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policy analysis on growth and employment



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**CGE-microsimulation analysis of government infrastructure investment and interventions in South African rural economy: focus on rural economic development, poverty, inequality and gender**

RESEARCH PROPOSAL

Presented to

**Partnership for Economic Policy (PEP)**

By

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**SOUTH AFRICA**

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## Before you begin

Please make sure you carefully review and understand the following:

- [Webpage](#) – for priority themes, eligibility criteria and application procedures
- [Guidelines](#) – for designing a research project proposal (in scientific terms - section III)
- PEP requirements and strategy for policy engagement and research communication (section IV)

Please note that:

- This template is mandatory
- Plagiarism is strictly forbidden – see note on “references and plagiarism” at the end of this document/template. PEP will be using a software program to detect cases of plagiarism.
- PEP encourages applicant research teams to submit proposals in English, but content (in text boxes below) may also be written in French or Spanish.

There are three main dimensions to all PEP-supported projects: **capacity building, research and policy engagement**. Each dimension must be considered with due care and attention as they will be assessed individually and concurrently to determine the overall quality of a proposal.

The PEP proposal template is structured in five sections:

1. Project overview and objectives
2. Capacity building – team composition and experience
3. Research – literature review, method and data
4. Informing policy - context, relevance, process and dissemination
5. Other considerations

## SECTION I – PROJECT OVERVIEW & OBJECTIVES

### 1.1. Abstract (100 to 250 words)

State the main research question, the context and its relevance in terms of evidence-informed policymaking, in relation to PAGE priority issues. Complete with a brief description of the method and data that will be used.

**Insert your text here** – 100 to (max) 250 words

*South Africa is one of the top economic giants of Africa, but its levels of unemployment, poverty and inequality remain persistently high. If poverty reduction is to be achieved in South Africa, then the Government needs to put in place interventions that are inclusive to ensure that the poor and females are not left behind. This is because poverty levels are higher among women than men.*

*Following the adoption of the National Development Plan (NDP) Vision 2030 in 2012, one of South Africa's key focus areas has been rural development. Rural development is one of the 14 outcomes of the 2014-2019 Medium-Term Strategic Framework (MTSF). The South African government has put in place various measures and policies to support the rural development outcome one of the key one being the Comprehensive Rural Development Programme (CRDP). The focus of the CRDP is to ensure deliberate and strategic investment to revitalize old, and create new, economic, information and communication and social infrastructure, facilities and public amenities in rural communities and small rural towns.*

*This study aims to assess the economywide and distribution impacts of government infrastructure (social and economic) investment and interventions on the rural economy and of agricultural related support, focusing on the possible differential impacts for rural and urban people and male and female workers and households.*

## **1.2. Main research questions** (max 500 words)

Explain the focus (or key questions), including the gender-sensitive aspect, of your research and its relevance for policy.

**Insert your text here** - max 500 words

*South Africa is one of the top economic giants of Africa, but its levels of unemployment, poverty and inequality remain persistently high. Economically, the country has been performing modestly over the years, especially when compared to other African countries. However, within its borders, such achievements are not shared equally by all as the country faces high levels of unemployment, poverty and inequality; with those living in the rural areas and women gaining the least. The World Bank and Department of Planning, Monitoring and Evaluation ([DPME], 2018) found that South Africa is one of the most unequal societies in the world and the country needs to prioritise infrastructure and skills development amongst women to create jobs and reduce inequality. According to Phoofolo (2018), agricultural sector growth is believed to contribute relatively more to poverty reduction than growth in other sectors of the economy. Yet, agriculture does not seem to get the focus it deserves in South Africa. The South African agricultural sector is one of the least supported globally (Department of Agriculture, Forestry and Fisheries ([DAFF], 2014). South Africa's public spending on agriculture as a share of total government expenditure is above that of only six other countries in Africa over the period 2005 to 2015 (AGRA, 2018). In 2019, agriculture received 1.68% of total public expenditure, which is far lower than the 10% share of public expenditure that was committed by all African Heads of States and Government under CAADP and reaffirmed under the Malabo Declaration.*

*Du Toit (2016) pointed out that agricultural development on its own is inadequate to achieve inclusive growth and that there is need to promote rural non-farm sector employment, in addition to increasing the efficiency or productivity of farming. The potential of rural development in South Africa, and the need to rekindle it, is widely acknowledged even within government circles (Bank & Hart, 2017).*

*While there has been an increase in access to basic services among people in rural areas and some progress has been made in terms of reduction in rural poverty over the past 20 years, DPME (2014) argued that high levels of poverty and inequality are still a characteristic of South African rural areas.*

*The National Planning Commission ([NPC], 2012) asserted in the NDP that South Africa's rural communities should be offered better opportunities that enable them fully to participate in the socio-economic and political life of the nation. DPME (2014) stated that the focus of the South African Government during the 2014-2019 MTSF continues to be rural development, with targets and actions that include provision of more infrastructural, financial and technical support to smallholder farmers.*

*Statistics South Africa (2017) provided evidence of the need to focus on interventions that benefit women when addressing poverty. The 2015 lower-bound poverty line for males was 38.2% in comparison to 41.7% for females (Statistics South Africa, 2017). Thus, if Sustainable Development Goal (SDG) 1 of no poverty is to be achieved in South Africa, then the Government needs to put in place pro-poor and gender-sensitive interventions so that the females are not left behind.*

*Based on the above arguments, this study proposes to analyse strategies to improve rural economic development in a way that effectively contributes to reduction in poverty and inequality. Given the difference in poverty rates between males and females, it may be argued that government interventions and investments are not thoughtful about gender in the structuring and/or implementation thereof. This calls for government strategies that are gender-sensitive in order to achieve the leave-no-one-behind principle of SDGs. However, the policymakers first need to know what impact existing and/or proposed interventions have, a contribution this study intends to make. This will help inform them on the need for targeting and prioritisation of rural public interventions and investments which is expected to yield improved welfare outcomes for the rural economies and communities.*

*Interventions of this nature require the use of general equilibrium modelling that can adequately assess sectoral changes and economywide impacts. In addition, because another important focus of this study is to assess welfare and gender effects of government interventions in the rural economy, this study proposes to use Computable General Equilibrium (CGE) modelling in combination with microsimulation modelling which adequately takes into account distribution effects and how females and males benefit from the interventions. CGE modelling is useful in this scenario as it is able to study the expected effect envisioned by policymakers, the channel through which adopted and implemented interventions and investments affect the economy and different players, the sensitivity of these interventions and investments, and the unforeseen externalities that ensue.*

*Specifically, the questions intended to be addressed include:*

- What is the impact of government interventions and investments on the rural economy?*
- What is the impact of government interventions and investments in the rural economy on farm versus non-farm employment creation?*
- Do government interventions and investments yield differential impacts on male versus female labour and on male versus female headed households, taking into account individual and household characteristics (for example access to basic services, labour market participation, skills endowments and age of dependents)?*

### 1.3. Main contributions (max 500 words)

Describe why and how you expect this research/evidence to contribute to addressing important knowledge gaps, both in terms of scientific contributions\* and to inform policymaking.

For the gender-sensitive aspect, explain the potential usefulness of your work for gender-oriented policy.

\*The literature review shall be detailed under "Research" (section III), not in this section.

Insert your text here - max 500 words

DAFF (2014) acknowledges that while several agriculture sector strategies have been implemented in the past and significant progress has been achieved, there is still need to improve investigation of what contributes to job losses and sluggish growth in the agricultural and, more importantly understand what can be done to reverse these challenges. With high levels of unemployment, poverty and inequality continuing in South Africa, it is imperative to continue searching for answers that might result in addressing these persistent challenges. There is evidence in literature that despite its low contribution to GDP, agriculture might be the answer to these challenges (Phoofolo, 2018). In addition, the South African government policy continues to concentrate on rural development with targets and actions that include provision of more infrastructural, financial and technical support to smallholder farmers (DPME, 2014).

These call for the need for research to contribute to evidence-based policy making. It is important to understand through research, and inform policy accordingly, if the rural development initiatives are yielding the impacts they are expected and intended to. This will help policy makers with information of whether the interventions need to scale up, down, or provided in alternative ways.

This study will also provide evidence of differential impacts between rural and urban as well as female and male economic actors, if any, which will help policy makers if there is need to target some interventions to specific groups.

In terms of scientific contribution, this study will contribute by augmenting the SAM with data on a disaggregated public sector, rural-urban aspects as well as gender aspects, features that have not been adequately explored in existing literature focusing on South Africa or publicly available recent SAMs (for example, the SAM with a disaggregated public sector that allows detailed analysis of public infrastructure investment is for 2005). These features will allow for a very rich analysis of the impacts of government rural development interventions.

There are a number of studies that use CGE modelling to analyse the impact of rural development and related policies in South Africa as explained in the literature review section, but to the best of our knowledge none of the studies incorporate poverty and inequality analysis.

This study will thus further contribute to the literature on rural development in South Africa by analysing the poverty and inequality impacts of government interventions in the rural economy. Given the significant role played by rural development in South Africa, to help inform and advise policy, it is imperative to conduct welfare impacts of rural development interventions in South Africa, particularly with the challenge of persistently high levels of poverty and inequality.

## SECTION II – CAPACITY BUILDING

### 2.1. Team composition and experience

For each team member, please indicate (using the following tables – one per member):

1. **Age, sex, and relevant training, experience and/or expertise** (start with team leader).

Note that:

- Teams must be composed of both **researchers** and **government officials/officers**:
  - Four (4) **researchers** - including one senior/experienced researcher, acting as team leader and at least two researchers aged under 30 - with a sufficient academic and/or professional background in economic policy analysis. In particular, having a master's degree/diploma or being currently enrolled in a master's program is considered a minimum requirement (generally, team leaders should have a doctoral degree/diploma or be currently enrolled in a doctoral program). These members should describe their relevant training and experience in the issues and research techniques involved.
  - Two (2) government officials/officers from (and with their involvement sanctioned by) the institution in charge of the policy/program that the research aims to inform. These **government-affiliated members** must have a good understanding of the relevant policy processes and priorities but are not required to have research experience.
- Applicant teams must be gender mixed, with female members representing at least 50% of all members (including the team leader) and contributing substantively to the project. PEP encourages teams with a female leader.
- All members of applicant teams must be African nationals (and reside in Africa for the duration of the project).
- Priority is given to projects in low-income economies, and/or fragile or conflict-affected situations (**LIE/FCS**) but proposals are welcomed from all African countries (including North Africa).
- A researcher can be funded as a team member a maximum of three times by PEP (no more than twice as team leader) and should show marked progression over time.
- A researcher who is already involved in a funded project is not eligible to submit a new proposal before the approval of the final report of the currently funded project.
- Each listed member must post an up-to-date CV in their profile on the PEP website – refer to “How to submit a proposal” and the eligibility criteria on the call [webpage](#).

2. **Benchmark and expected capacity building:**

- Describe the capacities that each team member (and potentially her/his affiliated institutions) is expected to build through their participation in this project. This is an important aspect in the evaluation of proposals and should be presented in detail.

- What techniques, practices, literature, theories, tools, etc. will each team member and her/his institutions learn (acquire in practice) or deepen her/his knowledge of?
- How will these skills help each team member in their career (development) and/or professional responsibilities?
- What is each team member's current state of knowledge with regard to the project you are proposing?

3. **Task and contributions to project:** Indicate the specific tasks each team member would carry out in executing the project.

Note that, in this particular initiative, while all outputs should be focused on the research-policy nexus and produced through a collective and coordinated effort, PEP will provide more specific training/support for:

- *Researcher* team members to take the lead in developing a high-quality scientific research paper (i.e. reporting the process of and results from methodological applications).
- *Government-affiliated* members to take the lead in developing a "policy paper" (i.e. positioning the research and findings within the country's broader policy contexts and strategies).

### Team leader

Name	Age	Sex (M/F)	Highest degree/diploma
Vandudzai Mbanda	43	F	PhD in Economics
<b>Training and experience</b>	CGE modelling (GAMS), use of Stata, econometrics, socio-economic research, report writing, presentation of research outputs to varied audience, literature review		
<b>Expected capacity building</b>	Strengthen CGE modelling, updating existing SAM, microsimulation modelling		
<b>Contribution to project</b>	Proposal writing, CGE modelling, microsimulation modelling, report writing, results dissemination, project coordination, supervision and management, mentoring team members		

### Researcher #2

Name	Age	Sex (M/F)	Highest degree/diploma
Sinqobile Ncube	40	F	Master's in economics
<b>Training and experience</b>	Introduction to CGE modelling (GAMS), literature review, research, Stata, presentation, econometrics		
<b>Expected capacity building</b>	Strengthen CGE modelling, microsimulation modelling		
<b>Contribution to project</b>	Proposal writing, CGE modelling, econometrics, microsimulation modelling, results analysis, report writing, results dissemination		

### Researcher #3

Name	Age	Sex (M/F)	Highest degree/diploma
Leoné Walters	28	F	Master's in Economics
<b>Training and experience</b>	CGE modelling (GAMS and GEMPACK), econometrics, research, literature review, presentation		
<b>Expected capacity building</b>	Strengthen CGE modelling		
<b>Contribution to project</b>	Literature review, CGE modelling, report writing, results dissemination		

### Researcher #4

Name	Age	Sex (M/F)	Highest degree/diploma
Nthabiseng Rakgotho	22	F	B-tech degree in Economic Management Analysis
<b>Training and experience</b>	Data collection, research		
<b>Expected capacity building</b>	CGE modelling Literature review, report writing		
<b>Contribution to project</b>	Literature review, results analysis, report writing		

### Government official/officer #1

Name	Age	Sex (M/F)	Highest degree/diploma
Sifiso Mboneni Ntombela	34	M	PhD in Agricultural Economics
<b>Training and experience</b>	Economic modelling (CGE, PE and econometrics), trade and economic modelling, research		
<b>Expected capacity building</b>	CGE modelling		
<b>Contribution to project</b>	Advise on policy-relevancy of research		

### Government official/officer #2

Name	Age	Sex (M/F)	Highest degree/diploma
Bokang Vumbukani-Lepolesa	40	F	MSc in Mathematical Statistics
<b>Training and experience</b>	Managing research, GAMS and GEMPACK (CGE model building)		
<b>Expected capacity building</b>	CGE modelling, research, econometrics		
<b>Contribution to project</b>	Advise on policy-relevancy of research		

## 2.2. List of past, current or pending (non-PEP) projects in related areas involving team members, including resulting publications (If any)

Indicate the funding institution, the title of the project and related publications, and list the team members involved.

Name of funding institutions	Title of projects and related publications (link)	Team member(s) involved
City of Johannesburg	Title: A dynamic regional computable general equilibrium (CGE) model for the city of Johannesburg: Scenario for achieving 5 percent GDP Growth in the city ((current) Publication (reference):	Vandudzai Mbanda
City of Johannesburg	Title: A regional Computable General Equilibrium (CGE) model for the City of Johannesburg: Report with applications and modelling scenarios using the City's Static CGE model (2019) Publication (reference):	Vandudzai Mbanda
City of Johannesburg	Title: A regional Computable General Equilibrium (CGE) model for the City of Johannesburg (2017) Publication (reference):	Vandudzai Mbanda
	Title: Publication (reference):	
	Title: Publication (reference):	
	Title: Publication (reference):	

## 2.3. List of past or current PEP-supported projects involving team members, including resulting publications

Project code (e.g. PMMA-12345)	Title of project and related external (non-PEP) publications, if any	Team member(s) involved
MPIA 1200	Title: Impacts of Infrastructure Investment in South Africa: A Dynamic CGE Analysis (2012) Publication (reference): Growth and employment impacts of public economic infrastructure investment in South Africa: A dynamic CGE analysis. Journal of Economic and Financial Sciences, 10(2): 235-252(2017)	Vandudzai Mbanda and Sinqobile Ncube  Vandudzai Mbanda
	Title: Publication (reference):	
	Title: Publication (reference):	
	Title:	

## SECTION III – RESEARCH, METHOD AND DATA

*This section should be completed by the team leader and/or research members*

### 3.1. Literature review (1000 to 1500 words)

Explain the specific gaps in the existing literature that your research aims to fill. You might want to explain whether this question has been previously addressed in this context (including key references), and if so, what you intend to achieve by examining the question again. Be sure to include literature that provides conceptual foundations for the gender analysis to be undertaken in your research.

**Insert your text here** – 1000 to (max) 1500 words

*Agriculture is believed to be key to Africa's future (AGRA, 2018), yet rural areas have not been included in the economic growth waves experienced by most African countries in the recent past. Consequently, rural communities in the majority of African countries, South Africa included, are home for the poorest people. Information from Statistics South Africa (2017) indicates that the poverty rates for rural areas (according to the upper-bound poverty line) were 87.6%, 88%, 77% and 81.3% for the years 2006, 2009, 2011 and 2015 respectively; and 52%, 46.8%, 38.8% and 40.6% for the urban areas over the same years. These substantiate why South Africa needs to prioritise rural development as outlined in the 2014-2019 MTSF and the NDP Vision 2030.*

*According to DAFF (2014), South Africa has among the least supported agricultural sectors in the world. AGRA (2018) provided evidence that South Africa had the 7<sup>th</sup> least public spending on agriculture as a share of total government expenditure among all African countries (after Egypt, Congo, Angola, Equatorial Guinea, Democratic Republic of Congo and South Sudan) over the period 2005 to 2015. The NPC (2012) asserted in the NDP that South Africa's rural communities should be offered better opportunities to that enable them fully participate in the socio-economic and political life of the nation. DPME (2014) stated that the focus of the South African Government during the 2014-2019 MTSF continues to be rural development, with targets and actions that include provision of more infrastructural, financial and technical support to smallholder farmers.*

*OECD (2016) argued that inclusive infrastructure is essential for rural economic development as evidenced by diminishing gaps in rural-urban hard infrastructure (road, rail, ports) and soft infrastructure (education, social, health etc), both of which are more developed in countries like China, Thailand and Vietnam. OECD (2016) highlighted the importance of gender in rural development, pointing out that in many countries women are significant actors in the agriculture sector and rural development. As pointed out by Bertolini (2019), the harmful impacts of rural poverty do not affect the rural areas alone but also affect the entire socio-economic context. If not addressed, lagging rural poverty can perpetuate the rural-urban economic divide, inequality, promote congestion urban and worsen related social problems, thus further increasing the public budget for social policy spending.*

*As mentioned by Mabugu (2016), industrialisation and modernisation are intricately connected to rural development, both historically and among rapidly growing developing countries today. Xiaoyun (2014) pointed out that China developed its economy by shifting its policy from a heavy industry based and urban based strategy to a policy promoting labour intensive and light industries in rural areas. This saw an increase of the contribution of the rural economy to national industrial growth rising from 9.9% to 43.2% from 1978 to 2006 (Xiaoyun, 2014). China did not focus only on agriculture but promoted both agricultural growth and small and medium rural enterprises (Xiaoyun, 2014). One of the key rural development preconditions in most developing countries is the provision of physical infrastructure as its inadequacy inhibits rural development (Mabugu, 2016). Poor provision of physical infrastructure that includes transport, energy, water and sanitation, irrigation and communications severely limits poverty reduction efforts and agricultural growth (World Bank, 2006).*

*This research intends to take into account relevant aspects of Sustainable Development Goals (SDGs) as the point of departure. It particularly focuses on promoting sustainable agriculture, building resilient infrastructure and creating sound policy frameworks based on pro-poor and gender-sensitive development strategies. Public investments and interventions in rural development can help achieve improved welfare outcomes for rural communities.*

*In 2009 the government launched the CRDP as an effective food insecurity and poverty response (Government of South Africa[GoSA], 2009). The New Growth Plan (Economic Development Department, 2010) and the NDP Vision 2030 (NPC, 2012) both articulate a vision of an integrated rural economy with land reform, job creation and rising agricultural production contributing to this vision. The NDP specifically outlines the potential to generate 1 million jobs in agriculture through an effective land reform programme and growth of irrigated and land-based agriculture.*

*Subsistence agriculture is the mainstay of small-scale farmers across Africa (Kang'ethe & Serima, 2014). In South Africa, the rural economy is said to be not vibrant enough to provide its rural communities with remunerative employment or self-employment opportunities (Department of Agriculture, 2001). Land is one of the key requirements to support small-scale farmers and other rural economy players, but as argued by Cousins (2018) land alone is not enough to reduce poverty. Instead, a combination of well-structured strategies is required to promote rural development and attain the much-needed welfare improvements in rural communities. Thus, a relook at public strategies for rural development in connection with infrastructure development, pro-poor gender-insensitive strategies might be a solution to rural economic growth and development.*

*There are several studies that have been done using CGE modelling for South Africa due to the direct and indirect effects of different policy scenarios being studied. Since the early 1990's studies have used CGE methodology to evaluate the impacts of policy on economic outcomes in South Africa (McDonald & Punt, 2005).*

*Many of the studies on rural development that used CGE modelling largely focused only on assessing impact of agricultural policies or improvements in the agriculture sector (for example Herault and Thurlow (2009) and Chitiga, Mabugu and Fofana (2017) on South Africa, Schünemann (2017) on Malawi, Otchia (2014) on Democratic Republic of the Congo, Storm (1994) on India, Dorward, et al. (2004) on Malawi). While Arndt, Davies and Thurlow (2018) assessed the economy-wide impact of rural*

development related policies, they did not look at their poverty and inequality impact or their gender impact. Three studies closely related to what our study intends to do are Chitiga, et al. (2017), Arndt, et al. (2018) and Schünemann (2017). Mabugu and Chitiga (2007) use a sequential dynamic CGE model and link the model to a nationally representative household survey to simulate a higher economic growth scenario to assess economic and poverty implications. Their framework allows for analysis according to urban-rural classification, ethnicity and skill. They find that households in urban areas benefit less relative to households in rural areas.

Specifically related to agricultural policy, Herault and Thurlow (2009) used a CGE and microsimulation model to show that removing global and domestic price distortions on agriculture products will lower poverty and inequality. In the case of global price distortions, however, poverty reduction is lower in rural areas relative to urban areas as these households receive lower wages and are deeply rooted in poverty. They argue that price distortions may to some extent explain the poor performance with respect to rural development and agricultural outcomes.

More recently and considering government investments in different regions, Arndt, et al. (2018) used a dynamic CGE model with model parameters based on the 2015 South African SAM to study the impact of firstly, investments in major cities, secondly, investments in rural areas with the aim of increasing employment opportunities and thirdly, investment in secondary cities that have relatively stronger links to rural areas. The findings indicate that increased investment in urban areas should not be at the expense of rural areas as lower agricultural production will cause higher food prices, lower real income and outmigration leading to a rise in urban poverty.

In line with this study, Chitiga, et al. (2017) used a dual economy dynamic CGE model to assess the effects of macroeconomic policy on rural and urban households, agricultural growth, and the relationship between growth in non-agricultural and agriculture sectors. Chitiga, et al. (2017) analysed how macroeconomic performances affect agricultural growth and the wellbeing of rural households. Chitiga, et al. (2017) carried out three simulations namely an exchange rate policy (exchange rate depreciation, i.e. an average 7% per annum depreciation between 2005 and 2015), an agricultural growth policy (a 1 % annual increase in agriculture total factor productivity), and a non-agricultural growth policy (an expansionary fiscal policy in form of an increase in government spending averaging 20% of GDP). They found an expansionary fiscal policy to have negative impacts on agriculture and on rural development, with rural households experiencing a lower decrease in consumption; the depreciation of the exchange rate simulation resulted in a decline in the national economy; while an increase in agricultural productivity yielded a small positive impact on the overall economy, benefiting rural households relatively more (Chitiga, et al., 2017).

As expected, growth in the agricultural sector causes relatively higher positive effects for rural households relative to urban households. Importantly, they state that as literature suggests poor rural households are moving to non-agriculture activities, which raises the need for micro-level analysis to study the effects of policy with this evolvement in mind (Chitiga, et al., 2017). Herault (2006) emphasised the relevance of CGE-microsimulation analysis of any policy change in the South African context, given the high poverty and inequality levels, as the approach enables a detailed assessment of impact of policies on poverty and inequality, identifying the winners and losers.

*This proposed study contributes to this avenue of research literature focusing on government interventions and investments in South Africa and the differential impacts based not only on sector, urban-rural classification, but also on gender and other household characteristics using CGE-microsimulation methodology.*

### 3.2. Methodology (1200 to 1600 words)

Present the specific techniques that will be used to answer the research questions and how exactly they will be used to do so.

- Explain whether you will use a particular technique normally used in other contexts or whether you intend to extend a particular method and how you will do so.
- Explain if these methods have already been used in the context you are interested in (including key references).
- Explain how these methods incorporate and/or are appropriate for addressing gender considerations in your research.
- **For PMMA (microeconomic analysis) proposals only:** It is generally expected that the proposed methodology aims to empirically estimate a causal relationship. In such a case, you should explain potential sources of endogeneity in the context of your research and how the proposed technique(s) would allow the identification of the relevant parameters. You are strongly encouraged to discuss the potential impact mechanisms i.e., the channel(s) through which the “treatment” impacts on your outcome(s). Also, make sure you clearly present the outcome(s), the “treatment” and the sample used in the analysis.

**Insert your text here** – 1200 to (max) 1600 words

*This study proposes to use CGE microsimulation analysis to assess the impacts of government interventions and investments in the South African rural economy. The proposed methodology is suitable for the proposed research. This is because it allows simulation and testing of several scenarios; past or existing ones to assess their impact on various variables of interest and intended policy interventions to provide valuable information on the best potential option(s). The ability of this kind of analysis to provide impacts of possible policy interventions comes in handy particularly if policy makers are interested in some simulations related to this project to be carried out to inform their policy implementation.*

*South Africa’s long-term vision developmental blueprint, the NDP, aims to reduce inequality and eradicate poverty as well as attain economic growth and employment creation by 2030 through growing an inclusive economy. Inclusive rural economy is one of the focus areas of the NDP through which government believes poverty will be eliminated and inequality reduced. The NDP is implemented in five-year phases in the form of the Medium-Term Strategic Framework (MTSF). Rural development is one of the 14 outcomes of the 2014-2019 MTSF through which government believes poverty will be eliminated and inequality reduced. The 2014-2019 is the first cycle of the five-year planning series for advancing the NDP goals and the 2019-2024 and 2024-2029 phases build on the previous cycle(s) and guided by performance reviews to continue the NDP initiatives (Cooperative Governance and Traditional Affairs, 2018).*

*The South African government has put in place various measures and policies to support the rural development outcome. These include Comprehensive Rural Development Programme (CRDP), National Rural Youth Service Corps programme, Recapitalisation and Development Programme (RADP) and Comprehensive Agricultural Support Programme (CASP). This study focuses on the CRDP as it is expected to have greater economywide impacts. The objective of the CRDP is to effectively address rural poverty by managing and using natural resources optimally through strategic investment in socio-economic infrastructure and an integrated agrarian transformation that profits rural communities (Government of South Africa, 2016).*

*Rural infrastructure development is deemed an essential component of CRDP, and a key driver of the second phase of the programme. The focus of the CRDP is to ensure deliberate and strategic investment to revitalize old, and creation of new, economic, information and communication and social infrastructure, facilities and public amenities in rural communities and small rural towns (Archary, n.d.). Emphasis of the CRDP is on rehabilitating existing and developing new economic and social infrastructure in rural areas. Economic infrastructure includes roads, ports and railways, energy, community gardens, water harvesting, watershed and river basin management systems, irrigation schemes, dipping tanks, shearing sheds, milking parlours, fencing for agriculture, rural electrification, storage warehouses, transport and distribution networks, production/marketing stalls, communication networks (for example internet network, cell phones, land lines, tv, radio) (Archary, n.d.). Archary (n.d.) argues that effectively, there is convergence of various aspects like infrastructure delivery, skills development and enterprise development throughout the CRDP.*

*Results from this study would be useful in providing the much-needed information, as pointed out by DAFF (2014) that investigation of what contributes to job losses and sluggish growth in the agriculture sector in South Africa and what needs to be done to address these challenges is still required. Thus, results of this study can thus be useful in providing evidence of the agents and production sectors that benefit or are negatively affected by interventions in the rural economy.*

*To understand the poverty and gender impacts of the government interventions in the rural economy, microsimulation analysis will be used. CGE analysis commonly uses the representative household, thus fails to adequately address questions on welfare effects by gender of household head and household characteristics. Hence this study will augment CGE analysis with microsimulation analysis to provide a comprehensive study of the impacts of rural economy government interventions and investments in South Africa.*

*Chitiga, et al. (2017) pointed out that to assist policy makers have a better understanding of rural development related policies, it is imperative to analyse the policy impacts at the micro level, especially in order to understand their poverty and inequality impacts; two of the three main challenges faced by the South African economy.*

*Schünemann (2017) used CGE modelling to assess how irrigation impacts on the economy, on food security and on poverty reduction in Malawi. Schünemann (2017) found interesting results that although the potential of irrigation to reduce poverty is large, it is subject to labour endowments of smallholders. Schünemann (2017) warned that labour constraints among farmers can result in labour-intensive irrigation reducing off-farm labour income and increasing poverty. Du Toit (2016) explained*

*that this is because when the efficiency, intensity or competitiveness of agriculture increases large numbers of people are often pushed off the land when there are limited opportunities of getting alternative employment. This line of argument is supported by FFC (2016) when it pointed out that the focus on rural development should not be agricultural development (those involved farming and related agricultural ventures) because rural economy challenges go over and above agriculture and agrarian reforms and include social and economic infrastructure, education, creation of employment opportunities, health care, and the need to change rural areas economic structure.*

*Schünemann's study, however, does not evaluate effects on female and male labour, which would be interesting considering the potential different priorities by female and male labourers and respective household characteristics. On the other hand, the rural development aspect of the study by Chitiga, et al. (2017) is the assessment of the increase agriculture productivity.*

*This study therefore expands on the work of Chitiga, et al. (2017) and Schünemann (2017), but does not focus only on agriculture productivity or irrigation but on various interventions by the South African government on the rural economy. In terms of the Chapter 6 of the NDP, these include investments in infrastructure, irrigation and basic service delivery, security for communal farmers, specifically female farmers, assistance to small- and micro farmers as well as the mining and tourism sector investments in rural communities. With respect to the implementation by the CRDP, the study will consider rural infrastructure improvements implemented by this programme, rural enterprise development interventions and employment creation strategies. Other policies specifically aimed at the agricultural sector, females and social welfare in rural communities will also be included to determine how adopted interventions and investments alleviate poverty, reduce inequality and gender-insensitive policy structuring.*

*As pointed out by Schünemann (2017), works with representative household groups, detailed disaggregation of the household sector allows to analyse policy impacts on income and poverty especially for vulnerable household types. In the case of this study, the household sector will be disaggregated according to gender, rural-urban classification, farming versus non-farming and other household characteristics such as access to basic services and age of dependents. This study will therefore be able to analyse government intervention and investment effects on employment creation and welfare for females and males (headed households) in rural versus urban areas according to sector. In addition, impacts on labour market behaviour will be taken into account based on factors like involvement in farm and non-farm activities and skills endowments between male and female workers. Furthermore, considering household characteristics allows us to further isolate effects.*

*This study proposes to use the PEP 1-t CGE model (in the GAMS program) that will be adapted to the structure of the South African economy by using the relevant elasticities and parameters. The CGE model will be used to simulate the government interventions and infrastructure investments on the country's rural economy. Because of the cumulative nature of investment, a dynamic CGE model is deemed more relevant to assess the policy initiatives. In addition, the policy initiatives are rolled out over a number of years, thus using a dynamic model adequately captures the impact over time.*

*To quantify the impacts of rural development related infrastructure investment scenarios, we first construct a business as usual (BAU) growth path scenario for South Africa during 2015-2030 (to capture*

the NDP implementation period). The BAU scenario will broadly assume a growth based on recent past growth trends.

The BAU scenario will serve as the counterfactual against which government interventions on the rural economy will be compared. The proposed simulations:

1. An increase in agriculture capital investment
2. An increase in skills for rural workers
3. An increase in capital spending for rural based activities
4. An increase in public economic infrastructure investment in rural areas
5. An increase in public social infrastructure investment in rural areas

The magnitude of the simulations will be informed by the information from the 2019-2024 MTSF which will outline the South African government's implementation of the NDP and provide strategic plans, yearly performance plans and budgets of departments. In addition, the simulations will be informed by inputs from consultations with the relevant government stakeholders so that the output of this research is policy relevant.

To be able to capture the rural economy interventions, the factors of production, sectors and households in the SAM will be disaggregated into rural and urban. This process will follow closely the work of Arndt, et al. (2018) who disaggregated the 2015 SAM across six municipal groups.

The implementation of our dynamic CGE microsimulation analysis will be in two stages. In the first stage we run the government intervention on the rural economy scenarios using a recursive dynamic CGE model. The results from the CGE model will then be used as inputs in the microsimulation module in the second stage. To capture impacts on the distribution of poverty and inequality resulting from the simulated scenarios we utilise a layered top-down approach. Changes in variables that include sectoral output and prices and sectoral employment will be fed as inputs into the microsimulation module which is an econometric analysis that assesses the household and individual-level poverty and inequality impacts in STATA.

The microsimulation analysis takes into account heterogeneity in individuals' or households' characteristics that include human capital endowments, sources of income, region of residency, consumer preferences and household demographic characteristics. This micro-data comes from a national survey provides explained in the data section below. The equations for each working age household member's earnings, for self-employment income for the household and for utility gained by each individual's labour market participation are deemed the most important elements of microsimulation analysis (Davies, 2009). To ensure consistency between the SAM data used for CGE modelling and the survey micro-level data used for microsimulation modelling we will adjust the sample weights of the survey data as pointed out by Robilliard and Robinson (2003) and Vandyck and Van Regemorter (2014), even though full consistency is not required when a sequential approach is used as argued by Tiberti, Cicowiez and Cockburn (2017).

### **3.3. Data requirements and sources (1000 to 1300 words)**

This is a critical part of the proposal. Explain the reason for your choice of particular databases. You must establish that they are ideal for the policy question you wish to address (including in terms of gender analysis) and that you have or will have access to these data before your project begins. Please consult the "[Guide for designing a research project proposals](#)" for more detail.

**Insert your text here** – 1000 to (max) 1300 words

*The data for the CGE modelling part is the Social Accounting Matrix (SAM). In South Africa several SAMs exist and are produced by the Government statistics agency, Statistics South Africa and other organisations like IFPRI, Quantec and Conningarth Economists. However, for the purposes the suitable available SAM will be augmented with aspects capture gender dynamics and the rural-urban divide. These aspects are not available in publicly available SAMs. This study intends to adopt the IFPRI SAM by adding rural-urban information and male-female categories for labour because this SAM is relatively rich in terms of a disaggregated agriculture sector.*

*We rely on 2015 SAM developed by Van Seventer, et al. (2019) and available from the International Food Policy Research Institute (IFPRI). The original SAM comprises of 104 commodities and 62 sectors, four labour categories by education level, capital, 14 household groups, a public sector, a representative firm and the rest of the world. This is a very rich and highly disaggregated SAM which provides great flexibility for varied analysis. However, it does not provide a disaggregated public sector which limits analysis of government policies. In addition, it neither provides disaggregation by rural-urban divide nor by gender which are the key focus areas in this study. Furthermore, it has no information on racial groups which is closely linked to rural development as well as poverty and inequality. In addition to aggregating the sectors to a reduced number in order to have a focussed analysis, this study is going to expand labour and disaggregate it by skilled level, gender, ethnic group and rural-urban region while households will be distinguished by rural-urban region, income level and ethnic group. This adaptation of the SAM is going to be done using various data sources that include the 2015 Labour Market Dynamics in South Africa, the Labour Force Survey (LFS) of the 4<sup>th</sup> Quarter 2015, the 2014/15 Living Conditions Survey (LCS), the 2014/2015 National Income Dynamics Study and National Accounts data.*

*In addition to the SAM, relevant elasticities and parameters sourced from previous econometric studies, Statistics South Africa and South Africa Reserve Bank will be used to adapt the PEP dynamic model to the structure of the South African economy and to construct the BAU scenario for the country.*

*For the microsimulation analysis, use will be made of household survey data. This data is readily and publicly available from University of Cape Town's DataFirst portal. The 2014/2015 National Income Dynamics Study data will be used for the microsimulation model.*

## SECTION IV – INFORMING POLICY

*This section should be completed by the government-affiliated members, and validated by the head of their institution (to be confirmed in the required acknowledgement letter).*

#### 4.1. Government affiliation

- a) Name the government institution at which you are employed, and describe its general mandate

N.B. This does not engage the institution itself to sanction, take part in and/or sponsor the proposed research project, other than authorizing the employees identified in section 2.1 (and below) to take part in the related work on a personal basis.

Insert your text here – max 50 words

**#1 National Agricultural Marketing Council (NAMC)** – The NAMC is an advisory body established to provide research and policy advise to the Minister of Agriculture, Land Reform and Rural Development and also collaborates with and/or provides advisory role to DAFF and DRDLR. NAMC also has the mandate to administer the Agricultural Industry Trust, which are government assets that were inherited from the agricultural boards that existed under apartheid regime. Relevant to this study, the NAMC was appointed by the Minister of Agriculture, Land Reform and Rural Development to coordinate the implementation of infrastructure in the agriculture and rural space as part of operationalising the 18 Strategic Infrastructure Projects identified in the Infrastructure Development Act of 2014. The type of infrastructure programs coordinated by the NAMC will inform the design of the analysis in this study.

**#2 Gauteng Department of Economic Development (GDED)** – has a mandate to facilitate and promote economic development and growth in Gauteng. GDED acknowledges and pursues economic inclusion, not only to uplift the marginalised nodes such at townships and rural areas, but to further stimulate the provincial economic growth through inclusivity. One of the main areas of responsibility is ensuring that the right environmental framework and initiatives are put in place to foster economic growth and job creation. Among other key things, GDED has developed the Township Economy Revitalization (TER) Strategy to guide reconfiguration/ transformation of townships into productive areas that contribute directly to inclusive wealth creation and sustainable livelihoods. Further, GDED, alongside Gauteng Social Development and Gauteng Department of Agriculture is developing the Gauteng City Region Poverty and Food security Strategy, to assist vulnerable groups such as women and youth, who are already susceptible to poverty and food insecurity.

- b) What is/are your specific role(s)(as employees) in the institution

Government official/officer #1	
Name	Sifiso Mboneni Ntombela
Title/position	Dr
Role/responsibilities	Chief Economist

Government official/officer #2	
Name	Bokang Vumbukani-Lepolesa
Title/position	Ms
Role/responsibilities	Director Research and Knowledge Management

## 4.2. Describe the policy context and needs

- a) Describe the specific policy issue(s), questions or needs faced by your institution and that the research project aims to inform - both in terms of socioeconomic outcomes (identify the target/beneficiary population), and the related policy processes (whether it is at the stage of debate, decision, design, implementation, review, reform, etc.).

Explain why the evidence to be produced with this research is important/useful to inform decision-making, especially **with regard to your institution's specific mandate and strategies**.

**Insert your text here** – max 300 words

*One of the major structural problems facing South Africa is an exclusive economy, where the majority of the citizens, in particular women, are not actively participating in the economy due to resource constraints and skills shortages. In the agricultural sector, about 32 000 commercial farmers, who are predominantly male, are responsible for 98% of agricultural output. The challenge is to bring more players, particularly youth and women into the agricultural economy such that the sector contributes to rural development. The key policy and developmental challenges facing South Africa include:*

- *Creating farmer support programs to promote inclusive agricultural economy, thus bring new farmers both small and large holder farmers*
- *Developing economic rural infrastructure to support agriculture and other rural activities*
- *Develop social rural infrastructure to improve wellbeing and living standards of communities*
- *Empower women and youth in agriculture and rural communities to create jobs and alleviate poverty*

*These developmental challenges are addressed through Chapter 6 of the National Development Plan of 2012; the Broad Based Black Economic Empowerment of 2013, specifically the AgriBEE charter; Infrastructure Development Act of 2014, specifically Strategic Integrated Infrastructure Program 11 - Agro-logistics and Rural Economic; National policy on Comprehensive Producer development Support, Marketing of Agricultural Products Act of 1996 and Land Reform policy from the 1997 White Paper.*

*Specific to rural development, the DRDLR has implemented various programmes in line with Chapter 6 of the NDP (NPC, 2012) and the 2014-2019 MTSF (DPME, 2014). The CRDP was implemented in 2009 to address the various detrimental challenges that rural communities face (DRDLR, 2019). Sub-programmes of CRDP include the Rural Enterprise Industrial Development (REID) implemented to advance the institutional environment in which rural communities can develop and the Rural Infrastructure Development (RID) that aims to improve infrastructure needed to support economic transformation in rural areas (DRDLR, 2019).*

*Similarly, GDED has put in place multiple initiatives to address the plight of economic exclusion and joblessness. Under the auspices of the Transformation, Modernisation and Revitalisation (TMR) agenda, the province continues to strive for creation of a conducive environment for inclusive economic growth, with a view to attain 30% GDP contribution from the provincial township economy by 2030. Examples of such initiatives include development of infrastructure (industrial hubs), skills development and support programmes (e.g. fund) for township businesses, with a keen interest on participation of women and youth. On the other hand, strategies such as the Gauteng City Region Poverty and Food*

*security Strategy, Gauteng Agro-Processing Strategy and the Township Revitalisation Strategy remain at the fore, in support of the Gauteng City Region Economic Development Plan and the NDP.*

*The above policy issues are at the implementation and evaluation stages. The outcomes of this research will inform policymakers whether the aforementioned policies and program implemented are advancing the cause of rural development, inclusive economy, gender empowerment and poverty alleviation. The research outcomes will assist the NAMC to better advise the Minister of Agriculture, Rural Development and Land Reform of the existing policy and programs effects on empowering women, mitigating gender-bases inequalities and alleviating poverty and ending hunger in the country. Further, the research outcomes will provide valuable inputs for revision of economic inclusion and labour absorption strategies. The simulations will provide a solid/fundamental base for lessons learnt, to influence implementation of inclusive economic growth plans going forward. The evidence to be produced from this research is important as it will inform decision-making, especially with regard to the attainment of the organisation's mandate as captured in the following objectives which are; increasing market access for all participants and enhancing the viability of the agricultural sector.*

- b) What are the **current policy options/scenarios**, faced by (or available to) decision-makers - in terms of potential interventions, approaches, etc. - in relation to this particular issue?

If possible, also provide a **brief history** of policy initiatives (and related reforms, if any) implemented in the past to address the issue, indicating generally what worked and what didn't (i.e., why is this still an issue?).

**Insert your text here** – max 400 words

*There are three broad policy discussions that the NAMC together with its social partners (i.e. organised labour, business and consumers) is engaging and they include:*

- *Equitable allocation of resources to reduce poverty, end hunger and gender-based or racial-based inequalities in agriculture and rural communities. In this regard, the NAMC is advancing the Department of Water and Sanitation to allocate water rights to all farmers including women and youth that seeks to actively participate in the sector. It is also advising the Department of Agriculture, Land Reform and Rural Development to allocate land for agricultural production purposes, with clear emphasise given to women and youth.*
- *Creating social (e.g. hospital and community service centers, schools, electricity and water) and economic (e.g. agro-processing, market and storage facilities and roads) infrastructure to advance rural development and gender empowerment. The former homelands areas, where majority of rural dwellers and women reside did not receive infrastructure investments under apartheid regime. As such, these areas require extensive infrastructure development to catch up with urbans areas. The NAMC as appointed by the Ministry of Agriculture, Land Reform and Rural Development is coordinating the implementation of various infrastructure investments in agriculture and rural space to advance an inclusive economy.*
- *Provision of agricultural and women support to advance an inclusive economy. Some of the programs implemented under this initiative include female Agri-entrepreneurs. This is conducted in partnership with Buhle Farmers Academy to provide an annual accredited training programme for female Agri-entrepreneurs. The programme focuses on technical, managerial and capacity building aimed at ensuring market access.*

*On the other hand, GDED's scenarios and policy discussions revolve around the following key strategic issues:*

- *Effective regulatory and administrative environment - one that does not hinder development and growth of township enterprises. As part of creating a conducive environment for inclusive economic development, GDED works closely with stakeholders to ease processes which have been considered problematic in the past, examples of which include red tape.*
- *Township-based production of goods and services (manufacturing). Key to this, is the issue of infrastructure support for marginalised nodes; examples of which include production centres/ industrial parks, business parks and sector specific incubation hubs.*
- *Township business funding mechanisms. Capital and cash flow related issues have been identified as some of the key success impediments for township businesses, the majority of which are survivalist in nature.*
- *Township product value proposition - Innovation and indigenous knowledge systems.*

c) How do you expect this **evidence will be used/assimilated** effectively into the relevant policy decision/advisory processes? Be as precise as possible, indicating the specific decisions or recommendations that have to be made by your institution.

Are you aware of any cost- or **budget-related considerations** that should be taken into account in the context of these policy decision/advisory processes?

Also, justify the timing of the proposed research project - how does it fit with the **calendar** of the related policy decision/advisory processes?

**Insert your text here** – max 300 words

*South African agriculture and rural development receives the lowest share of public budget which perpetuates the exclusion of women and other previously disadvantaged groups in the economy. The outcomes of this research analysis will strengthen the advisory to policy makers of the importance of investing in gender-based infrastructure, especially in agriculture and rural areas to reduce inequality and poverty as well as ending hunger. While budget constrain is an important consideration, the research outcome will be likely used to motivate policymakers and leaders of government to prioritised infrastructure development for the empowerment of women.*

*The evidence to be acquired from this research will directly provide pointers to the likely success of township interventions. Townships, farms and rural areas somewhat have common dynamics hence the simulations are hoped to provide some level of nuanced insights on the likely impact of interventions that are similar to those at national level. Further, the lessons from the proposed research will directly influence revision of provincial strategies, especially those that are relevant to poverty reduction, economic inclusion and agro-processing - targeted at specific groups within the society.*

*To be more precise, GDED: Economic Planning Branch provides thought leadership for economic policies and decisions in the province. The branch has developed the Gauteng City Region (GCR) Economic Development Plan and the TER strategy, both of which advocate inclusive economic growth at different levels (sector-based initiatives and township specific interventions); hence the research will be a good foundation for benchmarking. This will go a long way in sustaining inclusivity in the province.*

*Further, the research will contribute to the body of sector knowledge that GDED needs for specific sector interventions in townships and /or the Gauteng 'declared' rural areas*

### 4.3. Stakeholder mapping and dissemination

List all other potential stakeholder institutions, i.e., institutions that you consider as potential users of the same research evidence (other than your own). These can include other ministries and government agencies, as well as civil society organizations, NGOs, private sector, etc.

<b>Name of institution/organization #1</b>	DAFF (Department of Agriculture, Fisheries and Forestry)
<b>List the key representatives or target research users (policy makers or influencers)</b>	
Ms MK Thobejane MK MS - Sector Transformation and gender mainstreaming	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
<i>The evidence of policy simulations on the economy wide effects of farm sector employment of women could be used inform policy on agricultural sector transformation and gender main streaming.</i>	

<b>Name of institution/organization #2</b>	DRDLR (Department of Rural development and Land Reform)
<b>List the key representatives or target research users (policy makers or influencers)</b>	
Mr TS Ndove - DDG Land Redistribution and Development	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
<i>The evidence of policy simulations on the economy wide effects of both farm sector and non-farm sector employment of women could be used to inform policy land redistribution and development in terms of allocations of land and equipment as well as provision for mentorship along gender lines.</i>	

<b>Name of institution/organization #3</b>	DWS (Department of Water Affairs and Sanitation)
<b>List the key representatives or target research users (policy makers or influencers)</b>	
- <b>Mr Siphos Skosana</b> Director: Water Allocation	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
<i>The evidence from the paper could be used by the department of Water Affairs and Sanitation to ensure in access to water for productive purposes especially for previously</i>	

*disadvantaged groups like women as equitable access to water is critical to eradicating poverty and promoting economic growth.*

<b>Name of institution/organization # 4</b>	Gauteng Office of the Premier (OoP)
<b>List the key representatives or target research users (policy makers or influencers)</b>	
- Planning	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
<i>The OoP is the overarching decision maker in the province; hence the research will add to the existing and evolving evidence for decision making in Gauteng.</i>	

<b>Name of institution/organization # 5</b>	Gauteng Department of Agriculture and Rural Development (GDARD)
<b>List the key representatives or target research users (policy makers or influencers)</b>	
-	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
<p>1. GDARD developed the Gauteng Comprehensive Rural Development Strategy in 2010 and is continuing to build on the following:</p> <ul style="list-style-type: none"> <li>• sustainable land reform and agricultural productivity</li> <li>• Access to sufficient food security for all</li> <li>• Support for rural infrastructure development, access to services and sustainable livelihoods</li> <li>• Job creation linked to skills and capacity building</li> <li>• Sustainable use of natural resources and environment</li> </ul> <p>2. Secondly, GDARD developed the Agro-processing strategy in 2015 to enhance growth in Gauteng's primary sector, which has been on a declining trajectory over the years</p> <p>The research will not only be a direct contribution for the review of the above strategies but will also add value to other agriculture development and poverty alleviation initiatives</p>	

<b>Name of institution/organization # 6</b>	Gauteng Research Forum
<b>List the key representatives or target research users (policy makers or influencers)</b>	- Municipalities (especially those with rural areas), academia,
<b>Describe briefly why and how you believe this institution could use the evidence</b>	<i>The research will be used as a reference point for researchers across the Gauteng province, most of who participate at the Gauteng Research Forum.</i>

<b>Name of institution/organization #7</b>	South African SDG Hub (University of Pretoria)
<b>List the key representatives or target research users (policy makers or influencers)</b>	- <b>Prof Willem Fourie and the SA SDG Hub</b> Programme Coordinator: South African SDG Hub
<b>Describe briefly why and how you believe this institution could use the evidence</b>	<i>The hub connects South African policy makers with the research and innovations they need to implement the Sustainable Development Goals. It publishes all research related to the SDGs. The SA SDG Hub will publish the outputs of this proposed research on its website, making it available to a wider audience in the country. Given that the team leader of this proposed research is a Senior Researcher at the SA SDG Hub, there is great opportunity to use the hub for disseminating the research.</i>

#### 4.4. Outline your engagement/dissemination strategy

Describe how you intend to engage with these other stakeholder institutions (listed in 4.3) to ensure that they:

- 1) Contribute to informing the research work (i.e. consultations)
- 2) Are kept informed of the research progress and findings

*Inform stakeholders before project commences to get ideas of doable simulations that they might be interested in that are within the scope of the project.*

*Keep them up to date of key milestones of the project.*

1. *The NAMC as an advisor to Ministry of Agriculture, Land Reform and Rural Development (former known as Agriculture, Forestry and Fisheries as well as Rural Development and Land Reform) has an opportunity on quarterly basis to address government and business leaders on policy issues in the following platforms:*

- *Government economic cluster – a forum attended by senior government officials and political heads*
- *CEO forum – a forum attended by senior business, government and labour officials*

*The outcomes of this research will form part of NAMC's advisory report on policies to these two platforms to ensure the study recommendations is used by both government and business leaders.*

2. *On the other hand, GDED hosts quarterly economic seminars to engage in discussions with experts and other stakeholders. These seminars are often sector-based/ specific, to allow room for clear/ concise action.*

*Secondly, GDED facilitate Quarterly Research engagements with researchers across the province to synergise the work where necessary; hence besides seminars, the researchers' forum will be used as a dissemination platform within Gauteng.*

3. *The SA SDG Hub hosts many seminars, conferences and public lectures with academia, government entities, the private sector and other stakeholders to engage on SDG discussions and to disseminate research outputs on SDGs-related topics. Information to inform the simulations for our proposed research can be sought from such engagements and research outputs can be disseminated in such fora.*

## SECTION V – OTHER CONSIDERATIONS

- 5.1. **Describe any ethical, social, gender or environmental issues or risks that should be noted in relation to your proposed research project.**

*Insert your text here*

*None*

- 5.2. **References and plagiarism:**

Applicants should be very careful to avoid any appearance of plagiarism. Any text of five or more consecutive words that is borrowed from another source should be carefully contained between quotation marks with a reference to the source (including page number) immediately following the quotation. It is essential that we be able to distinguish what you have written yourself from what you have borrowed from elsewhere.

Note also that copying large extracts (such as several paragraphs) from other texts is not a good practice, and is usually unacceptable. For a fuller description of plagiarism, please refer, for example, to the following website:

- <http://writing.yalecollege.yale.edu/advice-students/using-sources/understanding-and-avoiding-plagiarism>

PEP will be using a software program to detect cases of plagiarism.

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