government assumes the responsibility to become an employer of last resort (ELR) by introducing employment guarantee schemes (EGS) and public works programmes. Whenever such active labour market policies have been implemented, and there are many such examples, jobs are created through publicly funded labour-intensive projects designed (for the most part) to create and maintain public assets such as roads, bridges and other infrastructure.

This research project proposes that in addition to physical infrastructure, an area that has immense potential to create meaningful employment is that of social service delivery and social infrastructure. While unemployment and enforced “idleness” persist, existing time use survey data reveal that people around the world—especially women and children—spend long hours

performing unpaid work. Among poor households, this work includes much time spent on household maintenance due to lack of access to water, sanitation, energy sources and basic household assets; it also consists of unpaid care for family members and communities, work that fill gaps in the provisioning of public goods and services. By creating job opportunities that reduce unpaid work, this study suggests that well-designed, gender-aware employment guarantee programmes can promote job creation, gender equality and pro-poor development.

1.3 PURPOSE, METHODOLOGY AND OBJECTIVES OF THIS DOCUMENT

The purpose of this document is to present our findings of a simulated policy experiment. In brief, we trace the economic consequences of public work creation that has a strong potential to reduce unpaid work burdens. The proposed interventions pertain to extension of service delivery in the areas of health provisioning and early childhood development. The main objective of this study is to serve as a benchmark in assessing the approximate economy-wide impacts of such job creation at the national level. For that, we develop and make use of a gender-disaggregated social accounting matrix (SAM) model. In addition, parallel time use accounts are developed to shed light on the distribution of unpaid work between men and women. Finally, context-specific assumptions are made to determine the types and numbers of new jobs needed to provide services currently produced via unpaid work and the corresponding required budgetary allocations are determined. From a macroeconomic point of view the cost of our proposed interventions also represent an injection of new demand; this proposed scaling up of government spending is subsequently examined by simulating its effects, i.e., the macro and micro implications that allow us to identify the benefits the proposed programme generates for the economy and for households.

The modelling approach we have adopted reveals, among other salient features, the use of male and female labour within several stratified household types, the income received by men and women who possess different skill levels and inhabit diverse types of households and the poverty alleviation ability of the intervention for ultra-poor and poor households. It allows us to trace the fiscal space expansion, growth of output and distribution of that output among households. Moreover, by providing information regarding both paid and unpaid work activities—all of which are congruent components of a functioning economy—it sheds some light on a wider range of potential gendered impacts. We must emphasize that this exercise aims to simply identify *orders of magnitude* involved should the proposed scope of work opportunities be implemented. Many of the specific assumptions used in this study can be changed to better reflect objectives and targets as identified by beneficiary communities and multiple stakeholders at the national, provincial, municipal and local levels.

1.4 ECONOMIC CONTEXT AND POLICY CONSIDERATIONS OF THE STUDY

To put the economy on an equitable growth path, economic development must be underpinned by growth, equity and job creation. The challenge is drawing together the right mix of employment, economic and social policies to achieve this end. The policy mix should not lead to unsustainable rates of inflation, interfere with the micro-decisions of individual firms or replace existing jobs. Further, experience has shown that it should not rely exclusively on the expectation that high growth rates, even when achievable, will result in sufficient work opportunities to absorb the unemployed, especially people that have low skills and have remained outside the bounds of the mainstream economy for structural reasons. So far, low growth rates, globalization processes and jobless growth have put to the test policy initiatives based on price stability, structural adjustment and even of careful fine-tuning of aggregate demand.

This study proposes that government job creation programmes, such as employment guarantee schemes or employer of last resort approaches, are important policy instruments that ought to be given due consideration. Projects designed to produce useful assets and services can potentially create multiple benefits: jobs and income, assets and public service delivery, better human development outcomes and—as this study argues for—more gender-equitable outcomes in unpaid and paid work. When designed through community participatory methods they enhance citizenship and contribute to a shared ownership society; depending on the scale and geographic focus of such initiatives, higher levels of economic activity can be achieved in excluded and poverty- or crime-ridden areas that usually also experience high rates of outward migration. Public job creation can turn vicious cycles to virtuous ones, but for that, revitalization of depressed regions will critically depend on minimizing leakages from the community by localizing the income-expenditure nexus.

In cases where private sector demand is insufficient to provide full employment, unemployment emerges and persists. There are compelling reasons—ethical, political and economic—to reconsider the obligation of the state to guarantee the “right to a job” for all its citizens. Traditionally, projects have been in the area of road construction and other tangible, physical infrastructural assets. For example, many African countries have undertaken such initiatives by substituting (to the highest degree possible) unskilled labour for machines; international development organizations, including the ILO, have been strong advocates of such policy initiatives for decades. As the table below highlights, there are plenty of examples of countries in Asia, Africa and Latin America that have engaged in public job creation—albeit periodically and in a stop-gap fashion.

Table 1. International Experience of Government Job Creation: Selected Programmes

Country	Year	Programme Description
Argentina	2002 onwards	Head of households plan (<i>Jefes de Hogar</i>) offered households with children under 18 twenty hours of work per week.
Australia	1940–1970	Keynesian Commonwealth Employment Service delivered an average of 2 percent unemployment; in contrast to unemployment hovering near 9 percent in the 1990s and over 4 percent presently.
Bolivia	1986–1990	Emergency Social Fund engaging beneficiaries in public works and infrastructure.
Botswana	1980s onwards	Labour-Based Relief Programme and Labour-Intensive Rural Public Works Programme.
Chile	1975–1987	The minimum employment programme was a public works programme, developed to combat 30 percent unemployment and employed up to 13 percent of the workforce.
France	Piloted in 2005	Pilot programmes began in six districts (2005) and are currently being evaluated before being officially adopted nationwide.
Ghana	1988 onwards	Programme of action to mitigate the social costs of adjustment, largely involving labour-intensive construction.
India	1972, 2005	Maharashtra Employment Guarantee Scheme guarantees manual work to any applicant. National Rural Employment Guarantee Act offers 100 days of employment to rural households.
Indonesia	Relaunched in 1998	<i>Padat Karya</i> programmes involving poverty alleviation and emergency job creation measures in response to Asian crisis, small-scale infrastructure projects.
Korea	1997–1998	Master plan for tackling unemployment: emergency public works programmes for low-skill workers following the East Asian crisis.
Mexico	1995 onwards	<i>Programa de Empleo Temporal</i> : community development through intensive use of unskilled labour for social and productive infrastructure. By 2000, programme had increased to one million beneficiaries.
Morocco	Since 1961	The <i>Promotion Nationale</i> has been successfully operating for over 45 years. The programme focuses on the development of rural communities, the Saharan and South Provinces (consistent annual increases in working days).
Nepal	1989	Dhaulagiri irrigation development project.
Peru	1991–1995	<i>Programa de Apoyo al Ingreso Temporal</i> , a public works programme focusing primarily on women (At one time employed 500,000).
South Africa	2004 onwards	The expanded public works programme seeks to reorient existing departmental expenditure in ways that maximise jobs creation in environmental, infrastructure and social sectors.
Sri Lanka	1985 onwards	National housing development authority: engages urban communities in housing and infrastructure development.
Sweden	1938–1970	Programme offered an alternative to welfare-ism by emphasizing the “right to work” rather than the “right to income.” Unemployment rates remained below 3 percent until the late 1980s, when the programme was dismantled.
United States	1933–1936	New Deal public works programmes (WPA, PWA, CWA).
Zambia	1991 onwards	Micro-project unit targeted the poor and focused on the maintenance of existing infrastructure.

The desirability of implementation of public job creation is often met with questions and creates policy concerns that need to be addressed. Yet, with few exceptions to date, there is a lack of country studies that assess the economy-wide impacts, as well as the feasibility of employment guarantee policies.

To provide adequate answers as to the sustainability and fiscal responsibility of such employment initiatives, it is rather important to examine this issue on a country-by-country basis and several research initiatives are underway at the moment. For developed countries, simulations for the United States, Australia and the United Kingdom (which exclude multiplier effects) reveal that such a programme would cost today between 1 and 3.5 percent of GDP, which would be affordable for most government budgets. When the multiplier effects of such a programme are considered—resulting from the rising incomes of job guarantee workers and increased demand—the potential benefits extend far beyond the programme budget and wage bill. Beyond other social implications, simulations for the U.S. indicate that an employer of last resort programme would provide an addition of 1.66 percent of GDP annually.

This study joins such efforts, with a particular focus on jobs and projects whose employment guarantee job creation potential is often bypassed—jobs that substitute paid for unpaid work while creating conditions for development among marginalized communities and households. One of the concerns in implementing such initiatives is that scarce resources may be wasted in meaningless types of projects: i.e., digging ditches today only to be filled the next day. We propose job creation that addresses such concerns. In evaluating the desirability, feasibility and sustainability of such a policy, the multidimensional benefits that can accrue must be kept in mind. Drawing in marginalized segments of the population via the types of job creation we will propose in this study has the strong potential to contribute to many objectives including reversing outward migration, revitalization of marginalized communities, increasing human capital, reducing crime and promoting social inclusion.

It is also worth considering the strong linkages between EPWP, EGP and the MDGs. For the most part, discussion on the feasibility of the MDGs has focused on the lack of financial resources and on ways of bridging the funding gap, with many ongoing exercises centred on the costing of MDGs. Their objective is to gauge the total resource requirement of achieving the MDGs. Yet, policy selection is equally important in this context and guaranteeing employment ought to be given due consideration. There are multiple channels through which employment can speed up the achievement of MDG targets and this issue has received some attention recently. A good place to start would be to include a public employment, labour-intensive mandate for all MDG-related projects (for physical and social infrastructural asset creation). Although not a panacea, well-designed public employment guarantee policies can go a long way toward the achievement of the MDGs. Table 2 below indicates the multiple benefits gender-informed EPWP projects can deliver:

Table 2. Employment Guarantee Schemes and the Millennium Development Goals

MDGs	The Expanded Public Work Programme Can Deliver:
MDG 1: Eradicate Extreme Hunger and Poverty	<ul style="list-style-type: none"> _ Wage income benefit to EGP workers (beneficiaries) _ Project design in development of community gardens and common lands and other community-based agricultural production
MDG 2: Universal Primary Education	<ul style="list-style-type: none"> _ Reduction in need for unpaid work results in higher enrolment _ Training work/education options for adults _ Beneficiaries can be also engaged in school construction/maintenance
MDG 3: Promote Gender Equality and Empower Women	<ul style="list-style-type: none"> _ Benefit of wage income combined with gender targeting design _ Training/accreditation courses draw women into the labour force _ Reduction on unpaid work via better infrastructure _ Water and crèche provisioning for beneficiaries and by beneficiaries _ Early childhood development (ECD) workers & centres for ages 0–4 _ Home-based care workers alleviate unpaid care burdens _ Female beneficiaries participate in the <i>design</i> of EGS projects
MDG 4: Reduce Child Mortality	<ul style="list-style-type: none"> _ Wage income benefit for extension workers and community workers in early childhood development _ Early childhood development (ECD) centres for ages 0–4 _ Beneficiaries receive training in extension health services and receive certification to operate centres _ Infrastructure for clean water, latrines and crèche is developed
MDG 5: Improve Maternal Health	<ul style="list-style-type: none"> _ Wage income benefit for maternal health care education programme extension workers _ Education/training certification programmes _ Beneficiaries can be engaged in auxiliary community care activities
MDG 6: Combat HIV/AIDS, Malaria & Other Diseases	<ul style="list-style-type: none"> _ Home-based and community-based care worker development in education/training programmes _ Beneficiaries are engaged in providing auxiliary community care services
MDG 7: Ensure Environmental Sustainability	<ul style="list-style-type: none"> _ Engage beneficiaries in environmental remediation, reforestation, development of ponds, traditional irrigation systems, water projects and ecological latrines
MDG 8: Develop a Global Partnership for Development	<ul style="list-style-type: none"> _ Youth targeting design elements _ Learning from the international experiences of job creation programmes by engaging with communities, experts and global networks

1.5 GENDER AND CARE AS INTEGRAL DIMENSIONS TO COMBAT POVERTY

While not the case in every single country, on a world scale, the majority of the 1.3 billion people living in poverty are women. The vulnerability of women to poverty is strongly linked to the gender division of labour in paid and unpaid work, as well as asymmetries in access to and decision making over use of assets and resources. Women are income-poor, but also overtly taxed in terms of the time they allocate to caring for the sick, fetching the wood, collecting the water, preparing meals, etc. As a consequence, the *time-tax* that poor women

incur in securing inputs for household production and in providing care for family members is of concern and constitutes a dimension of asymmetry between them and the rest of the population.

This work further places an enormous time-tax on some people asymmetrically, particularly on poor women and children in developing countries, limiting other aspects of social engagement. In some cases, it reduces the time spent in self-employment, subsistence production of foodstuffs and market participation. A case in point here is taking care of HIV/AIDS patients in sub-Saharan Africa, an activity that pushes poor families deeper into poverty. In other cases, it limits involvement in political processes, attending school and medical appointments, skill upgrading, artistic expression, community participation and leisure. Internalized as one's "destiny," an unchangeable, unfortunate duty, but still inviolable obligation, the disproportionate engagement of parts of the population in unpaid care work can lead to social exclusion, time-poverty and even to depletion of human capabilities.

Among poor women, who are primarily the main providers of unpaid work and unpaid care work for their households and communities, enhancing access to basic social services is of extreme importance. EGPs provide some opportune space for use of public funds to poor women's benefit. They can provide jobs that unemployed poor women can undertake, create conditions that facilitate their participation in such programmes and, most importantly, identify useful jobs that are currently performed under unpaid conditions. A key finding in reviewing many EGP projects is that they consistently miss thousands of "hidden vacancies" that can potentially expand the menu of new employment-intensive projects.

1.6 SUMMARY AND KEY FINDINGS OF THE SOUTH AFRICA STUDY

If South Africa's current growth rate continues unabated, coupled with existing trends of declining labour-intensity, unemployment will reach the range of 33 percent by the year 2014. This finding originates in a recent UNDP International Poverty Centre, Brasilia study of South Africa and it further estimates that even under the most expansionary fiscal and monetary policy regime, unemployment will barely be halved by 2014 (Pollin et al. 2006). This worrisome possibility has unfortunately been corroborated by many other studies (Altman 2007).

To redress the severity of unemployment, part of the accepted policy response in South Africa at this time includes employment creation through the Expanded Public Works Programme (EPWP). Since the dismantling of apartheid in the early 1990s, South Africa has enacted several employment generation initiatives. Their mixed but encouraging success eventually culminated in the EPWP, a R20 billion national initiative. Inaugurated in 2004 as a medium-term active labour market policy, it aims to create one million new jobs for unemployed, low-skilled workers over five years. The EPWP was introduced as a repackaging of the successful elements of the Community-Based Public Works Programme (CBPWP) and

the Poverty Relief Fund, largely modelled on the Gundo Lashu project, a programme implemented in 2001 through the Limpopo Province Roads Agency with funding from DFID–South Africa and technical assistance from the ILO (ILO 2007).

South Africa is in a unique position regarding the potential of EGPs to promote gender equality. The EPWP consists of four sectors and one among them, the social sector, is most pertinent in the context of our study. If projects are designed in ways that are aware of the extra burdens placed on poor women, women can benefit in two distinct ways: first and foremost, their unpaid work burdens (including unpaid care work) can be reduced; second, women can benefit by enrolling in such projects as workers and receiving income, as well as training, which enhances human capital. If women are actively involved at the level of project selection, design and implementation, such initiatives can contribute to women’s empowerment in many dimensions.

Especially important is the inclusion and scaling up of budgetary allocations in home and community-based care (HCBC), as well as early childhood development (ECD) programmes within the social sector. To make these interventions effective, appropriate budgetary allocations must be made with the focus on improving the livelihoods of poor women and their communities. Presently, EPWP provides only a small budget for social sector job creation: (1) R15 billion for infrastructure investments—increasing the labour-intensity of government-funded infrastructure projects, including building of roads, bridges and irrigation systems; (2) R4 billion for environmental investments—creating work opportunities in public environmental improvement programmes; and (3) R600 million for social services—creating work opportunities in public social programmes, with a focus on home-based care workers and early childhood development.

Existing projects should be expanded beyond their current focus in both ECD and for people that provide care to HIV/AIDS patients and their children. The burdens of unpaid work, which women and children perform while caring for PLWHA, must become visible and alternatives must be made available through specific EPWP job creation within the social sector. In addition, the budgetary allocations seem to be extremely restricted and job opportunities are not full time, nor year-round. We must also keep in mind, as explained previously, that there is an interface between income poverty and time poverty, and women in poor households that have PLWHA suffer all the more. Therefore, parallel to cash benefits currently stipulated, to level the playing field, EPWP community care workers should be provided not only with training, but also with full time work to substitute for unpaid work of overworked household members. (There is a dearth of information in regard to detailed, nationally-representative studies and data collection on household coping mechanisms and unpaid work. Proper evaluation of EPWP projects would remedy this.)

1.7 KEY FINDINGS FOR SOUTH AFRICA

In many respects, the Expanded Public Works Programme (EPWP) has set deeply transformative objectives of employment and skill creation with benefits that extend beyond income transfers. In recent times, there has been recognition that to achieve the goals set by the EPWP policy intervention, larger budgetary allocations are required.

Our proposal suggests scaling up job creation in the areas of early childhood development (ECD) and home- and community-based care (HCBC), areas that will expand social service delivery to underserved areas, while creating jobs and skills within the communities it will help serve. The EPWP jobs we propose in this study are full-time, annual jobs and entail the development of an ECD and HCBC cadre. Examples include child care workers, school nutrition workers, teacher aids, school caretakers, school clerical workers, cooks, vegetable gardeners and administrators for local ECD sites, community health workers, nutrition and food security workers, TB and malaria officers, and workers that provide directly observed therapy, voluntary counselling and testing.

Specifically this study entailed:

- Desk reviews of government documents and interviews with officials
- Identification and costing of the proposed social sector job creation
- Creation of a time use satellite account
- Creation of gender-informed social accounting matrix
- Simulation analysis

The economy-wide results we report below stem from a suggested budgetary allocation of approximately R9.2 billion:

- **This injection creates 571,505 new full-time, year-round EPWP Social Sector jobs.** Roughly 540,000 are allocated to unskilled members of poor and ultra-poor households and the remaining to skilled supervisory workers. It must be noted that if programme costs are co-shared with other departments and EPWP funds are allocated **exclusively** to wages of the newly hired, 1.2 million jobs would have been created.
- **In addition to the direct job creation, around 200,000 jobs are created indirectly elsewhere in the economy.** The above injection results in extra demand generated through the economy from two sources: (a) new demand for intermediate inputs used by the EPWP sector in order to hire, train and deliver the new ECD and HCBC services (backward linkages); and (b) new demand for consumption goods that is generated when the newly hired skilled and unskilled EPWP workers, as well as those

from other industries, spend the income they will be now receiving. The indirect job creation is the labour needed to produce this extra output.

- **Adding the direct and indirect job creation, a total of 772,000 new work opportunities are created.** Overall, for every three direct job opportunities EPWP creates, another job is created somewhere else in the economy.
- **Almost 60 percent of new EPWP jobs are estimated to be filled by women.** They will create 317,007 (55.5 percent) new unskilled female positions at monthly wages of R500 for most workers and of R1,000 for those with higher levels of skill. An additional 16,386 skilled direct jobs (2.9 percent of total direct job creation) are expected to be filled by women.
- **In 2000 prices, the R9 billion corresponds to 3.5 percent of government expenditures** or about 1 percent of GDP. The budget we propose covers all labour payments, as well as all other costs associated with service delivery and human capital development, such as food and other agricultural inputs for meal preparation, supervisors, training and certification expenses, etc.
- **The total impact on GDP growth is in the order of 1.8 percent or R15 billion.** For 2000 it therefore raises the growth rate from 4.2 to 6 percent, with an implied multiplier equal to 1.6 ($15B \div 9.2B$).
- **The resultant growth is pro-poor.** The overall incremental change of income is 9.2 percent for ultra-poor households, 5.6 percent for poor households and 1.3 for non-poor ones. These overall changes are instructive, but do not shed light on those households from within whose ranks participants of the scaled up social sector EPWP come from; we discuss this issue in more detail below.
- **New direct and indirect taxes will be generated equal to about R3 billion,** which reduce the overall cost of the intervention by one-third, assuming no unanticipated leakages.
- **All participating poor households that were above or around the ultra-poverty line datum are lifted above the poverty line. Ultra-poor households cross the ultra-poverty poverty line and experience a substantial reduction in depth of poverty.** Among the 540,000 poor and ultra-poor households (under the model's assumption that unskilled labour employment is successfully targeted to poor and ultra-poor households), all poor households cross the poverty line. The remaining households (i.e., all the ultra-poor households) see their depth of poverty reduced by 61 to 83 percent. As a result, all such households cross the ultra-poverty line.

- **Social Benefits.** Going beyond the multiplier analysis, a variety of implications for all participants, and especially for women, must be mentioned.

Accreditation. The range of possible work opportunities we have proposed entail on-the-job-training and dedicated time for attending seminars and workshops that lead to accreditation. Increased levels of human capital acquisition and certification can potentially lead to better job prospects in the formal markets and within the government sector at the provincial or municipal level.

Service delivery. Children of all vulnerable households across the country will be able to enrol in early childhood development programmes that should lead to better nutrition, health, education and overall wellbeing for children, especially those in vulnerable households. The most vulnerable households with people living with HIV/AIDS will be receiving home-based care, counselling and better nutrition.

Generating self-employment. Potential asset accumulation, as well as other government interventions that support and promote community-based development, can lead to the springing up of new small businesses. **For community revitalization,** it is extremely important that earned income is spent on purchases from local shops and neighbours.

Participants will potentially experience an increased sense of dignity within their communities, as well as fulfilment and self-worth. Ours is a hypothetical policy scenario, which limits our ability to directly conduct such a study for the proposed intervention. Nonetheless, other EPWP-related project evaluations, even among critiques of this initiative in South Africa, have shown the strong and positive association participants report in reduction of nonincome poverty.

As the market has not been able to produce sufficient demand to absorb surplus labour, EPWP has the potential to contribute to a more inclusive economic and social development path by providing useful work opportunities to those ready and willing, but unable to find a job. Our proposal for social sector job creation serves as a benchmark *ex ante* evaluation of the impact of such scaling up on selected micro- and macroeconomic variables. It has highlighted the implications of a hypothetical scaled up social sector EPWP that reaches an additional half a million jobless from among low-skilled, poor households.

1.8 RECOMMENDATIONS

Our study has been informed by previous international and national research in this area, as well as interviews with colleagues and government officials. There is clear indication that in order to achieve the goals laid out by EPWP certain modifications are needed at various levels. Several audits, EPWP commissioned reviews and independent researchers have suggested that fencing off of budgetary allocations is necessary. Longer duration of employment, rethinking institutional coordination among departments, different linkages between the national, provincial and municipal level government bodies and higher levels of community involvement are among key areas of concern. Below we add four issues as identified in this study in the hope that EPWP can be strengthened sufficiently to deliver the *right to a job*, especially for those among the poor and unemployed who wish to engage in gainful employment.

- To achieve reduction in unemployment and poverty, EPWP jobs should increase in number and become full-time, year-round job opportunities. For that, higher budgetary allocations are needed. While this has implications for the net debt position of the government, it must be kept in mind that there is clear evidence of fiscal space expansion, pro-poor growth and indirect employment stimulus, all of which are counterbalancing positive forces.
- In identifying useful, labour-intensive types of employment, social sector labour-enabling work opportunities presents an area where many jobs remain hidden and ready to become part of the EPWP. Unpaid work, time use data and community level women's group meetings can provide the most useful inputs through participatory methods that can establish a balance of top-down, bottom-up design of projects to be undertaken.
- In understanding the overall macro-micro implications of such EPWP (social sector included), *ex-ante* social accounting matrix modelling can provide policymakers with useful benchmark information. Such a modelling approach allows for better overall understanding and, in particular, for gender-disaggregated impact analysis. For South Africa, such models are readily available at the national and provincial levels and require only minor modifications for EPWP impact assessment.
- An evaluation criterion of EPWP job opportunities that is neglected is its impact on ameliorating burdens of unpaid work. This can easily be corrected, provided that the benefits of redressing gender inequalities are made evident. Beyond its importance in improving women's lives, a substitution of unrecognized, undervalued and unremunerated work by paid work will contribute to reaching other human development objectives—including making progress towards achieving the MDGs.

II. SOUTH AFRICA: EXPANDED PUBLIC WORKS, A SOCIAL SECTOR INTERVENTION

1. INTRODUCTION TO THE STUDY

The remainder of this document is comprised of six sections. This section, section 1, briefly introduces the study and the structure of this report. Section 2 describes the South African economy through the lens of a gender-disaggregated social accounting matrix (SAM-SA). Section 3 presents selected findings regarding unpaid work. In section 4, the proposal for scaling up the Expanded Public Works Programme (EPWP) is discussed. Section 5 presents the simulation results of the proposed intervention and we conclude in section 6.

Since the dismantling of apartheid many positive developments have taken place in South Africa, yet unemployment and poverty still remain serious challenges. With a labour force of 15.8 million and 4.1 million people unemployed (by conservative measures), and with fifty percent of the population living in poverty, in 2004 the government introduced a public job creation initiative, the Expanded Public Works Programme, whose stated objective is to create one million job opportunities for the unemployed in a five-year period. A recent EPWP mid-term review and several other studies have appraised the challenges and the successes of this initiative. One of the challenges regards the scale of the intervention; it has been noted that the number of jobs, the duration of employment and hence the total wages per year are too small to make a difference in addressing the vast unemployment issues the country faces. Furthermore, it has been projected that even under accelerated growth scenarios, high unemployment will persist in the decade ahead (Pollin et. al. 2006; Altman 2007). As a result, the need to scale-up EPWP job creation is being discussed among policymakers and within the research community.

If scaling up is indeed adopted in South Africa and additional budgetary allocations are approved, EPWP will provide the policy space to create new jobs within all EPWP sectors, including the social sector. This research project investigates the economy-wide implications of such new job creation. The suggested work opportunities proposed in this study provide work in the areas of early childhood development and home-based and community-based care. As such, they provide a substitute to existing unpaid work performed by many poor and unemployed women who provide care work for their communities and families. Our proposal envisions an extension of service delivery to underserved communities, provided for by female and male community members that get paid for their work. For that, a substantial scaling up is required in terms of allocated funds for social sector jobs to cover the cost of a range of new jobs and to provide such jobs to new workers willing to be hired. The new jobs promise to create benefits for the newly hired and for the members of communities that will be the direct recipients of the services they will be producing, as well as for women, who will see their unpaid work burdens diminish. In addition, these new jobs will set off a number of chain reactions throughout the economy. Below we examine the economy-wide implications of a

hypothetical budgetary allocation of EPWP Social Sector job creation on income, employment, GDP and potential tax growth. A major concern regarding such active labour market policies is their ability to ameliorate poverty—are EPWP and other employer of last resort policies able to address poverty reduction? We explore this question further, as we find it of extreme importance, especially in the context of “cash transfers” versus “employment guarantee” debates.

Section 2 describes the South African economy through the lens of a gender-disaggregated SAM. We construct the SAM-SA with particular attention paid to two issues: household types and labour input disaggregation by skill and gender characteristics. Going beyond broadly based averages, we identify twenty household groups depending on geographic location, income level, adequacy of dwellings they reside in and population group. In regards to labour, we identify male-female differences in skilled and unskilled labour and how these are distributed across household types and productive sectors of the economy.

This is, however, a picture limited to the monetised part of the economy. As it has often been argued that it is important to underscore the “hidden” unpaid contributions that individuals (especially women) make to the functioning of the economic system and time use data can shed light on unpaid work. The analysis of such data becomes the focus of section 3. A time use satellite (TUS) matrix is constructed following the same household categories as the gender SAM. This allows us to examine unemployment, poverty *and* unpaid work patterns for men and women and thus a link is established between the monetised and the nonmonetised spheres.

In section 4 we present our proposal for scaling up the EPWP. We identify “hidden vacancies,” namely useful jobs currently carried out under unpaid conditions. The jobs we propose for a scaled up EPWP are primarily in two areas: early childhood development and home-based care for the permanently or long-term ill. Having identified types and numbers of jobs to deliver the above-mentioned social services, we use the corresponding budgetary allocations to simulate the economy-wide impacts of this scaled-up hypothetical scenario.

Using a multiplier methodology that concentrates on the distributional implications of intervention, we run several simulations and present and discuss the results in section 5. The backdrop against which we simulate the impacts of the job creation proposal is the SAM-SA that we use to highlight how the newly injected resources impact men and women in different types of households separately. We are particularly interested in the *pro-poor* growth potential of such government action and, as such, we discuss the impact of the interventions on poor versus non-poor households. Next, we report job creation and income generated along gender lines, identifying multiplier effects and corresponding changes in the tax base. The final section, section 6, summarizes and concludes.

2. GENDER, UNEMPLOYMENT AND POVERTY STRUCTURE OF THE SOUTH AFRICAN ECONOMY THROUGH THE LENS OF A SAM

2.1 Introduction

This section describes selected features of the SAM with occasional references being made to the time use satellite accounts we have developed for this study.¹ Making use of its framework we provide some insights into the South African economy, highlighting poverty and gendered dimensions that contextualise the proposed EPWP interventions and their impact on households and the economy. A technical report on the construction of the SAM-SA is submitted as a separate document (Appendix A: Technical Report #1) providing a detailed description of the development of the SAM-SA² and related time use satellite accounts for the base year 2000.³

A few comments are in order on the development of the SAM-SA. Our key focus was to derive appropriate representative household and factor (labour) groups to enable us to carry out our simulation analysis along gender lines and finely differentiated households.⁴ This is important as the job creation interventions we propose will not affect all households in quite the same way, especially when unpaid work is taken into consideration. This implies that demographic and geographic data, as well as information on household income and the labour market status of individuals, is fully incorporated. All this information is essential in forming detailed household and factor accounts, and hence we spend some time describing the economy according to the implied social significance of the types of households we construct.⁵

¹ As mentioned earlier, we provide more details regarding unpaid work in the next section.

² This input-output SAM is a collaborative project between the Levy Economics Institute and the PROVIDE team. The SAM-SA is built on South African input-output tables of the PROVIDE-SAM. Among other new elements, it contains a complete revision of the household groups, gender disaggregation of factor groups and value added, as well as a new EPWP sector necessary for policy analysis.

³ The year 2000 was chosen for consistency purposes, as the data of a satellite time use account we developed for this project were collected in 2000 by Stats South Africa.

⁴ The SAM used in this study is an updated version of the PROVIDE 2000 model, developed at the University of Elsenburg, Department of Agriculture, South Africa. In updating it for this project, we are indebted and acknowledge the contributions of Kijong Kim, Rosemarie Leaver, Kalie Pauw, Cecilia Punt and Melt van Schoor. The year 2000 was chosen in order to make the accounts of the paid and unpaid economy compatible and in view of the fact that the data collection on time use took place in 2000 as well.

⁵ Data on income and expenditures of households, as well as wages, are from the Income and Expenditure Survey of 2000 (IES 2000; SSA 2002a) and Labour Force Survey of September 2000 (LFS 2000:2; SSA 2002b); all the relevant submatrices in the factor (labour) and household rows and columns of the SAM come from this merged dataset (referred to as IES/LFS 2000) and contain comprehensive information on income and wage distribution.

When forming representative accounts in a SAM, such as factor or household groups, some basic guidelines need to be followed. First, one has to decide on the appropriate level and extent of account disaggregation: the smaller the subsample on which estimates of income and expenditure flows of an account are based, the less reliable that estimate is likely to become, especially if the subsample contains any outliers. Thus, while more accounts are always better (one can always aggregate the SAM once accounts have been formed and not the other way around), the sample size remains a real constraint. The challenge is to find the right balance between detail in the SAM and reliability of estimates.

Secondly, a SAM, much like any economic model, is a *representation* of an economy. As such, it reflects the views of the modeller. We have attempted to group households and disaggregate labour factors in terms of how they each respond differently to economic changes, yet these are approximations of socioeconomic stratification within the society and the economy. Such “stylised facts” and “groups” are still broad brushes and do not encompass the variation of institutional positioning or intrahousehold dynamics that individuals experience. Still, they do remain useful insofar as the proposed socioeconomic groups are recognisable for policy purposes, allowing us to go a little further than the overgeneralizations, such as “the poor” or “women,” would have provided us with. With these issues in mind, we turn now to the description of the economy through the lens of a gender SAM.

A SAM is a double-entry table that provides information about the economy. Along its columns and rows there are numeric entries that record the transactions that take place between “institutions” and “agents” during a period of time. SAMs can be organised in many different ways, but essentially they provide information on interactions between:

- (1) Production activities (productive sectors of the economy) and commodities used (intermediate goods used in production);
- (2) Factors of production (capital and labour);
- (3) Institutions (households, firms and government);
- (4) Capital account (the financial side of the macroeconomy); and
- (5) Rest of the world (imports, exports and other financial flows)

These accounts are symmetrically arranged (in rows and columns) forming a square matrix that traces the origin and destination of expenditures and income received. In addition to providing a consistent framework of national accounts, a SAM incorporates the distributional and social dimensions of an economy. Table 3 below shows a simple schema of a typical SAM.

Table 3. Simplified Schematic Social Accounting Matrix

			EXPENDITURES						TOTALS
			ENDOGENOUS			EXOGENOUS			
			FACTORS	HOUSEHOLDS	PRODUCTIVE ACTIVITIES	GOVERNMENT	REST OF THE WORLD	CAPITAL ACCOUNT	
RECEIPTS OR INCOMES	ENDO-GENOUS	FACTORS	0	0	T ₁₃	X ₁₄	X ₁₅	X ₁₆	Y ₁
		HOUSEHOLDS	T ₂₁	T ₂₂	0	X ₂₄	X ₂₅	X ₂₆	Y ₂
		PRODUCT ACTIVIT	0	T ₃₂	T ₃₃	X ₃₄	X ₃₅	X ₃₆	Y ₃
	EXO-GENOUS	GOVERNMENT	L ₄₁	L ₄₂	L ₄₃	t ₄₄	t ₄₅	t ₄₆	Y ₄
		REST OF WORLD	L ₅₁	L ₅₂	L ₅₃	t ₅₄	t ₅₅	t ₅₆	Y ₅
		CAPITAL ACTS	L ₆₁	L ₆₂	L ₆₃	t ₄₄	t ₄₅	t ₄₆	Y ₆
	TOTALS		Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	

Source: Defourny and Thorbecke 1984

At an aggregate level, a SAM allows one to see how total income is distributed between capital and labour. At a disaggregated level, a lot more detail can be provided. For example, labour, a factor of production, can be specified as being male or female, skilled or unskilled; each industry can be described by the types and amounts of inputs used, including the female/male intensity of labour employed. A SAM also allows for information on several household types to be constructed depending on specific socioeconomic characteristics, i.e., poor or non-poor households, the quality and durability of their housing unit, rural versus urban location, ethnicity or racial group, etc.

From the perspective of this study, a SAM is a powerful tool in that it can include sufficient detail to point out gender differences—and biases—in the division of labour, patterns of income received and expenditures incurred, etc. In addition to the transparency of income distribution and the labour composition of production (as it emerges from the description of the productive structure of the economy), it allows one via simulations of hypothetical policy intervention scenarios to examine, for example, how women and men are affected differently, which is important for the ex-ante evaluation of the policy intervention we propose.

2.2 The Economy According to the Gendered Social Accounting Matrix (SAM-SA)

The SAM employed for this study follows the customary practices of input-output construction and is an update of the 2000 PROVIDE SAM. It has been reformulated in several important respects to include three features: a gender focus in the labour categories of market activities; a variety of household types that are conceptually particularly useful in tracing differentiated effects of public employment creation interventions; and a new production sector—the expanded public works sector—which is designed for new job creation that delivers EPWP outputs (i.e., services in ECD).

The new SAM distinguishes 20 household types (classified according to income level, ethnicity and location) and four categories of workers (differentiated by skill and gender). It defines 27 market activities, of which one is agriculture, eleven are manufacturing, four are infrastructure related and ten are services, and adds an EPWP Social Sector that uses some inputs from other sectors of the economy and employs primarily unskilled workers—female and male—from ultra-poor and poor households. This level of detail permits a better understanding of how a policy intervention aimed at job creation can yield a differentiated impact on female and male workers, depending on their ethnicity, the type of household they belong to, their skill level and their location. In what follows, we provide further details on other aspects of the SAM. A technical report is also included as a separate appendix.

a. Labour Factors and Activities

The two main characteristics used in creating labour factors are skills and gender. In modelling exercises, differentiated skill levels are often represented in one of two ways: by occupational categories, as each type of job corresponds to specific preacquired skills, or by educational level, which is closely associated with years of schooling required to attain a certain level of skill. In this study, educational attainment has been chosen over occupation as a proxy for skill. This decision was based on clear evidence that educational level is a better predictor of earnings and employment prospects than occupational categories, as the latter leads to widely dispersed wage income distribution (Altman 2007; Technical SAM-SA Report 2007; PROVIDE 2000 and 2005).⁶ Race is a deeply inscribed marker in labour markets and table 4, below, provides a clear indication of educational attainment inequalities in South Africa.

Table 4. Educational Attainment by Population Group

	None through Primary	Lower Secondary	Upper Secondary	Tertiary	Other or Unspecified	Total
African	41.9	25.9	28.0	3.0	1.2	100
Coloured	31.5	31.8	31.7	3.9	1.1	100

⁶ The original SAM disaggregates highly educated workers into those who have obtained a Matriculation Certificate (or grade 12) and those who have tertiary education. These two categories have been aggregated in the present study to make simulation analysis easier and more robust.

Asian	7.0	20.6	59.9	11.6	0.8	100
White	0.8	14.1	57.8	26.3	1.1	100
Total	32.7	24.5	34.4	7.2	1.1	100

Source: Authors' calculations based on LFS South Africa 2000

In 2000, there were approximately 11 million employed individuals in South Africa. About two-thirds of the employed fell in the category of zero education up to grade ten, while 20 percent had a “matric” certificate and 14 percent had some form of tertiary qualification. Unemployment rates vary little between the bottom two education categories (around 38 percent, using the broad definition of unemployment), but the labour market participation share of adult matriculants was 35 percent higher than that of the bottom education cohort.

Only 14 percent of people with a tertiary qualification are unemployed, which is well below the national average of 36 percent prevailing in 2000. While there is clearly a strong correlation between education levels and unemployment rates, the link is extended between unemployment and poverty. About 63 percent of labour market participants in the ultra-poor household⁷ group are unemployed and almost all of them are in the lowest education category. The rate drops to 49 percent among the poor, and 35, 20 and 6 percent in the non-poor (low-mid, upper-mid and high income) household groups, respectively.

Pronounced as the above educational differences may be,⁸ further investigation for modelling purposes of this study revealed that it would be more appropriate to aggregate labour factors at the lower end of the education spectrum. Maintaining a split between primary school and lower secondary school, which results in obtaining the General Education and Training Certificate (GET), was surprisingly unnecessary. In fact, the distinction between grade 12 and the other categories is much more important. Consequently, the two selected education categories are “none through GET” and “matriculation to tertiary.” Therefore, the four labour types in the SAM are: female and male workers who have acquired below and up to a GET (labelled in the tables as “Female up to GET” or “Female Unskilled” and “Male up to GET” or “Male Unskilled”); and female and male workers with upper secondary education or higher (labelled in the tables as “Female Skilled” and “Male Skilled”).

⁷ Income level of R1,847, which is less than US\$1 a day. We discuss definitions of income groups shortly.

⁸ The current education policy in South Africa determines that school attendance is compulsory until the completion of grade 9, with most students acquiring at least a grade 10 GET certificate, corresponding to the lowest two tiers identified in the table 5. Estimates of labour market participation, employment probabilities (using the Heckman two-step procedure) and earnings equations using South African data (see, for example, Oosthuizen 2005 and Van der Westhuizen et al. 2007) show clearly that: (1) the decision to participate only increases significantly once a person has a grade 12 qualification; (2) the employment probability of a labour market participant only increases significantly once a person has a grade 12 qualification; and (3) earnings rise gradually as education levels increase, but also jumps significantly with a matric qualification.

Interesting gender differences also exist between education and occupational structure, as detailed in table 5, below. Occupational segregation appears to be quite strong in South Africa (as in many other parts of the world), with women constituting only a small fraction of the most senior occupations (6 percent of senior officials and 1 percent of professionals), but being the vast majority (90 percent) of one of the lowest status occupation, domestic worker.

Table 5. Female and Male Workers by Education and Occupation

	Female up to GET	F- Higher Education	Male up to GET	M-Higher Education	Total	F-Share (occupation)
Senior Official	31, 990	96,149	89,821	284,845	502,805	6.4
Professional	6, 377	217,506	17,932	246,430	488,245	1.3
Assoc. Professional	100,777	450,876	100,121	325,568	977,342	10.3
Clerks	173,489	451,806	119,903	198,395	943,593	18.4
Service Work	372,509	203,765	373,975	330,194	1,280,443	29.1
Skilled Agriculture	90,664	8,408	300,914	47,371	447,357	20.3
Crafts & Trades	169,956	42,864	934,990	286,856	1,434,666	11.8
Machine Operator	144,504	23,382	778,886	140,456	1,087,228	13.3
Elementary	841,497	129,127	952,261	145,674	2,068,559	40.7
Domestic Worker	887,319	60,313	36,362	2,067	986,061	90.0
Unspecified	298,851	104,561	311,335	124,323	839,070	35.6
Total	3,117,933	1,788,757	4,016,500	2,132,179	11,055,369	

Source: Authors' calculations based on LFS South Africa 2000

Finally, at a more aggregated level, skilled and unskilled women workers contribute 33 percent of total labour value added and 42 percent of total time inputs into the market production process (figure 1 and figure 2). Their lower share-to-value-added corresponds to total income received by women. This reflects *lower wages* for women than for men—which are often associated with feminization of jobs and discrimination and are not necessarily due to lower labour productivity, as a neoclassical interpretation would suggest.

Figure 1. Female and Male Share in Labour Value Added

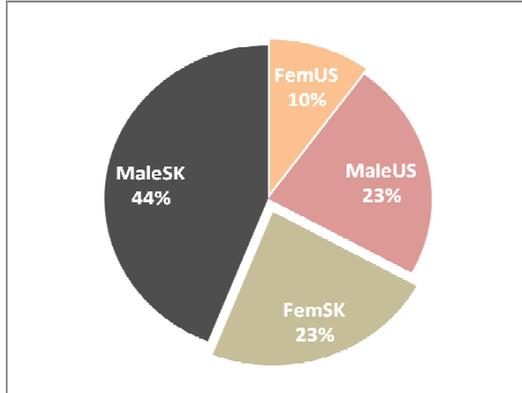
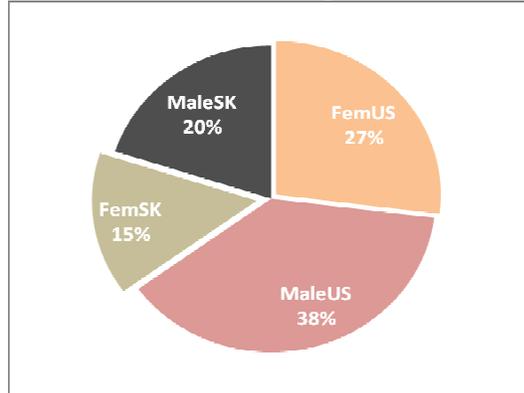


Figure 2. Female and Male Share I in Paid Work Time Inputs



Source: Authors' calculations based on gender SAM-SA

b. Activities: A Macro View of the Economy with a Focus on Male-Female Employment

From the national accounting matrix (NAM) for South Africa it can be seen that gross domestic product at market prices was R920,681 million in 2000, with 49.7 percent accruing to labour, 41 percent accruing to capital and the remaining 11.1 percent accounted for by net taxes on products (R83,933 million) and production (R18,146 million). Imports accounted for 9.5 percent of total supply of R2,414 billion (measured at consumer prices), with the remaining 90.5 percent of supply produced domestically. The demand for commodities as intermediate inputs accounted for some 52.3 percent of total demand for commodities and domestic final demand accounted for 37 percent and exports for 10.6 percent. Although South Africa was a net exporter of goods and services (R27,250 million), the total factor and institutional expenditures to the rest of the world (-R28,442 million) caused it to run a net deficit on the current account of R1,192 million. Gross domestic investment was R139,619 million (15.2 percent of GDP) and this was complemented by a small increase in stocks (R7,096 million, giving total investments of R146,715 million).

Not all production activities employ female and male workers with the same intensity. The sectoral disaggregation of the SAM was chosen to emphasise the gendered structure of the South African economy, as illustrated in table 6. For example, the textiles sector is singled out for being the most female-intensive manufacturing sector. This sector employs about 6 percent of the total female labour force and more than 50 percent of its labour value added is female. Infrastructure tends to be male intensive (on average the female share in infrastructure-related sectors is about 10 percent).

Domestic work services are by far the most female-intensive sector in the economy (83 percent of its labour value added is female and this is mostly unskilled) and an important source of female employment, accounting for 23 percent of total female employment. It is a

primary destination of poor African women seeking jobs, who are often migrant workers, and is also the lowest paying sector in terms of wages.

Furthermore, we note that in the sectors of education, health and social services,⁹ there is a higher female intensity of 59.8, 67.5 and 66.4 percent, respectively, as opposed to those classified as “other services” (such as financial and business services) and “other government” sectors. These “female intensive” sectors provide about 10 percent of total female employment with decent work conditions, i.e., contracts and wages are trade union negotiated. These sectors therefore present great potential in enhancing employment opportunities for women in South Africa.

Table 6. Structure of the South African Economy by Gender and Skill (in percent)

	Sector's VA/GDP	Capital	Unskilled Male	Skilled Male	Unskilled Female	Skilled Female	Female Intensity	Unskilled Intensity
Agriculture	4.9	61.8	16.0	14.0	5.9	2.3	21.4	57.3
Mining	7.9	62.0	21.7	15.1	0.3	0.9	3.3	57.7
Food	2.7	47.5	16.7	20.1	9.7	6.2	30.1	50.1
Textiles	1.6	41.4	13.5	15.7	19.2	10.2	50.1	55.8
Paper	1.6	44.5	17.7	23.9	4.9	9.0	25.1	40.7
Petroleum	1.4	76.0	3.6	19.4	0.1	0.9	4.1	15.4
Nonmetals	3.3	60.8	9.4	22.6	2.6	4.5	18.3	30.8
Metals	3.2	59.8	15.2	17.3	0.9	6.8	19.1	40.1
Machinery	1.2	45.1	18.3	27.0	3.8	5.8	17.6	40.2
Commun. Equip.	0.3	52.2	3.3	29.3	9.2	6.1	32.0	26.0
Transport Equip.	1.5	56.8	10.8	28.2	1.7	2.5	9.6	28.8
Other Mfg.	1.1	75.5	9.2	9.8	3.2	2.4	22.8	50.5
Electricity	1.8	74.0	6.2	16.6	0.4	2.8	12.2	25.3
Water	0.4	47.9	14.2	32.5	3.2	2.2	10.4	33.4
Building	1.9	20.3	43.1	31.6	1.6	3.4	6.3	56.1
Construction	1.5	46.3	28.2	23.4	0.7	1.5	4.0	53.7
Trade	14.3	44.4	15.4	19.6	9.9	10.8	37.1	45.3
Transport	8.7	58.4	14.6	19.6	1.9	5.5	17.8	39.7
Fincl. Services	9.7	55.5	1.2	31.5	1.3	10.6	26.8	5.5
Business	9.0	56.6	4.0	26.5	2.5	10.5	29.8	14.8

⁹ This is important to keep in mind in view of the social sector EPWP interventions, as it will be come clear in a later section.

Education	6.5	14.8	3.1	31.2	3.0	47.9	59.8	7.2
Other Gov't.	9.7	15.7	11.0	42.6	3.2	27.5	36.5	16.8
Health	1.9	22.1	4.5	20.8	12.9	39.7	67.5	22.3
Social Services	0.3	23.3	17.0	8.8	15.8	35.1	66.4	42.8
Other Services	2.4	32.6	17.1	25.4	10.2	14.8	37.0	40.4
Domestic Service	1.3	0.0	15.2	2.0	75.7	7.1	82.8	90.9
Total	100.0							

Source: Authors' calculations based on Gender SAM-SA

c. Hourly Wages

Education is a strong determinant of wage levels, with people in the lowest education group earning, on average, R16,492 per annum, compared to R41,008 for matriculants and R94,894 for people with tertiary qualifications. Still, on average, female wages across all education categories are about 38 percent lower than that of men, despite average working hours of females being only 8 percent lower than that of men. Despite the lower wages, female unemployment rates are also significantly higher, averaging 41 percent compared to 31 percent among males.

It is important to point out that these overall wages mask substantial differences among socioeconomic groups, in particular between the African and white populations. As illustrated in Table 7, an African woman who has completed the GET would earn, on average, only 30 percent of what a white woman with same educational qualifications would earn, while an African woman with higher education would earn about 71 percent of a corresponding white woman's wage. The gender wage gap, too, differs between the two population groups: for the white population, women's wages are about 60 percent of white men's wages in all educational categories, while similarly for the African population the gender wage gap is 57 percent for the medium educated (GET) and 87 percent for highly educated (tertiary degree), respectively.

Table 7. Real Average Monthly Earnings by Gender, Education Level and Population Group (in South African Rand)

	African Female	African Male	White Female	White Male	African F/M	White F/M	African/White Female
Till GET	884	1,539	2,966	4,905	57 %	60%	30%
Tertiary	5,553	6,373	7,803	13,311	87%	59%	71%

Source: Authors' calculations based on LFS South Africa 2000 and Gender SAM-SA

As is made evident in the above table, the returns to tertiary education for African women are quite high: their monthly earnings rise sevenfold, while for African males the corresponding change is about threefold; for white men and women the change is approximately two and an half times. As a result, the gap in monthly pay between African women and their highly

educated counterpart African males is reduced by 30 percent (with women now receiving R0.87 for every R1 a man makes).

It also results in reducing the gap vis-à-vis white women from 70 percent less to 29 percent. This important finding is illustrated in table 8, below. Increasing educational attainment of a woman to GET certificate level results in earning wages above poverty levels, provided a job is available.

Table 8. Real Average Monthly Earnings by Gender and Education among the African Population (in South African Rand)

	African Female	African Male	African F/M
Primary	402	900	45%
Up to GET	884	1,539	57 %
Tertiary	5,553	6,373	87%

Source: Authors' calculations based on LFS South Africa 2000

Lastly, table 8 shows the improvement in the gap between African women over men when the education level is higher than primary; as shown above, the gap in real average monthly earnings is reduced by 12 percent.

Hourly wages in general and, hence, gender-based differentials are expected to deviate from monthly or annual figures as seniority and contractual benefits are taken into account. Averaged over the entire population, and reclassifying skills into two educational groups, official LFS hourly wages are R6.6 for unskilled women and R10.8 for unskilled males.¹⁰ Table 9 below reports the corresponding figures obtained from the SAM-SA sectors that are very close approximations of the ones derived directly from the LFS (at R7 and 11), both of which suggest that women earn about 60 percent of what men earn in the unskilled group and about 68 percent of what men earn in the skilled group.

Table 9. Average Hourly Wages by Skill Level and Gender (in South African Rand)

	Female	Male	F/M Ratio
Unskilled	7	11	60%
Skilled	28	41	68%

Source: Authors' calculation based on Gender SAM-SA

d. Household Types

We identify twenty household types in the SAM that are grouped together along three axes:

- Location of the household
- Income level
- Population group according to race of the head of the household

Geographic Location: The first major division is the rural-urban split, with urban households further divided into formal and informal. Here informal refers to the type of housing in which the household lives and not to any formal or informal conditions of labour market employment. Formal urban residential areas include traditional residential suburban areas and

¹⁰ The wages we calculated for the four labour categories (male unskilled/skilled and female unskilled/skilled) required several iterations and assumptions to correct for missing observations and other problems. For full documentation, see Technical Paper #1.

city or town centres, and those residing within these areas are typically middle-income or wealthy households. Informal areas, on the other hand, include shantytowns and slums. Households live in shacks or huts, often lack access to basic services and are generally classified as poor or very poor. Linkages to formal employment are also weaker than in formal areas.

Rural households are divided into households living in areas demarcated as commercial farms or rural areas where commercial activities (such as mining) take place. As such, “rural commercial” households are not necessarily themselves involved in agricultural or mining activities although they very often are, either directly or indirectly. The remainder of rural areas in South Africa basically make up what was formerly known as the “homelands” in South Africa. As part of the racist regime’s apartheid policy, these areas were set aside as “reservations” for Africans of specific ethnic groups. Today the majority of the population in the former homelands are still African.

Homelands were either partially self-governed or, in some cases, independent from the Republic. The ex-homeland areas constitute less than 13 percent of the total land area of South Africa, but are still today home to over 27.1 percent of the overall population. Of this, an astounding 99.6 percent are Africans (as table 10 indicates), resulting in one out of three Africans living in ex-homeland territories. Among these households, 54 percent are female-headed households. Outward migration, rampant unemployment, inactivity and the worst poverty rates in the country are the result of decades of under funding, as well as economic and geographical isolation. Hence, separating households that currently reside in former homelands areas makes good sense from an economic modelling point of view.

Table 10. Population Distribution by Household Type (in percent)

	African	Coloured	Asian	White	Total
Urban Formal	63.2	12.1	4.4	20.2	100
Urban Informal	94.5	4.7	0.6	0.1	100
Rural Comm.	85.6	9.1	0.4	4.9	100
Rural Ex-homeland	99.6	0.2	0.0	0.1	100

Source: Authors’ calculations based on gender SAM-SA

Income groups: The next axis according to which we group households is income. Three income levels are used: non-poor households with per capita income within the upper 50th percentile; poor households with per capita income in the 25–50th percentile; and ultra-poor households with per capita income in the 0–25th percentile. Correspondingly, R1,846 can be regarded as the relative “ultra-poverty line.” The next 25 percent of the population live on R1,847–4,000 per annum and are labelled “poor.” Average income levels rise dramatically in the non-poor household groups, ranging from R6,502 in the lower middle-income group (50th to 75th percentiles) to R17,616 in the upper middle-income group (75th to 90th percentile) and R70,506 in the high-income quintile (90th percentile and above).

The implied poverty line of R4,000 is in the same vicinity as many other poverty lines that have been used for South African poverty analyses. For example, Hoogeveen and Özler (2004) suggest that a reasonable poverty line is in the region of R3,841 per capita per annum (for the same year). In 2000, there were approximately 43 million people in South Africa. To reiterate, the bottom two household groups are formed around the 25th and 50th percentiles of per capita income; hence, by construction, 50 percent of the population is defined as poor, of which half are ultra-poor. Poverty, as defined here, is especially prevalent in the former homelands areas where 78 percent of the population is poor. This attests to the immense inequalities in living standards that persist in South Africa. Table 11 provides some statistics on income distribution according to population group.

Table 11. Distribution of the Population across Income Groups and Race (in percent)

	African	Coloured	Asian	White	Total
Row Shares					
Ultra-poor	96.8	3.0	0.1	0.1	100.0
Poor	91.6	7.7	0.4	0.3	100.0
Low-Mid Income	79.6	14.7	3.4	2.3	100.0
Upper-Mid Income	61.0	15.3	7.0	16.8	100.0
High Income	28.8	8.4	5.7	57.1	100.0
Total	79.2	9.3	2.5	9.0	100.0
Column Shares					
Ultra-poor	32.0	8.4	1.1	0.2	26.2
Poor	29.2	20.8	4.3	0.8	25.2
Low-Mid Income	24.0	37.8	31.9	6.0	23.9
Upper-Mid Income	11.1	23.6	39.3	27.0	14.4
High Income	3.8	9.4	23.5	66.1	10.4
Total	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations based on LFS South Africa 2000

Population Groups: The next major division is the formation of population groups through a race split. South Africa population surveys identify four categories: African, coloured, Asian and white households. Given the small number of coloured, Asian and white households living in informal urban areas, all urban households from these three racial groups are grouped under formal areas. A similar assumption was made for non-African households living in former homelands. This approach is unavoidable given the small sample sizes of non-Africans in urban informal areas and the former homelands. A further necessary step was to group coloured and Asian households together. Of the four racial groups, these two racial groups, on average, have the most similarities, although generally speaking the Asian population is slightly

better off in terms of income and education levels. While the ideal would have been to keep these separate, the prevalence of Asian households in rural and informal urban areas is too low to justify having a separate account for these households.

Table 12 below presents the household classification by combining geographic location, income level and race, as discussed above.

Table 12. Summary of Household Types

1. Urban Formal African Non-poor	11. Rural Commercial African Non-poor
2. Urban Formal African Poor	12. Rural Commercial African Poor
3. Urban Formal African Ultra-poor	13. Rural Commercial African Ultra-poor
4. Urban Formal Coloured Non-poor	14. Rural Commercial Coloured Non-poor
5. Urban Formal Coloured Poor	15. Rural Commercial Coloured Poor
6. Urban Formal Coloured Ultra-poor	16. Rural Commercial Coloured Ultra-poor
7. Urban Formal White Non-poor	17. Rural Commercial White Non-poor
8. Urban Informal African Non-poor	18. Ex-homeland African Non-poor
9. Urban Informal African Poor	19. Ex-homeland African Poor
10. Urban Informal African Ultra-poor	20. Ex-homeland African Ultra-poor

e. Unemployment

In the last decade, the official unemployment rate in South Africa has been very high and is currently at 25.5 percent. The extended unemployment rate, a measure that includes discouraged workers, is about 37.1 percent, affecting predominantly unskilled and low-skilled African workers (LFS, March 2007, Stats South Africa). These rates correspond to 4.4 and 7.1 million persons out of work, respectively. It must be noted that despite chronic unemployment, as compared to countries of similar socioeconomic level of development, self-employment and the size of the informal sector has remained surprisingly small during the last decade.

Table 13 details unemployment rates by gender for each household classification included in the reformulated SAM-SA and highlights the high correlation between unemployment and poverty. While unemployment among affluent white segments remains below 5 percent, the case is quite clear that unemployment increases with poverty, reaching 81 percent among African ultra-poor males in urban areas. This is consistently the case across geographic location, gender and race/population group. Female unemployment is higher than male for 8 out of 12 poor and ultra-poor household types, with the trend reversing for African poor and ultra-poor households in urban areas and in ex-homelands.

Table 13. Male and Female Unemployment Rates (in percent)

	Male	Female
Urban Formal African Poor	60.8	58.7
Urban Formal African Ultra-poor	81.1	74.2
Urban Formal Coloured/Asian Poor	54.2	58.7
Urban Formal Coloured/Asian Ultra-poor	62.3	71.5
Urban Informal African Poor	48.0	55.4
Urban Informal African Ultra-poor	69.0	75.1
Rural Comm. African Poor	32.9	44.7
Rural Comm. African Ultra-poor	56.2	60.7
Rural Comm. Coloured/Asian Poor	14.9	30.1
Rural Comm. Coloured/Asian Ultra-poor	24.8	58.9
Ex-homeland African Poor	42.3	41.0
Ex-homeland African Ultra-poor	59.5	54.3

Source: LFS, South Africa 2000 and SAM-SA

f. Income Distribution

Income inequality: Income inequality in South Africa is very high,¹¹ even when government transfers (old age grant, child grant, etc.) and intrahousehold transfers are taken into account. On average, rural households are poorer than those in urban locations; Africans are more so than other population groups, while the worst of all are the ex-homeland households.

¹¹ World Bank ranking is 10th worst in the world (UNDP, HDR 2007)

Table 14. Income Distribution by Household Type and Source of Income (in percent)

	Population	Total Income	Labour Income	Capital Income	Gov't Transf	HH Transf	Remitt	Total Income
Urban Formal African Non-poor	16.3	25.0	74.1	21.1	2.9	1.8	0.0	100.0
Urban Formal African Poor	7.1	1.7	52.0	19.2	18.0	10.8	0.1	100.0
Urban Formal African Ultra-poor	4.4	0.4	35.5	17.1	29.6	17.7	0.1	100.0
Urban Formal Col/Asian Non-poor	8.1	12.2	74.5	20.4	3.2	1.8	0.0	100.0
Urban Formal Col/Asian Poor	1.5	0.3	54.6	9.5	22.3	13.5	0.1	100.0
Urban Formal Col/Asian Ultra-poor	0.6	0.1	34.6	18.0	29.6	17.8	0.1	100.0
Urban Formal White Non-poor	8.3	37.7	57.2	39.8	2.0	1.0	0.0	100.0
Urban Informal African Non-poor	3.7	3.3	73.1	20.6	3.2	3.1	0.1	100.0
Urban Informal African Poor	2.7	0.7	64.8	14.4	8.8	12.0	0.1	100.0
Urban Informal African Ultra-poor	1.8	0.2	44.3	14.2	15.8	25.6	0.1	100.0
Rural Comm. African Non-poor	3.9	4.2	72.2	21.3	4.5	2.0	0.0	100.0
Rural Comm. African Poor	3.4	0.7	51.1	14.6	15.6	18.7	0.1	100.0
Rural Comm. African Ultra-poor	4.5	0.4	35.0	10.0	26.7	28.2	0.1	100.0
Rural Comm. Col/Asian Non-poor	0.8	0.7	71.9	21.5	5.0	1.5	0.0	100.0
Rural Comm. Col/Asian Poor	0.5	0.1	75.8	2.2	15.9	6.0	0.0	100.0
Rural Comm. Col/Asian Ultra-poor	0.1	0.0	76.1	0.1	19.6	4.1	0.0	100.0
Rural Comm. White Non-poor	0.7	3.5	43.8	54.5	1.1	0.5	0.0	100.0
Ex-homeland African Non-poor	6.9	5.6	55.5	35.5	5.8	3.2	0.0	100.0
Ex-homeland African Poor	10.0	2.0	34.5	23.8	24.2	17.4	0.1	100.0
Ex-homeland African Ultra-poor	14.7	1.2	25.0	17.1	31.5	26.2	0.1	100.0
Total	100.0	100.0						

Table 14 is quite instructive in going beyond averages. Notice for instance that white urban formal households and rural commercial ones constitute 9 percent of the population and receive 42 percent of total income. On the other hand, ultra-poor households representing 25 percent of the population—of which half reside in ex-homelands—receive 2.3 percent of income. Put it differently, some 9 percent of the people command 18 times more income than

another 25 percent (bottom quintile) of the population lives on. The corresponding ratio of the richest 10 percent to the poorest 10 percent is 31 times.

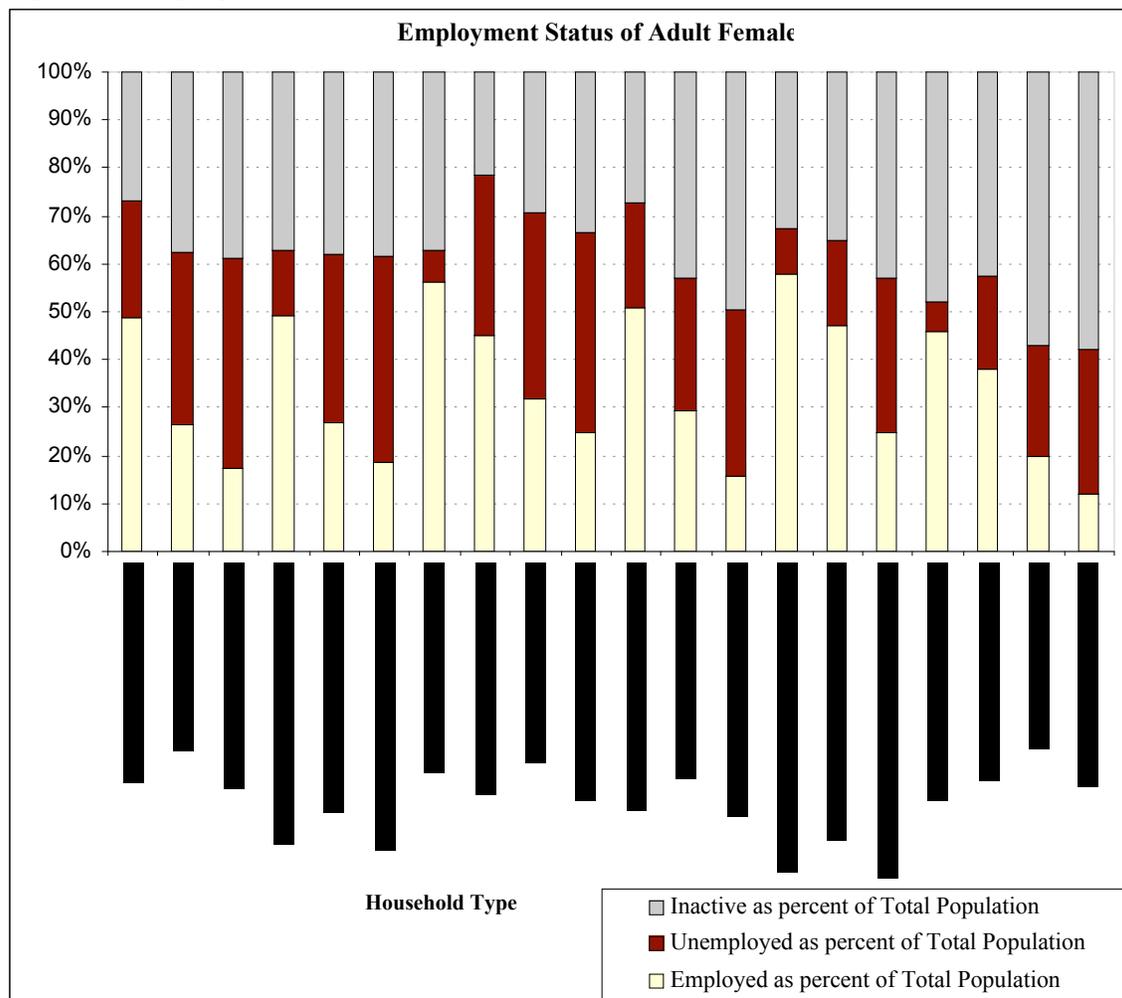
The table also highlights the importance of labour income to total income. By international standards it is very high for households in South Africa, pointing to the extreme importance of having access to jobs and the devastating impact of unemployment and enforced “inactivity.” For urban formal non-white/non-poor households labour income is about 74 percent of total income; in urban informal African non-poor households it is 73 percent; and in rural commercial non-poor households (for both African and coloured) it is 72 percent. The majority of the non-poor population, as evidenced from table 14, is employed and derives its income from paid work.

Even though unemployment is a big challenge for many, having access to a job does not guarantee a decent standard of living. Low paying jobs are a problem for many workers, with about 50 percent of those working making less than R430 per month per family member (when their income is distributed over their individual members of their households), bringing many families just around the US\$1 a day per person. Transfers from other households also constitute an important source of income for the ultra-poor, especially in rural areas (about 27 percent of total income). The contribution of capital earnings to total income is highest in white households, at about 40 percent in urban areas and 55 percent in rural.

Gender Dimensions: Labour income contributions by men and women vary considerably across household types. Keeping in mind that these ratios represent both embedded gender inequalities in wages as well as employment opportunities, it is still rather important to understand which types of households rely on women’s earning more so than men’s for their survival.

Figure 3, calculated from the 2000 LFS, shows that the proportion of women in paid employment is highest (56 percent of total adult women) among white, non-poor households in urban areas. These women are likely to have more access to jobs because of better education and are often of a privileged background. The highest rates of female unemployment (above 40 percent of the total) can be found in urban areas among households that are non-white and poor, regardless of whether they live in slums or more formal settlements. The proportion of women classified as inactive appears to be higher in rural areas, in particular among poor African households in the ex-homeland (about 59 percent of the total) and in white, non-poor households living on commercial farms (48 percent). It is quite likely, however, that women classified as inactive are involved in many unpaid productive tasks, including collecting water and fuel, and helping on the family farm. Time use data presented in section 2 will corroborate this hypothesis.

Figure 3. Employment Status of Adult Females



Source: Authors' calculations based on LFS South Africa 2000

Table 15 augments the previous table and underscores the significance of the share of female (both skilled and unskilled) earnings. It is important to note that the female contribution is most significant in ultra-poor African households, in urban as well as rural areas. In all these households, although women experience high unemployment rates and “inactivity,” they still contribute more than men to labour income (almost 60 percent of total labour income). One may infer that expanding job opportunities and reducing the amount of unpaid work and inactivity may not only be key to the survival of these households, but also to the survival of women themselves. Female contributions are highest in non-poor, non-white, urban formal households, poor and ultra-poor African households in urban informal areas and, as mentioned above, in non-poor African households in the ex-homeland. It is likely that female contributions to money income may include a significant share of transfers, as there is evidence elsewhere (Schatz and Ogunmefun 2007) that older women’s pensions constitute an important, regular and reliable source of income in such households.

Table 15. Labour Income Earned by Gender (in percent)

	Labour Income (as a percent of total HH income)	Unskilled Female	Unskilled Male	Skilled Female	Skilled Male
Urban Formal African Non-poor	74.1	7.1	17.2	19.4	30.5
Urban Formal African Poor	52.0	19.1	23.8	4.4	4.7
Urban Formal African Ultra-poor	35.5	18.8	13.7	1.6	1.4
Urban Formal Coloured/Asian Non-poor	74.5	8.1	16.8	17.4	32.2
Urban Formal Coloured/Asian Poor	54.6	20.4	27.9	2.5	3.8
Urban Formal Coloured/Asian Ultra-poor	34.6	11.8	20.4	1.9	0.5
Urban Formal White Non-poor	57.2	1.6	3.7	15.3	36.6
Urban Informal African Non-poor	73.1	13.8	42.4	5.0	11.9
Urban Informal African Poor	64.8	21.4	38.2	2.8	2.4
Urban Informal African Ultra-poor	44.3	24.1	18.6	1.1	0.5
Rural Comm. African Non-poor	72.2	8.7	46.4	6.9	10.2
Rural Comm. African Poor	51.1	15.5	31.7	1.7	2.1
Rural Comm. African Ultra-poor	35.0	14.6	19.3	0.7	0.4
Rural Comm. Coloured/Asian Non-poor	71.9	15.6	42.8	5.0	8.5
Rural Comm. Coloured/Asian Poor	75.8	22.1	50.9	1.0	1.8
Rural Comm. Coloured/Asian Ultra-poor	76.1	17.3	58.7	0.0	0.1
Rural Comm. White Non-poor	43.8	0.7	5.6	7.8	29.7
Ex-homeland African Non-poor	55.5	9.1	17.4	14.8	14.1
Ex-homeland African Poor	34.5	12.2	17.4	2.5	2.4
Ex-homeland African Ultra-poor	25.0	13.0	10.0	1.2	0.9

Source: Authors' calculations based on gender SAM-SA

g. Expenditure Patterns

The income elasticity of demand for a consumer is defined as the percentage change in consumption expenditure in response to a 1 percent change in her income.¹² This information reveals differences across households and gender, and it is important to understand such differences. In the context of our analysis, and from a modelling point of view, it would be

¹² Formally, the income elasticity of demand of a household (η_h) is defined as:

$$\eta_h = \frac{\% \Delta C_h}{\% \Delta Y_h}$$
, where C_h is the household's consumption expenditure level and Y_h is the household income. The elasticity can be estimated using a simple econometric model of the form

inappropriate to assume average propensities as applicable to all income groups.¹³ Generally such elasticities are less than one, given that consumers save a portion of their income. Nonconsumption expenditure, such as remittance payments, taxes, etc., also reduces the amount of disposable income available for allocation to pure goods and services. Poor households are expected to save less and expend a larger segment of their earnings on food and basic necessities than is typically the case with the average rate of nonconsumption expenditure as income increases.

The estimated coefficients, as well as some average household expenditure shares (from the IES/LFS 2000), are shown in table 16. Although elasticities do not vary greatly between these population subgroups, a few interesting points can be highlighted. Rural commercial African households have a fairly low elasticity. This is due to the high share of total expenditure that is made up of remittances from these households to other households.¹⁴ Urban formal households, as well as rural commercial white households, have fairly high income tax rates, which is indicative of the fact these are typically the households that are involved in formal work activities. These same households also generally have fairly high savings rates, especially among white households. This puts downward pressure on the consumption elasticity.

Table 16. Model Coefficient and Average Expenditure Shares by Household Type

	Model Coefficient(*)	Consumption (All Goods & Services)	Income & HH Taxes	Remittances	Savings	Total
Urban Formal African	0.901	77.0	9.5	5.8	7.7	100
Urban Formal Coloured/Asian	0.898	77.8	11.2	1.5	9.5	100
Urban Formal White	0.876	69.6	16.1	1.7	12.5	100
Urban Informal African	0.899	85.8	3.9	7.4	2.9	100
Rural Comm. African	0.828	76.0	4.8	15.5	3.7	100
Rural Comm. Coloured/Asian	0.944	90.7	5.0	1.7	2.6	100
Rural Comm. White	0.910	72.1	12.8	0.8	14.3	100
Rural Ex-homeland African	0.929	88.2	4.4	4.1	3.3	100

Note (*): All estimated coefficients were statistically significant at a 1 percent level.

Source: Authors' calculations LFS South Africa 2000

¹³ The ex-ante simulation in section II.5 examines the impact of an increase in income received by poor and ultra-poor unskilled workers on new demand for goods and services. Assuming average elasticities across household groups would distort the results.

¹⁴ Many of the households in this subgroup are mining workers who remit fairly large shares of their income, often back to family members in former homelands. As shown in the table, the presumed recipients have a fairly high elasticity.

The average expenditure propensity of households (AEP_h) is defined simply as Ch/Y_h. Next, the marginal expenditure propensity (MEP_h) can be calculated as:

These values can be read off the SAM to get a more disaggregated picture.

Table 17. Commodity Expenditure Shares by Household Type (in percent)

	Ultra-Poor African Male	Ultra-Poor African Female	Poor African Male	Poor African Female	High Income White Male	High Income White Female
Food	54.0	56.3	46.5	49.5	11.5	12.8
Beverages & Tobacco	4.2	1.6	5.2	2.3	2.0	2.0
Textiles	3.9	4.3	4.6	5.0	1.9	2.0
Manufacturing	20.8	20.6	19.4	19.7	16.8	16.1
Health & Education	3.1	3.4	2.6	2.8	7.9	7.3
Other Services	12.5	12.5	17.3	16.9	33.6	37.1
Income Tax	0.6	0.5	1.9	1.5	14.3	12.6
Remittances	0.6	0.5	1.6	1.3	1.3	1.3
Savings	0.3	0.4	1.0	0.9	10.7	8.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations from LFS South Africa 2000

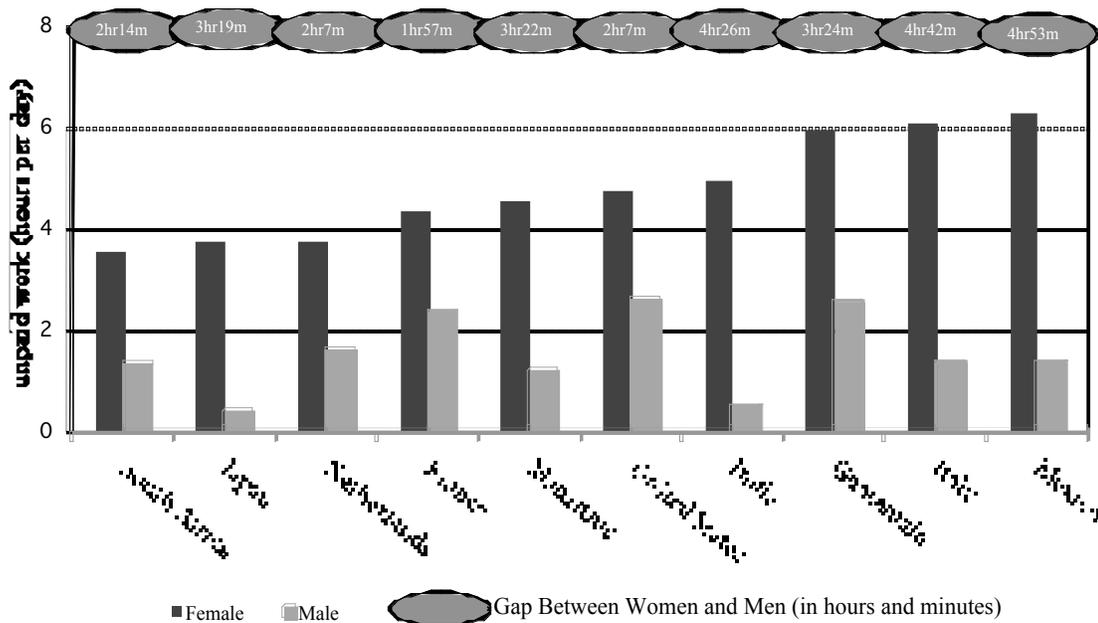
To sum up, poverty, unemployment and living in ex-homelands are highly correlated. Poor households depend a lot on women's access to market income, as female workers' earnings contribute a larger share than male earned income. Higher unemployment rates among women are correlated with a household being ultra-poor. Women earn less than men, but as their educational level increases from no education to primary to secondary, the speed of closing the female-male gap increases.

3. DISTRIBUTION OF TIME SPENT ON UNPAID WORK

The picture regarding poverty and unemployment has so far been limited to the monetised part of the economy. We now turn to the Satellite Time Use Accounts to highlight the “hidden” unpaid work contributions that individuals (especially women) make, and how embedded inequalities are being experienced by men and women. People allocate their time on activities that can be classified as paid work, unpaid work and no work. We start this section by making the following observations.

First, it is well established that around the world, women and children perform unpaid work disproportionately vis-à-vis men, as figure 4, below, illustrates.

Figure 4. Time Spent on Total Unpaid Work by Men and Women: Selected Countries



Source: Antonopoulos (2007)

Second, part of this unpaid work provides services to household and community members that, in many cases, they would be unable to have access to either due to lack of income or due to “deficits” in public service delivery. Minding young children, caring for people that are ill for extended periods of time and fetching water, fuel and fodder in rural areas are some examples of how unpaid work makes up for a lack of money income and public provisioning. Poor women then may be expected to spend more time on some forms of unpaid work, over and above what is customarily required for household reproduction from other groups of

people within a country,¹⁵ time that provides “subsidies” to governments, household members and communities.¹⁶

Leaving aside sleep time, the concept of “no work” is commonly understood as consisting of free time spent on personal care and leisure activities. This is our third point. There exists an often-neglected distinction between “no work” as voluntarily chosen free time and “no work” as the outcome of enforced inactivity due to chronic lack of employment opportunities.¹⁷ It will be of no surprise that poor and ultra-poor people report “doing nothing” for longer periods than those employed.

Bearing in mind these three issues, we turn to examining patterns about the distribution of unpaid work. More often than not these patterns are reported as “average” time spent on activities. Our interest in this study regards interventions that provide jobs to unemployed members of ultra-poor and poor households in areas that alleviate unpaid work burdens.

One of the objectives of this section is to describe how unpaid work is distributed according to gender, unemployment and poverty. Statistical analysis provides clear evidence that unpaid time contributions (in general) and in care activities (in particular) are higher and statistically significant for women, the unemployed and those individuals living in poverty. We report these findings in some detail in Appendix B. In this section we present pictorially how unpaid work is distributed among different households in South Africa. Our investigation highlights patterns of unpaid time allocation by poor versus non-poor households, unskilled versus the skilled and unemployed versus employed. This sheds some light on the fact that: (a) women in some households are in need of services that, were they to be provided, their unpaid work burdens would be reduced; and (b) some women experience an oxymoron of a double deprivation—they do not have access to paid work, but they perform more than their fair share of unpaid work. In this context, there may be many candidates who would willingly participate in the undertaking of jobs that provide training and certification in activities they have been performing all along. Consequentially, they can easily meet the criteria to become ECD workers or HCBC workers.

Following the same structure of the SAM-SA household classification, we use time use survey data of 2000 (TUS 2000)¹⁸ to get estimates on the time spent on various unpaid activities in twenty types of households. In the original survey, two people (aged ten years or above) per

¹⁵ See Harvey and Taylor (2000).

¹⁶ For an extended discussion, see Antonopoulos (2007).

¹⁷ Traditional economics presumed that within the span of a day what is not accounted for by work-time is leisure (Pigou 1920; Becker 1965; Linder 1970). Heterodox economic traditions warn that “no work” can also be the outcome of social exclusion from paid work, in which case a person is rendered forcefully inactive for short or long periods of time (Vickery 1977; Minsky 1986).

¹⁸ The TUS 2000 covered all nine of South Africa’s provinces. Within each province, four different settlement types were visited, these being: formal urban, informal urban, commercial farms and other rural settlements. In total, 8,564 households participated and data was collected for 14,553 respondents in three rounds during February, June and October, so as to capture potential seasonal variations in time use.

household were selected and questioned about the activities they had performed the previous day. Responses were recorded by the interviewer in a 24-hour diary.

To code the reported activities, the South African Time Use Survey utilised the activities classification system developed by United Nations (UN) Statistics. The UN classification system consists of several broad categories¹⁹ including the following, which are instrumental for this study: fetching wood and water for household consumption; caring for sick, permanently ill and elderly people in the household or minding after children; community service, such as helping other households with repairs or to take care of their sick; and household maintenance, for example, sanitation, cleaning the home and cooking.

In constructing the same twenty types of households, we further identified the skilled/unskilled labour composition of the household, as well as their employment status (employed/unemployed/inactive). We then proceeded to group unpaid work in three broad²⁰ categories, the sum of which we will be referring to as “total unpaid work”: water and firewood collection; social care; and home and community maintenance. Next, we report out findings.

3.1 Water and Firewood Collection

The task of water and fuel collection is not distributed equally across households and between individuals within households. Urban households hardly spend any time on water and fuel collection, while rural households spend, on average, between 20 and 30 minutes per day on it. In rural areas and the ex-homeland, unskilled females in ultra-poor households spend, on average, more than 40 minutes a day on water and firewood collection, while unskilled males spend 15 minutes (table 18). This is mostly the result of poor availability of adequate physical infrastructure in the rural areas. Problems of access to water are particularly severe for poor households that, as a consequence, must devote more time in securing it. African unemployed, unskilled females in rural areas and in ex-homelands bear most of the burden, devoting up to an hour and a half per day (94 minutes) for water and firewood collection. The same pattern does not apply however to unemployed, unskilled males.

¹⁹ See Antonopoulos (2007)

²⁰ Full documentation is provided in the Technical SAM Report, which has dedicated sections to the TU accounts.

Table 18. Time Spent on Water and Fuel Collection by Skill, Gender and Employment Status

	Male Unskilled	Male Skilled	Female Unskilled	Female Skilled	Total
Rural Comm. African Non-poor	2	0	13	0	5
Rural Comm. African Poor	9	0	19	13	13
Rural Comm. African Ultra-poor	9	0	33	4	21
Rural Comm. Coloured/Asian Non-poor	4	2	6	0	4
Rural Comm. Coloured/Asian Poor	7	1	3	12	4
Rural Comm. Coloured/Asian Ultra-poor	16	0	5	0	8
Rural Comm. White Non-poor	0	0	0	0	0
Ex-homeland African Non-poor	8	1	30	4	13
Ex-homeland African Poor	12	9	28	16	19
Ex-homeland African Ultra-poor	15	5	42	31	29
Ex-homeland African Non-poor Unemployed	0	0	64	19	38
Ex-homeland African Poor Unemployed	7	0	39	10	15
Ex-homeland African Ultra-poor Unemployed	3	18	94	44	55
Average for Working Age Population	6	1	18	4	9
Average for Unemployed	4	1	31	7	12

Source: Authors' calculations from TUS South Africa 2000

3.2 Social Care

The distribution of time spent on caring is still very unequal between genders. Non-poor African households spend 23 minutes on social care, on average, as opposed to poor Africans in both urban and rural location averaging 30 minutes; non-poor Africans spend 17 minutes as compared with 42 minutes for the ultra-poor in the ex-homeland. The average for urban white households is very close to the average for the total population—about 29 minutes per day (table 19).

Time on social care is not distributed equally within households and it is women, once again, who bear most of the burden. Social care is one activity in which skilled females, as well as

unskilled females, are heavily involved—both skilled females and unskilled females spend about 45 minutes per day caring for other family members. Educated women in ultra-poor African households in the ex-homeland spend longer than an hour (72 minutes). The average time for males is much lower: 5 minutes per day for the unskilled and 11 minutes for the skilled—between one-tenth and one-fifth of women’s time.

Table 19. Time Spent on Social Care by Skill, Gender and Employment Status

	Male Unskilled	Male Skilled	Female Unskilled	Female Skilled	Total
Urban Formal African Non-poor EMPLOYED	4	4	11	28	12
Ex-homeland African Non-poor EMPLOYED	5	14	10	34	13
Ex-homeland African Poor EMPLOYED	2	2	32	47	20
Ex-homeland African Ultra-poor EMPLOYED	7	56	52	72	35
Ex-homeland African Non-poor UNEMPLOYED	0	40	62	30	45
Ex-homeland African Poor UNEMPLOYED	6	0	56	79	36
Ex-homeland African Ultra-poor UNEMPLOYED	0	5	66	34	38
Ex-homeland African Non-poor INACTIVE	0	8	35	58	28
Ex-homeland African Poor INACTIVE	2	5	49	38	29
Ex-homeland African Ultra-poor INACTIVE	7	5	57	79	43
Total EMPLOYED	5	12	35	38	21
Total UNEMPLOYED	12	8	64	50	37

Source: Authors’ calculations from TUS South Africa 2000

Once again, time allocation to social care varies with employment status, as women who are unemployed and women who are “inactive” devote more time to unpaid care work than women who are employed (figure 5 and figure 6). The correlation is clear, but the direction of causality is by no means obvious: is it the case that women who must devote more time to unpaid work are therefore prohibited from working for pay or is it that being jobless, more unpaid work simply fills in gaps that income poverty creates? We can not answer this question, but what has emerged so far is that being poor, unskilled and unemployed imposes yet another inequality on these women, vis-à-vis other women and men. In general, women must spend more of their time performing unpaid work and the next four figures present a visual representation of that. Furthermore, this work is unrecognized, unremunerated and lacks appreciation.

Figure 5. Average Time Spent on Social Care by Income Groups (in hours)

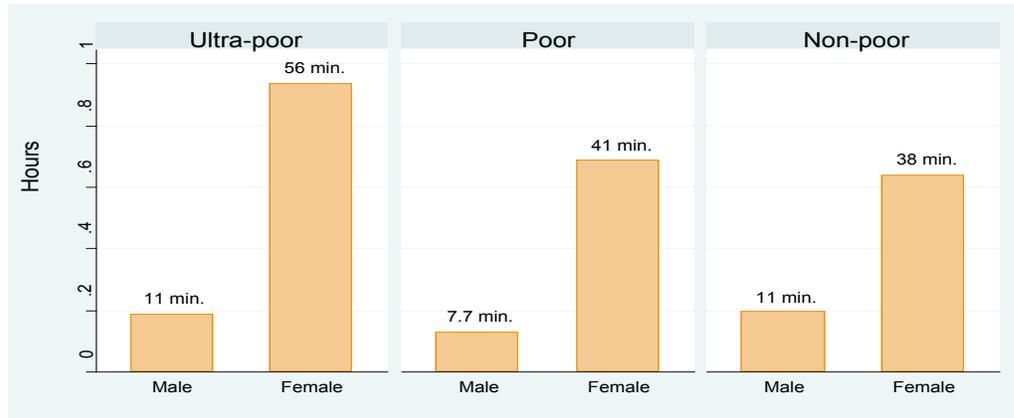


Figure 6. Average Time Spent on Social Care by Employment Status (in hours)

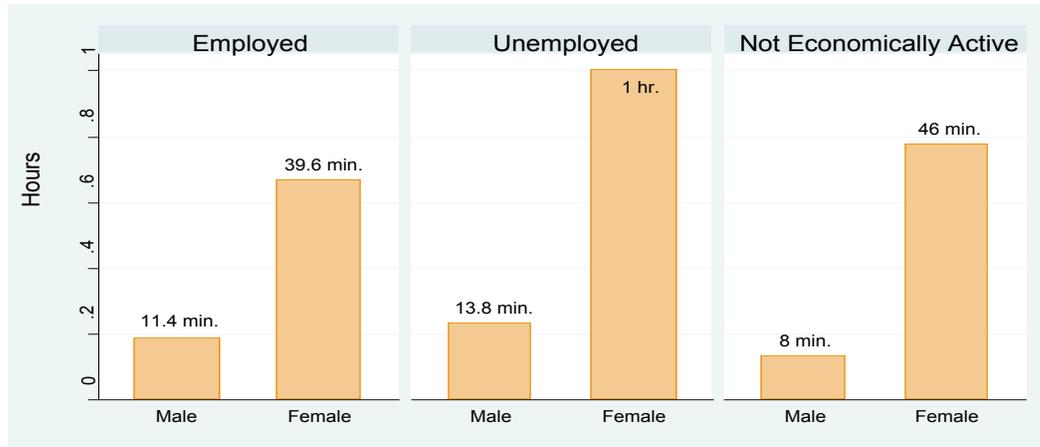


Figure 7. Average Time Spent on Unpaid Work Activities by Residence (in hours)

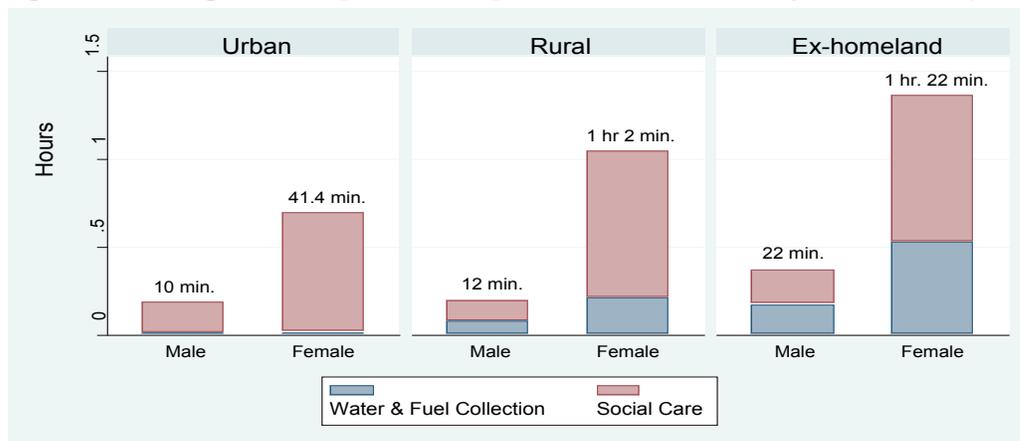
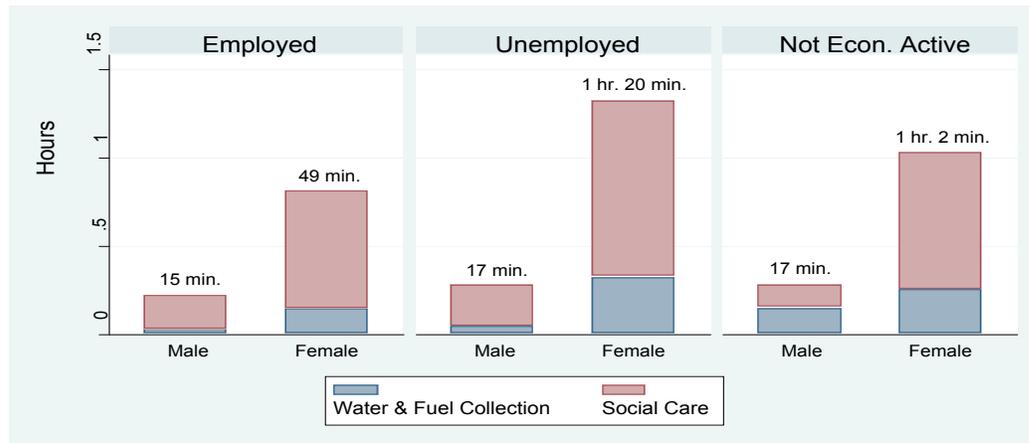


Figure 8. Average Time Spent on Unpaid Work Activities by Employment Status (in hours)



3.3 Home and Community Maintenance

This activity takes up most of people’s unpaid work time. This is also the activity that takes up the bulk of men’s unpaid work, about 80 minutes per day, compared with about 15 minutes for social care and less than 5 minutes, on average, for firewood and water collection. Gender differences continue to be sharp, with women in most households spending three times as much as their male family counterparts on home and community maintenance (table 20); non-poor households spend around two hours per day and poor households overall spend an extra 20 to 30 minutes a day longer than non-poor households, irrespective of location.

Ultra-poor African households in urban informal settlements and ultra-poor African households in the ex-homeland are the households with the greatest burden; they spend close to three hours per day on home and community maintenance. This clearly reflects absence or limited access to household appliances and technology that are available in the more affluent households, which would make tasks such as preparing a meal or washing clothes much less time consuming. Thus, unemployment and inactivity, on average, correspond to higher amounts of unpaid work.

Table 20. Time Spent on Home Maintenance by Gender and Skill Level

	Male Unskilled	Male Skilled	Female Unskilled	Female Skilled	Total
Urban Formal African Non-poor	70	75	193	169	126
Urban Formal African Poor	84	83	204	217	151
Urban Formal African Ultra-poor	75	67	211	198	146
Urban Formal Col./Asian Non-poor	58	43	171	145	109
Urban Formal Col./Asian Poor	100	19	191	159	137
Urban Formal Col./Asian Ultra-poor	80	24	218	187	155
Urban Formal White Non-poor	99	71	180	178	127
Urban Informal African Non-poor	82	114	224	217	146
Urban Informal African Poor	107	120	249	240	181
Urban Informal African Ultra-poor	75	140	220	238	168
Rural Comm. African Non-poor	102	83	181	228	134
Rural Comm. African Poor	68	103	218	186	129
Rural Comm. African Ultra-poor	70	40	224	178	156
Rural Comm. Col./Asian Non-poor	50	141	204	209	134
Rural Comm. Col./Asian Poor	73	123	210	125	157
Rural Comm. Col./Asian Ultra-poor	47	40	282	196	189
Rural Comm. White Non-poor	75	50	253	207	125
Ex-homeland African Non-poor	114	62	228	195	160
Ex-homeland African Poor	98	116	238	219	176
Ex-homeland African Ultra-poor	82	82	222	263	169
Total Employed	78	63	190	153	119
Total Unemployed	100	112	275	305	207

Source: Authors' calculations from TUS South Africa 2000

Summing up and concluding this section, the following figures and graphs show how unemployment and poverty affect the gender distribution of total unpaid work. What emerges from the discussion above is that, as expected, gender is a key determinant as to who performs unpaid work, with 76 percent of total unpaid work in South Africa being carried out by women (figure 9). Looking at it from the perspective of employment status, people who are unemployed or considered to be “inactive” carried out 70 percent of this work (figure 10).

Figure 9. Time Spent on Unpaid Work

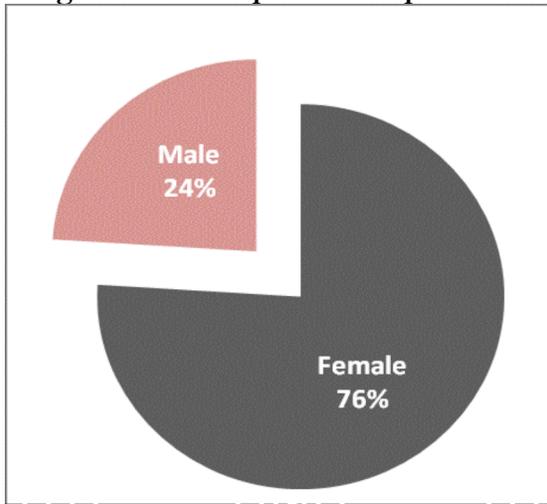
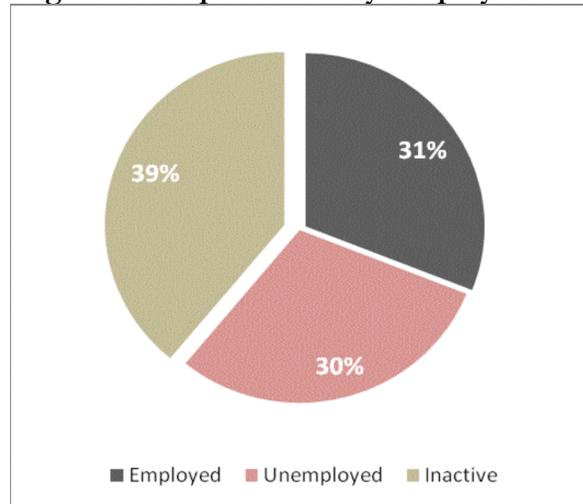


Figure 10. Unpaid Work by Employment Status



The next figure (figure 11) depicts and summarizes the average time spent by income level. Once again we see that women in ultra-poor and poor households spend more time on these unpaid tasks than those who are not poor. Much of the difference arises from not being able to purchase in the market some of the goods and services needed for household maintenance work, as well as not having access to water, sanitation, etc. The gender engrained division of labour in unpaid work persists across employment status and geographic location as the final two figures exemplify. Figures 12 and 13 also provide unambiguous evidence to that effect.

Figure 11. Average Time Spent on Unpaid Work Activities by Income Groups

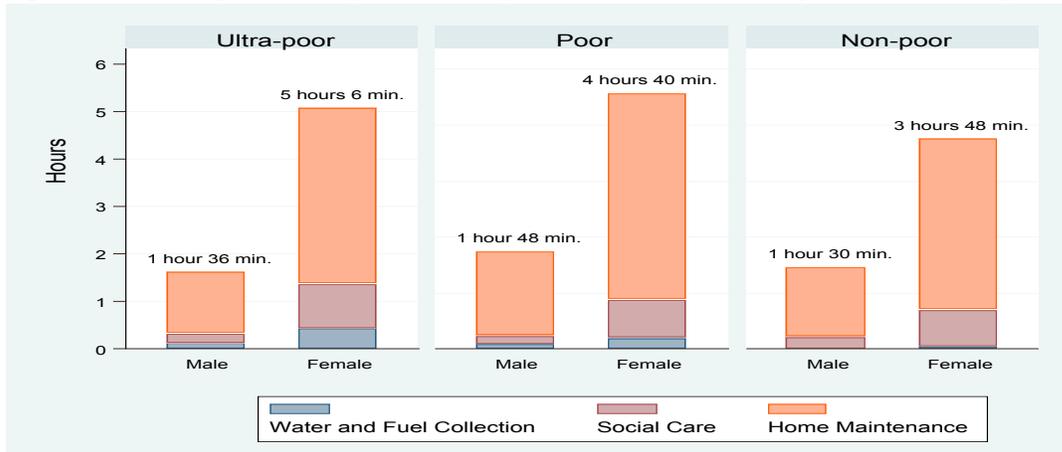


Figure 12. Average Time Spent on Unpaid Work Activities by Employment Status

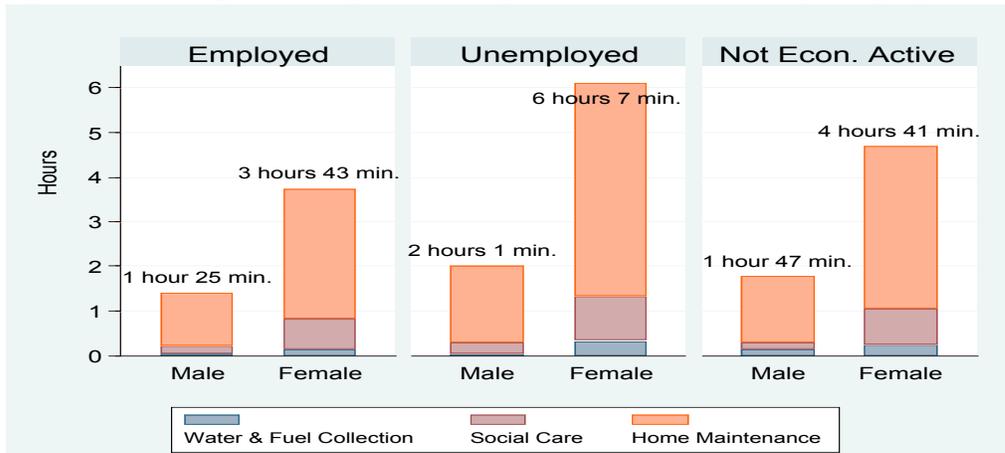
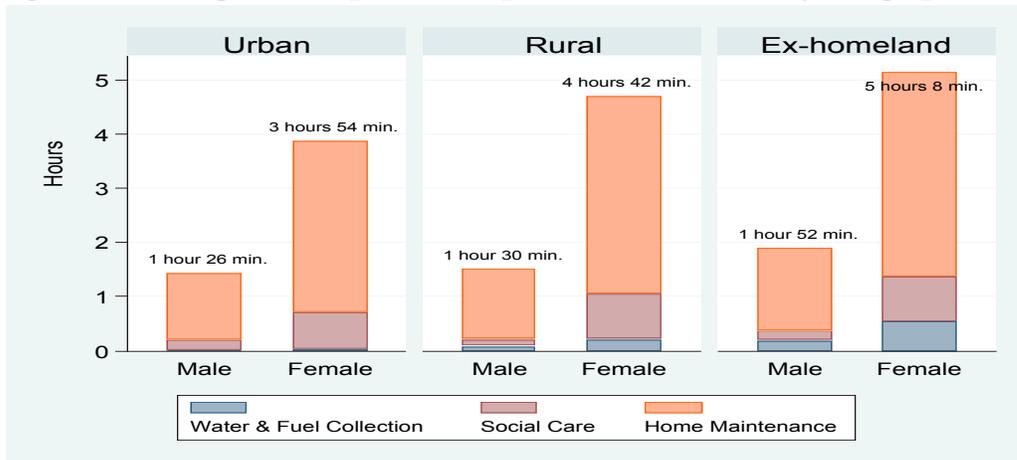


Figure 13. Average Time Spent on Unpaid Work Activities by Geographic Location



4. SCALING UP EPWP SOCIAL SECTOR JOB CREATION

Creating job opportunities in the area of social service delivery will provide three beneficial outcomes simultaneously: jobs and income to poor households; training, as well as social services to poor households; and reduction in women's unpaid work burdens. In proposing scaling up within the framework of EPWP, we discuss job creation in two areas: early childhood development (ECD) and home- and community-based care (HCBC).

This section is structured as follows: (a) we provide a brief overview of EPWP; (b) we then present the job creation proposal in terms of SAM parameters with a budgetary allocation of around R9 billion (constant 2000 prices); and (c) we present and discuss the results. Lastly, we discuss three additional simulations to draw useful comparisons.

As we will see shortly, EPWP has been pioneering in that it envisioned jobs with a social service focus to them, but the budgetary allocations were noncommensurable to the problem of unemployment, nor could they make a significant improvement in expanding service delivery. The scope of skills and numbers of jobs were too few and training targets were not matched with actual service delivery. The proposed scaling up in this study increases the current-level budget of R600 million to R9 billion. Instead of short-term employment, work opportunities become full-time, year-round jobs; the number of EPWP jobs increase from current levels of 19,000 to approximately half a million jobs, providing employment, income and training for poor, unemployed persons and services to the community. The cost of scaling up can be easily financed through different means of government revenue, notably deficit financing and growth dividend. The impact of deficit financing on government debt is negligible.

4.1 Policy Space for Social Sector Interventions within EPWP

The mandate of the EPWP is to utilize public sector budgets to alleviate unemployment by providing short-term to medium-term employment opportunities to unskilled, unemployed workers from poor and ultra-poor households. In that, it is a work entitlement. Building on prior experience from smaller scale programmes, including the Zibambele and KwaZulu Natal road construction projects, the government announced the EPWP plan²¹ in 2004, which set as its goal to create one million job opportunities within five years. The projects to be undertaken were primarily in labour intensive infrastructure that substitutes labour for machines.²² As compared with similar international programmes, EPWP was quite innovative in that it also

²¹ <http://www.epwp.gov.za/>

²² Projects of this nature have been advocated by the ILO for many decades and several countries have undertaken their implementation—primarily in Africa, but also in a few countries in Asia and Latin America. See <http://www.ilo.org/public/english/employment/recon/eiip/about/index.htm>

proposed that work opportunities ought to be created in the environmental and social sectors of the economy. Introduced as a R20 billion government programme, it included the following components:

R15 billion for infrastructure investments—increasing the labour-intensity of government-funded infrastructure projects, including building of roads, bridges, irrigation systems, etc.;

R4 billion for environmental investments—creating work opportunities in public environmental improvement programmes, such as aforestation to prevent fires, removal of vegetation that inhibits the flow of water in rivers, etc.; and

R600 million for social services—creating work opportunities in two key areas: early childhood development and home- and community-based care for the ill.

The Expanded Public Works Social Sector Plan 2004/05–2008/09 was prepared by the Department of Social Development, Department of Education and Department of Health in March 2004²³ and, as mentioned above, it identified two main programme areas for job creation: early childhood development (ECD) and home- and community-based care (HCBC). These are services rendered by private, public and NGO institutions, and good service delivery requires high labour intensity.

The truth is that much of both ECD and HCBC are provided by unpaid work, mostly by women and, to some degree, by children. In South Africa at the time EPWP was being considered as a programme to be rolled out, serious backlogs had been identified within the departments of education and health. The need to expand was especially pronounced in some areas of the country maligned by decades of neglect during apartheid, as well as high poverty and unemployment. To fill this gap, three aspects need to be addressed: appropriate budgetary allocations, social infrastructure and enhancement of local skill development. The EPWP Social Sector proposed to draw in unskilled and low-skilled persons and provide stipends, training and eventual accreditation in ECD and HCBC. Besides income, it was envisioned that participants would be enabled to translate their newly gained knowledge and on-the-job training experience to long-term employment outside EPWP.

a. Background on Early Childhood Development (ECD)

EPWP's ECD programme set out to provide temporary jobs, skills and accreditation to 19,800 practitioners over five years, who would earn income, but also would be involved in training, thereby improving the care and learning environment of children. The target workers were

²³ <http://www.epwp.gov.za/>

previously unpaid volunteers, unemployed and/or underemployed parents and caregivers in all ECD programmes.

It was envisaged that they could be reached through: (a) learnerships leading to various levels of educational attainment and qualifications corresponding to accreditation of teacher aides, kindergarten teachers, etc.; (b) work/employment/skills programmes for very low-skilled, unemployed people to be recruited and trained in sites designated for receiving indigent subsidies; (c) direct and immediate creation of work opportunities in targeted ECD sites in very poor areas; (d) on-the-job training and certification for ECD support staff, such as vegetable and legume gardeners, cooks and administrators, etc.; and (e) short-term, three-month employment opportunities in auxiliary tasks for 3,000 unemployed parents through existing schools and local authorities.

Children who are within the age group of birth to six years are primarily the direct responsibility of their parents or receive care and supervision in crèches, nongovernmental organisations and community-based organisations. There are approximately 6.5 million children in South Africa aged 0–6 years old. Of these, 3.8 million (59.2 percent) live in circumstances of dire poverty and the development of these children has been an ongoing concern to the government.²⁴

The jobs we propose for scaling up EPWP in this study entail the development of an ECD cadre that extends the range, duration and number of job opportunities to include two-year appointments for child care workers, school nutrition workers, teacher aides, school caretakers, school clerical workers, cooks, vegetable gardeners and administrators for local ECD sites.

ECD services go beyond child-minding. They encompass work that involves the physical and emotional processes through which children's bodies and minds are nourished in ways that allow them to grow and feel secure about themselves and the world that surrounds them from birth to at least nine years. It has been estimated that if all children in need were cared for by ECD sites, a total of 60,000 sites would be needed with an average of five practitioners/caregivers in each site²⁵ and the proposed intervention adopts these figures.

A 2001 report of a nationwide audit of ECD identified a total of 23,482 sites; the Department of Social Development provided subsidies to only 4,612 sites of between R4.20 and R6.00 per child in need per day. Very few among the children that need interventions were spending time in ECD sites: less than 5 percent of children under 3 years old, 15 percent of 3–5 year

²⁴ Documents reviewed for this segment include Friedman et al. (2007), volumes 2 and 4, and EPWP Social Sector On-line documents, available at <http://www.epwp.gov.za/>

²⁵ Friedman et al. (2007), volume 4

olds, and 21 percent of 5–6 year olds. In addition, many of the centres did not have accreditation, trained personnel or the necessary materials to ensure the appropriate development of children in their care. This information allows us to establish existing gaps in terms of number of centres and ECD practitioners that are needed.

b. Background on Home- and Community-Based Care (HCBC)

Home- and community-based care (HCBC) is the provision of comprehensive services, including health and social services, by formal and informal caregivers in the home, aiming to restore and maintain a person's comfort, function and health, including providing care towards a dignified death. South Africa is rated as one of the countries with the most people affected by HIV/AIDS and much of HCBC has been in caring for people living with the HIV/AIDS virus. Prevalence rates are higher among women between the ages of 15–29; in 1990, 1 percent of women tested at antenatal clinics were infected with HIV/AIDS and by 2000 this figure had risen to 25 percent. Given the crisis facing the country, a social development document endorsed the implementation of a HCBC programme to mitigate the impact of HIV/AIDS in communities. The strategy was based on the recognition that communities, particularly households with limited access to the formal health sector, bore the brunt of HIV/AIDS economic and social impact.

A rapid assessment of HCBC conducted by the National Population Unit in 2003 indicated that there were 892 HCBC sites and that nongovernmental organisations (51 percent) or community-based organisations (36 percent) ran 87 percent of these sites. Of the 892 sites, 356 received some form of government funding. This funding accounted for 65 percent of the total funding for HCBC sites with a further 10 percent received from business and international donors. Government contributed (via conditional grants) amounts of between R50,000 and R200,000 per site per annum. Each site serviced an average of 1,453 clients. The total personnel complement in all of the sites was 31,565. Of these, 19,616 were volunteers, of which 15,326 received no allowance or remuneration.

The EPWP-HCBC plan envisaged the full development of 19,616 practitioners with a minimum of 10 HCBC workers per site, using the Department of Health's norms and standards for care as a benchmark. This ballpark figure was to be further increased based on the geographic area and the socioeconomic status of the beneficiaries. A later audit showed that there was a need for a further 300 HCBC sites per annum to cope with the increasing incidence of HIV/AIDS and other terminal illnesses. This was equated to a further 3,000 care workers to be trained per annum.

The targeted beneficiaries of the HCBC programme were to be unpaid "volunteers" who were unemployed and often the adult dependants of the terminally ill and people living with HIV/AIDS who were not in receipt of a state grant. The EPWP was therefore seen as a critical component of the effort to deliver holistic HIV, AIDS and TB related services. It represented a strategic opportunity to address key pressure points in interventions at that time

and it aimed to put in place the foundations for the roll out of the Community Health Worker (CHW) Programme by equipping thousands of unemployed people with the foundation skills and experience to enter in a CHW training programme. Finally, sustaining the commitment of volunteers required incentives—either financial or those based on meaningful skills development.

The suggested scaling up we propose is in the order of an additional 110,000 jobs that would provide services to poor households in underserved areas by creating a cadre of community health workers, nutrition and food security workers, directly observed therapy practitioners, voluntary counselling and testing, and TB and malaria officers.

The EPWP-HCBC programme will provide accredited training, with an allowance and full-time work for existing volunteers. Beneficiaries of the HCBC programme will come from the ranks of “volunteers” who are unemployed, but also from a further expanding pool beyond that to include young men and women who will be providing respite household maintenance work (including fetching water and fuel wood) to the members of households of the terminally ill and people living with HIV/AIDS.

4.2 Gender Dimensions of the EPWP Social Sector

HCBC and ECD programmes have been relying heavily on unremunerated volunteer work. Most among the “volunteers” have been poor, unemployed and “inactive” women and youth. EPWP provides work opportunities that receive a monthly stipend and are accompanied by enrolment in “learnerships”²⁶ and other types of short courses that can lead to accreditation. Skill development is therefore enhanced and so is the capacity to deliver quality service in an area of great need.

Time use data show clearly that the burden of taking care of the ill falls primarily on women’s shoulders. Although we do not have sufficiently disaggregated time use information in regards to HIV/AIDS, case studies have shown the same pattern prevails with all illnesses, i.e., TB, malaria, etc. Women carry this responsibility disproportionately, especially in ultra-poor and poor families with PLWHA in ex-homelands and informal settlements in urban centres. They are more burdened, as they do not have enough income to purchase basic necessities, nor adequate access to running water to bathe and clean after the ill, as well as not enough respite time—unpaid care work is the only way to provide care and the inputs needed to do so. For

²⁶ A learnership combines work-based experience with structured learning and results in a qualification that is registered within the National Qualifications Framework (NQF) by the South African Qualification Authority (SAQA). A learner who completes a learnership will have a qualification that signals occupational competence and is recognised throughout the country. Each learnership consists of a specified number of credits and takes at least one year to complete. The learnership may consist of a number of NQF aligned short courses, which make up the learnership curriculum. A learnership requires that a trainer, a coach, a mentor and an assessor assist the learner.

them, HCBC is extremely important, especially in the context of high HIV/AIDS prevalence in the country.

An expanded ECD and HCBC programme will benefit women in multifaceted ways:

- (a) Given that they are the primary unpaid care work providers, the programmes can alleviate some of that work as ECD and HCBC workers provide services (while in training) for their own communities;
- (b) EPWP can benefit ultra-poor women with minimal educational attainment by providing them with jobs that do not require much training immediately, as well as with adult education classes provided by EPWP workers who are among the more educated members of the community;
- (c) Given that educational attainment has strong impacts on the wages of African females, moving up from primary education to GET will result their monthly incomes doubling and the female-male gap closing by 12 percent. The results are much more dramatic for educational attainment that involves some tertiary education (see table 4 in section 2). A well-designed EPWP can benefit low-skilled women of working age—but in order to achieve this outcome, EPWP must be a sustained two-year programme to allow sufficient time for advancement. Providing women with training, certification, work experience and income can be stepping stones to their participation in the mainstream economy; and
- (d) Given that health and education are highly feminized sectors, women can find jobs in them without facing too many barriers to entry once they have received certification (see table 6 in section 2).

It also may have the implication that unskilled females would recognize the opportunity and seek EPWP Social Sector employment more so than men.

4.3 Our Proposal for Scaling Up the EPWP Social Sector Job Creation

The proposed scaling up of the social sector of EPWP entails jobs that result in providing ECD for all children ages 0–4 and home care for the ill living in poor households. The envisioned ECD cadres include childcare workers, school nutritionist, teacher aids, school caretakers and clerical workers, as well as auxiliary, but important, personnel such as cooks, vegetable gardeners and administrative assistant workers for ECD sites. For HCBC, a cadre of community health workers, nutrition and food security workers, directly-observed therapy providers, voluntary counselling and testing, and TB and malaria officers are proposed.

Although the wage structure is similar to the current social sector, our proposal extends the list of types of jobs and, most importantly, the duration of enrolment for beneficiaries to two consecutive years per job opportunity for employment of eleven months per annum or 220–240 days per year. As mandated by the scope of objectives of EPWP, these proposed work opportunities encompass dedicated time so that EPWP workers/trainees can attend seminars and workshops that lead to certification or accreditation.

Combining all the various job categories, the proposed new job creation is in the order of 531,406 annual full-time EPWP jobs (including supervisors) at a projected annual cost of about R9.3 billion.²⁷ This cost is inclusive of payments to EPWP workers, as well as all other necessary input costs, such as purchases of agricultural products and other food ingredients for meal preparation for children; payments made to skilled workers, such as supervisors; maintenance and repair people; trainers; allowances for transportation expenses for workers; and other educational certification expenses.

The job categories and number of jobs we propose, as well as the associated budgetary allocations we simulate, were developed through separate models (for each job) by a team of researchers under Dr. Irwin Friedman’s directorship at the Health Systems Trust in Durban (hereafter HST). Appendix C provides further details of these estimates.

By way of illustration, we provide three examples of distinct types of data and information this allowed us to make use of. Box 1 below proposes the inclusion of “childminders” as part of an EPWP-ECD plan.

²⁷ The original Friedman, et al. (2007) report calls for R12.2 billion in year 2004 price level. Deflation is required to match the value with the base year 2000 for SAM. The gross domestic product (GDP) deflator comes from “World Economic Outlook Database, October 2007” by the IMF. The GDP deflator (100 in year 2000) indicates that the general price level in year 2004 is 131.682. Thus, the deflation rate is $100/131.682 = 0.759$. The interpretation is following: R1 in year 2004 is equivalent to R0.759 in year 2000.

...a new cadre of worker called the “childminder” who has a responsibility for providing partial/day care and early childhood stimulation [is proposed]. Each childminder is envisaged as responsible for ten vulnerable or orphaned children in the 0–4 age group in compliance with the new Children’s Act 38 of 2005 and the new Children’s Amendment Bill which was before parliament at the time. The Act seeks *inter alia* to give effect to certain rights of children as contained in the Constitution and set out principles relating to the care and protection of children....

It is envisaged that childminders could operate within existing frameworks already created by the National Integrated Plan for Early Childhood Development and the National Integrated Plan for HIV and AIDS with a specific focus on vulnerable children and orphans. It envisages the childminders, working with existing HCBC & ECD workers, currently being upgraded to undertake the role of community caregivers

The model predicts that about 103,290 childminders are required to meet the partial care needs of approximately 1 million children aged 1–4 who comprise 20 percent of the most vulnerable children (including orphans) in this age group. The average cost of care per child per month is similar to that of the Child Care Grant, R181 per month...

The budget for stipends for these childminders, who would earn R500 per month, would cost R619 million per year. The total cost of implementation including food for the children (provided by food stamps), supervision and training would be in the region of R2.2 billion....

In order to estimate the number of jobs, detailed constitutional and institutional knowledge was required. This knowledge was complemented by demographic and community survey data, as well as health and educational data from a variety of South Africa survey documents. Thereby, several assumptions were established on the basis of which each model established the number of jobs needed to extend service delivery and build local capacity. The table below presents a partial list of assumptions used to estimate the number of food security workers needed. We also show below a partial list of results produced by the model for food security workers. It is these results that were ultimately used as raw data for the SAM simulation analysis.

²⁸ Excerpted from Friedman, et al. (2007). We are much indebted to Dr. Friedman and his team, as this project would have been poorer without his sharing of data and open access to the models developed by HST.

Table 21. Food Security Workers: Incorporating Nutrition and Emergency Food Relief Workers

Selected Assumptions		
Estimate of the Number of People per Household		6 persons
Vulnerable Households/Nutrition Worker–Basic Ratio		1 to 250 persons
% of the Most Food Insecure Household Targeted		5%
Deprivation Index Multiplier for Vulnerable Communities*		20%
Stipend for Food Security Workers (FSWs)		R500
	Number of Jobs	in Rand
SSW Mentors	5,016	(R7=US\$1)
District Supervisors	251	
Provincial Management Staff	27	
National Technical Support Staff	11	
Food Security Worker Stipends		300,969,195
FSW Mentor Salaries		150,484,598
Food Stamps for Most Vulnerable Households		1,881,057,471
Equipment/Materials		25,080,766
Training		75,242,299
Travel		60,193,839
Direct Subtotal		2,493,028,168
Administrative Allowances (e.g., NPO Supervision)		124,651,408
Total Local Direct Costs		2,617,679,577
District Supervisor Salaries		24,237,017
District Supervision Budget		49,860,563
Provincial Management Salaries		3,180,000
Provincial Management Budget		37,395,423
National Technical Support Staff (Salaries)		1,908,000
National Technical Support Budget		12,465,141
Grand Total of All Costs		2,746,725,720
Total Vulnerable Households Served		7,897,812
Food Security Workers		50,162

Table 22 presents a summary of estimates for all job categories under home- and community-based care; these were derived from individual models for each job. Appendix C provides more details for each work opportunity cluster.

Table 22. Number and Types of Jobs for Home- and Community-Based Care—Estimated Households Served and Total Cost of Service Delivery

Number of Community Health Workers Employed	15,797
Number of Community Caregivers Employed	19,746
Number of TB /DOTS Supporters Employed	23,695
Number of Community-Based Counselling & Treatment Workers	51,012
Number of Malaria Workers	1,305
Total Number of Community-Based Health Workers	111,556
Number of Professional Jobs Created	1,856
Total Households Served by CHWs (Education, Nutrition)	3,949,233
Total Vulnerable Households Getting Home Nursing Care	197,462
TB Patients Receiving DOTS Support	236,954
HIV Positive People Getting Counselling/ART Support	510,124
Households Involved in Malaria Control	652,648
% of Population Targeted (Vulnerable Households)	50%
Estimate of Average Household Size	6
% of Households in Target Pop Needing a Dedicated Community Caregiver for HCBC	10%
Grand Total of All Costs	1,616,018,754

4.4 Financing Options for the Proposed Expansion

When implementing or scaling up an employment guarantee programme, a critical aspect to consider is the source of financing such initiatives. For the case of South Africa, we have seen that the stimulus of the scaled up programme results in an expansion of tax revenue (due to multiplier effects) sufficient enough to cover one-third of the cost of the programme. This leaves two-thirds of the cost in need of financing. As this is of practical policy importance, in what follows we use 2007/08 as a baseline. Accordingly, our proposed EPWP scaling up cost of R9.2 billion (at the 2000 price level) is now equivalent to R13.3 billion (in 2007 prices). Recalling that one-third of the initial investment (i.e., R4.8 billion) is recovered through an increase in tax revenues, the requisite amount is R8.5 billion. There are three possible ways to finance our proposed EPWP Social Sector expansion in South Africa: deficit financing, raising of tax rates or making use of a potential economic growth dividend.²⁹

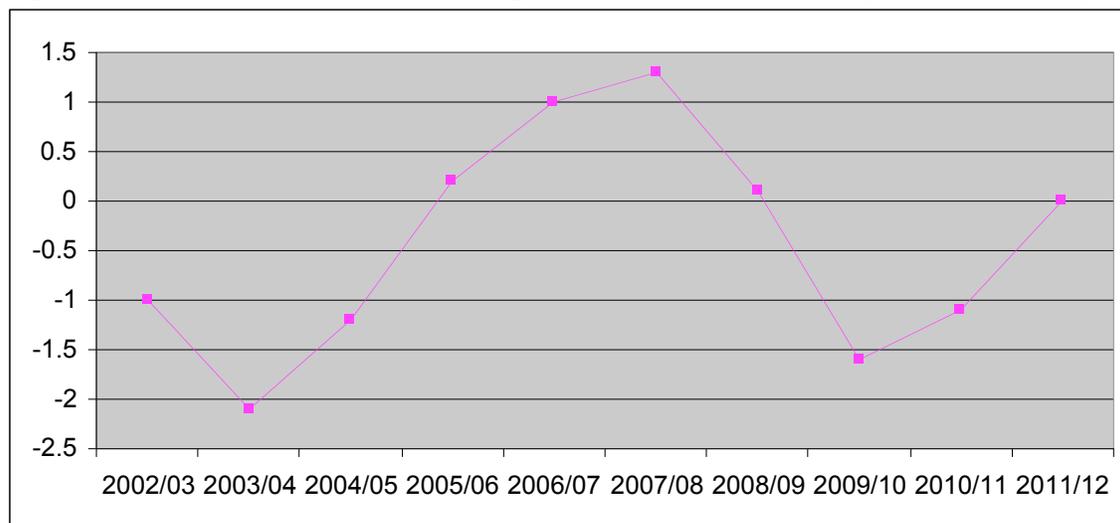
²⁹ This idea is first addressed in Pollin et al. (2006). We adopted their idea and framework on financing of the programme and are deeply indebted for their original work. To relate the issue to the current economic conditions, all the figures are adjusted to 2007 and 2008 fiscal years in this section.

a. Deficit Financing

The consolidated national government's revenue in 2007/08 amounts to R584.6 billion, or 28.4 percent of GDP and expenditures stand at R 558.0 billion, or 27.1 percent of GDP. This leads to a government budget surplus in the 2007/08 fiscal year of R26.6 billion (1.3 percent of GDP). This alone can fully cover the R8.5 billion needed for implementation of the scaling up in the order of our recommendation.

The current 2009 global economic downturn and high volatility in commodity prices are not big obstacles to financing the proposed expansion. The unfavorable conditions are expected to generate a budget deficit of R41.5 billion (1.6 percent of GDP) in 2009/10 fiscal year. However, deficit financing of the scaled up programme in its entire amount (R13.3billion) would only increase the budget deficit-to-GDP ratio by 0.62 percent. Specifically, it would push it from -1.6 percent to -2.2 percent. Moreover, positive multiplier effects could still result in securing tax revenues of one-third of the costs, reducing the ratio to -2.0 percent. This ratio is still within the range of previous years, as shown in the table below. Moreover, the expected positive economic growth, leading to improved budget balance in three years, also suggests that deficit financing would not create any heavy burden on the economy.

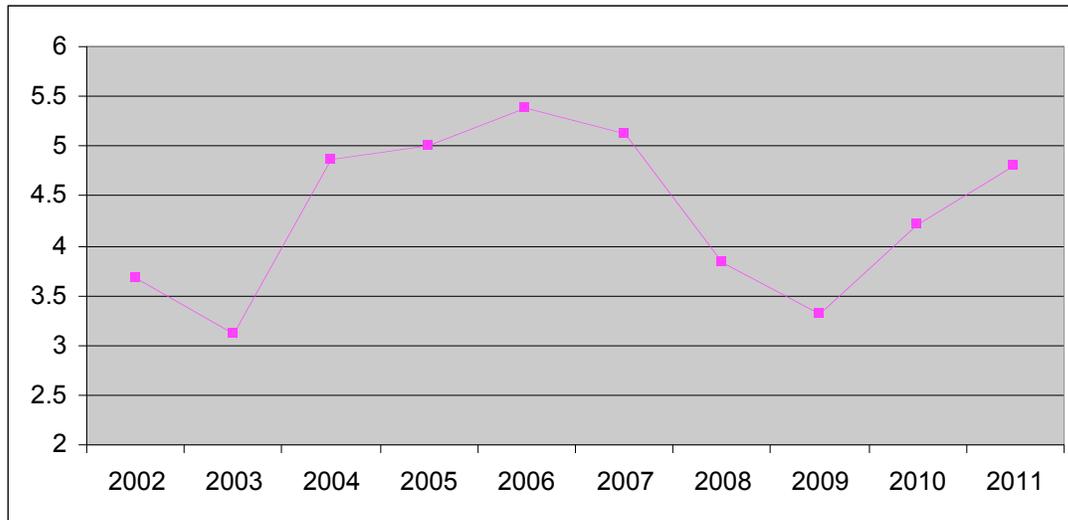
Figure 14. Consolidated National Budget Balance, South Africa (Percent of GDP)



Source: Medium Term Budget Policy Statements (2003-2008), National Treasury, Republic of South Africa

Note: Deficit calculated as the total of revenue minus expenditures.

Figure 15. GDP Growth, South Africa (Percent, Constant Prices)

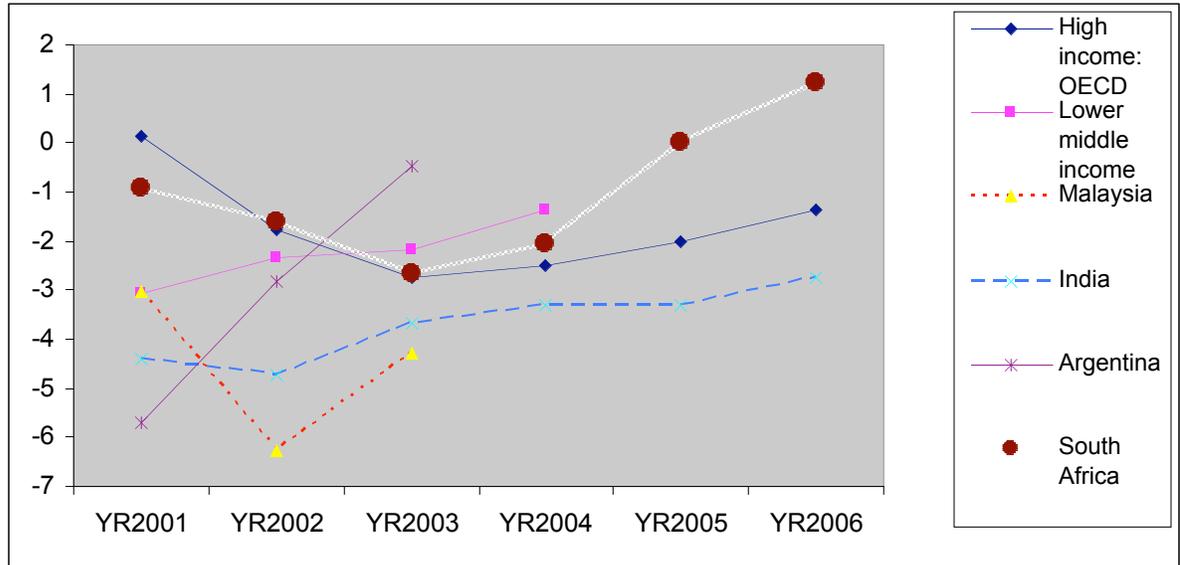


Source: World Economic Outlook, IMF

International comparison of the deficit/GDP ratio reveals the strong fiscal stance of the South African government and sufficient fiscal space to support the programme expansion. South Africa has been performing better than the average of high-income OECD countries and at least on par with lower middle-income countries in this regard; she also outperforms countries with similar public works programmes, such as India and Argentina, as well as Malaysia, which had similar economic structures in terms of resource dependency in 1980s.

In terms of the government debt-to-GDP ratio, South Africa is also in an excellent position, at 28.0 percent in 2007/08 and 24.5 percent (estimates) for 2008/09, respectively. Spending R13.3 billion on an EPWP expansion through deficit financing would increase the ratio by 0.77 percent and 0.66 percent in the two respective fiscal years. In other words, despite the expected slowdown of the economy, government debt is expected to decline.

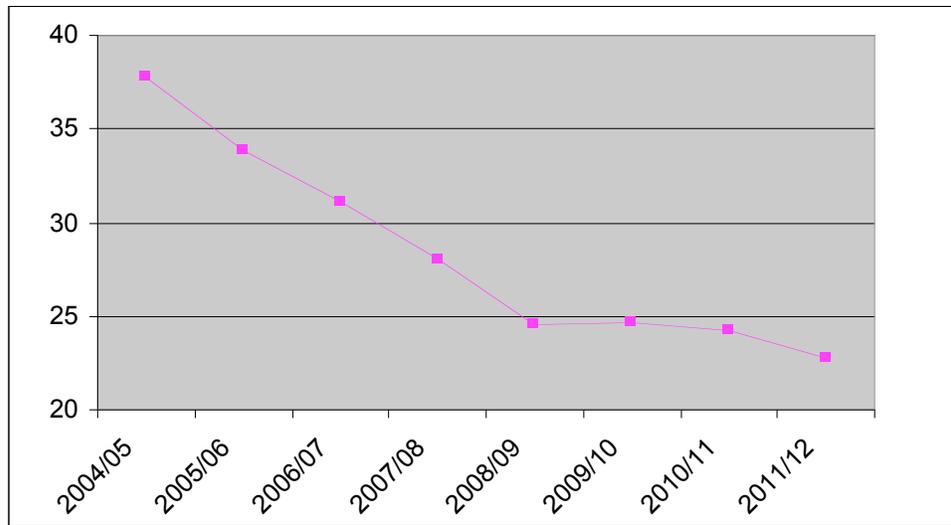
Figure 16. Surplus/Deficit, South Africa (Percent of GDP)



Source: World Development Indicators, World Bank, 2008

Note: The beginning and ending years for South Africa in the above figure differ from those reported in figure 14, above. Deficit calculated as the total of revenue, minus expenditures, minus net nonfinancial asset acquisition.

Figure 17. Total Government Debt (Percent of GDP)



Source: Medium Term Budget Policy Statement (2008), National Treasury, Republic of South Africa

Finally, it is worth mentioning that as a result of declining government debt, overall debt service costs have been going down from 6 percent in 1998/99 (R44.6 billion in 1998 prices and R93.7 billion in 2008 prices) to 2.3 percent of GDP in 2008/09 (R54.4 billion, current

prices). The saving of R39.4 billion gives the government enough fiscal space to finance and expansion of the EPWP Social Sector without raising taxes.

As indicated by the Medium Term Budget Policy Statement (MTBPS), R170.8 billion will be added to the spending plan for the next three years. The annualized amount of R57 billion is equivalent to 8.8 percent of the estimated budget revenue in 2008/09 and 2.4 percent of estimated GDP in market prices. This committed amount for government spending is below the projected tax revenue for each year (between R59 and 85 billion) in the next three fiscal years. Thus, the proposed expansion of the EPWP Social Sector in the amount of R13.3 billion would not greatly compromise the government's fiscal balance. Given the strong fiscal stance, structural deficit financing for EPWP would not exert a heavy fiscal burden in the near future.

b. Taxation

Should financing of the proposed EPWP expansion be based exclusively on new tax revenues, the tax revenue-to-GDP ratio would have to increase from approximately 26.5 percent to 27.1 percent (based on 2008/09 budget estimate). This ratio in 2007/08 would need to go from 27.8 to 28.4 percent. The overall declining trend of the tax-to-GDP ratio is attributed to improving the tax collection system and economic growth. Personal (R201 billion), corporate (R158.9 billion) and value added tax (R167 billion) comprise 82 percent of the estimated total budget revenue in 2008/09. Personal income tax is based on a progressive rate system (18 percent for below R122,000 to 40 percent for over R490,000) and it is unclear how the bracket income or rate changes would affect income tax revenue for EPWP financing. The corporate income tax rate was lowered from 29 to 28 percent in 2008/09. Assuming all else constant, the rate reduction costs R5.7 billion, which could be used for EPWP financing instead. In addition, a 1 percent increase in the value added tax rate (from 14 to 15 percent) would raise another R12 billion, all else constant. A 15 percent rate for value added tax is the minimum rate among EU countries and is still lower than some of the developing countries, such as China (19 percent), Russia (18 percent) and Turkey (18 percent).

However, financing the EPWP through taxes alone may not be a reliable nor progressive method. In the face of volatile commodity prices, South Africa's resource-dependent economy makes corporate income tax less reliable as a financing source. Value added tax is not a progressive tax and thus the rate increase may be in conflict with addressing income inequality in South Africa. A combination of moderate rate changes in various tax bases may be desirable, but an increase in government spending on EPWP need not be bound by it.

c. The Dividend of Economic Growth

Instead of modifying the tax system, the government could garner the benefit of future economic growth, which translates into increasing tax revenue: an estimated 3.7 percent

growth in real GDP during 2008 fiscal year alone could bring an additional R20 billion³⁰ in tax revenues.

In addition, the positive multiplier effects of the expanded programme itself, as we mentioned earlier, is expected to cover up to 36 percent (or R4.8 billion at the 2007 price level) of the total implementation cost. The South African government projects that future real GDP growth rates may stay over 3 percent per year, even after accounting for the global economic downturn. Financial commitment for the programme therefore would not jeopardize future government budget management, especially when at this juncture the need for expansionary fiscal policy is critical for growth and distribution.³¹

4.5 Input Composition of the Simulation

To simulate the economy-wide impacts of the intervention, we first need to know the input composition of the sector and the proposed cost breakdown details of the intervention. The original classification of jobs and other expenditures was organised to match the industry and skill classifications in the SAM-SA. The matching of jobs was based on the *description of EPWP job responsibilities* and the modeller's judgment regarding the most appropriate SAM factor and commodity classification that mimics the nature of the described job.

Table 23 shows the results of matching the job titles of the proposed interventions to the activities and labour factors of production we have used in the construction of the SAM-SA, which makes evident the new jobs' gender decomposition by skill level. We assume that all unskilled EPWP labour is allocated to poor and ultra-poor households. The percentage of income received from being employed as an EPWP worker per household type is determined across household types according to their corresponding poverty population weight (see Appendix A—Technical Report on SAM).

³⁰ A recent GDP estimate released by Statistics South Africa shows that the annual GDP in 2008 has grown by 3.1 percent from the previous year. The fourth quarter GDP in 2008, at market prices, increased 1 percent compared to the same quarter in 2007, even with the current global economic downturn. Quarter-to-quarter-based GDP growth, however, shows a slowdown to 1.1 percent in the fourth quarter from 3.1 percent in the previous quarter (Statistics South Africa P0441, Gross Domestic Product, 4th quarter 2008). Actual growth dividend may be lower than the estimate in this text.

³¹ Pollin et al. have proposed that one final possible source of funding is the natural resources "royalty fund." An ongoing legislative effort on this front is the Mineral and Petroleum Royalty bill. Much of the discord and discussion surrounding this bill stems from the specifics of the tax rate to be imposed on gross value so that it adjusts accordingly with profitability rates. Under the revised form, the estimated revenue could vary significantly depending on individual companies' performance in the market. The uncertainty over total revenue and difficulties in monitoring firms for correct reporting on their profitability make it an unreliable source of funding and we therefore do not include it in the above discussion.

Table 23. Matching Activities and Annual Wage Expenditure Allocation

Job Titles	Matching SAM Activities	In Million Rand				In Percentages			
		Unskilled		Skilled		Unskilled		Skilled	
		Male	Female	Male	Female	Male	Female	Male	Female
School Nutrition Workers	Domestic Services, Cooks	103	512	8	28	16	79	1	4
Sports Coaching Facilitators	Education	155	152	7	11	48	47	2	3
School Caretakers	Building Maintenance	296	11	23	13	86	3	7	4
Adult Education Workers	Education	140	137	34	52	39	38	9	14
Special School Teaching Aide	Education	77	75	20	30	38	37	10	15
School Clerical Workers	Government Services, Education	103	30	28	18	57	17	16	10
Peer Educators	Education	102	100	48	74	31	31	15	23
Social Security Workers	Social Care	83	77	20	79	32	30	8	30
Food Security Workers	Government Services	19	6	8	5	52	15	20	13
VCT Counsellors	Health Care	33	96	31	60	15	44	14	27
Community Health Facilitators	Health Care	See Community Health Cadres				See Community Health Cadres			
Community Health Workers	Health Care								
Community Caregivers	Health Care								
TB & DOTS Supporters	Health Care								
Treatment Supporters	Health Care								
Malaria Workers	Health Care								
Community Health Cadres		238	681	10	20	25	72	1	2
Total		1,350	1,876	237	390	35	49	6	10

The EPWP hiring scheme entails wage levels that would make these job opportunities attractive to very poor, unemployed, unskilled persons—which minimizes potential leakages of the allocated funds to better-off households. The computed daily wage rates are R23 and R75, in 2000 prices.

In our scenario, we distribute the job opportunities across households to those who wish to participate in the programme. Unskilled workers are expected to come exclusively from poor and ultra-poor households whose annual per capita income levels are below the 50th (below R4,000) and 25th (below R1,846) percentile, respectively. As we have seen, both unemployment and poverty follow distinct patterns according to geographic location, types of residence and race.

Table 24 presents a summary of how poverty is shared among the poor and ultra-poor households and the percent of unemployment for each household type.³²

Table 24. Poverty Share and Unemployment Rates by Households Type (in percent)

Poor and Ultra-Poor Households	In-group Poverty Share	Unemployment (official definition)	Unemployment (expanded definition)
Urban Formal African Poor	16.1	50	58
Urban Formal African Ultra-poor	7.7	68	75
Urban Formal Coloured Poor	2.6	40	53
Urban Formal Coloured Ultra-poor	1.0	60	68
Urban Informal African Poor	7.8	43	49
Urban Informal African Ultra-poor	4.1	55	63
Rural Formal African Poor	7.7	27	41
Rural Formal African Ultra-poor	7.2	49	65
Rural Formal Coloured Poor	1.1	10	19
Rural Formal Coloured Ultra-poor	0.2	18	41
Ex-homeland African Poor	21.2	37	53
Ex-homeland African Ultra-poor	23.4	55	73
Total (R4,000 per annum)	100.0		

As shown in table 25, the expenditure on food, material and equipment (in other words, intermediate inputs) is allocated across activities using adjusted average expenditure propensity of the matching activities from the SAM. The adjustment is made only to account for endogenous accounts. This is based on the assumption that the EPWP sector does not have any leakages. In other words, the sector does not pay any taxes related to sales and production, nor does it accumulate any capital for future use. They are then aggregated back to become “intermediate inputs,” which are part and parcel of the external shocks.

³² Expanded definition includes discouraged workers.

Table 25. Detailed EPWP Social Sector Intervention—Input Composition

	EPWP-Social Sector	
	(%)	Million Rand
Male Skilled	1.90	180
Female Skilled	3.20	296
EPWP Male	13.40	1,248
EPWP Female	18.60	1,733
Agriculture	10.50	974
Mining	0.10	9
Food	31.30	2,910
Textile	0.40	40
Paper	0.50	42
Petroleum	0.40	37
Nonmetal	2.30	215
Metal	0.20	21
Machinery	0.70	65
Communication Equipment	1.10	102
Transportation Equipment	2.50	236
Other Manufacturing	0.50	43
Electricity	0.10	13
Water	0.10	7
Building	0.50	42
Construction	0.30	31
Trade, Hotels & Catering	0.40	35
Transportation & Communication	3.00	280
Financial Service	0.50	44
Business Service	2.90	272
Education	0.20	17
Other Government Service	3.80	350
Health	0.10	8
Social Service	0.30	32
Other Service	0.10	11
Total	100.00	9,294

4.6 The Fixed Price Multiplier Approach

This section presents a set of experiments run using a simple SAM multiplier approach. It explores the distributional effects of alternative employment guarantee programmes on labour markets and household income, particularly focusing on the gender dimension. The SAM described in section 1 provides the base for the analysis.

The multiplier analysis can be used to explore the impact of exogenous changes and policies on the whole interdependent socioeconomic structure. It shows the impact on the total outputs of the different production activities and the incomes of the various factors and socioeconomic groups from a one unit increase in exogenous demand and captures the full set of channels through which influence travels within the system.

The common approach in multiplier analysis is to partition the SAM into exogenous and endogenous accounts and to derive the incomes of the endogenous accounts (usually production activities, factor incomes and household/firm incomes) by pre-multiplying any chosen vector of exogenous injection by a multiplier matrix. The matrix provides explicit linkages among all accounts and allows us to trace a specific multiplicative effect through sectoral and household demand linkages. These interconnected linkages construct a circular process in which production activities generate household incomes (via the aggregation of factorial income per household category) and household expenditures generate the demand for output. Other related variables, such as government spending, imports and exports, transfers, etc., are linked to this core process where necessary.

A SAM-based fixed-price multiplier analysis assumes that any increase in exogenous demand is to be satisfied by a corresponding increase in output, not prices. It also suggests a world in which excess capacity and unused resources prevail and prices remain constant. This assumption coincides with the fact that South Africa displays a high level of unutilized, unskilled labour resources that can be directed to the public works programme. Thus, the price of labour service (wage rates) and, consequently, output prices would not change significantly enough to invalidate our analysis. As a result, the magnitudes we derive in the experiments can be treated as useful first approximations.

The starting point for an analysis based on this SAM is the exogenous nature of the increased demand leading to sectoral output increase. The set of fixed price multipliers can then be used to ascertain the impact of this increase in output on the incomes of specific household groups.

Let's set the value of output (y) to be equal to endogenous accounts (n) and exogenous accounts (x). Using the property of average expenditure propensity (A), the values of endogenous accounts (n) equals the product of the propensity and the value of output, as shown in equation (1).

$$y = n + x = Ay + x \quad (1)$$

$$y = (1 - A)^{-1}x = Mx \quad (2)$$

After rearranging the terms in the equation, we can derive the matrix of accounting multipliers in equation (2). The matrix (M), when computed, can account for the results (e.g., income,

consumption, etc.) obtained in the SAM without explaining the process that led to them. One limitation of the accounting multiplier matrix (M) as derived in equation (2) is that it implies unitary expenditure elasticity; however, it would be unrealistic to assume that consumers react to any given proportional change in their incomes by increasing expenditures on the different commodities by exactly that same proportion.

A more realistic alternative is to specify a matrix of marginal expenditure propensities (C_n , below) corresponding to the observed income and expenditure that prices remain fixed. Expressing the changes in income (dy) resulting from changes in injections (dx), i.e., EPWP expenditure, one obtains:

$$\begin{aligned} dy_n &= C_n dy_n + dx \\ &= (I - C_n)^{-1} dx = M_c dx \end{aligned} \quad (3)$$

M_c can be termed a fixed-price multiplier matrix and its advantage is that it allows *any* non-negative income and expenditure elasticities, including unitary elasticity, to be reflected in M_c . Thus, changes in consumer expenditure over commodities can be disproportionate to changes in their incomes. For instance, a poor consumer may spend a larger proportion on food as income increases; meanwhile, a non-poor consumer may do otherwise. The marginal expenditure propensity (MEP) can be readily known from one of its properties: MEP_i is equal to the product of expenditure (income) elasticity (Ey_i) times the average expenditure propensity³³ (APE_i) for any given good (i), i.e.:

$$MEP_i = Ey_i \cdot AEP_i \text{ for any good } I \quad (4)$$

Fixed multiplier analysis using a social accounting matrix can articulate any multiplicative effects of economic policy instruments and can provide valuable insights to policymakers as to effective and efficient policy interventions, such as sectoral development, job creation and targeted poverty reduction.

Our emphasis in this paper lies on the gender and poverty dimension of the EPWP. In particular, a focus on female employment is likely to be more effective in achieving the objective of poverty alleviation and income equality, as we have already seen. We proceed to report and discuss the results.

³³ The average expenditure propensities come directly from the SAM, which is the ratio of expenditure on good i to total expenditure. The expenditure elasticities provide changes in consumers' expenditure on good i due to their income increase. This information comes from PROVIDE. See table 16 in this text for detailed estimation results.

5. SIMULATION RESULTS

5.1 Introduction

It is widely acknowledged that South Africa needs to pursue an aggressive employment expansion policy. A 2006 UNDP, Brasilia Poverty Centre (IPC) in-depth country study on South Africa³⁴ concluded “[t]he key realization of these findings is that under the best-case scenario (an unrealistic growth rate of 8 percent per year), South Africa would reduce its unemployment by 50 percent in 2014. This further underscores the need for simultaneous initiatives aimed at the poor and unemployed.” Similar conclusions have been reached by many researchers in South Africa, including those in a recent HSRC publication.³⁵ The realization that accelerated growth will not solve joblessness in and of itself largely motivates this project.

The simulation we have constructed exogenously injects R9.3 billion through channels in the SAM-SA (at 2000 price levels). We set as an EPWP goal the reduction of unemployment by half, assuming that responsibility for the remaining unemployment rests with expansionary fiscal and monetary policy, as well as government policies that provide support and stimulus to the private sector. In other words, we address the most disenfranchised and indigent parts of the population. The following assumptions are made: (1) EPWP workers come from within the ranks of ultra-poor and poor households; (2) most workers, both men and women, receive monthly wages of R500, while those with higher levels of skills receive R1,000 (in 2004 prices; deflated to 2000 prices) as we discuss below, hence there are no gender-based wage differentials within this programme as mandated by official EPWP documents; and (3) wages and salaries for supervisors and administrators were estimated at prevailing market rates.

As the R9.3 billion is injected in the economy, new demand is generated throughout the economy from two sources: (1) new demand for intermediate inputs used by the EPWP sector in order to hire, train and deliver the new ECD and HCBC services (backward linkages); and (2) new demand for consumption goods that is generated when the newly hired skilled and unskilled EPWP workers, as well as those from other industries, spend the income they will be now receiving. This creates direct and indirect employment effects, and direct and indirect new income that is distributed across households with concomitant changes in output, taxes and potentially poverty. We report these changes below. Several other nonincome benefits are expected to accrue in the realm of human development. Included in these benefits is gender-equality promoting outcomes of narrowing wage differentials among unskilled workers, reduction in unemployment among women, human capital development and, of particular importance, new services that will potentially reduce the unpaid work burdens of women (and children).

³⁴ Pollin et al. (2006)

³⁵ See Altman (2007)

5.2 The Impact on GDP and Output Growth

The direct contribution of this intervention to GDP is R15 billion, which represents a 1.8 percent increase in GDP. In terms of factor contributions to value added, labour contributes R9,249 million (61 percent), while R5,939 (39 percent) comes from capital. The increase in industry output is largely accounted for by output growth in the agriculture and food industry (3.5 percent, compared to 1.1 and 1.5 percent in the manufacturing and services sectors, respectively: table 26). This is mainly due to the relatively larger allocation of the injection to purchasing commodities from these industries for preparation of meals and food stamps as part of food security, which amounts to 41 percent of the total. Output growth in the service sector is higher than that of manufacturing, as expected, since the intervention focuses on social-sector services. Given the initial expenditure of R9.3 billion, the implied GDP multiplier is estimated at 1.6 ($15B \div 9.2B$).

Table 26. Sectoral Output Growth (in Million Rand)

	Agriculture	Manufacturing	Services	GDP
Base	241,457	1,132,106	1,040,440	835,651
Increment	8,477	12,435	15,948	15,187
Growth Rate	3.5%	1.1%	1.5%	1.8%

5.3 The Impact on Government Income

The impact on government income is shown table 27. The growth in household income and industry output raises the government's tax revenue by R3,314 million (1.5 percent). As a result, new taxes account for nearly 36 percent of the proposed EPWP Social Sector intervention. The tax growth implies that the government could finance the intervention without compromising the government budget balance greatly, as it requires a net increase of roughly R6 billion. Such a figure is equivalent to a mere 0.7 percent of GDP and 2.3 percent of government expenditure (at 2000 price levels). If financed through deficit spending, the government deficit as a percentage of GDP would increase from 2.0 to 2.7 percent.

Table 27. Impacts on Tax Revenue (in Million Rand)

	Sales	Indirect	Direct	Total
Base	83,933	18,529	121,085	223,548
Increment	1,456	284	1,573	3,314
Growth Rate	1.7%	1.5%	1.3%	1.5%

The sales tax revenue accounts for 38 percent of government tax revenue, and increases by 1.7 percent. Indirect tax, or value added tax (VAT), revenue comprises 8 percent of the total revenue and grows by 1.5 percent in response to the intervention. Direct tax, or income tax, covers 54 percent of the total and increases by 1.3 percent. Within the increment of tax

revenue, each tax type accounts for 44, 9, and 47 percent, respectively, of the total increment. Thus, most of the marginal growth in tax revenue is attributed to the growth of sales tax caused by higher economic activities. This result implies that an increase in commodity demand due to direct and indirect income growth by the intervention is a key contributor to tax revenue increase and, consequently, EPWP financing.

5.4 The Impact on Labour Factors: Employment Creation and Unemployment Effects

The major beneficiaries are the 545,191 unskilled, full-time public works employees; quite importantly, the indirect impact for low-skilled labour employed by other sectors is 135,927. Put differently, every four unskilled EPWP jobs generate another low-skilled job elsewhere in the economy. Supervisory and other skilled workers will also be employed within the EPWP and this corresponds to a net job creation of 26,314 skilled jobs, totalling 571,505 EPWP jobs. Taken together, they create backward linkages, i.e., sectoral multiplier effects, strong enough to generate approximately another 192,893 jobs in the economy. The impact of the social sector direct job creation will be to create an additional 56,966 skilled and 135,927 unskilled workers. Overall, for every three jobs created due to the EPWP intervention, an additional job opens up within the economy. Job creation within EPWP turns out to be greater for women than for men across skilled and unskilled categories.

Table 28. Job Creation as a Consequence of Scaling Up EPWP Social Sector

	Female Unskilled	Female Skilled	Male Unskilled	Male Skilled	Total	Unskilled Total	Skilled Total
Direct EPWP	317,007	16,386	228,184	9,928	571,505	545,191	26,314
Indirect Jobs	66,053	23,511	69,875	33,455	192,893	135,927	56,966
Total	383,060	39,897	298,059	43,383	764,398	681,118	83,280

The total number of unemployed in our simulation was 6,455,842, from which 60 percent belong to poor and ultra-poor households—despite comprising only 38 percent of total labour force. In this study, we have assumed that the EPWP intervention targets half of total unemployed (3,227,921 people) and the other half would be under the purview of other government policies and programmes, ranging from support to SMSE’s to social grants, etc.

Table 29. Employment Impact of EPWP Social Sector Intervention

	Economy-Wide Labour Force				Targeted-Group Labour Force			
	Male	Female	Total	EPWP	Male	Female	Target	EPWP
Labour Force	9,217,437	9,025,409	18,242,846		4,608,719	4,512,704	9,121,423	
Employed	6,406,093	5,380,911	11,787,004	764,398				764,398
Unemployed	2,811,344	3,644,498	6,455,842	5,691,444	1,405,672	1,822,249	3,227,921	2,463,523

Table 29 shows the contribution of social sector interventions in terms of employment in South Africa, with 764,398 jobs generated (24 percent of the targeted unemployed population). Overall, the unemployment rate decreases from 35 to 27 percent in the target group.³⁶ Given the size of its budget (1.1 percent of GDP or 3.5 percent of government expenditure), the intervention generates a more than proportionate increase in employment. This efficient employment scheme is mainly due to the labour-intensive nature of social sector activities.

5.5 Exploring Direct and Indirect Employment

Changes in employment stem from two sources: direct employment in EPWP and indirect employment in the rest of the economy. The direct employment is attributed to labour demand in the EPWP Social Sector, which provides job opportunities for the unskilled labour force from poor and ultra-poor households, as well as for skilled labour, which includes supervisors (or trainers) and administrative staff for the programme. Indirect employment stems from increasing input demand by industries and the concurrent increase in household consumption of goods and services. The following sections illustrate these impacts in more detail.

a. Direct Job Creation

An EPWP Social Sector intervention generates direct employment from hiring both unskilled labour as trainees and skilled labour as supervisors and staff. Table 30 shows the number of direct jobs by gender and skill levels. Total direct jobs cover **18 percent** of targeted unemployed persons in South Africa. Skilled jobs are allocated across all types of households, including non-poor households, as the skilled jobs are not subject to employment targeting by assumption. Unskilled jobs are targeted exclusively to poor and ultra-poor households, thus all of the direct jobs are allocated by population weights across poor and ultra-poor household types. The female unskilled labour force is the largest beneficiary group in terms of number of jobs created, receiving 55 percent of total direct jobs. Overall, 95 percent of the new direct

³⁶ In 2006, the economy-wide unemployment was estimated at 26 percent or 4.3 million persons. Should the intervention have taken place in year 2006, it would have dropped the unemployment rate from 26 to 21 and 16 percent of the economy-wide and targeted (one-half of total unemployed) unemployed population, respectively.

jobs go to the unskilled labour force, which implies efficiency of the intervention in terms of support personnel (skilled labour) ratio to trainees (unskilled labour).

Table 30. Direct Job Creation

	Female Unskilled	Female Skilled	Male Unskilled	Male Skilled	Total Direct Jobs
Social Sector	317,007	16,386	228,184	9,928	571,505
Percent	55	3	40	2	100

Using the population weights by household types, as shown in table 32, one can observe the direct employment impact in greater detail. Overall, male and female unemployment rates drop from 55 to 48 and 47 percent, respectively. Considering the absolute increase in female jobs (as reported in table 30) one might expect a greater decrease in the female unemployment rate. However, female unemployment was greater at the outset. Thus, the rate change seems smaller than the level change (number of unemployed persons).

One of the general trends is the higher unemployment rate in urban areas compared to those in rural areas. The geographical concentration of unemployment indicates migration of the unemployed from rural to urban areas by both male and female groups.

Table 31. Effects of Direct Job Creation on Unemployment—Bottom 50th Percentile

Unemployment (Expanded)	Male Unemployed				Female Unemployed			
	Before		After		Before		After	
	%	Persons	%	Persons	%	Persons	%	Persons
Urban Formal African Poor	61	361,759	55	324,962	59	426,992	52	375,824
Urban Formal African Ultra-poor	81	252,472	76	234,911	74	303,278	68	278,877
Urban Formal Coloured Poor	54	50,993	48	45,111	59	65,647	51	57,472
Urban Formal Coloured Ultra-poor	62	22,510	56	20,203	71	32,469	64	29,262
Urban Informal African Poor	48	125,488	41	107,657	55	170,185	47	145,400
Urban Informal African Ultra-poor	69	90,703	62	81,408	75	61,223	59	48,308
Rural Comm. African Poor	33	85,934	26	68,319	45	124,342	36	99,863
Rural Comm. African Ultra-poor	56	130,612	49	114,284	61	189,392	53	166,706
Rural Comm. Coloured Poor	15	6,502	9	4,097	30	11,050	21	7,708
Rural Comm. Coloured Ultra-poor	25	2,078	19	1,571	59	5,093	51	4,388
Ex-homeland African Poor	42	215,617	33	167,305	41	266,386	31	199,235
Ex-homeland African Ultra-poor	59	367,418	51	314,008	54	483,565	46	409,354
Total Unemployed	55	1,712,086	48	1,483,835	55	2,139,622	47	1,822,397

Source: SAM-SA, PROVIDE 2007

Table 32. Population Distribution of Households—Bottom 50th Percentile

Household Type	%
Urban Formal African Poor	16
Urban Formal African Ultra-poor	8
Urban Formal Coloured Poor	3
Urban Formal Coloured Ultra-poor	1
Urban Informal African Poor	8
Urban Informal African Ultra-poor	4
Rural Comm. African Poor	8
Rural Comm. African Ultra-poor	7
Rural Comm. Coloured Poor	1
Rural Comm. Coloured Ultra-poor	0
Ex-homeland African Poor	21
Ex-homeland African Ultra-poor	23
Total	100

b. Indirect Job Creation

Indirect job creation occurs through two channels: extra demand for inputs from other industries (backward linkages) and household consumption. The initial injection increases demand for inputs to meet the output growth. In order to produce more inputs, industries need to hire more labour based on their production technologies. Concurrently, wage income from EPWP intervention increases consumers' demand for goods and services, further increasing output. Consequently, the consumer-driven output growth also fosters labour demand by industries.

Table 33 shows the number of jobs created *indirectly*. More than 190,000 jobs are created through these channels, which accounts for 6 percent of targeted unemployed persons.

Table 33. Indirect Job Creation

Types of Intervention (9.3 billion)	Female Unskilled	Female Skilled	Male Unskilled	Male Skilled	Total Jobs
Social Sector	66,053	23,511	69,875	33,455	192,893
Percentage	34	12	36	17	100

However, *only* 12 percent (8,577+14,030=22,607 / 192,893) of the indirect jobs are allocated for poor and ultra-poor households, as shown in table 34. This biased distribution of jobs originates from the extremely skewed distribution of wage income toward top 50th percentile, as seen in table 35. Because indirect jobs cannot be designed to reach the bottom 50th percentile, allocation of jobs is determined by the existing skewed distribution. As more EPWP-trained workers successfully integrate into the formal economy, this skewed distribution may improve. This long-term, dynamic impact analysis is, however, beyond the scope of this study.

Table 34. Effects of Indirect Job Creation on Unemployment—Bottom 50th Percentile

Effects of Indirect Job Creation	Male Unemployment			Female Unemployment		
	%		Indirect Jobs	%		Indirect Jobs
	Before	After		Before	After	
Urban Formal African Poor	60.8	60.5	2,095	58.7	58.2	3,664
Urban Formal African Ultra-poor	81.1	81.1	290	74.2	73.9	868
Urban Formal Coloured Poor	54.2	53.7	426	58.7	58.1	677
Urban Formal Coloured Ultra-poor	62.3	62.1	59	71.5	71.3	77
Urban Informal African Poor	48.0	47.6	1,286	55.4	54.9	1,598
Urban Informal African Ultra-poor	69.0	68.9	182	75.1	74.5	519
Rural Comm. African Poor	32.9	32.4	1,181	44.7	44.2	1,276
Rural Comm. African Ultra-poor	56.2	56.0	405	60.7	60.4	677
Rural Comm. Coloured Poor	14.9	14.2	283	30.1	29.4	271
Rural Comm. Coloured Ultra-poor	24.8	24.3	40	58.9	58.6	26
Ex-homeland African Poor	42.3	42.0	1,742	41.0	40.6	2,692
Ex-homeland African Ultra-poor	59.5	59.4	590	54.3	54.1	1,684
Total	55.2	54.9	8,577	55.5	55.1	14,030

Table 35. Proportion of Wage Income Distributed to Top 50th Percentile (in Percent)

	Male Unskilled	Male Skilled	Female Unskilled	Female Skilled
Non-poor	88.1	99.3	79.2	98.7

5.6 Impact on Households: Income and Poverty

The proposed EPWP intervention will affect income of different types of households through an increase in wages from both direct and indirect employment. In terms of the direct impact, the employment scheme we have proposed in the EPWP will result in income growth rates for the poor and ultra-poor households primarily.³⁷ In many ways, the amount dedicated to this intervention is not commensurable to the global problem of unemployment, nor to the poverty challenge that South Africa is facing. In addition, poverty is multifaceted and people in poverty face multi-dimensional deprivations. Income alone can bring individuals above the poverty line datum, but multiple deprivations require multiple interventions and, above all, in our view what is truly needed is community revitalizing and empowerment through local planning that promotes regional and municipal level development. We will return to this point shortly. Below we examine income and poverty impacts of the targeted intervention by examining what the impact is on income distribution and poverty as it regards the entire population, as well as what the impact is in regards to the poor and ultra-poor households from which EPWP workers originate.

³⁷ Although what we propose is not a “targeted” programme, the anticipated self-selection due to low wages would bring about the same result. There is a strong assumption here that the reservation wage is pretty much the same across both poor and ultra-poor households, which implies the same supply of labour response across the board. Further refinements of this assumption are possible in future uses of our model.

a. Global Impact

Table 36 illustrates income effects of the proposed intervention. Overall, the proposed R9.3 billion intervention, as we have seen, results in an overall increase of national income by R15 billion. Of this, R12 billion is received as household income, while R3 billion accrues to enterprises. The first three rows show the base income of non-poor, poor, and ultra-poor households and the corresponding increments due to intervention in absolute terms and as a percentage change. Total household income rises from approximately R695 to R707 billion.

Table 36. Income Changes by Household Types (in Million Rand)

EPWP Social Sector	Non-poor	Poor	Ultra-poor
Base (Preintervention)	640,846	38,410	15,986
Increment	8,535	2,137	1,467
New	649,381	40,546	17,453
% Change			
Base (Preintervention)	100	100	100
Increment	1.3	5.6	9.2
New	101.3	105.6	109.2
Income Distribution			
Base (Preintervention)	92.2	5.5	2.3
Increment	70.3	17.6	12.1
New	91.8	5.7	2.5

Before the intervention, non-poor households (upper 50th percentile) took 92.2 percent of total household income, while the poor (25th–50th) and the ultra-poor (below 25th) received only 5.5 percent and 2.3 percent, respectively. Provided that the intervention occurred in that year, the intervention would result in overall income growth of 1.3, 5.6, and 9.2 percent, respectively. The income growth of the lower 50th percentile exceeds the GDP growth rate of 1.8 percent; meanwhile, that of the upper 50th percentile does not. This result stems from the targeting employment scheme, favourable to poor and ultra-poor households, described in the previous section. This presents clear evidence of the *pro-poor growth* aspect of the EPWP Social Sector intervention.

As the last three rows of table 36 show, the intervention is in the right direction, yet it is too small to substantially alter the skewed income distribution in South Africa, which ends up improving only slightly. The income received by the upper 50th percentile decreases from 92.2 to 91.8 percent of total income and that of the lower 50th percentile improves from 7.8 to 8.2 percent.³⁸

³⁸ In Maharashtra and during the New Deal, similar programmes reached 10 percent of GDP allocations. Should the equivalent amount be allocated in South Africa, the results would be commensurable to the vastness of the issue at hand. The combined effect of a R30 billion allocation (around 8 percent of GDP in 2000) would have reduced unemployment by 24 percent for the targeted group and 13 percent for the economy-wide labour force. Moreover, the expansion would produce a marginal change of income for poor households by 18 percent and for ultra-poor households by 30 percent. Consequently, the lower 50th percentile would receive 9.0 percent (instead of 8.2 percent) of total household income. Assuming exit rates from the programme and revitalization of local

However, these changes do not clearly reveal the implications of the intervention on those households whose members participate as newly hired EPWP workers. The impact of the intervention, in our view, has to be judged according to two criteria: (a) the impact on participating households; and (b) the number of households that can potentially participate given the budgetary allocations for this programme. Disentangling these two dimensions can shed light and avoid confusion regarding EPWP's ability to eradicate poverty and reduce overall unemployment (see McCord 2004 and Hemson 2007, among others). The next section elaborates on the household-level impact of the proposed EPWP Social Sector intervention.

b. Participating EPWP Household-Level Impacts

The income and poverty reduction effects of the intervention for participating EPWP households are summarized in table 37 and 38. In obtaining the results reported below, we have assumed one EPWP job per household. Accordingly, the number of participating households is 571,505, with 545,477 of these households coming from the lower 50th percentile of the income distribution. We have also assumed that the new job opportunities reach poor and ultra-poor households in proportion to their poverty-weighted population size. The tables below therefore show income and poverty changes that occur due to the EPWP scaling up in those poor and ultra-poor households that participate as newly hired workers.

Columns two and three of table 37 report the pre- and post-intervention average annual income³⁹ received by each type of household. Prior to the intervention, poor households' annual income ranges from R11,336 (urban informal African) to R16,029 (urban formal Coloured and Asian), while for the ultra-poor the range is between R6,134 (urban informal African) to R7,818 (urban formal African). This provides ample evidence that the within poor-household income distribution shows high dispersion, as the ultra-poor earn, on average, half the poor household income level. Since each new EPWP job opportunity implies, on average, an extra R6,720 earned per year, for some household types this newly earned income represents a significant improvement. As expected, the lower the initial income, the higher the impact will be; column four provides clear evidence of the importance of the intervention for the poorest of the poor households which experience almost a doubling of their income, on average, ranging from an 86 to 110 percent increase.

economies, the intervention would produce dynamic effects that include improved poverty incidence and income distributions over time.

³⁹ The IES and LFS are the two key surveys that provide data on the basis of which annual household income can be calculated. It is well established that in South Africa, the income data derived from national accounts statistics (used for the construction SAMs) deviate from the IES/LFS, a data compatibility issue currently debated among researchers and the statistical agency. Following the prevailing practice among colleagues and the recommendation of the PROVIDE team, in our household-level income and poverty analysis we make use of IES/LFS survey data.

Table 37. Change in Annual Income by Household Type

EPWP Social Sector Intervention	Number of Participating Households	Average Annual Household Income (Rand)		Change in Income (%)
		Before	After	
Urban Formal African Poor	87,965	15,033	21,753	45
Urban Formal African Ultra-poor	41,962	7,818	14,538	86
Urban Formal Coloured Poor	14,057	16,029	22,749	42
Urban Formal Coloured Ultra-poor	5,514	7,417	14,137	91
Urban Informal African Poor	42,615	11,336	18,056	59
Urban Informal African Ultra-poor	22,210	6,134	12,854	110
Rural Comm. African Poor	42,094	12,750	19,470	53
Rural Comm. African Ultra-poor	39,014	7,801	14,521	86
Rural Comm. Coloured Poor	5,748	13,420	20,140	50
Rural Comm. Coloured Ultra-poor	1,213	7,733	14,453	87
Ex-homeland African Poor	115,463	12,746	19,466	53
Ex-homeland African Ultra-poor	127,621	7,021	13,741	96

A key issue regarding EPWP is its ability to make a difference in regards to income-poverty reduction. To establish whether a household finds itself in poverty, and whether it is subsequently lifted out of poverty, information is required on household income levels, as well as on the number of household members that depend on it. The size of households is not the same across all types and depends on a variety of socioeconomic characteristics. Traditionally, household-level poverty lines are calculated as the product of a designated per capita poverty datum times the adult equivalent household size.⁴⁰ The per capita ultra-poor and poor poverty

⁴⁰ The adult equivalent household size is defined as $E = (A + aK)^b$ with A the number of adults and K the number of children under 10 (thus $A + K = H$, the household size by head counts). Parameter values used in deriving the table below are $a = 0.5$ and $b = 0.9$

Average Household Size by Headcounts and Adult Equivalent Population

Household Type	Average HH Size Adult Equivalent (in Persons)	
Urban Formal African Poor	5.2	3.9
Urban Formal African Ultra-poor	6.5	4.7
Urban Formal Coloured Poor	5.7	4.1
Urban Formal Coloured Ultra-poor	5.7	4.1
Urban Informal African Poor	4.0	3.0
Urban Informal African Ultra-poor	5.0	3.7
Rural Commercial African Poor	4.6	3.5
Rural Commercial African Ultra-poor	6.6	4.6
Rural Commercial Coloured Poor	4.6	3.4
Rural Commercial Coloured Ultra-poor	5.4	4.0
Ex-homeland African Poor	4.7	3.5
Ex-homeland African Ultra-poor	6.2	4.3

We should note that ultra-poor households are larger than poor ones and, on average, that exerts some influence on poverty depth beyond income across all types of households.

datum line we have utilised is R1,847 and R4,000, respectively,⁴¹ and we report the derived household poverty lines in column one of table 38.

Table 38. Change in Depth of Poverty by Household Type

EPWP Social Sector Intervention	Poverty Line (Rand)	Depth of Poverty		Poverty Reduction
	Equivalency Scale Adjusted	Before	After	%
Urban Formal African Poor	15,513	(480)	6,240	
Urban Formal African Ultra-poor	18,770	(10,952)	(4,232)	61%
Urban Formal Coloured Poor	16,458	(429)	6,291	
Urban Formal Coloured Ultra-poor	16,277	(8,861)	(2,141)	76%
Urban Informal African Poor	12,196	(860)	5,860	
Urban Informal African Ultra-poor	14,630	(8,496)	(1,776)	79%
Rural Comm. African Poor	13,801	(1,051)	5,669	
Rural Comm. African Ultra-poor	18,595	(10,794)	(4,074)	62%
Rural Comm. Coloured Poor	13,622	(203)	6,517	
Rural Comm. Coloured Ultra-poor	15,833	(8,100)	(1,380)	83%
Ex-homeland African Poor	14,079	(1,333)	5,387	
Ex-homeland African Ultra-poor	17,375	(10,354)	(3,634)	65%

Note: Parenthesis denotes negative numbers

Two striking results are reported in table 38. First, column four shows that among ultra-poor households, there is significant decline in poverty depth, by 61 to 83 percent. Second, all poor households that have members who are beneficiaries of new EPWP work opportunities move above the poverty line.⁴² Here, the deeper a household finds itself in poverty prior to the intervention, the smaller the percentage change in poverty reduction. Thus, as depth of poverty is smaller for rural, commercial, coloured, ultra-poor households vis-à-vis other ultra-poor households to begin with, so the additional earned income results in a reduction of poverty depth by the considerable amount of 83 percent. This implies that if their income was to increase by an extra R1,380, these households would be also crossing the poverty line. On the other hand, ultra-poor African households in formal, informal and ex-homeland settlements would require three times as much additional income to become non-poor. It

⁴¹ There is no official poverty line in South Africa, although the Treasury is in the process of finalizing documentation that will establish such a threshold (as discussed in an earlier section of this report). In so far as income is concerned, our study has grouped households in three income levels: non-poor households with per capita income within the upper 50th percentile; poor households with per capita income in the 25–50th percentile; and ultra-poor households with per capita income in the 0–25th percentile. Correspondingly, R1,846 can be regarded as the relative “ultra-poverty line.” The next 25 percent of the population live on R1,847–4,000 per annum and are labelled “poor.” The implied poverty line of R4,000 is in the same vicinity as many other poverty lines that have been used for South African poverty analyses. For example, Hoogeveen and Özler (2004) suggest that a reasonable poverty line is in the region of R3,841 per capita per annum (for the same year).

⁴² The poor households move far above the poverty line, meanwhile the ultra-poor remain below the line after the intervention. This implies that there may be more effective job allocations, other than the population-weighted scheme, in terms of household-level poverty reduction. Finding them is not within the scope of this study, however. A further study should consider this issue and explore policy recommendations.

should also be noted that the proposed intervention reaches only 14 percent or 545,191 poor and ultra-poor households. A further expansion of EPWP would be required to raise more households out of poverty.

The skewed distribution of depth of poverty in line with the larger average household size of the ultra-poor points to the impending need for expanded community-based service delivery. The households are under the double burden of low income and of more persons to support through unpaid work. Scaling up of the EPWP Social Sector intervention should ease the burden that may lead to investment of time and financial resources to build human and physical capital for future income stream.

5.7 Beyond the Multiplier Analysis

Until now we have considered the economy-wide impacts of the proposed intervention and we have examined its poverty dimensions. The types of jobs we have recommended are in social care and, hence, they will alleviate unpaid work burdens from women, especially the poor and ultra-poor women that we have seen in section 3.3 who contribute disproportionately to the provisioning of social care for their families and communities. Going beyond the multiplier analysis, mention must be made of other dimensions expected to yield benefits to all participants, and especially women.

- **Accreditation.** The range of possible work opportunities we have proposed entail on-the-job-training and dedicated time for attending seminars and workshops that lead to accreditation. Increased levels of human capital acquisition and certification can potentially lead to better job prospects in the formal markets and within the government sector, at the provincial or municipal level.
- **Service delivery.** Children of all vulnerable households across the country will be able to enrol in early childhood development programmes, which should lead to better nutrition, health, education and overall wellbeing for children and especially those in vulnerable households. The most vulnerable households—those with people living with HIV/AIDS—will be receiving home-based care, counselling and better nutrition.
- **Generating self-employment.** Potential asset accumulation, as well as other government interventions that support and promote community-based development, can lead to the springing up of new small businesses. **For community revitalization, it is extremely important that** earned income is spent in purchases from local shops and neighbours.
- **Participants will experience an increased sense of dignity within their communities, as well as fulfilment and self-worth.** Ours is a hypothetical policy scenario, which limits our ability to directly conduct such a study for the proposed intervention. Nonetheless, other EPWP-related project evaluations, even among

critiques of this initiative in South Africa, have shown the strong and positive association participants report in reduction of nonincome poverty.

6. SUMMARY AND CONCLUSIONS

In many respects, the EPWP has set deeply transformative objectives of employment and skill creation, with benefits that extend beyond income transfers. Our proposal suggests job creation in the areas of ECD and HCBC, areas that will expand social service delivery to underserved areas, while creating jobs and skills within the communities it will help serve. We have assumed that the programme would provide one person per household with a full-time, year-round job and that unskilled workers are expected to come exclusively from poor and ultra-poor households. The development of an ECD and HCBC cadre would range from child care workers and school nutrition workers, to cooks and vegetable gardeners, to TB and malaria officers who, while earning a living, would also provide services to members of their communities. It must be noted that the 9.2 billion injection is allocated not only to providing wages for newly hired beneficiaries, but also to cover all other associated costs, ranging from training fees to food and materials used, administrative costs etc.

Below we summarize the economy-wide implications of our suggested intervention with a corresponding budgetary allocation of approximately R9 billion:

- The injection of R9.2 billion corresponds to the creation of 571,505 new full-time EPWP social sector jobs. Approximately 540,000 of these are allocated to unskilled members of poor and ultrapoor households, and the remaining to skilled supervisory workers. Should the entire injection be dedicated to and paying wages exclusively, our findings indicate that 1.2 million jobs can be created
- Almost 60 percent of these jobs are estimated to be filled by women, of which 56 percent are unskilled positions and 3 percent skilled. Unlike all other sectors and occupations in the economy, including unskilled ones, monthly wages received by both women and men are identical, at R500 for most workers and R1,000 for those with some level of skill.
- For every three job opportunities directly created through EPWP, another job becomes necessary within the formal market sector, and is therefore indirectly created, elsewhere in the economy—for a total of 772,000 new work opportunities overall.
- In 2000 prices, the R9.2 billion corresponds to 3.5 percent of government expenditures, or 1.1 percent of GDP.

- The total impact on GDP growth is of the order of 1.8 percent, or R15 billion. In 2000 prices, the GDP growth rate increases from 4.2 to 6 percent with an implied multiplier of 1.6 (R15 billion ÷ R9.2 billion).
- New direct and indirect taxes are generated equal to about R3 billion, which will reduce the overall cost of the intervention by one-third (assuming there will not be any unanticipated leakages).
- The resultant growth is pro-poor. The overall *incremental* change in income is 9.2 percent for ultrapoor households, 5.6 percent for poor households, and 1.3 percent for nonpoor households.
- All EPWP-participating ultrapoor households cross the ultrapoor poverty line datum, and depth of poverty is reduced by 60–80 percent. Poor households, previously located anywhere between the ultra-poverty and poverty line datum are lifted above poverty
- Overall, social sector job creation is more labour intensive than the infrastructure sectors of EPWP. Therefore, from a policy perspective it is crucial to note that budgetary allocations in the social sector result in higher levels of job creation and greater depth-of-poverty reduction.

As the market has not been able to produce sufficient jobs, EPWP has the potential to contribute to a more inclusive economic and social development path. Its achievements will have all the more impact if design, implementation and on-going evaluation and audits are gender aware, with women becoming key drivers in their community's wellbeing, forming partnerships with local government. For that, political will, backed with budgetary allocations that promote inclusion and social justice, is needed and South Africa faces a unique opportunity in achieving that.

Our study has been informed by previous international and national research in this area, as well as informal interviews with colleagues and government officials. There is clear indication that in order to achieve the goals laid out by EPWP, certain modifications are needed at various levels. Several audits, EPWP-commissioned reviews and independent research have suggested that fencing off of budgetary allocations is necessary, longer duration of employment must become the norm, rethinking institutional coordination among departments ought to take place, linkages between the national, provincial and municipal levels of government ought to be modified and higher levels of community involvement must be ensured. To these areas of concern, we add four issues as identified in this study. We do so in the hope that EPWP can be sufficiently strengthened to deliver the *right to a job*, especially for those among the poor and unemployed that believe it to be a key component towards full citizenship:

- To achieve reduction in unemployment and poverty, EPWP jobs should increase in number and become full-time, year-round job opportunities. For that, higher budgetary allocations are needed. While this has implications for the net debt position of the government, it must be kept in mind that there is clear evidence of fiscal space expansion, pro-poor growth and indirect employment stimulus, which are counterbalancing positive forces.
- In identifying useful, labour-intensive types of employment, social sector, labour-enabling work opportunities present an area where many jobs remain hidden and ready to become part of the EPWP. Unpaid work, time use data and community-level women's group meetings can provide the most useful inputs through participatory methods that can establish a balance of top-down, bottom-up design of projects to be undertaken.
- In understanding the overall macro-micro implications of such EPWP (social sector included), *ex ante* social accounting matrix modelling can provide policymakers with useful benchmark information. Such a modelling approach allows for better overall understanding, in particular for gender-disaggregated impact analysis. For South Africa, such models are readily available at the national and provincial levels and require only minor modifications for EPWP impact assessment.
- An evaluation criterion of EPWP job opportunities that is neglected is its impact on ameliorating burdens of unpaid work. This can easily be corrected, provided that the benefits of redressing the gender inequalities it perpetuates are well understood. Beyond its importance in improving women's lives, reduction of unrecognized, undervalued and unremunerated work will contribute to reaching other human development objectives—including making progress towards achieving the MDGs.

SELECTED REFERENCES

- Altman, M. (2007) *Employment Scenarios to 2024*. Pretoria: Human Science Research Council (HSRC) August 30.
- Antonopoulos, R. (2007) *The Intersection of Paid and Unpaid Work*. Geneva: ILO.
- Budlender, D. (2002) *Why Should We Care About Unpaid Care Work?* Harare: UNIFEM.
- EPWP (2004a) *Infrastructure Sector Plan for the Expanded Public Works Program*. Pretoria: Department of Public Works.
- EPWP (2004b) *Environment and Culture Sector Plan for the Expanded Public Works Program*. Pretoria: Department of Public Works.
- EPWP (2004c) *Social Sector Plan for the Expanded Public Works Program*. Pretoria: Department of Public Works.
- EPWP (2005) *Expanded Public Works Program (EPWP): Fourth Quarterly Report (1 April 2004 - 31 March 2005)*. Pretoria: Department of Public Works.
- Friedman, Irwin, L. Bhengu, N. Mothibe, N. Reynolds, and A. Mafuleka (2007) *Scaling up the EPWP*. Health Systems Trust, November, Volume 1–4. Study commissioned by Development Bank of South Africa and EPWP.
- Harvey, A.S., and M.E. Taylor (2000) “Time Use.” in M. Grosh and P. Glewwe (eds.) *Designing Household Survey Questionnaires for Developing Countries: Lessons from Fifteen Years of the Living Standards Measurement Study*. Washington, D.C.: The World Bank.
- McCord, A. (2004) “Policy Expectations and Program Reality: The Poverty Reduction and Employment Performance of Two Public Works Programmes in South Africa.” Economics and Statistics Analysis Unit & Public Works Research Project, SALDRU, ESAU Working Paper 8. London: Overseas Development Institute.
- Minsky, H. (1986) *Stabilizing an Unstable Economy*. New Haven: Yale University Press.
- Pollin, R., G. Epstein, J. Heintz, and L. Ndikumana. (2006) “An Employment-Targeted Economic Programme for South-Africa.” International Poverty Centre, UNDP Country Study No. 1, June.
- PROVIDE* (2003) *Social Accounting Matrices and Economic Modelling*. PROVIDE Background Paper 2003: 4. Western Cape: Elsenburg.

* PROVIDE papers are available online at www.elsenburg.com/provide

- PROVIDE* (2004) *The Organising of Trade Data for Inclusion in a Social Accounting Matrix*. PROVIDE Technical Paper 2004: 2. Western Cape: Elsenburg.
- PROVIDE* (2005a) *Creating a 2000 IES-LFS Database in STATA*. PROVIDE Technical Paper 2005: 1. Western Cape: Elsenburg.
- PROVIDE* (2005b) *Forming Representative Household and Factor Groups for a South African SAM*. PROVIDE Technical Paper 2005: 2. Western Cape: Elsenburg.
- PROVIDE* (2006a) *Compiling National, Multiregional and Regional Social Accounting Matrices for South Africa*. PROVIDE Technical Paper 2006: 1. Western Cape: Elsenburg.
- PROVIDE* (2006b) *A Framework for SAM estimation using Cross Entropy and Sequential Disaggregation*. PROVIDE Technical Paper 2006: 2. Western Cape: Elsenburg.
- SARB (2004) *South Africa Reserve Bank Quarterly Bulletin*. December. Pretoria: South African Reserve Bank.
- SNA (1993) *System of National Accounts 1993*. European Union, IMF, OECD, United Nations and World Bank.
- SSA (2001) *A Survey of Time Use*. Pretoria: Statistics South Africa.
- SSA (2002a) *Income and Expenditure of Households, 2000*. Pretoria: Statistics South Africa.
- SSA (2002b) *Labour Force Survey, September 2000*. Pretoria: Statistics South Africa.
- SSA (2003) *2000 Supply and Use Matrices for South Africa*. Report No. 04-04-01 (2000). Pretoria: Statistics South Africa.
- SSA (2004) *Statistical Release P0441. Gross Domestic Product, Annual Estimates 1993–2003, Annual Estimates per Region 1995–2003, Third Quarter*. November. Pretoria: Statistics South Africa.
- SSA (2006) *2002 Supply and Use Matrices for South Africa, Report No. 04-04-01 (2002)*. Pretoria: Statistics South Africa.
- UNDP (2006) *Human Development Report*. New York: UNDP.
- UNDP. International Poverty Centre (Brasilia), <http://www.undp-povertycentre.org/>
- Vickery, C. (1977) “The Time Poor: A New Look at Poverty.” *The Journal of Human Resources* 12(1): 27–48.

APPENDICES

The following appendices are available pdf files as separate documents (in .pdf format) at <http://www.levy.org/pubs/UNDP-Levy/EGS.html>

Appendix A: Technical Report (SAM-SA & TU Satellite accounts)

Appendix B: Statistical Analysis of Time Spent on Unpaid and Paid Work

Appendix C: Job Identification Tables

Appendix D: Technical paper on SAM-SA reformulation