



**THE SECOND ANNUAL REPORT:
THE ENVIRONMENTAL RESEARCH REGISTER (ERR),
2019/20 FINANCIAL YEAR**



GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

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1. PURPOSE

The aim of this report is to serve as a second annual report of the Environmental Research Register (ERR) and provide progress of the database since the approval of the first annual report on the 28th of March 2019 by the Head of Department: Gauteng Department of Agriculture and Rural Development (GDARD).

This project is part of Gauteng Department of Agriculture and Rural Development (GDARD)'s Annual Performance Plan for the 2019/20 financial year, under the Environmental Policy, Planning and Coordination (EPPC) Directorate.

2. BACKGROUND

The Environmental Policy, Planning and Coordination Directorate is in a process of updating and refining the development of a reporting tool on the collective number of different types of environmental research projects that have been and in some cases are being undertaken in the Gauteng City Region.

The main objective of the ERR is to serve as a reporting tool that captures data and produces reports on research carried out by various institutions. It can also be used to generate customised reports from different institutions or environmental sectors, and to perform gap analysis. This can assist in generating Key Performance Indicators reports and annual reports as well as contributing to departmental media releases.

Below is information on what to expect in the new report, what areas can be improved on as well as a detailed explanation of the process of the creation of the ERR and how the ERR is currently looking at the moment.

2.1. WHAT'S NEW IN THE SECOND ANNUAL REPORT?

Just like any research project, the ERR has matured from being a conceived idea, to its first report and now to the second annual report. As such improvements from first report can be noted as follows:

- Research objectives are now supported by project description. This gives a broader view of the intentions/ aim of the project that is being carried out.
- Documents that are not easily accessible from institutions' intranet (e.g Ekurhuleni) have now been added to M-drive and can be forwarded to the requesting party easily.
- The Focus areas of the studies captured now include innovation studies, 4IR as well as sustainable development. This is to ensure that the studies that look at alternative technologies, methods and techniques are properly recognised.
- Studies that are done in outside provinces that have Gauteng Province have an extended footprint where KZN is now present together with Western Cape, North West and Limpopo.
- There's also an improvement in host institutions column where funders such as SEON have published their own reports.
- Most of the institutions reports captured are studies carried out internally which shows that organisations are improving on skills and expertise of conducting research.

2.2. WHAT CAN BE IMPROVED IN FUTURE?

The following are a few items that can improve the quality of the report:

- Institutions can either open up their access to intranet to allow for easy access to work done and avoid duplication of work and create a conducive environment for forging partnerships and collaborations.
- Consultative workshops should be held with producers of the report to explain the uses and benefits of sharing their work, hence improve the bringing forward of work to be captured and share with a wider audience.
- The gaps identified can be presented to institutions that have potential to conduct research in such areas.
- Since the ERR is still at a adolescence stage, suggestions on what potential users would like to see and use the ERR for can be incorporate into the register to ensure that it is fully utilised.

3. DISCUSSION

As indicated above, the ERR aims to responds to the lack of centralised information portal for environmental researches conducted in the Gauteng Province. This will not only allow the GDARD officials with easy access to research information but also assist external stakeholders and the general public. It also provides greater exposure for researchers and research institutes. This register has the ability to increase the collaboration and sharing. Reporting can be done on all information that has been captured such as:

- Researcher profile (names, contact details, the institution that they are affiliated with, etc.)
- The title and nature of the research work,
- Geographic location of the study,
- Intended impact of the study,
- Types of source used for disseminating research outcomes,
- The type of outcomes.

The ERR objectives are:

- To establish and maintain a database that can be used as a benchmark for researches conducted in Gauteng province to support government, research institutions, private sectors and Non-governmental organisations (NGOs);
- To provide essential information to decision makers;
- To track information required by different statutory bodies and stakeholders;
- To provide annual progress reports to the entire provincial government department regarding the number of environmental research projects undertaken;
- Ensure that the research data and reports are saved on the departmental server and accessible to all stakeholders; and
- Facilitate research collaboration between various research institutions and provincial government.

The information captured on the ERR (see attached Annexure 2) is as follows:

- Project title;
- Names of researcher(s);
- Year of publication;
- Contact details (i.e. telephone number, fax and or email);
- Research objectives/ project discription;
- Economic sector (i.e. standardised economic sectors as per the National GDP);
- Focus Areas (i.e. Agriculture, Air Quality, Disaster management, Ecological research: Biodiversity, Ecological research: Ecosystems, Energy, Environment, GIS, Health, Industries, Infrastructure, Mining, Transport, Waste, Water)
- Area of implementation;

- Host institution;
- Geographic area (i.e. The municipality in which the project/study focused on);
- Status (i.e. completed, ongoing or discontinued);
- Accessibility of the project (i.e. yes or no);
- The output source (i.e. Journal, Institution's online library, Map, Government publications, forum/ seminar/ conference, other website/ online source);
- Output type (i.e. Paper in Journal, Thesis, Government report, Research Report, Conference proceedings, policy/ strategy/framework, survey, paper in website);
- Brief description of output/s (Abstract); and
- Link to abstract or research study/ name of source.

3.1. METHODOLOGY

To date 203 studies have been captured after being screened for relevance and identified to fall within the scope of the database (see attached Annexure 2). The scope was determined in the concept note approved by the HoD on the 13th of December 2018. The process of developing the ERR included the following:

a) Data Collection

Various types of data were collected from the sources such as the NGOs, three spheres of the government, private sectors and academia/research institutions. This was done using the desktop technique. This refers to the use of internet searches with the aim of collecting information. This technique will in future be supplemented by visits to institution's libraries and information hubs in the next financial year.

As part of the data collection process, the objectives and aims were summarised after reading the research report to clearly depict what the study hoped to achieve and avoid ambiguity. A few institutions were contacted to check the validity of contact details of the studies captured, as well as collect new studies that are not easily accessible from desktop technique.

b) Data Management

Data and relevant records such as research papers and links to the research studies were captured and stored during the register compilation process and have been saved on the GDARD shared folder to enable access after the register has been completed.

c) Data Quality

The Research and Development unit is responsible for updating and maintaining the database. Data collection procedures and quality control measures to ensure data accuracy and integrity are being considered in the development of the ERR. Drafts of the ERR underwent internal reviewing for comments and suggestions for improvement. The improvements include modifying of columns, uniform capturing practices using drop down lists and ensuring user friendliness, e.g. Statistics South Africa (STATSSA)'s standardised economic sector column was added.

Quality checking included verification of collected data and its relevance. The studies that didn't fit within the defined parameters and scope of the database were removed. The report was also circulated for comments and these comments were implemented. Quality check process is continuous and as new information is being captured in the database on regular basis.

d) Data sharing outside the GDARD

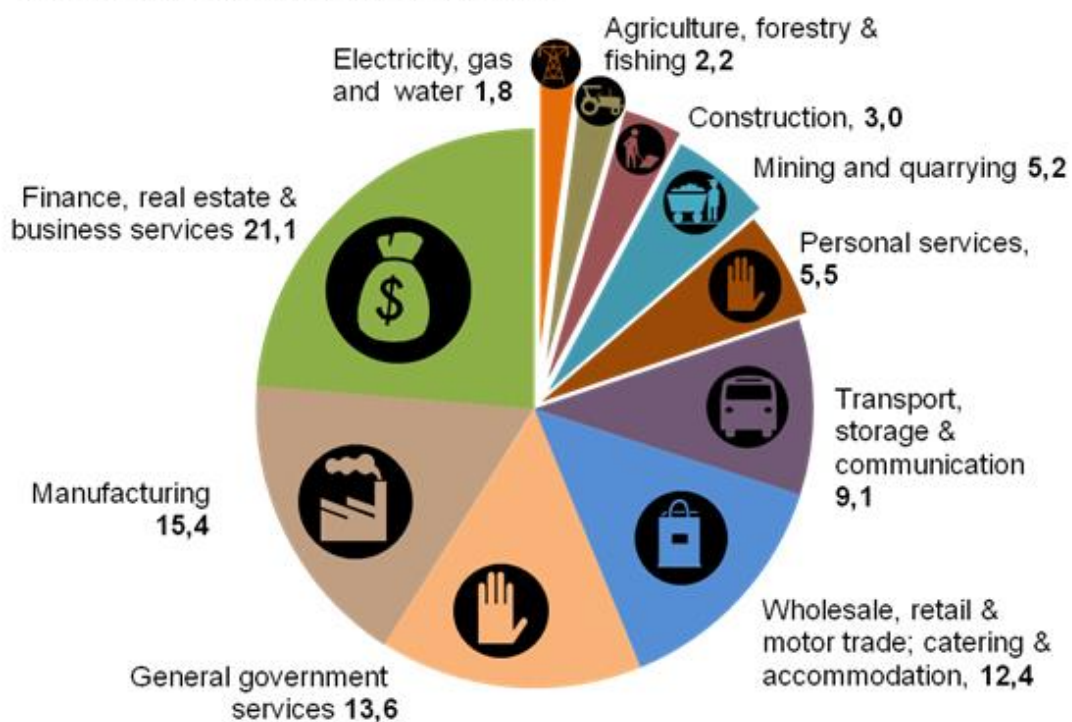
The first annual ERR and approved supporting documents (i.e. manual and annual reports) were shared with interested individuals, organisations or institutions outside of the GDARD through meetings and Fora. This raised awareness of the project and is intendant to promote collaboration and partnership with other research institutions and will reduce duplications in future. The approved annual report will also be shared using the similar process.

3.2. FINDINGS

The results presented below are from 203 studies currently captured in the ERR. Adjustments to the register were continuously made to ensure the register will be user-friendly.

The below chart illustrates the standard definition of economic sectors that make up the Gross Domestic Product (GDP) of South Africa. The reports generated can therefore be used to monitor the amount of research that goes into each standard economic sector that contributes to the GDP.

Contributions to GDP - Annual

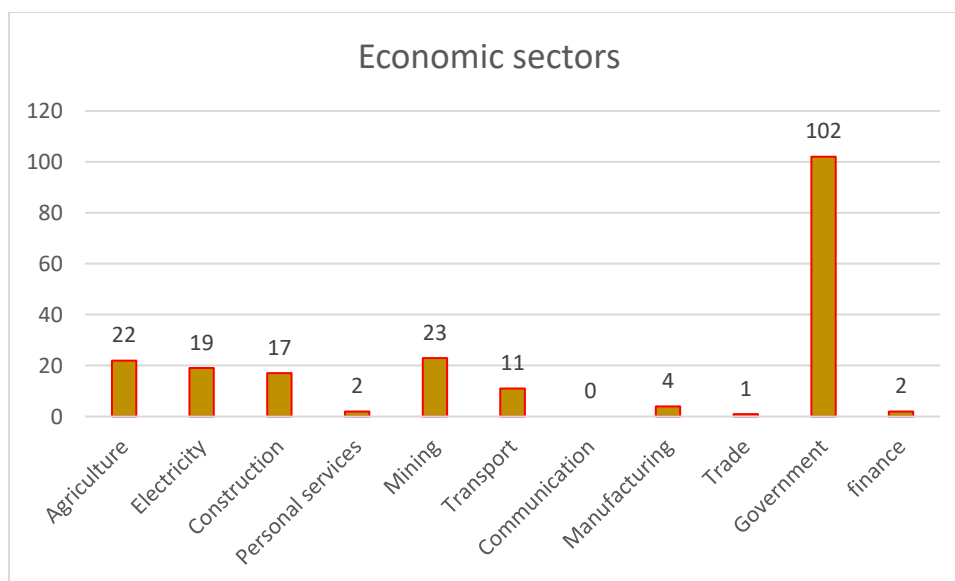


Source: <https://www.brandsouthafrica.com/investmentsimmigration/business/investing/economic-sectors-agricultural>

a) Number of studies per economic sector

The below represents the number of studies captured in the database. The findings are similar to those of the previous financial year, however the figures have changed due to more studies being added to the database. It is still suggested that the government has the highest number of studies captured in the ERR (102 of the 203 studies) due to most services (e.g. Air Quality, Disaster management, Health, Waste and Water) being the function of the government sector. This could also have something to do with government services being amongst the top 3 GDP contributors of the country as indicated above. The mining sector is second (23 of the 203 studies) due to mining being one of the drivers to economic development in Gauteng province. Agriculture is third (22 of the 203 studies) due to importance of food security in Gauteng which is the most populous province in South Africa. Communication is still the least (no studies) ascended by trade, finance and personal services.

Graph 1: Number of studies per economic sector

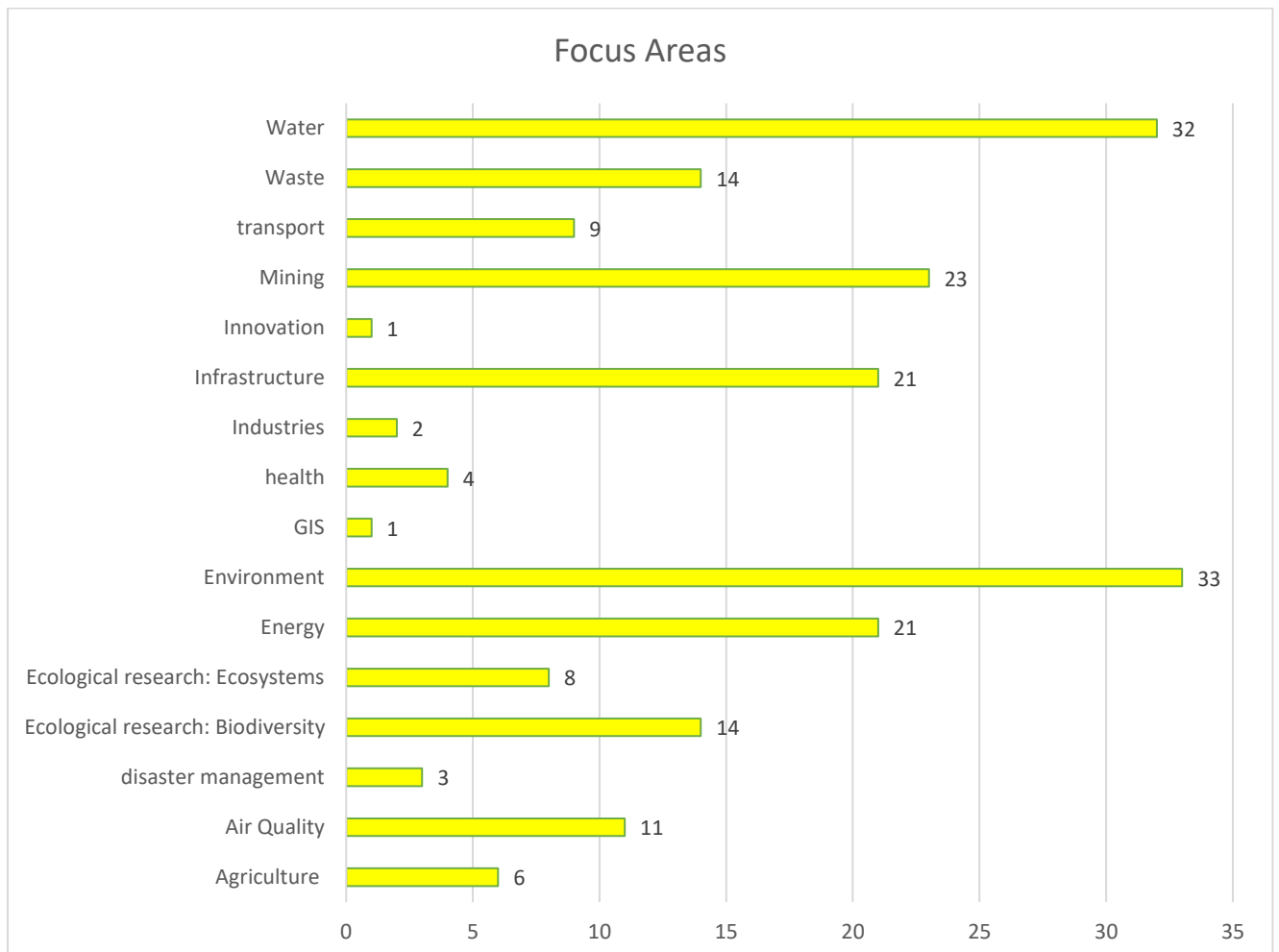


b) Focus areas

The below graph illustrates the focus areas of the studies that are currently captured on the ERR. The below categories are environmental categories used in the ERR.

Unlike the previous report, the environmental sector has the highest number of studies (33 of the 203 studies) present in the ERR. This could be justified by having a number of subsectors that fall under environment, for example climate change, natural resources management, waste management etc. It is however evident that most there are still a number of studies that focus on the water sector, which is the second highest (32 of the 203 presented). This could be as a result of importance of water because Gauteng is still a water stressed province that is till reliant on water imports and affected by extreme climate conditions such as droughts. There's an introduction of a new focus area labelled "innovation" that aims to focus on alternative technologies and techniques. It appears to be part of the least of the studies presented because it was discovered on the later stage that it can be of interest to most of the intended studies.it is also important to note that the industrial research looks also very limited but it is possible that this type of research is proprietary and could not be accessed through internet searches.

Graph 2: Focus areas

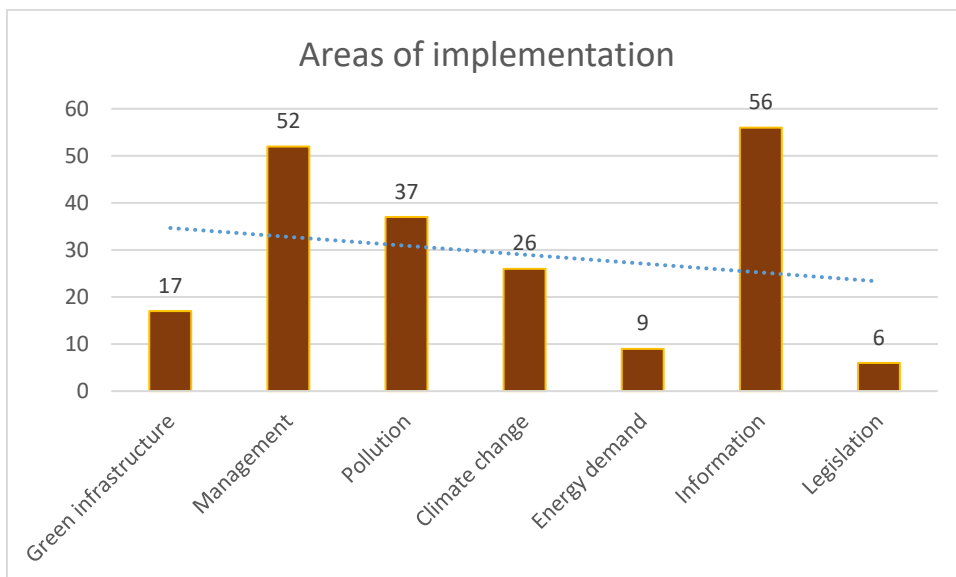


c) Area of implementation

The study captured were then individually categorised to areas of implementation that they fall under. This can also be referred to as the purpose of the study, for instance some were providing information, while others suggested ways of managing the resources, addressing issues of pollution, had suggestions on how to deal with climate change issues, proposed green infrastructure initiatives etc. It is important to note that in some instances some studies fell under more than one category, however they had one dominant area hence the dominant one was used.

From graph 3 below, it can be deduced that 56 of the 203 studies captured had hypothesis that sought to provide information to the reader pertaining the subject that is being studied, where else 52 of the 203 studies were suggesting ways to better manage resources. 37 of the 203 studies focused on ways of handling pollution issues.

Please note that this classification is still quite vague and will be improved based on inputs from users of the ERR.



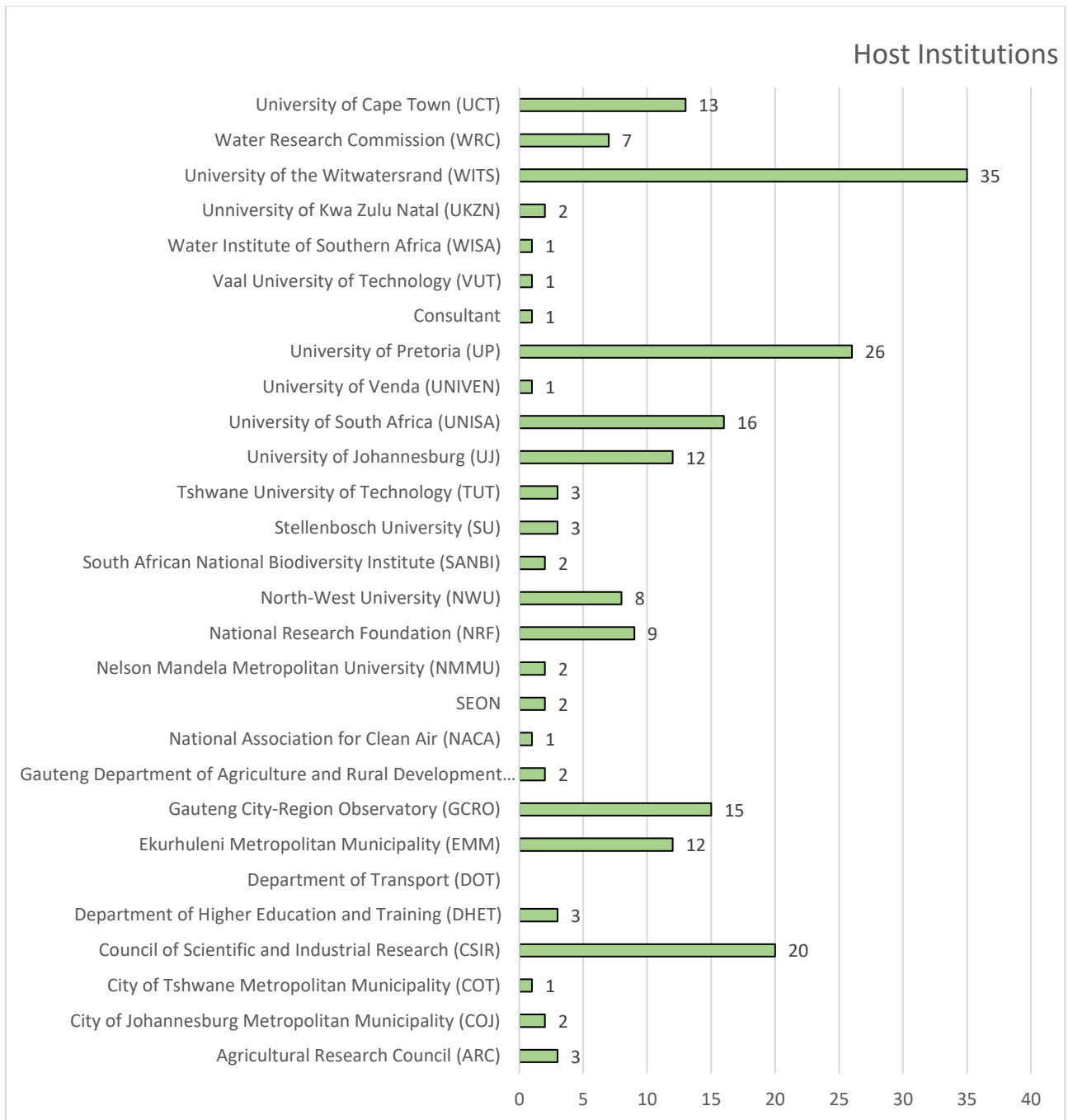
Graph 3: Areas of implementation

d) Host institution

The below graph shows the number of studies captured in the ERR per institution or source. The number of studies captured depends solely on the ease of access to the document at the given time. It may not necessarily reflect on the number of studies produced by that particular institution during or prior the capturing. The main aim of the below graph is to show the diversity of the sources of information. It also gives an indication of the possible stakeholders to be contacted for data.

From the graph below the University of the Witwatersrand (WITS) as an academic institution has the highest number of studies captured (35 of the 203 studies), followed by the University of Pretoria (UP). It is not a surprise that higher institution of learning got the highest numbers as they produce a number of thesis and dissertations from time to time compared to other institutions. It is necessary to note that some funding institutions such as NRF, SEON, CSIR may not necessarily be the producers of the thesis but they are the ones who commission the studies hence in most cases the institutions that host the researchers have their names appearing there.

From the graph below it can also be deduced that even though a number of environmental research projects are produced by the government only a few of them get to be published online and accessible to the public. Hence Batho Pele Principles such as access to information and transparency may be compromised.



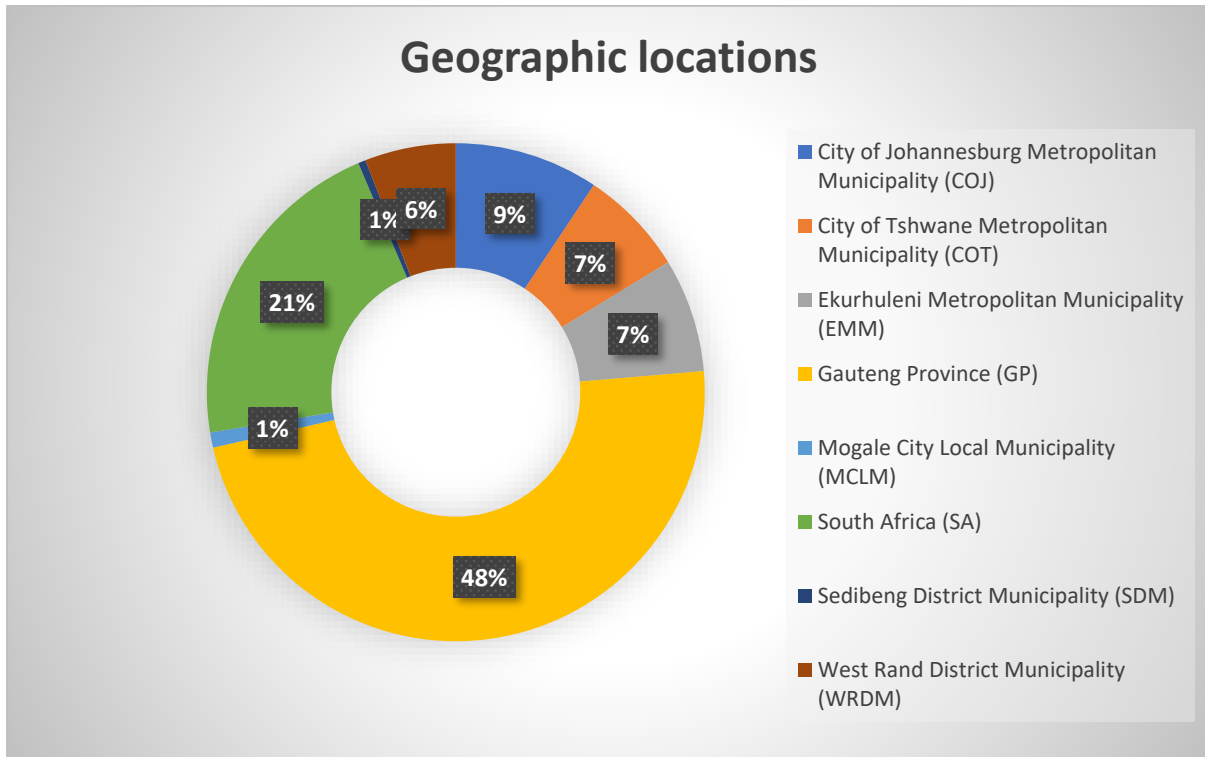
Graph 4: Host institutions

e) Geographic location

The below graph shows the distribution of studies per municipality. The province was used as a study area in cases where the study included more than one municipality. South Africa was also used as a geographic area for studies that had a number of provinces together with Gauteng as a case study.

The results showed that Gauteng province has the highest number of studies captured (48%), followed by South Africa (21%). Smaller municipalities such as Mogale City account for only 1% which could be as a result of lack of publishing.

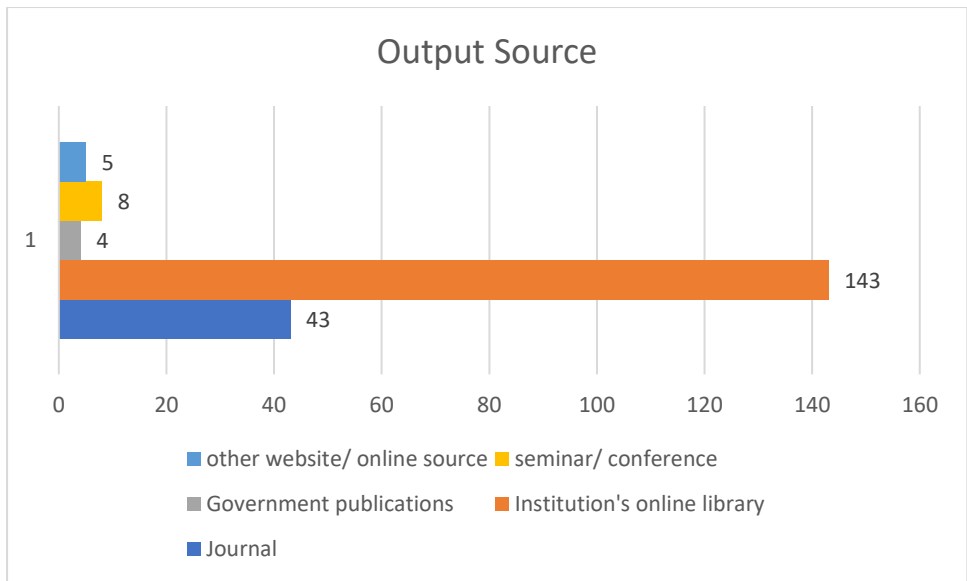
Important to note in this aspect is that some institutions outside of Gauteng Province had their case studies in Gauteng.



Graph 5: Geographic locations of case studies

f) The output source

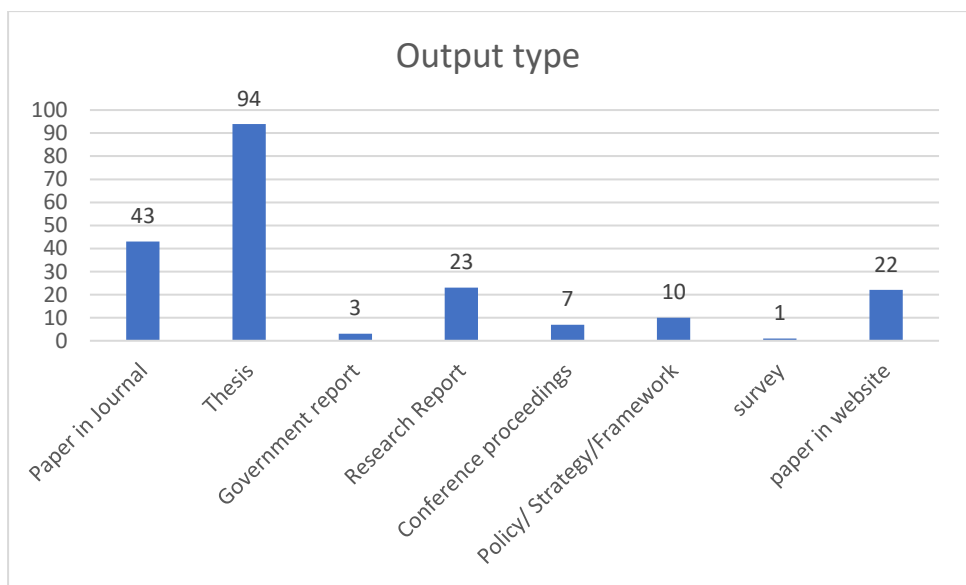
The graph below shows the preferred source of dissemination of research output or studies. As indicated above, most institutions use their online library while some disseminate their information through sources such as journals. It is important to note that while harvesting the information, desktop techniques were mainly used supplemented by one site visit for harvesting of data from the intranet hence the output sources are mostly online sources that were visited.



Graph 6: Output sources

g) Output type

From the below graph, it can be deduced that most of the studies captured on the ERR are produced by universities in form of thesis (94 of 203 studies). The least number of studies captured is government report and survey probably due to the fact that government doesn't publish their outputs online.



Graph 7: Output type

3.3. WAY FORWARD/ RECOMMENDATION

The register and approved reports will be shared with stakeholders outside the departments using GDARD website. This will promote collaboration and partnership with research institutions, hence reduce duplications caused by researchers working in silos.