

ECONOMIC IMPACT OF THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT

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Abstract

South Africa hosted the World Summit on Sustainable Development (WSSD) in 2002. This event is regarded as the single biggest conference to be held anywhere in the world. The aim of this paper is to set out the estimated economic impact of the WSSD and its parallel events on South Africa. This impact can be expressed in monetary terms as well as employment figures. The impact is calculated by using an input-output model and employment spin-offs determined from the IO table by using partial multipliers. The input data were derived from a survey amongst WSSD delegates as well as information on government and private investments made.

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Introduction

It is interesting to note that economists look at World Summits on Sustainable Development through different eyes. While population economists such as Keyfitz (1991) and Lee (1991) focus on the content of such summits in order to find ways to strengthen population-development-environment (PDE) linkages, macro-economists are more interested in the economic impacts of such summits (see MacKinlay, 1997).

The first time that the international community came together to focus on environmental issues was in 1972 at the United Nations Conference on the Human Environment in Stockholm, Sweden (United Nations, 1972). Following the Stockholm Conference, the impact of environmental degradation on human socio-economic development received increased attention. In 1983, the United Nations set up the World Commission on Environment and Development (WCED) that made it clear that critical and globally threatening environmental problems were emerging. The WCED came up with the concept of sustainable development that recognises that environmental protection

and socio-economic development can be mutually supportive and need to be looked at in an integrated manner.

The last Summit (also known as the 1992 Earth Summit) was held in Rio de Janeiro in Brazil. The largest international gathering ever held at the time, the Summit brought 108 Heads of State to Rio. The conference was attended by 50 000 delegates and 179 countries were represented. According to MacKinlay (1997) the economic impact of an event of this magnitude on the host country could be significant.

International experience suggests that these events are largely funded from various sources and through various financial institutions. In the main, funds (in the form of public funds) provided by the host country have tended to account for a significant share of the total budget. Given that the WSSD is funded by public funds, it becomes critical to determine how these funds are spent and what the multipliers of such funds are to the broader economy. It is against this background that the South African government had to decide if they would bid to hold the WSSD in South Africa. A decision had to be taken whether the WSSD would create more net benefits to the South African economy or whether the resources could be utilised more effectively elsewhere.

International experience regarding events of this nature is very limited, even non-existent. No economic impact assessment study exists for the 1992 Earth Summit in Rio de Janeiro, Brazil.

In a study conducted by Grant *et al.* (2001), predictions were that the WSSD would inject about R1.6 billion into the South African economy and would create approximately 16 400 jobs. It was expected that more than 65 000 people, including 135 Heads of State, would attend the WSSD. Furthermore, the relevant study suggested that the WSSD would increase South Africa's exposure as a tourist destination by the arrival of about 5 000 international media people. It is on this basis that the South African government decided to go ahead with their bid to host the WSSD.

South Africa hosted the World Summit on Sustainable Development (WSSD) from 26 August to 4 September 2002 in the City of Johannesburg (United Nations, 2000). This event is regarded as the single biggest conference to be held anywhere in the world and it was the largest international conference to be held in South Africa to date. However, activities were not restricted to the one event only. Almost five hundred (494) parallel events were held concurrently over the rest of South Africa. Local and international delegates attended the main and parallel events where they spent money on, for example, registration fees as well as on supporting industries (e.g. restaurants, hotels and retail outlets).

Except for the money spent by delegates on the events and supporting industries, there was also a monetary injection into South Africa by, *inter alia*, international media houses paying for media rights to the conference, foreign governments and NGOs sponsoring events and foreign investors who invested directly into supporting industries. The question that will be addressed in this paper is: "What was the return on the investment made?" This will be done by focusing on the economic impact of the WSSD as shown in the problem statement below.

Problem statement

The aim of this paper is to estimate the economic impact of the WSSD. The Department of Environmental Affairs and Tourism commissioned Urban-Econ and a joint venture between Iklwa Structured Financial Products and the Bureau of Market Research at the University of South Africa to perform an independent economic impact assessment of the WSSD and its parallel events on the South African economy. The economic impact can be expressed in monetary terms as well as employment figures.

In this regard, Stynes (2004) indicates that the term 'economic impact' in the context of summits refers to the regional and national economies. Economic impact analysis traces the spending associated with the summit to identify changes in sales, income, tax revenues and jobs due to tourism activity, although it is very difficult to accurately determine how sustainable the resulting jobs and income over the medium to longer term will be.

For purposes of this paper the following economic stimuli brought about by the WSSD were included in the analysis:

- investments by government and NGOs;
- expenditure by people attending summit events; and
- money invested by exhibitors.

The economic impact outcomes focused on, for purposes of this paper, are as follows:

- new business sales;
- employment; and
- national income (GDP)

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Estimating the economic impact of the WSSD

Hosting the WSSD is interpreted as a short-term injection for the economy, an event that is not likely to occur again in the near future (see MacKinlay, 1997). Experience has shown that the effect of new stimuli of this nature can be modelled on a technique known as the input-output model (see Adams & Stewart, 1956).

The input-output (IO) matrix, forms the nucleus of the input-output model. It is a quantified and summarised version of all transactions that take place between the main economic stakeholders in a particular year. The main feature of the matrix is that it divides these economic transactions into the main sectors of the economy. The matrix also makes provision for two kinds of transactions at a sectoral level, namely the purchase of intermediate and primary inputs on the one side, and the supply of intermediate and final outputs on the other side (Adams & Stewart, 1956).

It is also important to note that the main economic roleplayers, who are responsible for the transaction activities contained in the IO matrix, are business (intermediate demand), private consumers (final demand), government (final demand) and international markets (final demand). Essentially the IO matrix is nothing more than an extension of the national accounts of a country, desegregating the national accounts into the various sectors of the economy. These sectoral figures are therefore compatible with national accounting data published by the South African Reserve Bank (2003) on a regular basis.

The input-output table (IOT) is

schematically represented in Table 1 (Laubser, 2002; Heaps, 2004). The IOT is split into four quadrants according to the type of transaction. There are two dichotomies prevalent in the IOT, namely intermediate and primary inputs and intermediate outputs and final demand.

Quadrant I (commonly referred to as the transaction table or transaction matrix) reflects both the intermediate inputs as well as the intermediate outputs for the different sectors, and indicates the transfer of goods and services between the industrial sectors for purposes of production. The different final demand components applicable to the IOT are shown in quadrant II. These components include private consumption expenditure, government consumption expenditure, gross domestic fixed investment, change in inventories and total exports. Quadrant III represents the demand for primary inputs by the industrial sector. The elements of primary inputs include the remuneration of employees, the gross operating surplus, net indirect taxes, and the demand for intermediate imports. Quadrant IV is that portion of primary inputs that is also part of final demand.

Table 1

A schematic representation of the input-output table

	Intermediate demand	Final demand	Total production
Intermediate inputs	Quadrant I Intermediate inputs and outputs	Quadrant II Final demand	Total intermediate inputs
Primary inputs	Quadrant III Primary inputs	Quadrant IV Primary inputs that are part of final demand	Total primary inputs
Total production	Total intermediate demand	Total final demand	

Source: Laubser (2002); Heaps (2004)

According to Heaps (2004) input-output analysis can be used to determine economic impacts by bringing increases in final demand into interaction with the outputs of the manufacturing and non-manufacturing sectors. Should there be an increase in final demand, there will be a resulting increase in intermediate demand since the manufacturing and non-

manufacturing sectors require more inputs to meet an increased demand.

Such increases in final and intermediate demand will also give rise to increases in income and employment as the manufacturing and non-manufacturing sectors are likely to employ more workers to meet higher levels of final and intermediate demand (Heaps, 2004).

Although increases in final demand and concurrent increases in intermediate demand will give rise to higher levels of employment, this relationship is not entirely elastic since many employers first increase their capacity utilisation before appointing more workers. Furthermore, only a limited percentage of these employees are permanently and/or fully employed (Barker, 1999).

In an IO framework final demand is the sum of private consumption expenditure, gross domestic fixed investment, and change in inventories and exports. In the case of the WSSD final demand for goods and services can be increased by delegates spending more money on goods and services, and by international organisations investing in the WSSD infrastructure.

For production purposes, every industrial sector has a demand for intermediate and primary inputs from various other sectors. The total demand for these inputs with regard to each of the sectors in the IO table can be calculated by totalling the intermediate inputs of each sector with the primary inputs of each sector (Heaps, 2004).

Total production or input for the entire economy can be obtained by adding the total intermediate inputs from different industrial sectors to primary inputs; while the total production or output can be obtained by adding the total output for intermediate consumption of total final demand.

The model has various applications. In the case of the WSSD it was used to determine the change in final demand in order to capture the multiplier effect on the economy. It is assumed that the total impact on the economy will occur in stages, therefore a full cycle is necessary to react to the economy.

In the case of the WSSD economic impacts could result from (1) capital and operating expenditures by public and private recreational facilities, (2) consumer expenditures by delegates on goods and services associated with

the WSSD, (3) consumer expenditures by the WSSD organisers and WSSD-related organisations on goods and services necessary for the production of recreational and/or tourist experiences, and (4) multipliers resulting from the capital, operating and consumer expenditures as already mentioned, such as job creation and increased incomes.

Expenditure on supplies can be interpreted in various ways. It could be viewed as new money injected into the South African economy, which means that if the WSSD had not been held, the money would never have been available for the country. The effect of the expenditure then has a real economic impact. If the expenditure would have taken place irrespective of the WSSD being held, then the expenditure on supplies for the WSSD consisted of the mere transfer of economic activities. The model used to determine the economic impact of the WSSD focused on both the demand and supply aspects.

The economic impact should be viewed as an increase in economic activities in the country. Since the WSSD was a once-off event, its direct economic impact is not a recurring one. However, it is likely that the marketing impact of the WSSD will eventually lead to increased tourism and increased trade and investment. These impacts are difficult to estimate accurately and have been excluded from quantifying the economic impact.

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Data collection

In order to achieve the aims of the study, it was necessary to undertake extensive primary data collection in the form of surveys. A research team from Unisa's Bureau of Market Research (BMR) conducted interviews with WSSD delegates, managers of parallel events, JOWSCO, Ubuntu Village visitors, funders and beneficiaries in order to obtain primary data as input to the IOT. The types and number of respondents are shown in Table 2 below.

Table 2

The types and number of respondents

Types of respondents	No of respondents
WSSD delegates	422
Parallel events' managers	494
JOWSCO representatives	1
Ubuntu Village visitors	300
Funders	32
Beneficiaries	100

Further details regarding the various respondents are provided below.

WSSD delegates survey

Face-to-face interviews were conducted with delegates selected by means of a judgemental quota sampling method. Researchers used prestructured questionnaires during interviewing, and questions relating to various aspects were asked, namely, the group represented by the delegate, a breakdown of expenditure, length of stay, satisfaction with services and country of origin. A total of 422 delegates were interviewed.

Parallel events

There were 494 parallel events associated with the aims and objectives of the WSSD that were held outside of the Sandton Convention Centre before, during and after the WSSD dates of 26 August to 4 September 2002 (Ministry of Environmental Affairs and Tourism, 2002). During the data collection process, no sample was taken and all the managers of the events were contacted. The type of information that was requested related to predictions about the number of people who would attend the event, money that delegates would spend while taking part in the event, the amount of investment for the event as well as other sources of funding and the amount of that funding.

Johannesburg World Summit 2002 Company (JOWSCO)

Once South Africa had been awarded the bid to host the WSSD, the South African government, represented by the Department of Environmental Affairs and Tourism (DEAT), set up the

Johannesburg World Summit Company (JOWSCO) to manage and arrange the logistics of the WSSD (Earth Summit, 2002). JOWSCO, a non-profit company, was not an independent company, only an extension of the South African Government (JOWSCO, 2002).

The Ubuntu Village

JOWSCO arranged for the Wanderers Stadium (a sport stadium) to be temporarily transformed into a logistical hub and exhibition centre called Ubuntu Village. Every day 3 000 workers entered the village. A total of 307 570 people visited the Ubuntu Village.

Funders

Central, provincial and local government in South Africa as well as local and international sponsors and donors funded the WSSD. Personal interviews were conducted with these sponsors and donors or their elected representatives.

Beneficiaries

Personal interviews were conducted with the owners/managers of a sample of accommodation institutions (hotels, bed and breakfasts and homestays), car rental agencies, retail outlets and shopping complexes, as well as with service providers, transport contractors, tour operators, crafters and exhibitors.

The summit as economic stimulus

Investments

With regard to the various initiatives and other WSSD-related expenditure, the specific flow of funds can be established as set out in Figure 1. Various government departments made funding available for the WSSD. Some of the money was transferred to JOWSCO, which in turn was responsible for raising its own funds through private donors. The diagram clearly indicates the main sectors in which the money was invested as well as the percentage of the share of the investment.

Apart from the funding received from Government, JOWSCO raised additional money for the WSSD.

Figure 1
The flow of funds

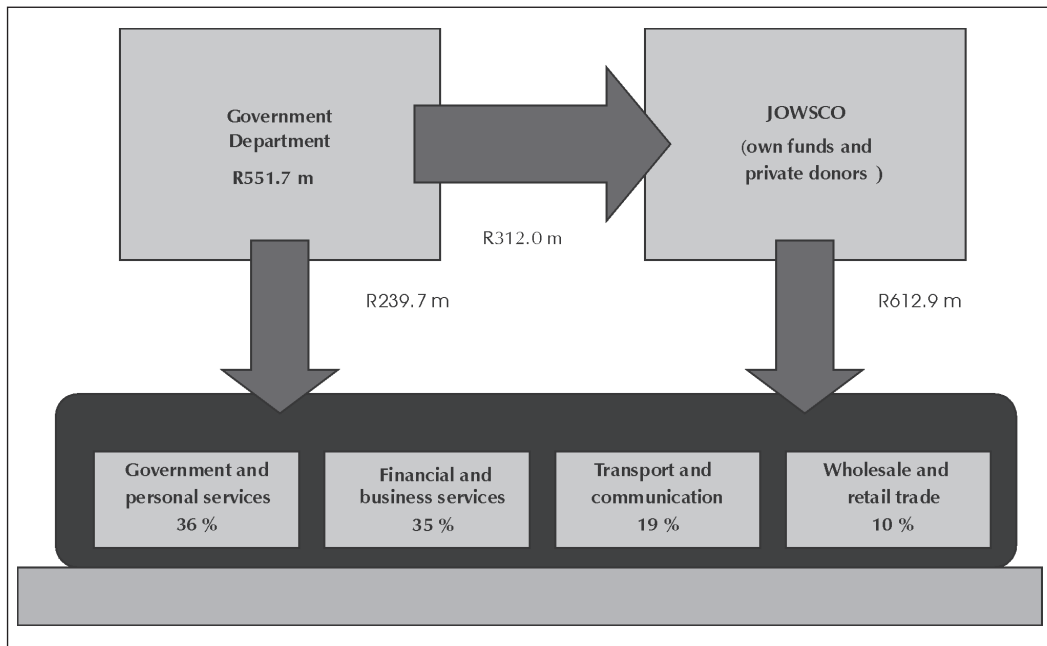


Figure 1 shows the flow of investments that were made in the South African economy due to the hosting of the WSSD. The main sectors of the economy that benefited from these investments were:

- Government and personal services
- Financial and business services
- Transport and communication
- Wholesale and retail trade

The specific aspects/divisions of each sector to which the funds were allocated, were:

- **Government and personal services**
 - Public administration and security
 - Human health activities
 - Recreational, cultural and sporting activities
- **Financial and business services**
 - Real estate activities
 - IT and related activities
 - Advertising

- **Transport**

- Transport infrastructure
- Telecommunications

- **Wholesale and retail trade**

- Hotels and restaurants
- Hotels, camping sites and other providers of short-stay accommodation
- Restaurants, bars and canteens

These economic sectors are also regarded as those in which tourist spending usually takes place.

From an economic perspective, the WSSD can be interpreted in terms of the activities that had an impact on the economy. These impacts can be described as follows:

- Government made various expenditures in order to ensure that the WSSD could take place, including on infrastructure development and security. These are regarded as having economic impacts on the supply side.

- Investments made by JOWSCO and other private investors were likewise directed towards areas such as infrastructure, transport and marketing. These are also regarded as having an economic impact on the supply side.
- Expenditure by people attending the WSSD events and activities is viewed as consumption expenditure.
- Money that was invested by exhibitors taking part in the WSSD is regarded as being both current as well as fixed, thus creating consumption expenditure and having an economic impact on the supply side.
- Investments that were made at the parallel events constitute consumption expenditure as well as economic impacts on the supply side.

4 Input data

Number of delegates

The number of delegates to the WSSD was given as 31 127 foreigners and 49 508 South Africans. A total of 24 760 people registered for the Civil Society Forum at NASREC, the other major international event, of which 8 645 were local delegates, meaning that 16 115 were foreigners. However, some of these delegates also registered for the WSSD. The additional civil society delegates for the NASREC events were estimated at 6 895 South Africans and 10 815 foreigners. It was also estimated that 25 000 delegates visited the WaterDome, 12 000 the Business Week events and that approximately 307 570 people visited the Ubuntu village.

Expenditure profile

On the basis of the face-to-face interviews that were conducted during the WSSD, an average expenditure profile was established for the main categories of delegates as set out in Table 3. The average budget of foreign delegates varied from R17 071 for church/religion delegates to

R39 488 for local government delegates. These budgets included airfares. However, not all funds paid for airfares flow to South Africa. On the basis of information from South African Airways (SAA) it is estimated that 23 per cent of all airfares paid by foreigners went to airlines other than SAA or its partners, with 77 per cent being allocated to SAA and its partner airlines. The average cost of air tickets, as reported by foreign delegates, was R4 847. Therefore, an amount of R1 115 (23 per cent) of the budget of foreign delegates would not flow to South Africa. The average budget of the South African delegates was R6 129, including airfares for travelling in South Africa.

Table 3
Average budget per delegate

Type of delegate	Average budget (rand)
Government delegates	39 225
Non-government (civil society)	30 474
Women	26 411
Youth	18 418
Labour	18 495
NGO (unspecified)	32 014
Indigenous	29 193
Civic	31 893
Business	38 545
Local government	39 488
Environment	33 142
Agriculture	24 426
Church/religion	17 071
Media	27 026
Weighted average total	31 368

Delegates were requested to give a breakdown of their expenditure in South Africa according to the following categories: accommodation, food and drink, transport, entertainment and leisure, as well as shopping. Table 4 shows the breakdown by type of expenditure.

Table 4
Breakdown of delegate expenditure

Category	Foreign delegates (%)	SA delegates (%)
Accommodation	41.9	34.5
Food and drink	22.1	19.6
Transport in South Africa	16.6	29.6
Entertainment and leisure	6.0	14.3
Shopping	13.4	2.0
Total	100.0	100.0

Sectoral expenditure/investment

A total amount of R838,47 million was injected into the South African economy by government departments and JOWSCO (own funds and private donors) as a result of the WSSD, as set out in Figure 1. The monetary effect of this investment is set out in Table 5.

Table 5
Expenditure/investment per sector

Sector	Expenditure/investment (R'000)	% contribution
Trade	83 987	10
Business services	296 151	35
Transport	160 189	19
Services	298 142	36
TOTAL	838 469	100

5 Modelling results

The analysis of the economic impact of the WSSD evaluates both the supply and consumption expenditure side of the event. The

supply side (i.e. expenditure by government and business) measures the impacts of hosting the event and impacts associated with tourism, business and capital expenditures. The demand side (i.e. delegate – accredited and non-accredited – expenditure) measures the impact of visitors' expenditure (i.e. accommodation, food, beverages, transport, etc.) on all the other sectors of the economy.

The modelling of the economic impact distinguishes between various impact measures, namely direct, indirect and induced effects. The direct impact involves the initial delegate expenditures as well as the goods and services purchased by government and business sectors, while the indirect effects refer to subsequent purchases made by the suppliers to sustain the direct expenditures. The direct and indirect impacts reflect the total impact of the WSSD.

Supply side impacts

Supply side impacts refer to the effects of government and private sector expenditure to host the WSSD. To identify the *real (net) economic impact*, distinction is made between new expenditure (i.e. private sector and donors) and government expenditure. New expenditure comprises injections into the economy as a direct result of the WSSD and would not have occurred if the WSSD had not been hosted. Government expenditure can be regarded as *fast track* injections into the economy as a result of hosting the WSSD.

It is shown in Table 6 that the total WSSD-related expenditure by government, the private sector and donors was R1 396,6 million, consisting of R612,9 million from JOWSCO, R544,0 million from the private sector and donors, and R239,7 million from government. The economic impact of such expenditure as determined by means of input-output analysis, is shown in Table 6.

Table 6
Economic impact of government and private sector expenditure

Expenditure item	Expenditure (R million)		
New expenditure	1 156.9 (consisting of R612.9 from JOWSCO – see Figure 1 – and R544.0 from the private sector and donors)		
Government expenditure	239.7 (see Figure 1)		
Total expenditure	1 396.6		
Impact of expenditure			
Sector	New business sales (R million)	Employment	Gross domestic product (R million)
Trade	447.1	1 120	75.7
Business services	1 836.0	3 990	369.8
Transport	660.4	1 540	130.1
Services	1 293.6	3 190	285.6
Total	4 237.1	9 840	861.2
Impact of new expenditure only	3 678.8	8 460	674.1

According to Table 6, the total impact of the supply side on the WSSD can be summarised as follows:

- The total expenditure of R1 396,6 million generated new business sales (i.e. gross additional economic output) worth R4 237,1 million. This implies that for each rand spent on hosting the WSSD, R3,03 was generated in the South African economy.
- The total number of employment opportunities created by the supply side expenditure amounted to 9 840. This was determined by applying available partial employment multiplier information to the total new business sales in order to determine the employment impacts of the total new business sales generated for each sector of the economy. It should be noted that such employment impacts comprise affected employment, i.e. those currently employed having to work harder as well as

new jobs that may be created (see Barker, 1999).

- The contribution to the GDP is estimated at approximately R861,2 million.

The real supply side impact is based on new expenditure as a result of the WSSD and is as follows:

- New expenditure of R1 156,9 million generated a gross additional economic output of R3 678,8 million and created approximately 8 460 employment opportunities (affected employment).
- The contribution to the GNP is in the order of R674,1 million.

Consumption expenditure impacts

The consumption expenditure impacts represent the expenditure by delegates attending the WSSD and are outlined in Table 7.

Table 7
Economic impact of delegate (tourism) expenditure

Expenditure (R million)			
Accredited delegates	922,3 (This consists of R855 million spent by foreign delegates and R67,3 million spent by the media.)		
Non-accredited members	629,9 (This consists of R303,4 million spent by South African delegates and R326,5 million spent by other visitors.)		
Total new expenditure	158,1		
Impact of expenditure			
	New business sales (R million)	Employment	Gross domestic product (R million)
Foreigners	2 709.8	5 600	507.4
Media	210.8	440	39.1
South Africans	1 993.3	4 110	373.2
Total	4 913.9	10 150	919.7

According to Table 7 the total consumption expenditure impact of the WSSD can be summarised as follows:

- The total expenditure of R1 552,2 million resulting from expenditures by accredited delegates and non-accredited members generated new business sales (i.e. gross additional economic output) worth R4 913,9 million. This implies that for each rand spent on hosting the WSSD, R3,17 was generated in the South African economy.
- The total number of employment opportunities created by the supply side

expenditure amounted to 10 150. This was determined by applying available partial employment multipliers as explained above. It should be noted that such employment refers to affected employment as previously described.

- The contribution to GDP is estimated at about R919,7 million.

Total impact

The total economic impact of the WSSD is the combination of the supply side and consumption expenditure impacts as outlined in Table 8.

Table 8
Total economic impact

Item	Net expenditure (R million)	New business sales (R million)	Employment	GDP (R million)
Supply side	1 396.6	4 237.1	9 840	861.2
Demand side	1 552.2	4 913.9	10 150	919.7
Total	2 948.8	9 151.0	19 990	1 780.9

Table 8 shows that the WSSD injected a total amount of R2 948,8 million into the economy of South Africa. This injection generated new business sales of R9 151,0 million via government and private sector spending, donor funding and expenditure by the delegates. It also

created 19 990 employment opportunities (affected employment) and contributed R1 780,9 million to the GDP. However, the latter represents less than 1 per cent of the total GDP of South Africa.

Net benefit

To determine the real economic impact of the WSSD, it is realistic to assume that only the new expenditure should be included in the analysis. This implies that the expenditure of

government should be excluded from the impact analysis because these funds would have been spent on non-WSSD activities. Based on the above, Table 9 outlines the real impact of the WSSD on the South African economy.

Table 9
Real economic impact

Item	Net expenditure (R million)	New business sales	Employment (R million)	GDP (R million)
New expenditure (government/private)	1 156.9	3 678.8	8 460	674.1
Delegates' expenditure	1 552.2	4 913.9	10 150	919.7
Total	2 709.1	8 592.7	18 610	1 593.8

The real economic impact should be interpreted as the net economic benefit of hosting the WSSD. Based on this, the WSSD has claim to the following impacts on the economy:

- The WSSD generated R2 709,1 million of direct expenditure in various sectors of the economy.
- This injection led to an increase in the demand for goods and services, implying that new business sales in all sectors of the economy increased by R8 592,7 million.
- It is estimated that the number of employment opportunities (affected employment) created by this direct expenditure is in the order of 18 610.

It is also important to indicate that besides the income and employment impacts of the WSSD shown above, it also had a variety of other economic impacts, i.e. stimulating the tourism sector and enhancing South Africa's standing as a tourist and investment destination.

6 Concluding remarks

The results of the economic modelling show that the economic impact of the WSSD was generally positive. On the basis of the findings, government spending of R239,7 million leveraged additional expenditure from local and international donors, sponsors and the private

sector in the amount of R1 156,9 million on the WSSD and related activities. In addition to this expenditure, accredited and non-accredited delegates spent an estimated amount of R1 552,2 million. The total direct injection of R2 709,1 million for one major event is regarded as substantial, considering its multiplying effect, which resulted in a total impact of R9,4 billion on the South African economy, indicating a return of 383 per cent on government investment. Furthermore, the potential of international agreements entered into will only materialise at a later stage.

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