REPUBLIC
OF
NAMIBIA

OFFICE OF THE
PRESIDENT

NATIONAL PLANNING
COMMISSION

JUNE 2018

Policy Brief

Analyzing labour productivity trends by industries and sub-industries in Namibia

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Introduction

The literature of economic growth emphasizes the role of factor productivity growth in improving economic growth and living standard within an economy (Hall & Jones, 1999). Productivity *defined as what one unit or a number of units of production contribute to overall production of goods and services*, remains low, it becomes a major hindrance to a country's economic growth. Namibia delivered economic growth averaging 4.8 percent between 2012 and 2016; this has not amply translated into significant reduction in poverty, income inequality and unemployment. Namibia is one of the countries with high inequality in Africa and the world (UNDP, 2015) with income inequality (as measured by the Gini Coefficient) pegged at 0.56 in 2016, and severe poverty of about 10 percent (NHIES 2015/16). In spite of better GDP growth rate, the country's labour productivity level stood at 0.16 in 2016, lower than the 0.6 of South Africa and the 3.4 of Mauritius. This implies that, on average, more workers are required to produce the same level of output in Namibia. This is harmful to the economy as additional workers will be required to produce the same or less output than previously.

Numerous initiatives have been introduced by the government and other organisations to boost productivity levels. For example, The Productivity Promotion Unit within the Ministry of Labour, Industrial Relations and Employment Creation (MLIREC) is mandated by the Namibian Cabinet to promote measure and enhance national productivity in Namibia. The Ministry of Agriculture, Water and Forestry provides capacity building to the small-scale farmers as well as better agricultural practices of crop farmers such as fertilizers, seeds just to mention few to boost their productivity levels. Government policies such as the Growth at Home strategy continue to support SMEs development, and numerous organisations have continued to support and advocate for productivity growth within the workplace. Despite these initiatives, Namibia's productivity levels remains worrisome.

Over the long term, increased productivity is the key determinant of economic growth, and, together with higher employment, is the primary route to higher living standards (McMillan & Rodrik, 2011). The overarching goals of the various national development plans have been to achieve high and sustainable economic growth. Therefore, it is essential to understand dynamics that influences the performance of the productivity growth. Lindsay (2004) applied the technique in a country case study of United Kingdom, emphasizing that labour productivity can be increased by increasing skills of the workforce. Better skills make workers more efficient. Therefore, investing in human capital is one of the major drives behind explaining differences in productivity across countries. Experience has also been considered to have significant impact on productivity. Lin & Bozeman (2006) and Daveri & Parisi (2015) indicated that there are significant differences between the employees that have previous industry experience and those that do not. Thus, it is meaningless to allocate the same weight of hours to each employee as people differ greatly in their abilities and experiences. Feyrer (2007) examined the link between the age distribution of the workforce and productivity using a cross-country panel on the Organisation for Economic Co-operation and Development (OECD) and low income countries found that changes in workforce demographics have a strong and significant correlation with the growth rate of productivity. That is, as the age increases, productivity also increases until a certain level. Liu & Westelius (2016) uses a similar methodology on Japan and they found similar results as found by Feyrer (2007). Their results indicates that workforces between the ages of 40 and 49 seem to be associated with productivity growth in developed countries, whilst in developing countries low productivity is largely associated with workforces that are very young. Thus, demographics changes may help to explain cross country productivity

differences. Darby (1981) argued that the deterioration in the educational attainment may account for a significant portion of the productivity slowdown. An increase in the education attainment leads to improvements in productivity. This assumes that the quality of educational has remained constant over the period.

Some studies have gone a step further to analyze the linkage between labour intensity, labour productivity and output growth. *Labour Intensity is defined as a numerical measure of how employment varies with economic output* – in other words, how much employment growth is associated with 1 percentage point of economic growth. Kapsos (2005) provided a comprehensive review of labour intensity by examining trends in developed and developing countries and before analysing how labour intensity is associated with productivity and growth. The findings are that high labour intensity, coupled with low output growths, reveals that labour productivity has remained low, and this is a representation of poor employment performance.

This policy brief seeks to add to, and strengthen, the evidence of low productivity performance in Namibia by industries and sub-industries. The brief will also investigates the nature and extent of labour intensity at the industries and sub-industries levels and, explore possible policy solutions to increase productivity growth – a key driver of long-term growth prospects.

Methodology

Using GDP data from the National Accounts and employments data from the Namibia Labour Force Survey (NLFS) from 2000 - 2016, the brief adopts a standard method of calculating productivity as outlined by Kucera & Roncolato (2012), and Barnes & Williams (2004).

The standard method of calculating productivity assumes the following production function:

$$Y_t = A_t K_t^{\alpha} L_t^{\beta}$$

Where t is the time factor at a given period time, Y_t is output, K_t is capital, L_t is labour and A_t represents technology/technical progress, a measure of the efficiency in the use of the factors of production. The parameters α and β represent the elasticity of growth to capital stock and labour, respectively. It is common practice in the literature to assume constant returns to scale when dealing with the production function so that $\alpha + \beta = 1$.

Total factor productivity allows one to analyze the contribution of all units of productions to total output, which is a great measure of sources of growth in the economy. This brief will, therefore focus on analysing contribution of the labour input to total output. This entails estimating the elasticity of growth to labour coefficient, which in simpler terms refers to a portion of output that the labour input is responsible for. This brief will use the same elasticity of growth to labour coefficient as estimated by (Nakale, 2016).

Therefore, labour productivity is obtained by calculating the total labour GDP per year divided by the number of employed persons in that year:

$$LP_t = \frac{Total\ Labour\ GDP_t}{Employment_t}$$

Where *LP* is labour productivity at time *t*, *GDP* is total labour gross domestic product measured in constant prices in the national currency at time t, and *employment* represents the number of persons employed at time t. The sectoral labour producitivity breakdowns were computed as:

$$LP_{it} \ = \ \frac{Total\ Labour\ GDP_{it}}{Employment_{it}}$$

Where *i* represent specific sectors in the Namibian economy at time *t*, the *LP*, Total Labour GDP and employment computed are specific for those sectors at time *t*. the rest of the components are as explained above.

Key Findings

2.1 Labour productivity Analysis

Labour productivity is a representation of the amount of goods and services produced by number of employed. Productivity addresses the question of how efficiently resources are used in the production of goods and services, measuring the change in outputs in relation to the change in labour employment. If output is increasing while labour employment remains static, it could be a sign "productivity gains" that the economy is advancing technologically and should continue to do so (Sinkkonen, 2015). Conversely, if labour employment increases in relation to flat output, it may be a sign "productivity loss" that the economy needs to invest in education to increase its human capital.

There is a negative correlation between productivity and employment: Since 2012, GDP and employment registered average growth rates of 4.8% and 2% respectively. In contrast, labour productivity growth averaged negative 5.3% over the same period. There is a close positive link between GDP and employment, when GDP changes, the levels of employment also changes in the same direction. However, there is an inverse relationship between productivity and employment. Thus, there is a negative correlation between these measures (productivity-employment) confirmed by sizeable negative (-0.629) correlation.

Overall labour productivity in Namibia has shown an increasing, albeit fluctuating, trend *f*rom 7 percent in 2000 to a 9 percent in 2016, (See Table 1). On average, labour productivity stood at 8 percent between 2000 and 2016. This productivity level was mainly driven by secondary industries which recorded the highest average productivity of 11 percent. Productivity levels for the economy are very low compared to South Africa and Mauritius; hence there is a need to analyze productivity trends by sectors.

Table 1: Aggregate Labour Productivity Trends by industries

Industry	2000	2004	2008	2012	2013	2014	2015	2016
Agriculture and forestry	0.02	0.02	0.04	0.01	0.01	0.01	0.01	0.02
Fishing and fish processing on board	0.20	0.12	0.88	0.19	0.25	0.18	0.18	0.19
Mining and quarrying	0.73	0.62	0.62	0.48	0.41	0.36	0.34	0.31
Primary industries	**0.05**	**0.07**	**0.14**	**0.05**	**0.04**	**0.04**	**0.04**	**0.05**
Manufacturing	0.14	0.17	0.24	0.19	0.17	0.19	0.15	0.13
Electricity and water	0.23	0.13	0.18	0.20	0.20	0.18	0.14	0.12
Construction	0.03	0.04	0.07	0.04	0.05	0.06	0.07	0.05
Secondary industries	**0.10**	**0.11**	**0.15**	**0.11**	**0.10**	**0.11**	**0.10**	**0.08**
Wholesale and retail trade	0.07	0.06	0.08	0.07	0.08	0.07	0.09	0.12
Hotels and restaurants	0.05	0.04	0.06	0.02	0.03	0.04	0.03	0.03
Transport, and communication	0.06	0.08	0.12	0.09	0.09	0.11	0.10	0.12
Financial intermediation	0.20	0.19	0.26	0.22	0.22	0.26	0.26	0.25
Real estate and business services	0.06	0.29	0.24	0.11	0.10	0.12	0.10	0.09
Community, social and personal	0.02	0.08	0.10	0.08	0.06	0.07	0.04	0.02
Public administration and defence	0.12	0.12	0.16	0.16	0.17	0.13	0.17	0.21
Education	0.08	0.09	0.11	0.10	0.10	0.11	0.11	0.11
Health	0.11	0.11	0.08	0.07	0.10	0.08	0.10	0.12
Tertiary industries	**0.07**	**0.10**	**0.12**	**0.09**	**0.10**	**0.10**	**0.09**	**0.09**
Overall labour productivity	**0.07**	**0.09**	**0.13**	**0.08**	**0.07**	**0.08**	**0.08**	**0.09**

Source: National Accounts, NLFS & NODSOM: 2000, 2004, 2008, 2012 – 2016

Primary industries recorded the lowest productivity levels with agriculture and forestry being the least productive sector (Table 1). In 2012, primary industries' productivity levels declined to 5 percent from 14 percent recorded in 2008. The industries recorded stagnant labour productivity of 4 percent from 2013 to 2015. The decline was instigated by low productivity levels in agriculture and forestry sector due to minimal rainfall the country has been receiving since 2011 triggered the farmer's cultivation activities. Between 2012/13, severe drought has hit the country and state of emergency was declared.

Agriculture: Agricultural sector contributes around 30 percent to the total employment, but in terms of productivity, it is the only sector that recorded close to zero productivity growth since 2012. Agricultural productivity loss means that the industry is unable to produce more output with the same employment levels, additional workers will be required each time to produce the same unit of output. According to NLFS (2016), 91 percent of the employees in agriculture have either primary, junior secondary or no level of education at all. This means that agricultural activities are concentrated among individuals with low levels of education.

The 2013/2014 Namibia Agricultural Census (NCA) report provides information on agricultural practices of crop farmers. However, this information cannot relate the type of agricultural technologies used, to the productivity of individual farmers as the microdata have not yet been released for public use. That would allow us to establish whether or not farmers with high productivity can be observed as those who use fertilizer and better seed varieties. Information on that would allow this brief to establish much stronger conclusions on the agriculture sector. While this

brief currently does not have information on the productivity of farmers on a micro level, much can be inferred by looking at the practices of farmers as reported in the census.

Fertiliser use can give indications of the productivity of communal farmers. Fertiliser makes crops grow faster and bigger in order to increase crop yields (NAC, 2015). For maize only 4.5 percent of households applied fertiliser while, there was higher application for sorghum (17.22 percent) and Millet (23 percent) but in general fertilisers application was very low. Similarly to the application of fertiliser, the use of better seed varieties is very low. Out of the 132 259 holders growing millet, more than 81 percent still used local seed varieties, 17.8 percent used improved seed varieties while 1.1 percent used hybrid seeds. For maize 83 percent of holders used local seeds while more than 90 percent of holders used local seed varieties for sorghum. There is also very little use of irrigation to water crops with less than a 1 000 out of the 152,652 households using irrigation. The use of fertiliser, improved seed varieties and irrigation all suggest that there is potential to increase the productivity of subsistence farmers. No knowledge, a lack of availability, and the cost of better seed varieties were the most important reasons for communal farmers not using better technologies. The majority of the farmers are not using better technologies and this could testify why the sector's productivity is very low. The report also shows that more than 70 percent of the agricultural households don't have access to local & regional produce market and agricultural development centre. Namibia has a large number of people depending on the Agricultural sector for survival. There is a need to improve farming methods through new and advanced technologies that will yield better results and enhance efficiency. This will, in turn, translate into poverty reduction and increasing incomes for the subsistence farmers.

Fishing: Productivity in the fishing sector registered average growth rate of 5 percent between 2000 and 2016. GDP grew around 1.2 percent on average between the aforementioned periods, reflecting minimal demand for fish consumption products, while labour employment grew by 5.9 percent. Fisheries sector is labour intensive and provides job opportunities for large numbers of Namibian citizens. It is estimated that the fisheries sector generates employment for more than 7 thousand workers in fishing, processing, and related economic sectors.

Mining: The Mining sector has the fastest productivity levels among the sectors studies from 2000 to 2011 as well as from 2012 to 2016 (See Table 1). Productivity remained strong between 2000 to 2011 periods, growing at an average rate of 66 percent, compared with an average rate of 38 percent during 2012 to 2016 period. The source of productivity growth however shifted between the two periods. During the first years of 2000s, productivity grew rapidly as output grew much faster than labour employment. As output growth slowed considerably in the more recent period, a significant increase in labour employment was mainly responsible for the decrease in mining sector productivity from 2012 through 2016[1]. Productivity gains in the mining sector during the 2000s were marked by large investments in diamond and uranium mining. In contrast, demand factors, including weak international demand for commodities considered to be responsible for the decline of productivity growth between 2012 and 2016. Productivity gains in mining sector means

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[1] Between 2007 and 2011 an average of negative 0.8 percentage employment growth was registered; 2012 through 2016, an average 2.4 percent was recorded compared to 5.6 &2 percent of output growth respectively.

that the industry is able to produce more output with the same or lower resource base of employment. Doing more with less is the foundation of improving performance in mining.

Secondary industry recorded the highest productivity levels than any other industries: Labour productivity levels for the Namibian economy have been constantly high in the secondary industry, with an average labour productivity of 0.11, followed by tertiary and then lastly primary industry, average 0.09 and 0.06 respectively. It is important to note that growing labour productivity depends on investment in physical capital, new technology and human capital.

Manufacturing: The Manufacturing sector had the third-highest productivity levels among the sectors, behind Mining and Fishing. Manufacturing productivity growth in the 2012-16 periods was slightly down from the late period of 2000-11. Among the sector, productivity growth in grain mill products, non-metallic products and diamond processing are the three sectors with productivity growth averaging above 40 percent through 2012 to 2016. The abovementioned sectors have relatively strong output growth with substantial increase in employment which resulted in declining of productivity gains in the manufacturing sector. Manufacturing employment growth has increased with an average 6.3 percent during 2012 to 2016, with a positive average output growth of 2.2 percent over the same period. During 2008 - 2011, output growth surpassed employment with 25 percent on average, as employment grew by only 0.7 percent. The manufacturing sector was the mostly affected by the recession in 2008/2009, in terms of jobs lost.

Utilities: Labour productivity in the *electricity and water* sector rose, 17 percent on average, from 2012 to 2016, a drop-off from the 18 percent productivity level that occurred from 2008 to 2011. Demand for both electricity and water has increased, but suppliers are limited. Declining domestic production of water and electricity due to minimal rainfall the country has been receiving may have played a role in restricting output growth in the utilities sector. Despite a substantial increase in employment growth (average13.9 percent), utilities productivity levels remained strong above 10 percent during 2012 to 2016.

In the *construction* sector, output and employment both grew faster from 2012 to 2016 than the previous years (2008-2011)[2]. The housing construction of the Mass housing project that began in the year of 2012 boosted the productivity levels of the sector. The construction of the residential has immensely increased of recent, contributing significantly to the productivity as from 2012. Most of these sectors of secondary industries tend to be more capital intensive, making use of the best available technologies to generate more output.

Tertiary industry recorded the second highest productivity levels following the secondary industry: Productivity levels have been increasing since 2013, on average with 9 percent. Output growth on average has been above 6 percent from 2013 to 2016, while employment growth slowed down with 3.4 percent over the same period compared to 2008 - 2011. This means the industry becomes

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[2] An average of 10.8 percent of output growth was registered between 2008 and 2011; while an average of 15.6 percent over 2012 and 2016. An average employment growth of -1.2 & 14.6 percent was registered between 2008 to 2011 and 2012 to 2016 respectively.

production efficient with fewer resources due to decline in employment growth. Productivity in the *hotels and restaurant* increased marginally at an annual rate of 1 percent from 2012 to 2014. Growth in both output and employment slightly improved in recent periods due to improvements of the exchange rate in the international markets. Travel information and booking services also have become more accessible to the public through internet, and travel agents have shifted their focus from the basic services available on the internet to travel packages and group trips. These positively contributed to the slightly improvements of the hotels and restaurant. Among the covered sector in the tertiary industries, productivity grew most rapidly, by far 24 percent on average since 2012 in *financial intermediation*. This is one of the sector that has maintained productivity levels above 20 percent since early 2000s with decreasing employment growth of 15.5 (5.5) percentages recorded in 2008 (2016) respectively. The intensive use of IT transformed the sector especially 2012 and 2016. The rapid increase in the number of ATMs and the increased number of services offered through them allowed banks to exploit technology and improve service to the public while reducing staff and operating costs. The highly competitive climate in banking also contributed to productivity gains as banks consolidated and streamlined their operations.

2.2 Labour Intensity Analysis[3]

Labour intensity is a representation of units of employment per one unit of output. It indicates how labour-absorbing an activity is for each unit of value-added. It is therefore, the number of employed persons in an economy associated with economic output, measured by gross domestic product. Cases where an economy experiences positive output growth and positive labour intensity indicates that there no productivity growth, especially if that intensity levels are very high (Kaspos, 2005). This is to say that an ideal situation, where job growth and productivity gains occur simultaneously is where positive output growth is accompanied by very low intensity levels (of about 1). Theory (Jinjarak, 2011) says that once average labour intensity rises, a larger part of total cost incurred by an industry is due to labour, adding that workers are not productive, they become costly to an industry.

Different ways can be used to measure labour intensity. The one way is to construct the ratio between employment and capital stock, which is the labour-capital ratio. This shows the relative factor utilisation in a production process and the extent to which it is labour intensive vs. capital-intensive. Another way of measuring labour intensity is the construction of the ratio between employment and output which shows the labour intensity of production. This measure indicates how labour-absorbing an activity is for each unit of output. Due to insufficient information of industry capital utilisation and inter-industry linkages, this brief constructed labour intensity as a ratio of employment and output per industry.

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[3] Labour intensity is expressed as the ratio of employment and output per sector. In simpler terms, labour intensity is employment per output, as opposed to labour productivity which is output per employment.

Overall average labour intensity has recorded a declining trend, from a high 8.2 in year 2000 to a 6.2 in 2016, Table 1. On average, during the years under observation, average labour intensity stood at 6.5. A declining labour intensive may be linked to a declining labour force or in terms of production processes becoming more productive.

Table 2: Aggregate Labour intensity[4]

Industry	2000	2004	2008	2012	2013	2014	2015	2016
Agriculture and forestry	34.6	23.8	14.8	36.0	56.5	49.5	44.8	34.8
Fishing and fish processing on board	2.7	4.5	0.6	2.8	2.2	2.9	2.9	2.8
Mining and quarrying	0.7	0.9	0.9	1.1	1.3	1.5	1.6	1.7
Primary industries	**11.4**	**7.7**	**3.9**	**10.6**	**13.7**	**13.6**	**12.1**	**10.0**
Manufacturing	3.9	3.2	2.2	2.8	3.1	2.8	3.5	4.1
Electricity and water	2.4	4.3	3.0	2.7	2.7	2.9	3.7	4.5
Construction	20.1	12.3	7.8	13.1	11.4	9.7	7.9	11.4
Secondary industries	**5.6**	**4.7**	**3.5**	**5.0**	**5.2**	**5.0**	**5.2**	**6.4**
Wholesale and retail trade	7.7	8.4	6.4	7.3	6.8	7.2	5.6	4.4
Hotels and restaurants	9.9	13.1	8.9	24.9	20.0	15.1	18.0	21.3
Transport, and communication	9.5	6.7	4.6	6.0	6.1	5.6	5.1	4.6
Financial intermediation	2.7	2.7	2.1	2.4	2.4	2.1	2.1	2.1
Real estate and business services	9.5	1.8	2.3	4.9	5.2	4.6	5.2	5.9
Community, social and personal	23.7	6.4	5.2	6.4	9.6	7.7	14.3	21.4
Public administration and defence	4.3	4.5	3.3	3.3	3.1	4.1	3.1	2.5
Education	6.4	5.8	5.0	5.2	5.6	5.0	4.9	4.7
Health	4.9	5.0	6.4	7.2	5.4	6.5	5.1	4.4
Tertiary Industries	**7.7**	**5.4**	**4.3**	**7.0**	**6.6**	**6.5**	**6.1**	**6.0**
Overall Intensity	**8.2**	**5.9**	**4.3**	**6.9**	**7.2**	**7.0**	**6.4**	**6.2**

Source: National Accounts, NLFS & NODSOM: 2000, 2004, 2008, 2012 - 2016

Average labour intensity for primary industries has scored a declining trend since 2013. An average of 10.3 was recorded as labour intensity for the primary industries between 2000 and 2016. *Agriculture and forestry* is the most labour intensive sector in the primary industries with an average labour intensity of 36.2 percent (2000-2016). The highest level of labour intensity for the sector was recorded during 2013, and stood at 56.5 percent.   This growth in labour intensity in the agricultural and forestry was driven primarily by a close to 64 percent increase in employment for livestock farming between 2012 and 2013. The years later, labour intensity growth for agriculture and forestry stabilised and continued slowing down, indicating a slight decline in total labour employed in primary industries.   High labour intensity levels are usually associated with low or no productivity levels. This means that for every record of growth in output, there must be more and more labour inputs utilised, since there is no productivity. The agriculture and forestry sector is therefore the biggest driver of average labour intensity for primary industries. *Mining and quarrying* sector is the least labour intensive in the primary industries. Although its typical that the type of employment in the sector requires a great deal of capital and technology usage, these levels of

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[4] Previously, labour force survey was conducted at a four-year interval between 2000 to 2012, and after that, it was conducted annually.

labour intensity show that labour as an input in the production process is also being efficiently utilised. This sector therefore portrays a great deal of productivity gains.

Overall secondary industries have registered an average labour intensity level of 5.0 percent for the eight years under observation. There have been no major fluctuations in the overall labour intensity for the secondary industries. Meanwhile, on the sub industries level, major fluctuations can be seen in the construction sector. It goes without saying that the construction sector is the most labour intensive in the secondary industries; however, major fluctuations can be explained in terms of economic performance and the economic cycle the economy is in. Manufacturing and the electricity and water sectors are less labour intensive. This is to say that value added from these sectors is not primarily driven by growth in employment but rather by how productive the existing employment is.

For the tertiary industries, average intensity recorded for the period under observation stood at 6.2. This is primarily driven by labour intensity in *hotels and restaurants sector*, (apart from communities, social and personal service, which are obvious labour related sector). Looking at table 2 above, hotels and restaurants recorded an average labour intensity of around 16.4. This is indicating that success of this sector, in terms of GDP depends largely on additional employees. The *transport sector* is also one of the most labour intensive in the tertiary industries, although on a declining trend, and is one of the sectors that are strongly identified by national development plans to create growth and employment. However with very high levels of labour intensity, although job creation and positive output growth is evident, productivity gains are minimal, indicating inefficiencies in production processes. *Financial intermediation* as a sector in the tertiary industry is less labour intensive. This is indicating that job growth and some level of productivity gains occur. With an average labour intensity level of about 2.3, during the eight-year period, this sector gives evidence of some level of efficiency in terms of employment performance, leading to ideal growth in output.

Conclusion and implications

The analysis shows that primary industry has the lowest levels of labour productivity, which means additional workers will be required each time to produce the same unit of output compared to other two industries. Secondary industry on the other hand is the most labour productive sector, which indicates that fewer workers are needed to produce the same unit of output over time. This further means that the secondary industry is able to produce more units of output each time with the same or less amount of workers. Doing more with less is the foundation of productivity, thus Namibia has potential to become the industrialised nation as envisaged in Vision 2030. With higher productivity gains in secondary industries, structural transformation can easily be achieved through the country national development plans.

In light of structural transformation aspirations, there is need to enhance productivity levels especially in the secondary industry which is showing potential to be highly productive. High productivity levels are essential for increasing national income and are associated with reduced poverty rates and improved living standards. This brief, therefore proposes the following policy recommendations:

Strong partnership between Industry-training institutions
There is a need to enhance skills development in the areas that are critical to economic development such as the agricultural sector. This will require strong partnership between industries and training institutions such as Ogongo, Neudam campuses and Tsumis Agricultural College to enhance the skills in the agriculture & forestry sector. There is a need to increase the number of agricultural college in Namibia

Establish awareness programs that will increase agricultural productivity
Given the fact that no knowledge, lack of availability and the cost of better seed varieties were the main reasons why the smallholder do not use better agricultural crop practises to enhance their productivity, it is essential to strengthen awareness programme within the communal farmers, and subsidize the cost of better technologies.

Improve access to markets
Given that 70 percent of the agricultural households do not have access to local & regional produce market as well as to agricultural development centres, there is a need for new accessible markets.

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APPENDIX A

Definitions of key terms

Productivity: refers to the measure of output (e.g. products) per unit of input (e.g. labour and capital) from a production process

Labour productivity: is defined as real economic output per employed persons used in the production of such output.

Capital Productivity: is defined as real economic output per stock of capital used in the production of such output.

Labour Intensity: Is defined as the number of employed persons in an economy associated with economic output, and it indicates how labour-absorbing an activity is

Productivity gains: Occur when positive growth in output is as a result of improved productivity levels with unchanging or dwindling labour inputs

Productivity losses: Occur when positive growth in output is as a result of increased labour inputs with dwindling productivity levels

Total Labour GDP: A portion or share of total GDP for the economy that is contributed for by the labour input alone.