

# **An analysis of the guiding documents used by the agricultural and health divisions in the Department of Correctional Services to ensure food and nutrition security**

by

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## Declaration

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Date: December 2019

## Summary

The relationship between agriculture and nutrition has become very important these days to ensure food and nutrition security. The government's role is crucial in especially the implementation of policies that are designed for both the agricultural and health division to ensure food and nutrition security. Commitment and the political will are required to formulate, implement, monitor and evaluate such policies and guiding documents. In South Africa, The National Development Plan (NDP): Vision 2030 has identified food and nutrition security as a main factor to reduce poverty and inequality. (The National Development Plan, 2011:303) Government institutions are therefore required to meet these demands. As "every citizen has the right to have access to sufficient food, water and social security" as well as the responsibility that lies within the government to "take reasonable legislative and other measures, within its available resources, to achieve the realisation of this right" all government institutions need to play their part according to the South African Constitutional Law of 1996. The assumption is made that these rights are relevant to all South Africans, even those who are incarcerated. The Department of Correctional Services (DCS) was used as platform for this research assignment to analyse whether effective service delivery occurs relating to food and nutrition security. Firstly, the link between the agricultural and health divisions was determined and whether it is effective enough to ensure food and nutrition security. Secondly, the ability of correctional facilities to be self-reliant and meet the nutritional needs of the inmates. Thirdly, the research assignment focused on the challenges that the two divisions in DCS face to meet their objectives on a daily basis. A conceptual framework was used to analyse the policies and guiding documents in the agricultural and health divisions of DCS to determine whether this government institution fulfils its obligation to ensure food and nutrition security for those they incarcerate. Finally, recommendations are made for improvement in agriculture and other operational activities to better the nutrition and health of the inmates.

### Key words:

Agriculture-nutrition, policy and governance, availability of resources, effectiveness, rehabilitation

This thesis is dedicated to my parents, Magdelene and Peter Jumaar.

## Biographical sketch

Carmen Theresa Loxton, was born as Carmen Theresa Jumaar on 20 September 1973. She was born and raised in Paarl, attending Mary Help of Christians Catholic Primary School. She completed high school at Kleinvlei Secondary School in Eersterivier in 1991. Thereafter, she enrolled at the University of Stellenbosch where she completed the BA-degree in Home Economics in 1996.

In 2001 she completed the Postgraduate Certificate in Education at the University of Stellenbosch. Thereafter, a career in teaching at several schools including The Settlers High, Strand Secondary School and Edgemean High followed. Currently she is an educator at the Brandvlei Management Area of the Department of Correctional Services. In the meantime, she also got married and has two sons. She enrolled for the MSc-degree in Food and Nutrition Security in 2017 and is excited to see what the future may hold.

## Acknowledgements

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## **Preface**

This research assignment is presented as a compilation of 5 chapters

**Chapter One**

**Introduction**

**Chapter Two**

**Literature Review and Theoretical Framework**

**Chapter Three**

**Research Results**

**Chapter Four**

**Discussion**

**Chapter Five**

**Conclusion and Recommendations**

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## **Abbreviations/Acronyms**

BBBEE – Broad-Based Black Economic Empowerment

BMI – Body Mass Index

CMC – Case Management Committee

DCS – Department of Correctional Services

FAO - Food and Agriculture Organisation of the United Nations

NDP - National Development Plan

PSA – Public Service Administration

POPCRU – Police and Prisons Civil Rights Union

RAIN project - Realigning Agriculture to Improve Nutrition

RDA – Recommended Dietary Allowances

SDG's – Sustainable Development Goals

SMART – specific, measurable, achievable, relevant, and time-bound

WASH – water, sanitation, hygiene

# Chapter One: Introduction

## 1.1 Motivation for the study

---

There are several reasons why the Department of Correctional Services (DCS) will be used as a platform to analyse its documents: Firstly, as DCS has both an agricultural and health division this study will determine whether a link between the two divisions exists and how this can be improved upon to maintain and improve the health of the inmates. As the agricultural division aids with the rehabilitation of offenders the study wants to assess to what extent rehabilitation is done and whether inmates can find work on farms once they are released. Also, the constraints to achieve these objectives such as poor awareness of food and nutrition security, wastage and lack of resources, and poor political drive will be explored to determine the effective implementation of agricultural and health policies and guiding documents in DCS to meet the food and nutrition requirements of those it incarcerates. Recommendations will be made to improve the effectiveness of the health and agricultural policies within DCS to meet their objectives.

Furthermore, the researcher is a member of DCS and has been stationed at the Brandvlei Management Area since 2012. The researcher is an educator specifically at the Combined Youth and Medium Independent School. The interest of assuring that inmates do not revert to crime once they are released from prison, has long resonated with the researcher, and the answer does not lie only in formal education but also in skills development which would then ensure that they are able to provide for themselves. Also, since Brandvlei Management Area is a farming correctional facility the researcher wanted to establish how skills development in agriculture as well as the aspect of health and nutrition is being promoted and sustained in DCS to ensure food and nutrition security for the inmates.

According to Faber, Witten and Drimie (2011:28), nutrition can be improved through several interventions. Any intervention should focus on investing in social, physical, financial, natural and human capital to make a difference in providing in the nutritional and health requirements of the target group. For example, the type of crop planted; methods of cultivation and access to finances all help in this regard. Agricultural intervention programmes can also be enhanced by nutrition education to ensure change in behaviour and ultimately improve nutritional status. (Faber *et al.*, 2011:28) When it comes to a government institution such as DCS, it is ruled by legislation and policies and these need to be revised regularly to see whether they are still current regarding the needs of the imprisoned. The National Policy on Food and Nutrition Security for the Republic of South Africa is a document which has been drafted and approved in 2013, to improve food and nutrition security in South Africa, which gives clear guidance to all (Republic of South Africa, 2014). DCS can also benefit by using this policy within its operations.

According to the Global Nutrition Report of 2016, appropriate decisions must be made when formulating policies. Policies should be made for the right people, in the right situation, by the right people and is crucial in the effectiveness of implementation of food and nutrition policies. Therefore each country should set their own targets as they will most likely take better ownership in reaching their targets (International Food Policy Research Institute, 2016:25). The research study was conducted in DCS, specifically their agricultural and health division, analysing their policies and related documentation.

DCS has an agriculture policy procedure in place which guides and regulates the processes of the agricultural activities on a national level in the department. The purpose of the farms in a nutshell, is to use the resources made available to become self-reliant and train inmates in skills which are market related so that they are productive during their time of incarceration. These skills should enable them to also become productive members of society once they are released and reduce therefor the issue of recidivism.

The Agricultural Procedural Manual of the Department of Correctional Services is a binding document and all agricultural activities must adhere to it. The policy procedure for agriculture results from the White Paper on Corrections, Section 2c of the Correctional Services Act, Act 111 of 1998, Rule 71 of Corrections and the Policy for Production Workshops and Agriculture (Agricultural Procedural Manual, 2016:1). These legislations permit DCS to put in place certain procedures for all agricultural activities it may have.

The Agricultural Procedural Manual is the document which guides all agricultural activities in DCS as well as the Production Workshop Manual which guides the production workshops. The production workshops are basically factories that produce inmate clothing, bedding, furniture, shoes as well as bakeries and of course farms. All of them fall under the directive Development and Care. Furthermore, each correctional centre farm develops its own farm plan, mechanisation plan, labour plan and planting schedules on an annual basis (Agricultural Procedural Manual, 2016:8-14).

The Agricultural Procedural Manual covers all areas such as the different structures which exists; the planning of the plant, animal and fodder production; the treatment of animals during transportation; handling of the produce, functioning of abattoirs; the outline of the quality specifications of perishable produce; the safe handling and storing of poisons; environmental management; machinery and the systems that must be in place for monthly reports together with the specific documentation involved (Agricultural Procedural Manual, 2016:213).

Every single project, whether it is for the vegetable plantations, orchards, the dairy, the small stock or the beef cattle are all covered in the Agricultural Manual. The guidelines are clear, and each aspect is clearly backed by legislation.

The accounting officer or person responsible is listed as well as the frequency of when the checks should be done, are clearly stipulated. To improve nutrition and lower incidences of malnutrition, obesity, diabetes and other non-communicable diseases the Global Nutrition Report of 2016 recommends that governments should set SMART (specific, measurable, achievable, relevant and time bound) targets concerning the improvement of nutrition (International Food Policy Research Institute, 2016:33). When looking at the principle of specific, measurable, achievable, and relevant and time bound goals, these have been set by DCS. They are all set out in the farm plan, mechanisation plan, planting schedules and labour plan.

According to the International Food Policy Research Institute (2016:5), policies must be implemented which promotes nutrition through the food, education, health, WASH (water, sanitation and hygiene) and other systems that reduce poverty in the communities to really make an impact. These policies must focus on both under-nutrition and nutrition related non-communicable diseases. The way that DCS tries to have an impact on reducing poverty, malnutrition and under-nutrition is by combining the efforts of the agriculture and health division by working together to provide healthy nutritious food for the inmates.

Production workshops in DCS play a major role in the process of rehabilitating inmates. Through these workshops they aim to be self-reliant and must work according to the normal business principles according to the Correctional Services Act and specifically Act 111 of 1998 (Republic of South Africa, 1998). The White Paper on Corrections (2005:39) recognises the fact that inmates should through rehabilitation, be made employable while incarcerated, so that they can contribute when they are released into society again. In this way they are prevented from returning to a life of crime. Therefore, the training that the inmates receive either in the production workshops or on the farms, are market related. Inmates are also given the opportunity to work in various agricultural projects and able to enhance their knowledge and skills.

## **1.2 Background and conceptualisation of the case study area**

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### 1.2.1 Brandvlei Correctional Centres

Brandvlei Correctional Centre or rather Management Area is a farming correctional facility which houses 3 correctional centres, namely the Maximum Centre with 672, the Medium Centre with 545 and the Youth Centre with 482 inmates (Klaas, 2019). All the inmates who are incarcerated here have been sentenced by the court for a specific period and differ then from correctional facilities which detain unsentenced inmates. Brandvlei Management Area is considered a correctional centre

farm as there are three or more agricultural activities taking place. It is one of about 21 correctional centre farms in DCS, together with about 12 other bigger farming correctional sites.

All these farming correctional centres are governed by various legislations which are summed up in the manuals they use.

A great deal of effort went into the compilation of these manuals and the responsible managers in their various divisions needed to train the correctional officials at the management areas so that they could implement the manuals. Brandvlei Management Area however, houses only male inmates in the 3 centres.

### 1.2.2 Breederiver Correctional Centres

Breederiver Management Area incarcerates both male and female inmates – in separate correctional centres of course - according to the Correctional Services Act No. 111 of 1998 (Republic of South Africa, 1998). In total Breederiver Management Area incarcerates up to 1 375 inmates which includes both male and female inmates that are sentenced and remand detainees. 264 inmates are female. Breederiver is not considered a farming correctional centre but does have a small agricultural division. It was used as part of this research assignment to see what a general correctional facility could achieve with a small agricultural division and how it manages the nutritional needs of the female inmates.

## **1.3 Statement of the research problem, research aims and research questions**

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### 1.3.1 Statement of the Problem

According to Turner, Hawkes, Waage, Ferguson, Haseen, Homans, Hussein, Johnston, Marais, McNeill and Shankar (2013:369), nutrition-sensitive agricultural intervention programmes and agricultural practices can be used to improve nutritional status. Implemented correctly a nation can improve their nutritional status on both national and household level.

The linkages between food and nutrition security, health, nutrition, agriculture, and people's livelihoods are well recognised in addressing malnutrition (Turner *et al.*, 2013:369). The pathways between agriculture and nutrition are also vital in making sure that any project would be successful to alleviate malnutrition. The pathways are as follows:

agriculture being a source of income; agriculture being a source of food; agricultural policies that affect food prices and consequently food consumption; the status of women and their empowerment; the time burden of women and lastly, the nutritional and health status of women (Ruel, Alderman & the Maternal and Child Nutrition Study Group, 2013:545; Kadiyala, Harris, Headey, Yosef & Gillespie, 2014:52). By improving upon these pathways food and nutrition security can be ensured.

The research problem that this research assignment wants to address is whether the Department of Correctional Services, and particularly if 2 correctional facilities in the Western Cape, can meet the nutritional requirements of the inmates through the agricultural and health divisions.

### 1.3.2 Aims of the study

- Analyse the policies and relevant documentation in the Agricultural and Health Divisions of the Department of Correctional Services, particularly in the two management areas in the Western Cape, to determine their effectiveness in providing nutritious food to the inmates through its agricultural and health divisions. The management areas are Brandvlei and Breederiver Management Areas in the Western Cape.
- Determine what the constraining factors are which hinders the implementation of the guiding documents at those two management areas.
- Provide recommendations for effective implementation of the agricultural and health policies and related guiding documentation, at the mentioned management areas to ensure that their nutritional and health requirements are met.

### 1.3.3 Research questions

1. What links exist between the health and agriculture division of DCS?
2. Are the correctional facilities of DCS self-reliant in terms of meeting the nutritional requirements of the inmates?
3. What are the constraints to achieving these different objectives?

## **1.4 Research methodology**

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### 1.4.1 Techniques and procedures of qualitative research

To answer the research questions of this research assignment, the qualitative methodological tools are the best ways in which to address the research questions. The Breederiver and Brandvlei Management areas were used as case studies for this research assignment. To address the research questions the case study was the best qualitative research method to use as it deals with the real-life situation of providing nutritious food to the inmates of the Brandvlei and Breederiver Management Areas through the agricultural and health divisions of these correctional facilities. Case studies are also the most common and effective method used in the social sciences and can be an explanatory and descriptive analysis of an organisation. In this case it is Brandvlei and Breederiver Management Areas. (Creswell, 2012:189; Suaro, 2015)

Qualitative data collection tools that are used are observations, interviews and reviewing of certain texts. In this case all these tools were used to get a wide range of information.

According to Babbie and Mouton (2001:280), the interview is one of the most effective tools used for qualitative data collection. It will be used in part in this research study to determine

the effective implementation of the policies and related guiding documents which ensures food and nutrition security for the inmates at the Brandvlei and Breederiver Management Areas.

The challenges which the correctional officials face to ensure that the policies and guiding documents of the agricultural and health divisions, enable them to provide in the food, nutritional and health needs of the inmates was also looked at.

Questionnaires as a data collection tool have many advantages, which include the fact that it can easily be distributed and collected at a later stage. According to Choudhury (2016), questionnaires allow participants the ability to answer freely and the fact that it is done anonymously extends that freedom to express them.

#### 1.4.2 Semi-structured interviews

Interviews were held with the managers of the agricultural and health divisions. The questions were worked out before-hand and allowed the interview process to go smoother. The questions became a guideline for the interview as many other questions were asked by the researcher to understand the processes and challenges they face much better. For this research assignment two sentenced prisons were visited to gather information. Four interviews were held with the related personnel involved in these divisions to gain their input regarding these policies. Eight questionnaires were also distributed amongst the staff.

#### 1.4.3 Observation

As the researcher would be visiting the Brandvlei and Breederiver Management Areas, it would be possible to observe the daily operations of the agricultural and health divisions. Observations can be biased however as the events taking place is viewed by the researcher alone. Therefore, a variety of research tools were used so that the best results could be obtained. Observations took place on site and were done on several occasions as the researcher visited Breederiver Management Area five times in total. As the researcher works at the Brandvlei Management Area observations took place since the start of her appointment in 2012, however the researcher was able to attend a nutritional meeting for the first time because of the research assignment. The dairy was visited probably more than five times on several occasions, due to the interest of the researcher in their daily operations. A great deal of information was also collected through informal conversations.

#### 1.4.4 Analysis and literature review

The policies and guiding documents used by the agricultural and health divisions of DCS will be analysed. The core policies are the White Paper of Corrections, the Bill of Rights and all the documents which guide the daily operations of the health and agricultural divisions of DCS

to provide food and nutrition security to the inmates that are incarcerated at the Brandvlei and Breederiver Management Areas.

Relevant literature was studied relating to agriculture as a division in correctional facilities and how this division can provide in the nutritional requirements of the inmates. Literature about the health of inmates in a correctional institution and how the health services provided by a correctional centre contribute to the overall nutritional and health status of the inmates were also reviewed. The link between the two divisions in the literature will also be looked at to see whether it can maintain and enhance food and nutritional security to inmates.

### **1.5 Research procedure**

#### **Step 1:**

An application was made to the Ethical Committee of the University of Stellenbosch to conduct the research. At the same time the researcher also made an application to DCS at the Brandvlei Management Area and it involved various role players which started from the Head of the Youth Centre right through to the Area Commissioner. The application was then forwarded to the Regional Office in Goodwood and approved by the Acting Regional Commissioner pending approval from the ethical committee of DCS at Head Office. The preliminary approval of the Acting Regional Commissioner was attached to the application of the Ethical Committee of the University of Stellenbosch. Once approval was given by the Ethical Committee of the University of Stellenbosch the following documentation had to be completed and sent to the ethical committee of DCS. These documents included:

- a G179 - for general information;
- a research agreement form – relating to conditions regarding research done in DCS to which the researcher had to agree;
- the research proposal with questionnaires, interview forms and consent forms;
- the approval letter of the Ethical Committee of the University of Stellenbosch;
- proof of the registration at the University of Stellenbosch and a
- certified copy of the researcher's Identity document.

Approval from the ethical committee of DCS was obtained and the research could commence.

#### **Step 2:**

An analysis was done of the relevant policies and manuals in the Department of Correctional Services, especially in its agricultural and health division, using the conceptual framework found in Turner *et al.* (2013:370). A literature review is provided to give a literature background around the issue of the link between agriculture and meeting nutritional requirements.

Current literature was looked at about correctional facilities implementing agricultural activities, their extent of self-reliance, rehabilitation through agricultural activities which involve inmates and the extent to which it prevents recidivism will help to determine whether the policies implemented by DCS is done properly. Constraining factors such as availability of resources, awareness of food and nutrition security by government officials of DCS, was explored. The political will of the South African government to ensure food and nutrition security was looked at and the impact of policies such as the National Development Plan (NDP), and the National Policy on Food and Nutrition for the Republic of South Africa in DCS.

#### Step 3:

Qualitative research was done in the form of informal interviews that was conducted with the personnel of the Department of Correctional Services who are involved in the implementation of the policies of the Agricultural and related Health Division. Their views concerning shortcomings is invaluable as they are the ones who are involved daily with the implementation of said policies. The managers of the agricultural and health divisions were interviewed to gain their insights into the policies which guide them and how the implementation of the policies in their division is done. The managers assisted the researcher to identify the manuals which guide their specific division. In total two Managers in the Agriculture division and two in the Health division of DCS were interviewed, therefore four altogether. The researcher made notes as the interviewees replied to the questions. Each had an interview form in front of them to make the process go smoother.

#### Step 4:

Questionnaires were distributed amongst two of their subordinates and in total eight questionnaires between the two Management Areas were distributed and completed. The researcher was received well and had co-operation from both Management Areas. The correctional officials were informed of the research study and that their participation was voluntary. They had a chance to read the consent form and ask questions as seen in Annexure A. Each interview form and questionnaire was given a reference number to ensure their anonymity. See Annexure B for the interview form designed for the agriculture section. Annexure C shows the interview form designed for the health division. Annexure D is the questionnaire.

The interview forms and questionnaires were studied, and findings were documented. The interview forms and questionnaires are kept in a file and locked up in a cabinet.

The researcher did not do a nutritional analysis of the inmates. For example, anthropometrical measurements, or 24-hour recall questionnaires used to determine nutritional status. These are already done by the health care professionals at DCS and thus the health care professionals can

determine the treatment of each inmate. For this research assignment only, the policies and manuals were assessed.

Step 5:

The data collected is summarised and presented in the research assignment.

## **1.6 Research agenda**

This research assignment comprises of five Chapters.

Chapter One is the Introduction which focuses on the research problem, the research questions, the aims of the study as well as the methodology. In the introduction this chapter also gives background around the two management areas used in this research assignment.

Chapter Two is entitled Literature review and theoretical framework. Definitions related to the research are provided in this chapter which are the key concepts of the research assignment, namely agriculture-nutrition; policy and governance; rehabilitation and management area. This chapter also reviews the related research literature and gives the theoretical framework for the research which is presented in the conceptual framework.

Chapter Three is entitled Research results. The findings of the different documentation and how it is implemented in the Brandvlei and Breederiver Management Areas are provided in this chapter. The information gathered by the researcher regarding the interviews and questionnaires are summarised here about how the implementation of the policies and related guiding documents in the health and agricultural divisions at the two management areas provide in the food, nutritional and health needs of the inmates.

Chapter Four is entitled Discussion, where the research results are discussed according to the conceptual framework outlined in the literature review. The challenges which the correctional officials in the agricultural and health divisions are discussed which hinders them from providing in the needs of the inmates which are incarcerated in the correctional centres on the Brandvlei and Breederiver Management Areas. The support structures within DCS and implemented in the two management areas are also discussed in this chapter.

Chapter Five is entitled Conclusion and Recommendations that reflects on the findings of this research assignment. An overall conclusion is provided as well as recommendations given regarding the specific challenges that the correctional officials and the health and agricultural divisions at the Brandvlei and Breederiver Management Areas are facing, in the applications of their duties to provide

food and nutrition security to the inmates. Suggestions are also provided regarding further research in this study field.

## Chapter Two: Literature Review

In this section an outline of the related literature on the topic is provided as well as a summary about the relevant concepts about food and nutrition security among the prison population. This provides a contextual background to the study and the platform from which the fieldwork come from, which were done through the interviews and questionnaires in the two management areas in the Western Cape.

### 2.1 Definition of terms

#### 2.1.1 Agriculture-nutrition

Food is a major outcome of agricultural activities and a contribution into good nutrition; thus they go hand in hand. Without proper and specific agricultural inputs there cannot be produce which provides in the specific nutritional needs of individuals and households. Agriculture deals with various aspects and some of them are labour; resources used; inputs relating to seed, plants or livestock, weather conditions; capital input and knowledge. So, at its core function agriculture deals with production and yield, however there is more to agriculture than that. Agriculture is also contributing to the health of people through the food that is being produced (International Food Policy Research Institute, 2010:8).

Furthermore, nutrition includes food availability, access to food at household level, a healthy environment, access to health care services and good child care practices. The link between agriculture and nutrition is clear especially since farmers need to produce food of enough quality regarding energy for consumption and good quality food relating to minerals and vitamins that the human body needs (International Food Policy Research Institute, 2010:8). The specific needs of children, pregnant and lactating women, the elderly and the overall needs of all people in various stages of their lives to lead healthy lives should be what fuel the agricultural section of all countries.

#### 2.1.2 Policy and governance

Policy is a strategy or plan that is used by a country to govern the processes leading its people. Several policies therefore exist within countries and can be adapted also from world policies. Policy instruments are used by governments and it requires their involvement in the policy making process, implementation, monitoring and evaluation. Policies are therefore the essence of a government and its use of power to rule over its people (Jordan, Wurzel & Zito, 2005). Good governance is defined by various characteristics. For example, a fair legal framework is used by the government for the benefit of the people.

Wikipedia (2019) defines policy governance as a system that is used by organisations. It also guides the relationship between the owners of the organisation, the ruling members as well as the stakeholders.

It also explains governance as the processes that are being used by a government or any other organisation. Certain rules or laws are used for the benefit of the stakeholders. A government is the most formal organisation that uses policies to govern its people.

In the case of this research assignment the policies such as the National Policy on Food Nutrition Security for the Republic of South Africa; the White Paper on Corrections and the manuals for the Health and Agriculture Division in DCS will be used to answer the research questions.

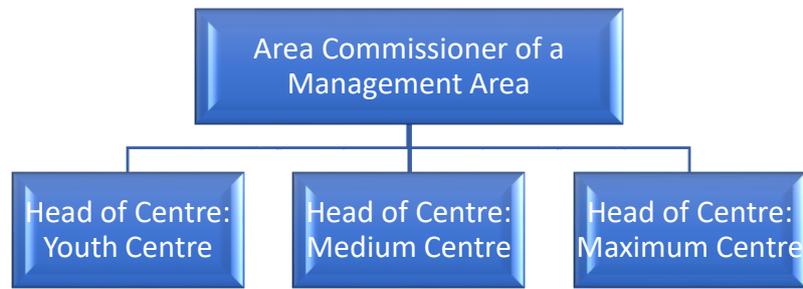
### 2.1.3 Rehabilitation

The White Paper on Corrections in South Africa (2005:74) makes it clear that the correctional system's main purpose is not punishment, but it is there to protect the public, to promote social responsibility and human development through rehabilitation. Thus, a change in human behaviour is achieved through various programmes such as spiritual programmes, social work programmes, anger management, formal education, skills development and psychological programmes. So, when an inmate is truly rehabilitated, he or she can become a productive citizen of the community after being released and a return to crime is less likely to occur. Inmates who are involved in the agricultural activities on a farming correctional facility is equipped with skills that they can use to either find work on commercial farms in South Africa or they are able to start their own food gardens and make an income from their own produce.

### 2.1.4 Management Area

The Department of Correctional Services is made up of various management areas in the different provinces. A management area can consist of one or more correctional centres such as a Medium or Maximum centre depending on the extent of the sentences of the inmates. These are sentenced prisons. Unsentenced prisons are correctional centres which house inmates that are awaiting trial and waiting to be sentenced by the court. Each correctional centre is run by the Head of Centre and the Area Commissioner is responsible for the management area.

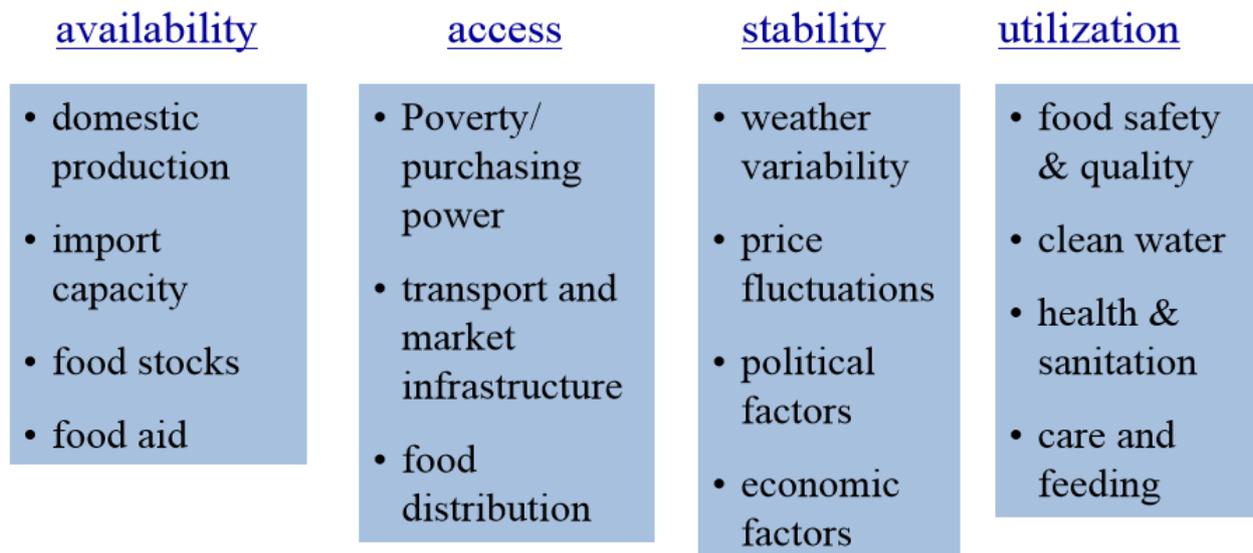
Figure 1 is an example of an organisational chart depicting a management area and the correctional centres.



**Figure 1:** Organisational chart of Brandvlei Management Area

## 2.2 Theoretical framework

The dimensions of food security are summed up in figure 2, which addresses the four food security dimensions namely food availability, access to food, stability and utilisation of food.



**Figure 2:** Food security dimensions

(Source: United Nations System Committee on Nutrition UNSCN 2013 Wüstefeld)

Food security is defined by Venugopal (1999:18) as the access and availability of food to everyone and on the other hand nutrition security requires the intake of a range of foods so that it can provide all the nutrients needed for the individual. So, there is a big difference between food security and nutrition security but should not exist without the other to obtain good health. Food security cannot exist without nutrition security and nutrition security cannot exist without food security. Food security at household level means that all members of the family can consume enough food which fulfils their dietary needs (FSN summary report, 2009). Nutrition security requires that household members have all three of the following needs met, namely care, health and food all at the same time. Therefore, nutrition security cannot be obtained without food security at household level. Furthermore, the inclusion of food safety is a definite requirement because without it, it can lead to disease and life-

threatening illnesses. To illustrate this concept one can see the effect when an infectious disease is the main cause of malnutrition, the answer to improve the situation by adding more food will in fact be ineffective.

The World Food conference held in 1974 defined Food security as:

*“availability at all times of adequate world supplies of basic food stuffs... to sustain a steady expansion of food consumption, and to offset fluctuations in production and prices.”*

What is important of this definition is the availability of enough food. With the availability of food, the value chain comes into play and has a direct influence on food prices.

So, when production increases, food prices tend to decrease and are thus beneficial for the consumer. When production decreases, food prices increase, and the consumer finds it difficult to purchase the necessary food items and are often unable to purchase a wide range of food (World Food Summit report, 1974:4).

Ericksen (2007:1) further defines food security from the World Food summit of 1996 as:

*“Food security is when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”*

Food security has undergone two different ways of thinking. Maxwell (1996:155) identifies them as:

- a) the focus is on household and individual food and nutrition security as well as global and national food security and
- b) the food first to the livelihood standpoint.

At first the focus was on enough or adequate food in the world. Developed countries mostly had this viewpoint and enforced it through legislation. In order to deal with the prevalence of malnutrition, under-nutrition and even overconsumption amongst these wealthier communities legislation is often the starting point for the production of sufficient food. (Foresight report, 2016:10).

The cornerstones of food security are according to Barret, (2010:826) access, availability and utilisation. Availability deals with the demand for huge amounts of food which is still true today. Ericksen, (2007:8) speaks about the use of imported goods which can be cheaper at times, compared to the food produced locally. However, this has its own problems especially when the imported goods are of inferior nutritional quality. Should the political environment become unstable then the agreement between the different countries can become strained and a vital source of food can be compromised.

Access to food is about how people obtain food through income and then purchase it locally. The influence of the cultural preferences that influences the food choices of the people is also a big issue.

Social, political and economic factors play a role too and distribution of food throughout the country makes it sometimes difficult for individual households to have access to food.

Utilisation of food deals with how families really use the food when it comes to preparation and getting the optimal nutritional value of the food for consumption and preparation under hygienic conditions. The food needs to supply in the dietary needs of the families and specifically in the micro-nutrients such as vitamins and mineral (Barrett, 2010:825).

Ericksen (2007:5) continues to address access to food through the different dynamics within families which determines who eats first. In certain families, children and women tend to eat last because of their cultural traditions.

So, various factors whether it is social, political and economic changes all these influence food security regarding access, availability and utilisation and this takes place on many levels. In other words, it can range from food production to food consumption (Ericksen 2007:5).

Ericksen (2007:8) further describes food insecurity as those people dealing with hunger, malnutrition, under-nutrition and or underweight on a daily basis. These are direct manifestations of nutrition insecurity. There are two indicators of under-nutrition and they are weight-height; weight-age and or mid- upper arm circumference. Under-nutrition also deals with insufficient energy intake per individual. All the main health challenges of nutrition security can be measured by the mentioned measurements and it simplifies the research and data collection when determining food and nutrition security.

Barrett (2010:826) further explains that the individual dietary needs such as hunger, and underweight data collection is very important. The focus should shift to the reduction and elimination of poverty, food prices and social protection policies that must be put in place for food and nutrition security.

It is not enough to deal with the high demand of food or the price of food, there is a need to concentrate on access to food regarding entitlement. Every household should have the ability to find ways to sustain their way of life especially with environmental factors playing a tremendous role in creating that stability in food supply. Households tend to be influenced more by the unstable environmental factors such as drought and flooding.

The World Bank had a different definition of food security, and that is:

*Food security is access by all people at all times to enough food for an active, healthy life, as stated by Maxwell, (1996:157).*

The needs of individuals are more important than just focusing on mass production of food but to also make sure that families and communities can make a living through agricultural activities. Families should not just survive but should have a healthy life.

Food sovereignty is a major part today of food and nutrition security as it deals with the ability of communities and households to care for themselves and be able to produce food which will provide in their nutritional needs which is enough for everyone. It is vital to involve communities as they take responsibility for their own well-being. This will allow the agricultural activities to be more sustainable.

There are several threats to food security and in Africa this is especially the case. War is often one of them. Other threats could be when the small-scale farmer is not prepared when natural disasters strike. They do not have cash crops available as a safety net, and the fact that there are so many vulnerable people like women, children and the poor makes conditions awful (Maxwell 1996:164).

The right to food is highlighted by the definitions of food and nutrition security and is a basic right. According to Maslow's hierarchy of needs the right to basic needs including food is very important in achieving any other higher developing goals, (Wikipedia 2019). Food is the basic need of every human being and consequently we have the right to food, including the right to safe food too.

Ecological public health focuses on people and the environment which is important in food and nutrition security. Food production done on a massive scale focuses on feeding millions of households who suffer from food insecurity and hunger, but production must be sustainable. As seen with the Sustainable Development Goals (SDG's) the environmental elements such as water and land must not be damaged further or depleted. The huge amount of energy that is being used on all levels in the food chain from production to the eventual consumption of food made the methods of food production in the 20<sup>th</sup> century unsustainable. Therefore many countries are changing the ways in which they produce food.

Agro-ecology is the answer which is the application of ecology science to sustain methods used in agriculture. Methods include the use of biomass, optimal land usage, water harvesting and rehabilitation of land. Using less pesticides and fertilizers are becoming more common as well to reduce the effect on the environment. Farmers are using traditional ways of insect control and thus enabling communities to pass on their knowledge and can take care of themselves once again.

The awareness of the role that agriculture plays for improved nutrition is growing globally and was seen in all the deliberations which led up to the United Nations' gathering to discuss the 2030 Agenda

regarding the Sustainable Development Goals. These role players include health care practitioners, investors and the commitment of the government.

To assist with the process of the role players to work together, several conceptual frameworks have been developed to identify all pathways which have an impact on agriculture and nutrition. The political will of government to drive the process of improving nutrition through agriculture can be seen in their commitment by creating and implementing policies which drives nutrition-sensitive and nutrition-specific programmes and interventions (Ruel, Quisumbing & Balagamwala, 2018:146).

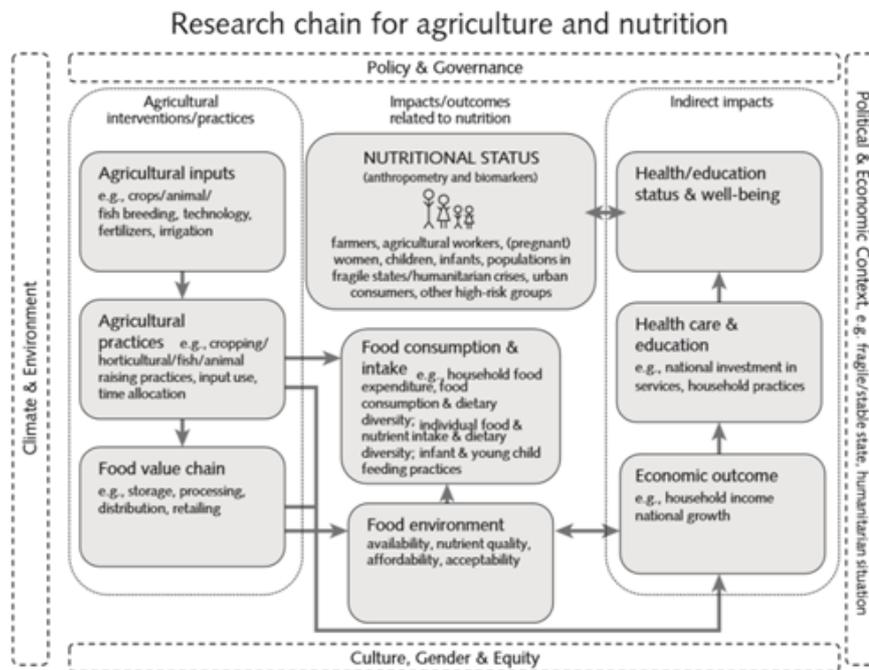
In South Africa the policy which drives food and nutrition security is the National Policy on Food and Nutrition Security for the Republic of South Africa of 2014 which derives from the Constitution of South Africa of 1996, Section 26 and 27, (Republic of South Africa, 1996) as well as the National Development Plan Vision 2030. The Department of Social Development and the Department of Agriculture, Forestry and Fisheries are leading the process of implementation together with other role players such as private, public and civil society partners.

As a Member State of the United Nations, South Africa must take into consideration the recommendations made by the Food and Agriculture Organisation of the United Nations (FAO) to include in its laws the right to access to food for all, thus a National Policy on Food and Nutrition Security for South Africa (The National Policy on Food and Nutrition Security, 2014). Government is taking ownership of this policy through the establishment of a National Food and Nutrition Advisory Committee, chaired by the Deputy President. Some challenges exist especially in the food safety control systems as various agencies such as the Department of Health and the Department of Trade and Industry are working separately. These efforts should be centralised to make an effective food safety and quality controlling system possible in South Africa.

Turner *et al.* (2013:370) developed a schematic diagram, (figure 3), which illustrates the ways in which agricultural intervention programmes and agricultural practices can be used to improve nutritional status. Implemented correctly a nation can improve their nutritional status on both national and household level.

There are direct and indirect linkages. The direct linkages involve steps in the production and consumption of food. Examples are agricultural inputs such as the fertilisers being used, or the crop being produced; agricultural practices like animal raising methods or the food value chain like the storage techniques being used; all of this play a significant role in contributing to the nutritional status. Furthermore, the individual and household's ability regarding food consumption, the food environment, including the ability to access available food that need to be nutritious enough to meet their dietary requirements and must still be acceptable according to their religion or culture. The

indirect linkages involve health, level of education and the ability of agricultural activities to increase the rate of economic growth that could influence the level of household income. This increases the chance of food security. On a much bigger scale, are the political and economic environment, gender, culture and the natural environment, play a role on the nutritional status of a country, including the policies made by the government (Turner *et al.*, 2013:372).



**Figure 3:** Conceptual framework for research on agriculture for improved nutrition (Source: Turner *et al.*, 2013:370)

This framework is used as a tool to examine the guiding documents used in DCS regarding agriculture and health.

The UNICEF conceptual framework of malnutrition is also widely used to guide agricultural and nutrition-specific interventions to improve health. According to UNICEF (1991), malnutrition occurs when the dietary intake of any individual is inadequate, and their health therefore suffers. These are the direct causes of malnutrition. A multi-sectoral approach is needed starting from the national, district and local level.

Kennedy and Bouis (1993) stated through the World Food Conference of 1974 which highlighted the fact that investment in agriculture will increase food production and can reduce under-nutrition worldwide. Due to investment, new technologies were used especially in the use of quality seed, the use of better irrigation systems, fertilisers, and diversification and improve women's time allocation. In rural Africa especially when technology is used in farming practices, communities can improve themselves and reduce poverty. Actions need to be taken from all levels, international, national,

community and finally at household level. The role that agricultural policies play in making a difference at household level is very important because without it there will be no means to guide the process of malnutrition.

The difficulty in adapting the new farming techniques and technology is immense in rural communities because it usually means financial support or investment. If the ruling parties are not on board and the governing bodies of especially developing countries do not invest in their own agricultural practices, then any efforts made by the international community will be accepted with difficulty.

The latter is true especially since investment and projects which have been started by companies from developed countries were only for their own benefit and most often depleted the natural resources. Rural communities are left behind to pick up the pieces and unable to trust other companies or non-governmental organisations who enter their society again with good intentions. The support of the government and its officials are an important factor when NGO's finally leave the community after a successful implementation of an agricultural, health or nutrition project. Projects such as the Scaling Up Nutrition (SUN) Movement calls for all relevant role players to be involved in nutrition-sensitive interventions and nutrition-sensitive development where scientific action, advocacy and communication is required to improve overall nutrition on a global scale. Investment in agriculture and nutrition programmes, obtaining political support is also one of the main aims of the SUN movement and without such initiatives; rural communities are not able to improve their farming techniques (Dangour, Kennedy & Taylor, 2013:197).

Furthermore, improvements can be made not only in the farming techniques but also the use of technology in the rest of the value chain too. For example, in the way that the products are handled once harvested; what time of the day harvesting takes place and how the products are stored and transported to the market. If the farmers can make use of better techniques then the nutritional value of the produce can be maintained to ensure a good quality product. Once at the market the rest of the value chain also need to make improvements in the way the produce is handled, stored, displayed and sold. At times fresh produce are processed in order to achieve maximum shelf-life and some of the nutrients are lost during processing. Most often processed foods contain high levels of fat, sugar and salt which can contribute to some of the non-communicable diseases such as hypertension and diabetes. It is important that the produce be kept as fresh as possible and that the processing of food is kept to a minimum. The fortification of food on the other hand in the processing of maize and wheat products is a way of making sure that the low income groups are able to take in the vital vitamins and minerals through fortified bread and cereal products. For instance fortifying staple with iron, the prevalence of anaemia in women can drop up to 2.4% annually on a global level.

Fortifying flour with folic acid about 50 000 neural defects can be prevented in Africa and Asia. (Helen Keller International 2011:1)

If the leaders of the countries especially in developing countries are not enforcing such initiatives and entrusting their health and agricultural ministries to be involved then the work of NGO's in these fields will be very difficult. However, with international institutions such as the World Health Organisation and the United Nations putting pressure on the member countries to improve the lives of their citizens, it makes it easier for leaders of the developing countries to involve themselves and make changes to their policies. As member countries of the United Nations have set goals in the Sustainable Development Goals, they are made accountable and given clear guidance in the way forward especially when it comes to reaching deadlines.

The Africa Progress Panel has a positive view about the situation in Africa. Africa could be the forerunner in at least 4 of the Sustainable Development Goals. It is in the areas of the use of energy, opportunities relating to climate change, using the resource rich minerals in Africa effectively and job creation.

Business and Sustainable Development Commission's new report about the SDG's found that the most opportunities would be created in Africa, and at least 32 million jobs could be created here. The highest would be in China with 49 million and 26 million in Asia. Furthermore, sustained business would initiate economic activity of at least 12 trillion USD and around 380 million jobs could be created by 2030. These statistics are very optimistic, but when all role players work together it can be achieved according to the Business Commission (2017). Furthermore, they state that the SDG's will activate growth in four principal factors, which are in food and agriculture, energy and materials, health and general well-being and finally development and infrastructure.

Helen Keller International (HKI) is another NGO that is committed to alleviate malnutrition in Africa and on a global level. HKI improves access to nutritious food and to improve the livelihoods of the rural poor through the Homestead Food Production project. Sustainable agricultural methods are introduced to the farmers and this helps to guarantee food and nutrition security. The education of women is included to empower the

m to become Model Farmers and then become involved in training other women as well.

Supplementation is another way in which HKI is a forerunner especially with vitamin A and Iron. They make sure that children within the first 1 000 days of their lives receive a vitamin A capsule at least twice a year. The health and agricultural services of the country are also required to be involved in the HKI initiatives and this aid in the success rate of HKI projects. (Helen Keller International, 2011:3)

Investment in energy is about 8 billion USD a year, but it is not enough to meet the need globally. The estimated financing gap needed, is about 55 billion USD per year is needed until 2030, to meet

the estimated financing gap. These figures are very high but the potential to generate jobs would increase economic growth and in turn increase productivity, which would make this investment worthwhile. People's lives would change, poverty reduced, hunger and malnutrition alleviated and basically a better life for all. (Africa Progress Report, 2015)

Africa is rich in resources like fossil fuels and energy renewable assets. Modern methods can be used to generate electricity. Renewable energy such as solar energy, hydropower and wind power are methods that are now being used which do not have carbon emission unlike fossil fuel.

Many African countries are involved in changing their way of operating such as Rwanda that increased access to energy up to 160% between 2008 -2011 and Ethiopia set a target to have zero net carbon emissions by 2027 according to the Food and Agriculture Organisation of the United Nations (2015).

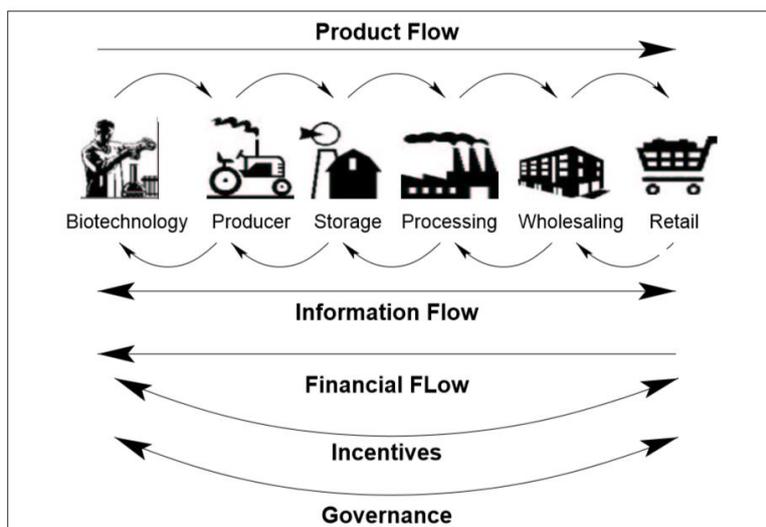
African governments should focus on low carbon energy and make it affordable for the poor through subsidising the costs. The M-KOPA project in Kenya for instance made inexpensive solar power and mobile technology available to the rural areas. The people pay a small deposit for a solar system and they also receive a solar panel, 3 ceiling lights, cell phone outlets to charge their phones and a radio. The balance is paid over time and this is done through a pay-as-you-go system, and the M-PESA mobile platform is used. More of these types of initiatives are needed. (Africa Progress Report, 2015) All these efforts relate to other SDG's such as SDG 7,8,9,10,13 and 17.

The National Development Plan (NDP) Vision 2030, clearly states that poverty and inequality must be eradicated. Food and nutrition security are one of the key pillars in meeting the objectives set out in the NDP (The National Development Plan, 2011:295). Therefore, the National Policy on Food and Nutrition Security for the Republic of South Africa was drafted and approved in 2013. The Department of Agriculture, Forestry and Fisheries and the Department of Social Development together with other departments were assigned to be responsible for the implementation of this policy (National Policy on Food and Nutrition Security, 2014:24). As with any new policy, all role players need to adapt current manuals to make sure that they are in line with the updated policy. That is why it is necessary to analyse the agricultural and health policies and guiding documents of DCS. Furthermore, the link between nutrition and agriculture must also be addressed especially in DCS as it is a unique government institution that is able to provide nutritious food for the inmates through its agricultural activities. Correctional facilities have the potential of becoming self-reliant and even support the local communities. Lyons (2012:9) stated farm prisons that were self-reliant could provide food to the inmates in a cost-effective way as well as boost the agricultural activities in the surrounding communities too.

Figure 4 provides an indication of what a value chain looks like. Farmers need to be educated regarding their involvement in the value chain. Their ability to make use of technology such as drought resistant seeds when planting their crop is important to survive major environmental impacts. Drought has a negative influence on their ability to produce a good harvest. In turn it will influence their income and ability to be sustainable. Furthermore, the farmers need to store their crop in such a way that there is little to no damage or loss of crop. However, wastage is a huge problem which farmers have because their crop is not stored properly or under correct conditions.

For instance, farmers need to have a dry place to store wheat bales. Transportation of their crop to the market is also a critical point and need to be transported in the correct conditions. As the food is received from the farmers many of the crop is first processed and packaged and through these steps the food could lose nutritional value. Once at the retailer food is sold and only then the food is bought by the consumers. The food does take a long time to actually get to the consumer and it goes through so many processes.

To ensure that good quality food reaches the consumer is quite challenging but it is possible through different ways. A great deal of care and money is needed to provide nutritious and safe food. Some retail stores tend also to cut out the middleman and buy directly from the farm in order to provide the consumer with the best quality food.



**Figure 4:** Value chain

Adapted from Boehlje (1999, van der Vorst *et al.*, (1998) and Poirier (1999) cited by (Book n.d.)

As indicated by figure 4, the value chain does not only include production flow but also the flow of information, money, the involvement of the government and the role players receive aid in the form of incentives. Information and education is always important to improve anyone's life. As seen in the Realigning Agriculture to Improve Nutrition (RAIN) project of an international NGO called Concern Worldwide. Model farmers are used in this project to assist and guide upcoming farmers. They exchange information about seeds, fertilisers and even the best way to harvest and cook the vegetables that they produce.

Educating farmers could range from basic education in reading, writing and numeracy as well as training in using farm equipment or how to use chemicals safely. The education of girls and women are a major challenge globally. Inequality and discrimination against women in agriculture should be addressed to empower women and improve their general health and well-being. The Sustainable Development Goals set out by the member countries of the UN; include the improvement of literacy and inequality which women experience. These are difficult challenges to overcome, especially in rural areas where male domination and cultural traditions are still enforced. Access to primary school for girls and boys are improving however girls and women still experience many challenges to access secondary school and tertiary education.

For example in 1990 in Southern Asia about 74 girls were enrolled in primary school for every 100 boys, but by 2012 the ratio of enrolment for both boys and girls were the same. Interestingly enough no country in sub-Saharan Africa has achieved gender parity in both primary and secondary education. (UNICEF, 2015)

The health of inmates is a major public health issue and every correctional facility should make sure that the health of inmates is taken seriously. Prisons can be a breeding ground for many diseases such as tuberculosis, HIV/AIDS and many other infectious diseases. What makes it worse is that prisons are overcrowded, inmates get little exercise because of the poor inmate to warder ratio and they are often kept in their cells for long periods of time. As many of the inmates will return to the community it is important that they are kept in the best health as possible so that the community can also be safe from infectious diseases let alone criminal activities.

Inmates have the right to health care and this is a basic human right taken up in the Constitution of South Africa (Republic of South Africa, 1999). Everyone has the right to health care, sufficient food and water and in the case of emergency medical care no one may be refused. The government is obligated to make use of all their resources to make sure that everyone in the county receives good health care and have access to safe food and water.

A study done in the United States of America by Wilper, Woolhandler and Himmelstein (2009, 667) found that many inmates that have a chronic illness do not receive health care. About 2.3 million inmates at the time rely on the wardens for health care treatment. About 43% of inmates incarcerated in state prisons suffer from a chronic medical condition and therefore requires treatment. Furthermore, access to medical care is lacking but also when they do get medical care the medical care is of poor quality. They further found that there is little information available about the state of health and health care of inmates in American prisons. As the inmate population increases it makes it more difficult for inmates to receive health care and good health care at that.

Poor nutrition of inmates is seen worldwide, in both developing and developed countries. According to Nwosu, Maranda, Berry, Colocino, Flores, Folkman, Groblewski and Ruze (2014:1) in the USA, with the largest prison population per capita, the inmates have poor nutritional status too. It was found that in the UK and USA micro-nutrient deficiencies, especially vitamin D, exists amongst inmates, which is linked to season, race and security level of the inmates. (Nwosu *et al.*, 2014:8; Collins & Thompson 2012:210; Leach & Goodwin, 2014:50) Furthermore, elevated levels of sugar and sodium amongst inmates also exists which can be rectified by increasing the intake of whole grains, fruit and vegetables (Collins & Thompson, 2012:217).

According to Brunicardi (2018), prisons are starting food programmes such as food gardens to improve the nutritional status of inmates as they do not receive quality and nutritional food. They are fed meals worth less than US\$1.20 per day. The World Health Organisation (WHO) supports the fact that food affects the physical and mental health of inmates and with the help of good quality and nutritious food it will help to rehabilitate inmates. They will adapt better in the communities upon release. As prison administrations are starting to realize the impact of healthy and nutritious food on the inmates, they adapt more sustainable food systems.

Possibilities of improving rehabilitation in inmates were seen in the Victor Valley Medium Community Correctional Facility in the state of California in the United States of America. Inmates volunteered to participate in a new programme introduced in 1997, which improved their diet with vegetarian meals and it included religious studies, anger management and skills development. 85% of the inmates volunteered and became very co-operative. Through their efforts the rate of recidivism dropped by 2% at that time. Furthermore, a research study done in 2002 by the University of Oxford found that among 231 adult male inmates, the inmates who received a multivitamin and a fatty acid supplement had a 35% decrease in behavioural problems and a decrease of 37% in violent behaviour. Through all these efforts a law was passed in 2018 in the state of California which requires correctional facilities to offer meals for those inmates who wish to follow a vegetarian diet (Robinson, 2018).

Furthermore, Zaalberg, Nijman, Bulten, Stroosma van der Staak 2010:118; Dani, Burrill and Demmig-Adams (2005:262) found that the positive impact of supplementation in essential fatty acids, calcium, vitamins and minerals were seen to have an improvement on the behaviour of the inmates.

According to Brundicardi (2018), inmates who are involved in skills training and who learn about sustainable agricultural practices tend to find work easier once they are released. The problem of recidivism is decreased by about 20%. An example of how a multi-sectorial approach is needed to improve food and nutrition security among inmates is what is taking place in Papua New Guinea.

The Austrian Centre for International Agricultural Research and The National Fisheries Authority of Papua New Guinea work together with the correctional facilities to teach the inmates and correctional officials about fish farming. The centre pays dividends to the correctional facilities to do the training and inmates are able to earn an income and make connections with various markets so that they can continue with fish farming when they are released and still have a market to sell their produce to. These are very important factors because inmates are often cut off from their families and unable to have some form of income. They rely on their families to bring them items such as toiletries and because of programmes like these inmates can still have some form of dignity that they can provide for themselves, rather than to commit crime. It is important that inmates are given these opportunities to rebuild their lives and find that there are other means to provide for themselves. They might not have had the skills, or know-how to start a business of their own such as fishing business. When they have connections in the fish industry it is so much easier to be successful. This is a very important part in the value chain and when there are clear connections between the farmer and the marketplace sustainable farming is possible.

Several studies have shown that deficiencies among inmates do exist and one such study was conducted by Jacobs and Mullany (2015: 660). They found that those inmates who have been incarcerated for more than a year had a vitamin D deficiency and those inmates should receive a vitamin D supplement or dietary improvements in their meals to increase vitamin D intake. Gould, Tousignant, Brian, McKay, Gibson, Bailey and Venn, (2013:13) also found in their research study that inmates' diets were lacking in micro-nutrients.

Furthermore, meals served to inmates are often low in fibre, micronutrients and minerals. This is an indication that there is no variety in food items being served to the inmates on a daily basis. Also the meals are often high in cholesterol and sodium which are nutritional factors that increase the risk of inmates developing hypertension and or heart disease, according to Collins and Thompson (2012:216). A diet rich in sugar increases the calorie intake and the risk for diabetes, obesity and overweight are increased. Therefore, a meal plan should be followed that include a variety of food items which are low in fat, cholesterol, sugar and salt, but high in fibre, micro-nutrients and minerals in order to lower the rate of chronic illnesses (Duyff, 2006:20). On the other hand some literature support the fact that the menus that are compiled for the general population of inmates are overall of good nutritional quality with the exception of having too much salt. (Williams, Walton & Hannan-Jones, 2009:168)

The choices that inmates make due to food items available in the prison tuck shops have a negative effect on their health and nutritional status. Even though it is found that the inmates receive food that are healthy for them the choices they make when it comes to food items being sold in the prison tuck shop are usually highly processed and high in fat, sugar and salt. From the literature that is available

prison kitchens do follow a menu that will maintain and or improve the nutritional status of the inmates, (Eves & Gesch, 2003:168; Williams *et al.* 2009:168) However, the role which the tuck shops plays should not be overlooked.

Prison kitchens follow a dietary plan to meet the nutritional needs of the inmates. The execution of the meal plans can be problematic as there are several challenges which exist that hinder the process of meeting the dietary requirements of the inmates. These challenges can range from the inferior food items being purchased for the inmates, food preparation, poor food handling, and unhygienic conditions in the kitchens or food being stored incorrectly. All these challenges have an impact on the quality of food which the inmates are consuming. Inmates then have deficiencies in micronutrients such as vitamins and minerals. Those inmates who have limited exposure to sunlight are also prone to a vitamin D deficiency and it should be kept in mind when correctional officials and health practitioners deal with high risk inmates which are kept in solitary confinement (Eves & Gesch, 2003:167; Murie, Messow & Fitzpatrick, 2012:457). Examples of poor vitamin D intake are those inmates with values between 3.3-3.4 µg. About 60% of the inmates were found to have a poor Selenium intake in a study done in 1997 by Eves and Gesch (2003:167).

Those following a vegetarian diet had also low levels of niacin, about 12.6 mg which is far less than the required 16.8 mg of those inmates which followed the normal 7 day meal plan. About 159 inmates took part in this study.

As the global population is estimated to reach over 9 billion people by 2050, the need to increase food production has become a great need. Developing countries face hunger and the scarcity of food on a daily basis. They are looking at ways to meet these demands and the role that home gardens can play. The popularity of home gardens has increased a great deal in addressing food insecurity and hunger. Food gardens in both the rural and urban areas have been seen to improve nutrition and food security in households. Developing countries such as those found in Africa, Asia and Latin America are having positive impacts on issues such as malnutrition and food insecurity. (Galhena, Freed & Maredia, 2013:8; Bleasedale, Crouch & Harlan, 2010:99) Other benefits are that home gardens are already a part of some of the rural households and this can be further used to improve their livelihood by increasing the household income when selling the produce on the local market. Home gardens can be a way of providing food when shortages occur on the local market but it can be a constant benefit to the households who choose to grow a food garden.

Food gardens are a means to improve food security but also develop economic growth. It is a sustainable and eco-friendly agricultural practice which has deep roots in especially the rural areas. As there are many benefits to home gardens it also depends on various factors such as the geographical area, the role of the climate, the involvement of women and the sustainability of the

home garden. The basic skills and a little bit of investment needed in capital and or seeds and plants are important factors in the effectiveness of the food garden to improve food security, nutrition and general income of a household. As women are mostly involved in agricultural practices and food gardens in rural areas they tend to come up against a great deal of obstacles. (Todaro and Smith 2015:458) These obstacles can range between the inability to obtain any financial assistance due to gender discrimination, lack of knowledge as women and girls are prevented from attending school and cultural traditions which prevent women from improving their lives. To obtain resources for their home gardens and probably to improve their methods through the use of technology is also a struggle as they could go up against traditional leaders who only believe in the traditional methods of cultivation which have been used for hundreds of years. The involvement of local governments, non-governmental organisations and international organisations are also involved in promoting and supporting home garden initiatives in various areas of the world. Where it is accepted people become involved and it becomes a means to improve their way of life and food and nutrition security is ensured.

The benefits of food gardens regarding nutrition have seen improvement in areas especially with micronutrients such as vitamins and minerals. Studies that have been done include nutritional improvement in children aged between 2 and 5 years old. This is when vegetables have been planted in the home gardens that are rich in micronutrients such as vitamin A for example (Faber, Venter & Benade, 2002:12; Talukder, Kies, Huq, de Pee, Darnton-Hill & Bloem, 2000: 165; Moreno-Black, Somansang & Thamathawan, 1996:5). The benefits of increased access, availability and the use of the produce from the home gardens help to improve food and nutrition security. It is not just an improvement in micronutrients but also an increase in the energy intake from the vegetables that were produced which are forming part of the daily diet of the households. Many home gardens do provide in staple crop which improves energy intake. As home gardens do not just include plant production but it also includes animal production such as livestock and poultry which enhances their diet with much needed proteins.

As home gardens are close to the dwelling places of the families that are involved it gives them easy access to the garden. Family members who help are normally women, children and the elderly and they help each other and become close. Traditions are handed down to the younger generations which preserve their way of life.

Furthermore, home gardens have environmental benefits since families use recycled water and controls dust and erosion. With greater education in biodiversity and better methods of irrigation and saving water home gardens can become sustainable.

When it comes to home gardens women tend to be the decision-makers but in African cultures they are not the decision-makers within the household. So, it is beneficial for women to be involved in home gardens in order to provide for their families and contribute in their own way. So, the status of women improves when they tend to a home garden.

So, food gardens are able to fulfil the various dimensions of food security which are availability, accessibility and utilisation of food. The nutritional quality is what needs to be worked on by all home garden owners and therefore education is important so that they can be trained about the type of vegetables to plant, treating the vegetables and in the end good harvesting methods. Furthermore, the storage of the vegetables is important as well as the cooking methods. When these measures are in place, the quality of vegetables that the food gardens produce can be the best vegetables with good nutritional value and on consumption as well. The Helen Keller foundation is a forerunner of training when it comes to their food homestead project. (Helen Keller Foundation, 2011:6)

Through skills development in agriculture inmates are being rehabilitated. Rikers Island, in the USA, is a good example. The horticulture programme and vegetable farm of Rikers Island involves both male and female inmates since 1996. The success of the programme lies not just with investment and the involvement of external stakeholders but also the fact that on release the ex-convicts come back to the programme as paid interns. Employment, learning and being productive citizens prevents the issue of recidivism (Jiler, 2006:19). Rehabilitation through vocational agricultural programmes also proved to be successful.

The Ouagadougou Declaration was formulated in the 2002 pan-African seminar in Burkina Faso due to little improvements made in African prisons regarding the skills development with rehabilitation in mind. The focus of the Declaration's Action Plan was to develop the potential of the inmates to empower them to lead crime-free lives once they are released. In African prisons it was found that vocational, educational and occupational training are being promoted, but not so much on psychosocial and behavioural aspects of rehabilitation due to the lack of skilled personnel. In countries such as Tanzania and Zimbabwe skills development and rehabilitation are a huge part of reforming the inmates, but the involvement of the inmates is different in all African countries. Furthermore, a distinction must be made between sentenced inmates and those awaiting trial (unsentenced inmates). In South Africa the Correctional Services Act no. 111 of 1998 (Republic of South Africa, 1998) makes provision that the pre-trial inmates may be involved in such rehabilitation activities. However, they are excluded in the Correctional Services White paper as their stay might be short-term as well as a lack in resources (Dissel, s.a.:164).

Discrimination against women is a major factor. In poor communities, they are often marginalised. Girls are often not sent to school or they are taken out to take care of the household tasks or to earn

an income. Early forced marriages are also a major issue and because the girl child will be part of the husband's family, it is not beneficial to educate them. However, the education of girls and women has far reaching effects. Health care, nutritional status, infant mortality rates and maternal health will improve. Therefore, when girls and women are educated, we ensure a better future for humankind (Global Partnership for Education, 2018). The same goes for female inmates and they should be educated in both formal education and skills development. According to a study done by Dinkel and Schmidt (2014:229) education and specifically health education of incarcerated women involves respect, trust and empowerment to improve their personal health and the health of their families. The clinical relevance of creating policies and manuals that focus on female health education improves their knowledge and skills, which empowers them to look better after their families once they are released. The reduction of recidivism amongst female ex-offenders is made possible. An example of improved general health and well-being in a female correctional facility is Styal in the United Kingdom. This correctional facility uses the food gardens to educate and improve literacy levels and basic health education of the women involved.

Through this programme the female inmates become peer educators and have therefore a far-reaching positive effect on health and nutritional status especially when they are released from prison. (Baybutt, Acin, Hayton & Dooris, 2014:182)

Shekar (2015) emphasises the fact that without agriculture there cannot be food or nutrition, however food made available from agriculture does not necessarily provide good nutrition. The disconnect between farmers having good nutrition in mind for the end user is most often true and basic economic growth is rather the focus. With the help of the efforts of the World Bank and their visionary report to end world hunger by 2030, it makes a plea to all role players to work together to change the global food system to end world hunger by the year 2030. Agricultural activities should now use techniques that are climate-smart and focus on improving nutrition and have efficient value chains that are inclusive for all (Townsend, 2015). The report emphasises that should under-nutrition, malnutrition and hunger be addressed, poverty can be reduced dramatically. Under-nutrition especially is the main cause of 45% deaths of children under the age of 5 every year. Furthermore, at least one in three children is stunted who live in the developing countries. Stunting is a major health problem as it leads to long term development problems both intellectually and physically. Stunting also has an impact on the pool of human capital that will be available in the future as it will impact negatively on agricultural productivity and economic growth. (Townsend, 2015)

According to the International Food Policy Research Institute (IFPRI) hunger, malnutrition and poor health are huge challenges facing the developing countries and agriculture can be a means to improve the lives of poor farmers as well as consumers in developing countries, including the rural poor. A research programme called Agriculture for Nutrition and Health (A4NH) led by the CGIAR

focuses on consumption of affordable, healthy and safe foods. The research programme does not focus so much on supply, but rather on the healthy food that is being produced and all the problems that arise in the rest of the value chain. This is a critical part in making sure all people everywhere actually consume healthy food. The availability of health care services is also recognised in the programme which improves the health of the population. In this way they provide a new viewpoint on the relationship between agriculture, health and nutrition. Improving food and nutrition security for health by focussing on safe foods, access to food, healthy food preparation techniques and access to health care facilities, communities and governments can improve on under-nutrition, malnutrition and hunger. (Agriculture for nutrition and Health, 2018)

Under-nutrition is a major concern regarding the health of people in especially developing countries. To improve the situation, food production through agricultural activities is used to contribute to the improvement of nutrition (Turner et al., 2013:372). There are several ways in which agriculture can improve nutrition such as improving the availability and access of nutritious food through the quality of diets, the income of households as well as the empowerment of women (Ruel, Quisumbing & Balagamwala, 2018:148) Despite growth in agriculture, the prevalence of under-nutrition remains (Turner *et al.*, 2013:369; Ecker, Breisinger & Pauw, 2011:245) Therefore, the answer does not lie in agriculture alone but also in the involvement of other role players.

As the focus today is more on feeding the world's nine billion people by 2050, agriculture is again on the forefront to address this concern. There was a big debate about its effectiveness in reducing poverty and economic growth as it was seen in the 1960's and 1970's as an unproductive and unsustainable sector. Agriculture was viewed as a sector which was and is used for its resources and labour for development in the industrial sector. However, due to the scientific development in agricultural techniques with the green revolution in countries in Asia in the 1980's, agriculture became a major role player to enhance economic growth and reduce poverty. (Krueger, Schiff & Valdés (1988:257) This study also found that policies that were in place during this time were not beneficial to farmers and this took place especially in developing countries. Since the 1980's a great deal of change has taken place in the formulation within the agricultural sector. Developing countries have opened up for trade. (Anderson, 2010:195)

The poor will especially benefit from being involved in agricultural activities if the agricultural intervention programmes, with the improvement of nutrition in mind, occur where the poor are located. As the poor live mostly in rural areas and make a living in agriculture, agricultural growth will be helpful to their state of well-being. It provides in the food, livelihood and income to the rural poor. Agriculture is the main livelihood of about 80% of the rural poor and 70% of the agriculture labour consists of women. (Ruel et al., 2013:538) Should their income increase due to agricultural growth, their health, nutritional status, access to better health care and overall well-being will

improve. The greatest asset that the poor use within the agricultural sector is their unskilled labour and this can be improved when they receive some form of education and most often basic literacy skills. The cycle of poverty can be broken, and their lives be improved. Christiaensen, Demery and Kuhl (2011:239) believe agriculture can make a significant reduction in poverty among the poor, compared to other sectors. It is 3.2 times better in improving the \$1-day headcount poverty in the low-income countries.

When the Millennium Development Goals were adopted by the United Nations member countries had a strong focus on reducing poverty and all were required to make every effort to reach the targets which were set. The poor themselves were being included in the process including agriculture and can be successful in the implementation of the new goals.

The Millennium Development Goals developed into the Sustainable Development Goals which focus strongly on sustainability of resources.

The reduction of poverty through agriculture is another focus point especially with the natural resources that are locally available. Education and reduction of inequality is also very important to reduce poverty.

For the poor to be involved in obtaining their own independence being able to generate an income and a livelihood, will give them a sense of pride and enable them to continue to be able to look after themselves, their families, their livestock and land. However, support from their community, cultural leaders and even the local government is important so that these farmers generate a sustainable living. It is essential to have a safe environment in order to make any headway. Government officials need to be supportive and not corrupt. To have a stable political environment is another aspect that must be considered to promote free trade and this will allow farmers to have access to the market. It will improve their chance of food and nutrition security.

### **2.3 Conclusion**

From the literature review it is clear that although food and nutrition security is one of the aspects that must be addressed in correctional facilities worldwide to ensure that the inmates are well taken care of as required by law. In some areas the nutritional well-being is lacking and the need for supplementation is required. The health care facilities are not always up to standard and the implementation process of the best laws and policies cannot ensure that the inmates at ground level receive the health care they need. There are many obstacles in the path of food and nutrition security and should be addressed by each country in their own way with the resources that they have available. The health division of DCS should be fully functional and have medical staff and dieticians available to the inmates for proper and good health care.

The agricultural division in DCS is definitely a means to ensure and improve nutritional health of the inmates. However, this division must be sustainable to make a significant impact on the nutritional aspect of the inmates' health. Food gardens have proven to be of great value and should be advocated as much as possible as it has so many advantages like decreasing poverty, improving nutrition, health and income as it creates stability in peoples' lives. Correctional centres and agricultural farms of DCS who really put effort into all the agricultural activities have a positive effect on the general well-being of the inmates as it improves their sense of responsibility and willingness to change and become productive citizens.

The conceptual framework of Turner *et al.* (2013:372) will be used to address the research questions regarding the ability of DCS to provide food and nutrition security to the inmates that they incarcerate. The guiding documents of DCS will be analysed to see whether the link between agriculture is made and how effective it is being implemented should it exist. Interviews, questionnaires, informal conversations and observations will also aid the researcher to address the research questions and be able to come to a conclusion and provide recommendations as well.

## Chapter Three: Research Results

Through the researcher's efforts with the questionnaires, interviews, observations and informal conversations done at the Breederiver and Brandvlei Management Areas the results were the following research findings. With the literature review as background the data was assessed as well as the guiding documents and policies of the agricultural and health division within the Department of Correctional Services. The results will be presented in this chapter in the form of the conceptual framework of Turner *et al.* (2013:370). Firstly, the impact of what happens on a national level of South Africa will be presented which has an impact on the linkages between agriculture and nutrition. Secondly, the findings of the direct linkages and lastly the findings about the indirect linkages will be presented.

### 3.1 National level

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The Department of Correctional Services is an institution which works on national level so it is governed by national policies. According to the conceptual framework of Turner *et al.* (2013:370), the following will be discussed: Policy and Governance; Political and Economic context; Culture, Gender and Equity as well as Climate and Environment.

#### 3.1.1 Policy and Governance

The importance of agriculture was emphasised by President Cyril Ramaphosa in the State of the Nation Address in 2018, when he said, "agriculture presents one of the greatest opportunities to significantly grow the economy and create jobs." So, to provide the inmates with a good chance to get work in agriculture, the full time school in the DSC in the Eastern Cape offers Agriculture Science at school level up to Grade 12. This provides the inmates with an opportunity to study and enhance their chances through formal education and skills development. With this qualification inmates become more employable when they are released. (Annual Report 2017/2018)

The Agricultural Division of DCS is guided by a wide range of legislation and must always comply with those acts. There are about 28 different Acts and include the Correctional Services Act 111 of 1998 and its Amendment Act 25 of 2008; Public Finance Management Act 1 of 1999; Animal Identification Act 6 of 2002; Animal Health Act 7 of 2002; Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947; Foodstuffs, Cosmetics and Disinfectants Act 54 of 1972 as well as its Amendment Act 39 of 2007; Environmental Conservation Act 73 of 1989; Occupational Health and Safety Act 85 of 1993 and the National Forest Act 22 of 1984. DCS has succeeded in incorporating all the necessary acts in the agricultural division and is taken up in the Agricultural Procedural Manual, Farm Plan and Mechanization Plan. (Agricultural Procedural Manual, 2016:2)

Some of the relationships that should be forged between the government and other role players are a relationship with the civil society. DCS has been successful in this regard with an agreement that was made with the Agriculture Research Council through the Service Level Agreement. (Annual Report 2017/2018) The Scientific and technical knowledge of the Agriculture Research Council is being put to good use in DCS and the results can be seen in the improvement of production in the financial year. These types of relationships have been made so that DCS can also get help in order to become self-sufficient and save the department money by producing food themselves rather than having to buy such produce at a greater cost. The offenders are getting work experience in the agricultural field; being trained well and helping them boost their work ethics.

Skills development programmes in DCS allow inmates to develop themselves. Another partnership was formed between the Safety and Security Sector Education and Training Authority (SASSETA) and through this partnership about 500 inmates were trained in different skills such as welding, plastering, textiles development and agriculture. Furthermore, DCS also forged a partnership with the Tshwane North Technical and Vocational Education and Training College. A learnership programme in basic agriculture and cabinet making was started at the Zonderwater Management Area. This project was funded by the College and the community of Tshwane and DCS drove the project. 15 inmates, 25 parolees and 25 community members were part of this project. Other TVET colleges were also involved in such training programmes around South Africa and the parolees and probationers received an income of R2 500 per month for 12 months while they received training. The 2017/2018 financial year was a good year for DCS as 1 494 parolees and probationers were trained through partnerships with other organisations and they were employed by external stakeholders. These partnerships are very important in the interventions and rehabilitation of inmates so that they can be fully re-integrated in the community again. (Annual Report 2017/2018)

DCS has several strategic outcomes-orientated goals, and one of them is Strategic outcomes-oriented Goal 3. This goal focuses on the successful re-integration of parolees, probationers and offenders back into society so that they can become upstanding citizens. It can only be achieved through the rehabilitation and social reintegration programmes. This is taken from Chapter 9 of the National Development Plan of South Africa and the contribution that DCS makes to these goals is reflected into various outcomes. One of them is to develop a skilled and capable workforce to support an inclusive growth path. For the year 2017/2018, many work opportunities were created and training done in agriculture such as training in the piggeries, dairies, vegetables, orchards, small stock, beef farms and abattoirs.

Offenders furthermore, are trained in the production of butter and the processing of vegetables. Overall around 3 307 offenders worked in agriculture on a daily basis. (Annual Report 2017/2019) DCS uses various methods to make sure that the best service is delivered in the department for the South African public when it comes to safeguarding the inmates and in the rehabilitation process of

such inmates. In order to achieve their goals, a Draft Service Delivery Improvement Plan (SDIP) was developed for the 2017/2018 financial year and the table below is a reflection of the service delivery plan and the achievements made for that year.

**Table 1** Service Delivery Plan and its achievements (Annual 2017/2018)

Main Service	Beneficiaries	Current/Actual Standard of Service	Desired Standard of Service	Actual Achievement
To provide offenders with educational programmes during their confinement.	Offenders	11 444 (According to the Service Delivery Improvement Plan for 2015/16)	10 855 (2017/18) target	10 014 inmates attended educational programmes as indicated by the daily attendance registers.
Correct offending behaviour by providing sentenced offenders with needs based correctional programmes	Offenders	64% (61 049/95 198) (As indicated in the Service Delivery Improvement Plan for 2015/16)	76% (81 432/107 145) (2017/18) target	82% (86 518/105 309)

For the first main service DCS aimed to provide 11 444 inmates with an educational programme. DCS aimed to train at least 95% for the 2017/2018 financial year, however DCS was able to achieve only 87.5%. This means nationally DCS underperformed in this regard.

DCS was able to meet their target and exceeded their target of 64% which was set out in the Service Delivery Improvement Plan of 2015/2016 in providing correctional programmes to the offenders. For 2017/2018 DCS wanted to reach 76% and exceeded it with 6% for that financial year.

The Directorate Development and Care is run entirely on the implementation of sound policies and the compliance of legislation. Both the agricultural and health divisions of DCS have strict rules and regulations in place for the smooth running of these two divisions. Through proper monitoring and evaluation this is achieved.

Continuous monitoring and evaluation are done daily, monthly and annually to ensure that the proper procedures are followed, that targets set are met, and that quality service is rendered.

All relevant government agencies are required to work together to achieve their goals. It is clearly seen in the documents of DCS that a range of government agencies as well as the private sector, and civil society in the form of the labour unions must be involved to ensure food and nutrition security within the Department of Correctional Services.

The focus and goals of political parties determine the effective implementation of policies and cooperation between government agencies. If the drive for the improvement of the nutritional status in the country does not come from its leaders, then the implementation will not happen in the government agencies. In the Department of Correctional Services having a nutrition section, a health care division and agricultural division shows the level of awareness and commitment to the nutrition-related programmes run in DCS.

### **3.1.2 Political and Economic context**

When politicians are not on board, as stated by Gillepsie, Haddad, Mannar, Menon and Nisbett (2013:557) nutrition takes a back seat and they do not provide any help especially when it comes to making funds available. In general, a great deal of sound evidence is needed to convince government to act and back nutritional programmes or initiatives. As health issues are not always clearly visible, politicians do not give support, but through greater awareness, education and pressure from communities, the government does not have much choice but to change the way they do things. For instance, an example would be the influence that the Food Consumption Survey of 1999 in South Africa on children aged 1-9, had on the Health Department. Due to the survey the 11 Food Based Dietary Guidelines were formulated and governs the Department of Health (Vorster, Badham & Venter, 2013:5). The Integrated Nutrition Programmes was another initiative which resulted from the national food consumption survey. This deals with under-nutrition and growth. Feeding schemes were also introduced at schools. Furthermore, policies were formed and implemented for the fortification of wheat flour and maize to alleviate under-nutrition. Health care facilities started to provide supplementation of vitamin A and Iron as part of the health programme for children under age of 5. Zinc supplementation is also important especially as it protects against stunting in children (Black, Christian & Katz, 2013:1). The children that stay with their mother in a correctional centre are also subject to supplementation and must follow the Road to Health programme as required by the Department of Health.

A stable political and economic environment allows a country to focus on the implementation of policies, however when the environment is unstable, unrests and uncertainties occur and issues such as the safety of the citizens take precedence. Due to the current issue in South Africa regarding the land expropriation without compensation has a destabilising effect on the economy of the country.

Possible effects on DCS would be the availability of breeding stock or other produce that will cost more due to the imports of such products in the local market should a shortage occur in South Africa.

When the Minister is politically appointed it becomes very problematic when he/she does not understand the role that CDS plays especially with the agricultural and health divisions to ensure

that the health and nutritional needs of the inmates are met. However, with the help of the Commissioners of DCS and their teams countrywide, they are able to run the various divisions in DCS with ease.

### **3.1.3 Culture, Gender and Equity**

Good work ethics in the work environment of DCS will ensure that policies are effectively implemented. In the case of the agriculture and health divisions in DCS many structures and procedures are in place to ensure the smooth implementation of required manuals and related legislation. However, in the employment of correctional officials, equity and gender is considered and at times is an advantage but could be a disadvantage especially when the work suffers. When speaking to the correctional officials working in the agriculture division it is a security risk to have female officials working with male inmates. There are always a male correctional official working together with the female correctional official at the various agricultural farms but most of the time they are working as administration clerks. Very few are actually working in the field.

The Annual Report of 2017/2018, states that 18 280 African males are employed by DCS compared to the 11 433 African females. Also about 133 African males with disabilities have employment in DCS compared to the 90 African females. These are the totals as at 31 March 2018.

The culture and gender of the inmates are taken into consideration, especially when it comes to the meals that are served. Service providers on the other hand that take part in the tender processes are required to comply with certain specifications such as a BBBEE company. National and Provincial Treasury regulations compels compliance in these tender processes to which DCS must observe. By following these processes it prolongs the procurement of much needed equipment such as experienced by the agriculture division of Breederiver Management Area. They are in dire need of a water pump that was broken and cannot be fixed. So, they went through the procurement process several times because the companies that were able to provide the water pump for them lacked in some of the requirements.

The Brandvlei Management Area houses only male inmates and therefore it is easier to manage agricultural activities for them. A management area such as Breederiver has a correctional centre for male and one for female inmates. The vegetable gardens which they tend to are done by the male inmates.

Male and female inmates must always be kept apart and cannot work in the same vicinity. Should the females be used to work in the vegetable gardens a female correctional official must also be involved to supervise them. To keep things simple, only male inmates are used.

According to Todaro and Smith (2015:458) women who live in Africa and Asia are amongst the very poor who are mostly involved in subsistence farming. About 70% of these women participate in all the processes involved in the production of food. For instance, they are involved in all farming activities right up to the preparation of the food itself. Therefore, it would be good, where possible, that female inmates are also involved in the vegetable gardens because women are mostly involved in the health care of families, nutrition and the preparation of healthy meals.

#### **3.1.4 Climate and Environment**

Climate plays a huge role in all agricultural activities. The different seasons influence the planting schedules as this is planned for in the Farm Plan (Brandvlei Management Area: Farm Plan, 2018/2019). Factors such as drought and floods influence harvests. A correctional centre farm such as Brandvlei Management Area has several water sources that were affected by the drought. It was so severe that the planting schedules could not be followed. From the interviews held at Brandvlei Management Area, water is obtained from the Brandvlei Dam that is adjacent to the farm, mountain water, the Water Scheme and bore holes. However, there are restrictions to these water sources due to the receding water levels of the Brandvlei Dam; it would not have been financially beneficial to obtain water from all these water sources. The Water Scheme was also only providing water to Brandvlei Management Area twice a week which was not enough. Consequently, the option to deviate from the planting schedule was a wiser option. The water available had to go to the animals to avoid needless loss.

The agricultural division is subject to various environmental legislations. These include fire prevention and fire control legislations.

The parks, nurseries and beautifying of the official terrains are the responsibility of either the Area Commissioner or the Agricultural Division depending on the management area. Nature conservation on correctional centre farms is promoted and the protection of natural resources, animal and plant life. Chapter 7 of the National Environmental Management: Biodiversity Act compels correctional centres to protect all animal and plant species that are threatened by extinction (Agricultural Procedural Manual, 2016:130-132).

Dams found on the correctional centre farms are inspected according to the category in which they fall. Category 2-3 dams are inspected every 5 years by an approved professional engineer. Category 1 dams are inspected internally. Pollution should always be prevented, and the National Environmental Management Act governs such activities (Agricultural Procedural Manual, 2016:139).

Soil erosion is combatted through the proper utilisation of the soil. Run-off water should be prevented, or its flow decreased as far as possible. Correctional centre farms have grazing programmes which assist in the prevention of soil erosion through grazing.

Grazing then should be properly managed. The Department of Agriculture, Forestry and Fish must be contacted to assist in areas of the correctional centre farm where soil erosion has occurred to improve the conditions. Water pollution should also be prevented, and the Department of Water works can assist not only in the prevention of water pollution but also optimal use of available water resources. To manage the air quality, noise and odour pollution the Area Commissioner of the different management areas are compelled to work together with the Department of Public Works and implement all regulations that are set out by the Minister of Environmental Affairs (Agricultural Procedural Manual, 2016:143-144).

## **3.2 Direct Linkages**

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### **3.2.1 Agricultural inputs**

When looking at the conceptual framework of Turner *et al.* (2013:370) one of the direct linkages between agriculture and nutrition are the agricultural inputs. In DCS there are plant production and animal husbandry.

Plant production consists of fodder, orchards, vegetable units and herb gardens. Animal production consists of dairies, beef cattle, pigs and small stock such as chickens, goats, sheep, mules and horses. So, a variety of products are being produced for the market which is the prison population. The produce is distributed for a specific region and surplus must be reported and distributed to the neighbouring correctional facilities or those areas which either have a shortfall or where the need arises. Fertilisers are applied to soil and vegetation according to a fertilisation programme which is set out by external providers (Brandvlei Management Area: Farm plan, 2018/2019).

Inmate labour is used for this process and for irrigation according to the labour team to which they belong and supervised by the correctional officials. All machinery and implements are listed in the mechanisation plan, the maintenance, condition and working hours are all set out to determine their work capacity and whether the machinery will aid the agricultural project to reach their targets at the end of the month when it comes to the yield produced. Continuous record keeping is of the essence and takes up a great deal of time of the correctional officials especially since the work needs to be done as well as the administration. Weekly reports must be filled in to make sure that when the monthly checks are done, everything correlates.

The correctional officials find it difficult to balance working on the farms, doing administration as well as being security members as well.

They have to report on a regular basis on their production progress and when they are used for security inside the prisons they cannot perform their duties on the farms or vegetable gardens and at times are underperforming. The frustrations regarding the continued shortages in staff put a great deal of strain on the correctional officials working on the farms and they become despondent and very negative.

Furthermore, there is a general perception that the correctional officials have, is that the unions often do not have their best interest at heart because the promotion and annual increases are not implemented as should be. The system of rewarding good work through the performance bonus system is seen often as just more paperwork and correctional officials are not rewarded according to their actual work performance but rather on a buddy system. So, there are quite a few areas which correctional officials find difficulties in regarding their work environment especially on the farms.

### **3.2.1.1 Resources**

With the continued financial limitations that DCS has been experiencing for the last few years through the 'belt tightening' and 'cost containment' initiatives implemented in the department, it has been difficult for the various components to operate. However, they were able to manage. Correctional officials responsible for the budgets in their various components have learnt not to waste their resources but use them optimally. According to the DCS Annual Report of 2017/2018, DCS has done well to optimise production in all the farming activities but especially in milk, chicken, meat, fruit and vegetables.

The Department of Correctional Services however can still provide in a wide range of resources to the correctional centre farms. Brandvlei Management Area boasts of 700 ha of soil but due to the different types of soil, which is available in small portions and the influence of the winter rainfall, plants tend to drown (Brandvlei Management Area: Farm plan, 2018/2019:1). These factors influence the productivity. Soil, water, labour, machinery and transport, stores, finances/budget, experts from private organisations and management are all aspects covered in the daily running of the correctional centre farms.

Experts are used continuously in the daily running of the agricultural activities. Experts such as private veterinarians for animal health, slaughtering and meat production are used. Private companies test the water and soil quality, as well as private companies which set up the mechanisation plan for a specific correctional centre farm. Local municipalities also do inspections such as checking conditions at the cow sheds at the dairy.

### 3.2.1.2 Labour

Inmate labour is used for agricultural activities. They are paid a form of gratuity to improve self-worth and self-image for their labour. An example of gratuity for the inmates working at a diary is done by classifying them under 3 different levels and each level has 2-3 notches. An inmate that has been classified under Level 1 notch 2 is paid R1.25 per day and up to R29.25 per month.

This is the lowest one. An inmate which falls under Level 3 notch 2, which is the highest one, is paid R6.65 per day and up to R149.10 per month. As seen in Table 2.

As stated they are paid a gratuity and therefore cannot be earning a market-related minimum wage because the focus lies upon rehabilitation and training of offenders. The record keeping is done at each correctional centre for instance when the correctional official takes out his team. The days which the inmates have worked are recorded and payment is made whereby the inmate is able to make purchases for that amount of money earned at the prison shop. So, they are not paid in cash. The gratuity is done according to their security classification, the type of offence they have committed, and how long they have been working on the team. The Case Management Committee (CMC) is responsible for the classification of the inmates and thus this influences their gratuity which they receive.

**Table 2:** Inmate labour gratuity (Financial circular 2018/2019)

<b>Gratuity of inmate labour</b>		
<b>Level 1</b>	<b>Daily tariff</b>	<b>Monthly tariff</b>
Notch 2	R1.25	R29.25
Notch 3	R1.90	R45.10
<b>Level 2</b>	<b>Daily tariff</b>	<b>Monthly tariff</b>
Notch 1	R3.35	R74.50
Notch 2	R3.80	R85.70
Notch 3	R4.45	R99.50
<b>Level 3</b>	<b>Daily tariff</b>	<b>Monthly tariff</b>
Notch 1	R5.70	R129.00
Notch 2	R6.65	R149.10

According to the DCS Annual Report of 2017/2018, the average offender labour that was used in the production workshops was 1 546 offenders. They were involved and worked in bakeries, kitchens and as food handlers. On average this number dropped with 219 when one looks at the performance of offender labour during 2016/2017. The reason for this decline was reported to be because of the vacancies found in the posts of members in this area on a national level. On the other hand the average offender labour used in agricultural activities for 2017/2018 found an increase of 39 offenders from 3 268 to 3 307. This slight increase was reported to be because more offenders qualified to work on the farms and that agriculture was promoted as a good way of earning an income

once the offenders are released. While the inmates are in prison they also earn some money and are able to buy needed items at the prison tuck shop. This is a good opportunity for inmates who seldom get a visit from friends and family.

### **3.2.2 Agricultural practices**

Each agricultural project has its own time frames. The planting schedules are for plant production (fruit trees and vegetable gardens) as well as fodder. However, they are subject to the environmental and weather conditions. Availability of resources such as soil, water and others determine whether the targets for the harvest yields can be met. Restrictions regarding the type of vegetables and orchards that are planted are determined by the potential of the soil.

The requirement for the analysis of soil is that more than 5 hectares of arable land is available for plant production and soil sample should be taken twice a year and every third year when less than 5 hectares are used (Agricultural Procedural Manual, 2016:20).

The smaller correctional centre farms have adopted more of a home garden system. A variety of vegetables is planted in season and is done on the same principle as the correctional centre farms. They tend to just focus on vegetables. The correctional centre farms have 3 or more agricultural activities going on and are classified as farms. The smaller correctional centre farms usually have only a small area available to them that goes up to about 2.4 hectares, such as the Breederiver Management Area in the Western Cape. So, from the Farm Plan the requirement is that 25 tons of vegetables must be produced per hectare plus 5%. The 2018/2019 objectives showed that the Breederiver Management Area should produce at least 349 300 kg of vegetables for that financial year.

The big-scale correctional centre farms receive their objectives on an annual basis. The agricultural division of Brandvlei Management Area had to produce 39 000 kg of vegetables for the 2017/2018 financial year. However because of the many challenges that they faced because of the drought, they under-performed and could only manage to produce 284 804 kg of vegetables. Furthermore, the orchards also were not able to reach their target of 35 000 kg of fruit for that particular year and were able to produce only 8 850 kg. Due to the drought they lost 2 orchards which greatly influenced their performance in this area. On the other hand Brandvlei Management Area was able to reach their targets in milk and meat production. For milk the target was 400 000 L and 469 239 L of milk was produced. 40 396 kg of red meat were produced with a target of 40 000 kg. (Jackson, 2019)

### **3.2.3 Food value chain**

A proper food value chain does exist for all agricultural activities in DCS, which ranges from the storage, processing and distribution. See figure 4.

The only aspect of the value chain which is not fully covered is retailing as the produce is seldom sold to the outside market, but it does occur. Breeding, purchasing and marketing are done according to the Animal Identification Act 6 of 2002 (Agricultural Procedural Manual, 2016:48-89). Tenders are also put out for the purchasing of animals for breeding and these are determined by the Public Finance Management Act 1 of 1999 (Republic of South Africa, 1999).

The Logistical Procedure Manual is used to stock all other supplies that are bought for agricultural production.

Requirements for the storage, processing and distribution are set out clearly and recordkeeping is done weekly to make sure that no loss occurs. Recordkeeping is kept for storage of fruit and vegetables, fodder and in animal husbandry. However, control measures must be tight to eliminate loss through poor storage, processing, packaging and distribution methods or theft.

At Brandvlei and Breederiver Management Areas theft is a problem at times when correctional officials do not manage the stores properly. On the other hand the public also cut the fences and steal some of the vegetables at the Breederiver Management Area and it is easily done as the correctional facility is near the residential area. There is also a walking path along the fence where the vegetable gardens are. At Brandvlei Management Area sheep can be stolen when they graze near the fences. Close monitoring of the farm is done, however at times it is not good enough to prevent loss through theft.

Service level standards are set for each project and their operations are evaluated accordingly. Meat production are evaluated against the Beefer Performance Scheme and milk production against the Milk Recording Scheme which are also set for the national meat and milk production for the commercial farmers in South Africa. As these measures are set in place it makes it much easier to do monitoring and evaluation. The production of the correctional centre farms is thus at a standard which ensures that production and training of offenders can be done.

Distribution of produce is spread throughout a designated region and the prison population within the region is the market place of the correctional centre farms. Wherever there is a shortfall it is reported to the Regional Commissioner and arrangements are made to fill the need. So, a continuous supply of food is available for the inmates. This is a major factor in food and nutrition security. Access to food and availability of food is ensured and the variety of food being provided is done so that the nutrition needs of the inmates are being met.

Food security according to Leroy, Ruel, Frongillo, Harris and Ballard (2015:169) consists of 4 dimensions namely availability, access, utilisation and stability with outcomes of good nutritional

status, physical, mental and emotional well-being. Food security includes aspects relating to enough, safe, nutritious and culturally acceptable food and that is what DCS seems to be doing.

Fresh produce once harvested is directly packaged for either distribution or storage. Each agricultural project has their own set of rules when it comes to packaging and storage. For maximum nutrient retention packaging and storage is crucial and when it comes to vegetables, they are harvested early morning and kept unwashed. Bruising is kept to a minimum when the vegetables are packaged, stored or distributed.

Milk is pasteurised, and butter and cream are made and used for inmates as part of their diet. At the dairy, the milking process, pasteurisation, extraction of cream from the milk and the making of butter are all mechanised thus making the process much easier. Labour saving techniques are essential in the training of offenders so that they can operate such machinery and for efficient food production.

Saving time is another benefit in having machinery to assist in the production process especially when looking at proper fencing, quality seed and time constraints of women (Faber *et al.*, 2011:27). The Mechanisation Plan deals with the number of hours that a tractor for instance should be utilised annually. However, these calculations are possible in theory and can differ from what happens on the farm due to unforeseen circumstances or work conditions. As stated in the 2018/2019 Mechanisation Plan for Brandvlei Management Area, the average hours per tractor per year is 1 205 hours. The numbers of tractors per correctional centre farm specialise in different agricultural activities and therefore will have different Mechanisation Plans.

The Bakery falls under the Production workshops and its functionary depends on the structure of the management area. At Brandvlei Management Area, it falls under the agriculture. The correctional officials were trained in the baking process and operating of the equipment. The inmates undergo the same training. The bakery provides brown bread daily to the whole management area – meaning all three centres at Brandvlei Management Area. The same hygiene principles are implemented at the bakery and inmates are required to wear the official overalls and safety wear. Inspections are done regularly to make sure that the hygiene and cleaning procedures are adhered to. The procurement of ingredients is done through the normal purchasing procedures through the financial division – Logistics and Supply Chain.

### **3.3 The impact of agriculture on nutrition**

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Monthly meetings are held between the agricultural and health division especially at the correctional centre farms such as Brandvlei Management Area. Aspects are discussed such as:

- the meal plan for the inmates;

- hygiene in the kitchen;
- purchases by Logistics;
- the availability of agricultural products;
- the control of quality of both purchases and agricultural produce;
- storage of rations;
- the preparation and serving of food;
- the financial status of the divisions;
- as well as combating of smuggling and theft of rations and ingredients.

If they were not able to, then follow up should be made to see what they could do to fix the problem. Furthermore, the Head of Centres reported that the inmates were unhappy with the amount of fat on the pork cuts that they receive to eat because it was according to them more fat than actual meat. In the meeting the participants agreed that meat cuts should be checked for the layer of fat and the correctional centre farms that rear pork should look into the fat layers. The pork should have a thin layer of fat and when they are prepared the fat should be cut off. They agreed to continue to monitor this problem.

### **3.3.1 Nutritional status**

The nutritional status of the inmates is determined through a health check on submission to a correctional facility. The health care practitioner, either a professional nurse or dietician will assess the health of an inmate and the meal plan will be assigned. If the inmate is in good health with no specific dietary needs he/she will follow the normal diet. It consists of a 12-day cycle with the food items and portion sizes (rations) listed for a breakfast, light meal and the main meal. See Annexure E for the 12-day meal plan. It is used by the medical practitioners, professional nurses, dieticians, food service officials and the inmates who are involved in prescribing, preparing or serving of the therapeutic diets at correctional centres. The guiding documents of the health division of DCS are the Approved Nutritional Document of 2016 and the Therapeutic Diet Manual (Brandvlei Management Area, 2016). These documents are guided by the Nutrition Guidelines of the Department of Health. The Chief Deputy Commissioner Incarceration and Corrections approved these documents and may amended them should the need arise.

The Approved Nutrition Document of 2016 contains the ration scales, the 12-day cycle meal plan and the protein issuing pattern. The Therapeutic Diet Manual is very concise in its description of the types of foods permitted and those to be avoided for each therapeutic diet, their prescriptions and measurements. The procedure relating to each therapeutic diet and the role of each correctional official involved in either the preparation of meals or the administration of the meals is well defined in this manual.

So, to clarify a normal diet is derived from the South African Food Based Dietary Guidelines of 2013. It includes all the different food types such as milk and milk products, meat and meat alternatives,

fruit and vegetables, carbohydrates and fats. The diet encourages a variety in food to be taken in and is seen in the 12-day cycle meal plan. The Recommended Dietary Allowances (RDA) requires that a diet should contain all the necessary nutrients for a healthy body to maintain good health, for repair and growth, and the normal diet fulfils these requirements.

A therapeutic diet is when the normal diet has been adapted to meet his or her specific nutritional needs where certain health problems may be experienced. A therapeutic diet is assigned to an inmate for the treatment of an illness or preventing the development of an illness or preventing the weakening of the inmate's health condition (Therapeutic Diet Manual, 2016).

Therapeutic diets are classified as either being a qualitative or quantitative diet.

**Table 3:** Therapeutic diets

Therapeutic diets	
Qualitative diets	Quantitative diets
Liquid diets	Increase or limitation of nutrients e.g. high protein diet.
Changes to the texture of the food e.g. mechanical soft diet.	Adaptation of the ratio and balance of food ingredients e.g. proteins, fats and starches e.g. diabetic diet.
	Increase or decrease of energy values in the diet e.g. inmates who need to reduce weight.
	Elimination of specific food items e.g. gluten-free diet.

(Adapted from the Therapeutic Diet Manual, 2016)

The qualitative diet is basically an adaptation of the normal diet and allows certain foods in the diet such as a patient/inmate who is unable to tolerate solid foods who will be receiving a full liquid diet. The quantitative diet is a diet which increases or limits the intake of certain foods and thus certain nutrients, for example a patient/inmate who suffers from high blood cholesterol is placed on a low fat/cholesterol diet.

What makes the therapeutic Diet Manual a workable document is that it lists the food which is allowed in the diet as well as those food items to be excluded from the diet according to the different food groups. Furthermore, a daily meal plan is set out for breakfast, main meal and a light meal. This therefore gives guidance to the food service officials regarding the specific diets that must be prepared with the available ingredients provided by the agricultural division.

When there are limitations to what the agricultural division can provide it creates problems for the kitchen and the meal plans that the inmates need to follow especially the therapeutic diets. For instance, there should be at least 2 types of vegetables in the main meal however; there can be

problems with the variety of vegetables that can be provided. The drought which affected the production of vegetables when more than one vegetable garden was lost at the Brandvlei Management Area, it created the scenario that only carrots and cabbage were available for a long time. These vegetables were repeated on the meal plans and did not create a variety in vegetables for the inmates.

A therapeutic diet is only prescribed on medical grounds and recorded in the inmate's health file. The prescribed diet is filled in on the prescription form (See Annexure F) and filed in the inmate's health file. Another copy is sent to the food service unit at the correctional centre. Once the food service officials receive the dietary prescription they become responsible for the implementation of the diet.

According to the Annual Report (2017/2018) 8% of those who qualified to get a therapeutic diet receive their prescribed diet. This number comes to 13 489 inmates of the 164 129 in order to treat communicable and non-communicable diseases through a diet.

Pregnant and lactating female inmates also have a specific diet that they follow and are included in the Approved Nutritional document of 2016. The breastfeeding of infants is encouraged, but should this not be possible, a diet is also prescribed for the baby. A meal plan and ration schedule are also available for children up to the age of 5. DCS is responsible for the food, clothing and health care of the children while they remain with their mothers in prison. A mother and child unit must be available for their accommodation in female correctional centre. (Correctional Services Act no. 111 of 1998). Breederiver female correctional centre unfortunately does not have such a mother and child unit in place because of a lack of space. The pregnant female inmates are transferred to other female correctional centres such as Pollsmoor Management Area because they do have a mother and child unit in place. Some inmates are transferred to such facilities temporarily until the baby is borne. Once the baby is born the child is given to family members of the inmate and she is transferred back to where she was incarcerated before. The inmates choose the latter option because they want to be at a correctional centre that is close to their families. This was determined when the researcher had an informal conversation with the medical staff at the Breederiver Management Area.

### **3.3.2 Food consumption and intake**

The preparation of food is done in the food preparation unit (big-scale kitchen) and depends on the management area, the facilities available, the number of centres that must be served as well as the number of inmates in the centres. At Brandvlei Management Area there is one big-scale kitchen that prepares food for all three centres. The kitchen and all its operations fall under the nutrition section. See Annexure G, which falls under the Directorate Health Care Services.

Food preparations are done by the correctional officials and the food handlers, which are the inmates. Food preparation is done according to the 12-day cycle meal plan and the ratio scales. The therapeutic meals are prepared separately as well as the meals for the religious groups such as the Rasta Farians, Zionists and the Muslims. Hygiene is of great importance in the food preparation unit and consistent cleaning is done. An 11-point checklist (Annexure H) is done regularly to make sure that the food preparation unit complies with all hygiene and health regulations. Health Inspectors regularly assess the conditions within the food preparation units and these reports are given through to management. At the monthly nutrition meetings, these reports are also discussed and if any irregularities are reported, suggestions are made to solve the problems.

Cooking methods vary between frying, cooking, boiling and baking which influence the nutrition quality of the meals served and care must be taken in proper food preparation techniques. The food handlers receive internal training to make sure that the correct techniques in cooking are ensured to achieve optimal nutrient retention.

The dishing up of the food for each correctional centre is done at the food preparation unit and then transported. The vehicles are inspected regularly to ensure that it is safe and hygienic.

The serving of food is done at the food distribution areas at the correctional centres. It is generally done by the food handlers and the correctional officials supervise the process to ensure that no smuggling of food ratios take place. However, the ratios need to be checked and, in this case, correct rations might not be given out at the centres especially when it comes to those that follow the normal diet.

The food handlers wear protective clothing both at the food preparation units and at the dishing out units at the centres. This helps with the safe and hygienic handling of food. Challenges do occur regarding the protective clothing and it was for example discussed at the nutritional meeting at Brandvlei Management Area. The clothing for the food handlers was often too big. The solution was that the clothing should be adjusted by the clothing stores at the correctional centres. Sometimes they also do not have enough clothing available for the food handlers and that is why they distribute clothing that is too big. It was suggested that logistics should look into getting the correct size clothing for the inmates. Enough gloves, aprons and caps should be bought for the food handlers.

Food served to the general inmate population is normally high in salt however it was found that the kitchen stuck to the requirements of the therapeutic diets. This was particularly true at the Brandvlei Management Area and the correctional officials were very adamant about enforcing these measures. The correctional officials in the kitchens were in a sense frustrated with the fact that they need to

make do with the food items that they receive because at times they are unable to provide a variety of meals to the inmates due to a lack of stock.

### **3.3.3 Food environment**

According to the Agricultural Procedural Manual (2016:8) the agricultural division should have a continuous flow of produce. The availability of produce whether it is fruit, vegetables, milk, eggs or red meat must meet the nutritional demands of the inmates. The planting schedules should be adhered to unless unforeseen circumstances such as the current drought and water shortages influence the planting processes. When it comes to animal production and the production of meat, the animals are put through their normal breeding cycle. A bull can either be placed with the cow or artificially inseminated. Should a milk cow or meat cow not fall pregnant, they will be sent to the slaughter house within the region, as such a cow would not be economically viable anymore.

If there are any shortfalls, the normal logistical and supply chain procedures are followed. Drakenstein Management Area is the correctional centre farm to which all produce is sent.

The produce is distributed from there throughout the region. Surplus is reported as well as shortfalls within the region. Furthermore, as required by the Department of Health daily food samples are taken of the food which is prepared by the food preparation unit. In this way quality checks are done and to determine future food poisoning outbreaks as set out in the Nutritional Services Procedure Manual (2016:100).

The quality checks are done in numerous ways. Milk from the dairy is measured against the national Milk Recording Scheme. The quality of meat is also checked by the veterinarians, health inspectors and checked against the Beefer Performance Scheme. Breeding stock is purchased when required and again a veterinarian will check out the health condition of the animals. For instance, the veterinarians check to see if they do not have any contagious or venereal diseases. Fertility tests are also done on the animals to make sure that the breeding stock that is purchased will be economically worthwhile.

For plant production certified seed is purchased to ensure good quality vegetables. A Log 1, together with price quotations, is given to the Head Logistics and this takes place twice a year (Agricultural Procedural Manual, 2016:25). Ground analysis of the orchards and vegetable gardens are required to maintain the production of good quality products. These are done by experts from private companies such as bemblab who is part of the Pathcare group. The water quality for irrigation and for the animals is also checked through an analysis by private companies.

The agricultural objectives for each province are given each year for the period between 1 April and 31 August of the following year. The annual objectives for production and labour for the Western Cape are provided in Table 4 below.

**Table 4:** Agricultural objectives for the Western Cape Region 01/04/2018-31/03/2019

Correctional centres/Management Areas	Production objectives 2018/2019							Labour Objectives (Offenders per day)
	Vegetables (Kg)	Fruit (Kg)	Red Meat (Kg)	Milk (L)	Pork (Kg)	Chicken (Kg)	Eggs (Doz)	
Allandale	70 000							
Brandvlei	250 000	15 000	30 000	400 000				
Drakenstein	400 000	130 000	3 000	460 000	250 000	700 000	310 000	
George	180 000							
Overberg	500 000	5 000	25 000	260 000	145 000			
Pollsmoor	300 000							
Voorberg	500 000	210 000	51 000	470 000				
Smaller places	349 300							
<b>Regional Objectives</b>	<b>2 549 300</b>	<b>360 000</b>	<b>109 000</b>	<b>1 590 000</b>	<b>395 000</b>	<b>700 000</b>	<b>310 000</b>	<b>800</b>

Source: Mabena (2017)

So, for each financial year, DCS sends out the objectives that must be met by the different regions regarding production and the inmate labour that must be utilised for that year.

Each correctional centre for the Western Cape is listed in the table above and the production for the various produce is provided. For example the Brandvlei Management Area is required to produce 250 000 kg of vegetables and 150 000 kg of fruit respectively. The amount of fruit and vegetable varieties is determined by what will grow in the area and is determined by the management area themselves to decide how their targets will be met regarding the fruit and vegetables they will grow for that particular financial year. Red meat production for Brandvlei Management Area was 30 000 kg and 400 000 L of milk for the 2017/2018 financial year.

As seen in Table 4, Drakenstein Management Area is one of the correctional farms that is able to have production in all the different areas and that is one of reasons why produce is to be sent from Drakenstein Management Area to be distributed in the Western Cape region. The smaller correctional centres are to produce only vegetables and that is around 349 300 kg per year.

What is important to understand from the totals provided in Table 4, is that each correctional centre farm was asked to provide input regarding their understanding and knowledge about the capacity to which the various produce can be produced at their management area. So, the input of the managers at ground level is taken into consideration by the Top Management of DCS at the Head Quarters when setting the objectives for each region. Once the objectives of the division are received, it is

scrutinised, changes are made where necessary and once approved it is sent to the different regions for implementation. (Mabena, 2017)

The totals given to the regions are given through at the start of each financial year and these totals are considered to be minimum requirements. Surpluses and shortages are obviously part of production and it needs to be regulated by the Heads of agriculture at the management areas. In order to meet the minimum requirements for production, management areas should produce every month a minimum of 8.3% of the annual production.

Furthermore for the Western Cape at least 800 inmates should be used as labour in the agricultural activities.

According to the Agricultural Operational objectives for 1/04/2018-31/03/2019, Molefe (2018), at least 300 inmates should get certified agricultural skills training. It is also stated that in order to be cost effective each correctional centre farm should make sure that their financial objectives are also reached or improved upon from the previous financial year. A balanced approach should be taken by the correctional centre farms to reach their objectives. Labour objectives must be met to ensure that the production objectives are met. The one objective therefore cannot be achieved without the other.

Management Areas are required to report their progress on a monthly basis to the Regional Coordinator: Production Workshops and Agriculture and Regional Commissioner, which in turn must report to the CDC Incarceration and Corrections.

All these processes were set in place as all state departments are required to implement the Public Finance Act, Act No 1 of 1999 which obliged national departments to make changes in the management of finances in the public sector. Budgeting practises had to change to minimise over expenditures, corruption and waste of state funds. These measures enhance more control over state funds, accountability and cost effective financial management. The above mentioned Act allows state departments to budget more effectively and ensures quality service delivery. Managers on ground level are also able to have flexibility and a voice about how the funds that they are responsible for are spent. With the necessary approval from headquarters managers are held accountable for the resources that are in their care.

Furthermore, this act requires all government departments to submit their budgets each year and it must be detailed and contain all the departmental outputs and the service delivery standards. These indicators are the measurable objectives as found in Table 4 of this research assignment. They are linked to the performance targets and the annual reports that are delivered to Parliament every year.

### 3.4 Indirect impacts

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#### 3.4.1 Health

DCS also identified specific performance indicators in its role to attribute towards the outcomes set out by the National Development Plan. In chapter 10 of NDP entitled Promoting Health, DCS also contributes to the outcome that all South African's should have a long and healthy life. The Health Division of DCS is vigorously involved in fighting all sorts of illnesses and diseases. Communicable diseases such as TB and HIV in correctional centres have dropped significantly. According to the Annual Report of 2017/2018, 636 inmates have been cured of TB out of a 728 inmates who were taken ill. That is a massive 87% cure rate. In the 2016/2017 financial year the cure rate was 83% and a total of 1 034 inmates were cured out of a total of 1 250 inmates that were infected. These achievements were made possible because of the co-operation between DCS and its stakeholders such as the Department of Health.

In treating those inmates that are HIV positive, DCS started to implement the instruction on Universal Test and Treat (UTT) for improved health. Therefore more inmates were started on anti-retroviral treatment in 2017/2018. 1 936 more inmates were treated in this financial year compared to the previous financial year. It increased from 24 506 in 2016/2017 to 26 442 in 2017/2018.

When it comes to meeting the nutritional needs of the inmates about 13 489 inmates were prescribed a therapeutic diet out of the 164 129 who qualified to receive a therapeutic diet, which is about 8%. (Annual Report 2017/2018) So, in treating communicable and non-communicable diseases of the inmates it is more effective when they follow a prescribed diet.

The idea that prevention is better than cure is well known and true because a great deal of money goes into treating illnesses through medication whereas it can be prevented with a healthy lifestyle by following a healthy diet and exercise. However, when a disease or illness is contracted the best way is to treat with medication where required but also to make lifestyle changes.

As prescribed by the Correctional Services Act no. 111 of 1998 (Republic of South Africa, 1998) adequate health care must be made available to all inmates. The health care practitioners at each correctional centre take responsibility of the general health care of the inmates. Should the correctional centre have a doctor on site, they are referred to the doctor, but if not, they will be referred to a clinic or hospital in the area.

The Department of Correctional Services takes the health care of inmates serious and thus they receive good health care services as required by the Correctional Services Act 111 of 1998 (Republic of South Africa, 1998). From the interviews held with the managers at the health care division of the two management areas, inmates are taken to public hospitals and clinics. The Heads of the Centres, health care managers at the correctional centres and the managers at the hospital or clinic need to

be in constant communication about when inmates are taken to a public hospital or clinic. This is important as the security is of the essence for both the inmate and the public. Inmates may be attacked by rival gangs or family of victims whom they have murdered or raped. The lives of the public or medical staff may be at risk if the inmate has ulterior motifs such as planning an escape when going to the hospital. The lives of the correctional officials may also be at risk should any incident take place. Arrangements need to be made that the inmates are helped immediately on arrival. However, there are challenges with this and communication is not always there. Inmates are expected to wait the same as the other patients at public hospitals and this can be a potentially dangerous situation. All inmates need to wear hand and or feet restraints to give better control over the inmate and reduce the risk of escape according to the B Order of DCS, Chapter 8 paragraph 1.1.11.

On admission inmates are given a health check by the health care practitioners and their nutritional assessment is also done. Anthropometrical measures such as height, weight, and waist circumference are done too. The Body Mass Index (BMI) category is also determined and helps with the prescription of the correct diet that will support or help the inmate reach optimal nutritional status. Once the baseline nutritional assessment is done, it is done again 6 months later to confirm whether the diet prescription should change or remain the same. Basic health care and education is of the essence to ensure optimal health.

With this being said the health care practitioners were able to share their experiences on the how regularly they do check-ups. As they are most often under-staffed they do not always get the chance to repeat the check-ups within the 6 month period. At times there are so many admissions that they are over-worked and behind schedule to estimate whether the inmate still requires the therapeutic diet or not.

It happens that the inmates who need their immediate medical help at the time receive preference over the ones who need to be assessed again. Their paper work stacks up due to the lack of staff. Sometimes they need to help in another correctional centre with admissions and their work at their own correctional centre piles up. However, medical staff is in good spirit and they do the best they can. The help that they receive from the clinic and hospitals in the region lightens their load especially when they have cases that need serious medical attention.

### **3.4.2 Health care and education**

Health education is provided by the health care professionals especially when inmates are admitted to a correctional facility. They cover basic hygiene, healthy eating patterns, the role of regular exercise and other health services which are offered such as psychological and social work programmes. A thorough health check is done, and should an inmate require further treatment they are referred to the doctor stationed at the centre or to the outside hospital. HIV tests and tuberculosis

screening are done on a regular basis; however, there might be challenges especially when a great deal of inmates is admitted to the correctional facility. The health profile of an inmate is done in confidence and therefore does take some time. Challenges regarding the HIV/AIDS test are experienced by the health professionals as pre and post counselling for the HIV/AIDS tests is required and might not be possible due to time and staff constraints.

Health education is not always possible but is done especially when it comes to HIV/AIDS test. Most often it does not take place as the medical staff is continuously busy with the treatment of inmates. Health awareness is done though with the TB screenings. Special days are organised by the HIV co-ordinators. This is a special part of the health division which was created by DCS due to the high percentage of inmates who have contracted this disease. Usually the focus is on HIV/AIDS but also on health awareness about TB and is done by the HIV/AIDS co-ordinators.

Furthermore, health education forms part of the curriculum of those who are involved in the Basic Education and Training of DCS. Those who are involved in the Adult Education and Training (AET) have a Learning Area called Life Orientation. In Level 4 they have Unit Standard 14659 that deals with the factors that contribute towards healthy living. They include Specific Outcomes one to four that speaks to personal hygiene; healthy eating habits; healthy meal plans and the importance of sport and recreation. (South African Qualifications Authority, 2009) Inmates who are involved in the Further Education and Training (FET) education programme also have Life Orientation as a subject and topics about health and fitness are covered in more detail. Personal well-being and recreation and physical well-being are covered in the Learning Outcomes and Assessment Standards One and Three. (National Curriculum Statement for Life Orientation Grades 10 – 12, 2003)

The NDP outcome to provide quality basic education derived from Chapter 9 of the NDP, Improving Education Training and Innovation sees DCS also contributing towards this outcome. DCS has established 14 formal schools and follow the curriculum set out by the Department of Education. DCS was able to achieve a 77% pass rate for Grade 12 and four schools were able to maintain a 100% pass rate for the 2017 academic year. The role that the Department play contributes to the process of rehabilitation. However, there are many difficulties in running a full-time school as security is always a problem. Educationists are pressed to perform under difficult conditions and at times the school cannot run because there are no security members to patrol the situation in the classrooms. Smuggling and fighting amongst the prisoners must be strictly controlled and if there are any threats of any kind then the school is stopped until the situation is under control or the threat has subsided.

The bad apples are most often transferred so that they cannot continue with their illegal activities at the school. Sometimes, an inmate is supposed to stab a member at the school and this is usually gang related and when there is any whiff of such a threat the culprit is removed from the school.

Educationists often have a heavy load as they cover more than the required four subjects because vacancies are not filled. This is a problem that DCS faces in many divisions and educationists and correctional officials become despondent because they are over-worked. However, one can see that they are committed because there are many successes for Education and Training in DCS.

According to the Annual Report of 2017/2018, DCS had 10 014 inmates enrolled for Adult Education and Training (AET), the Mainstream Education for Further Education and Training had 982 enrolled, 838 for the Amended Senior Certificate, 542 involved in post-matric studies. Then there were also 453 involved with computer training. Overall the total of inmates who were involved in formal education were 12 811 for the 2017 academic year. This is a great achievement and recruitment is done continuously amongst the adult inmates. The juveniles, those under the age of 18 have the right to education and are enrolled in school on admission. (Constitution of South Africa – Act 108 of 1996)

### **3.4.3 Economic outcome**

The products produced by the agricultural division and the Production workshops are sold internally. For example, the plant production team (fodder projects), sells the produce to the animal production projects and therefore the produce stays at the correctional centre. The Price Policy for the Production Workshops and Agriculture, together with the rules and regulations set out by National Treasury, guides the cost and price being charged (Cost and Price Policy MWA: 2018/2019). Production costs and transportation costs are all considered when the produce is being sold. For example, when skins or hides are sold on the open market, the sales procedure of government assets is followed. In the case of selling wool, two quotations from service providers in the Wool Industry is needed, and the one with the least cost involved, will sell the wool on behalf of DCS.

When it comes to the sale of breeding stock National Treasury gave permission for DCS to sell them. If it would be more lucrative to slaughter these animals rather than to sell the option is taken and the meat is used as rations in the meal plan. The responsible person is the Section Head for Agriculture, but the Area Commissioner for Development and Care is responsible to check whether the correct procedures are followed. The Supply Chain Management and Accounting checks that correct calculations are done. However, written authorisation is required from the Director Production Workshops and Agriculture before any animal can be sold though. This process is time consuming but is necessary to make sure that DCS benefits, but that issues such as fraud, theft and corruption is eliminated.

So, to determine the lucrativeness of selling, especially unproductive, breeding animals is calculated by using the production costs of the breeding animals against the administration and transportation costs when buying replacement meat. Also, the administrative costs relating to marketing-, selling - and transportation costs of the breeding animals that will be sold including a profit margin of 20% are considered. The highest amount will be used to establish whether the animal will be sold or slaughtered.

There are ways in which the agricultural division of DCS can be financially beneficial to DCS, however the aim is not to become profitable but rather ensure that the correctional centre farms help DCS to be self-reliant.

The inmates on the other hand receive a gratuity and do not gain financially from the products which they produce. Indirectly a skill is obtained and when they are released these skills can be used to make a living for themselves.

## Chapter Four: Discussion

According to Mwadime (2011:156) aspects of a sound policy include:

1. clear goals and objectives;
2. policy instruments are identified and selected;
3. policy application is well designed and
4. the methods regarding monitoring and evaluation.

Moreover, Setorglo, Steiner-Asiedu and Adu-Oppong (2016:369) describe the characteristics of a good policy as:

1. being technically correct;
2. the language used in the policy is clear;
3. it is legally sound;

4. it should be financially possible and
5. all the stakeholders accept it as is.

The guiding manuals in both the agricultural and health divisions of DCS contain the above-mentioned aspects and characteristics. For example, clear goals are set by both divisions to ensure that nutritious food is produced and thus ensuring access and availability of nutritious food. Policy instruments such as the body mass index are used as part of the health assessment in the health division. It is a standardised method used globally. Standardised and acceptable measures thus are used and set out in the manuals. Monitoring and evaluation methods are clearly set out and responsible people are identified which make the implementation of the manuals so much easier. The language used in these manuals is appropriate and understandable enough for those working in these divisions to apply their specific manuals. Furthermore, interns appointed in these divisions will be able to use these manuals and learn what is expected of them.

#### **4.1 The links between the health and agriculture divisions in DCS**

The researcher was pleasantly surprised at the depth to which DCS took the nutritional and general well-being of the inmates. The implementation of the White Paper on Corrections to protect society by providing a safe environment through the incarceration of inmates is enforced on a daily basis by DCS. The Correctional Services Act 111 of 1998 is fully enforced however the challenges of overcrowding are still a major concern which infringes on the overall goals of DCS. It was found that DCS has a long term strategy to manage overcrowding.

The strategy focuses on the management of sentenced inmates to be released out on parole half way through their sentence or be released under correctional supervision. The Criminal Justice Cluster is part of this strategy and therefore their input in this regard is also taken into account.

To answer the research question about whether a link between the health and agriculture division in DCS does exist, is an emphatically yes. There is a strong link made between the two divisions and the fact that a nutritional meeting is held on a monthly basis at the Brandvlei Management Area shows how serious the responsible agricultural and health divisions are about their responsibility towards the inmates. The Annual Report of all the areas of DCS is published on an annual basis which is reported to parliament and the performance of DCS is compared to the South African National Development of 2030. The strategic and annual performance plans are also ways in which DCS ensures that they keep track of improving each year.

##### **4.1.1 Questionnaires**

In this case as the correctional officials are working shifts, and in different areas of the management area, the researcher was not able to ask the participants to fill in the information immediately. What

made it especially difficult was that the correctional officials working in the agricultural division had their working groups under their supervision and could therefore not attend to filling in a questionnaire at the time. The consent forms and questionnaires were explained to them and they filled it in at a more convenient time.

#### **4.1.2 Health**

Fyodor Dostoyevsky is quoted in saying “The degree of civilization in a society can be judged by entering its prisons”. The health and living conditions of inmates are poor because it is not seen as an urgent need by the governments. Poor sanitary conditions worsen the living conditions in prisons and are a major health risk.

The health of inmates can be affected negatively because of the lack of exercise. The movement of inmates are limited within a correctional facility and this increases the chance of health issues such as the inmates becoming obese. Even though inmates do have the right to exercise they are often confined for long periods of time because of the lack of security members. This is often because correctional officials are used for escort duty, taking inmates to hospitals, court or transferring inmates to other correctional facilities. So on any given day the manpower in the correctional facility is limited and inmates are kept locked up. Should inmates receive their required one hour exercise time with a shortage of staff, it could possibly lead to fights among rival gangs or an attack on a correctional official. The lives of the inmates and correctional officials are on the line and the common practice is to keep inmates locked up when the manpower of the correctional officials are low for the day.

One would believe that inmates would not be happy about this situation as they do need exercise, but also the correctional officials cannot but themselves in danger and risk the lives of the inmates to enforce this. However, the shortage of staff is what management and Correctional Services as a whole should look into to curb this problem.

Educating inmates about the importance of exercise and exercising even under very limited conditions will promote their over well-being and their willingness to be involved in programmes that will assist in their rehabilitation process. So the importance of exercise should not be underestimated by correctional facilities.

Through the observations of the researcher and the input of the correctional officials through the interviews and informal conversations it was found that inmates are very resourceful.

They have skills that they use such as stealing, smuggling, being deceitful and are masters of manipulation. The inmates can be taught through their participation in the programmes offered by DCS to channel these skills in a positive way. Even without an hour’s exercise per day outside the

cells inmates can do exercise inside their cells if they really want to. One does not always need equipment or a lot of space to exercise. Positive peer pressure can be enforced amongst each other to exercise, eat healthy and to participate in the programmes. Strong peer pressure is enforced by the gangs and though they do have a code of conduct to have discipline, respect and clear ranking systems, they are still involved in illegal activities in prison. So, by changing their ways with the help of DCS programmes they can end up becoming productive and responsible citizens.

Those who are in control of the tuck shop should be made aware and educated about healthy eating and healthy food choices. It seems counter effective if inmates are on a specific nutritional diet which was determined by a dietician or health practitioner at the prison and the inmates buy food items at the tuck shop which is not healthy for him or her. This is especially true for those inmates who have chronic conditions. Should the tuck shop only be stocked with healthy food items inmates could possibly become unhappy and start some sort of hunger strike in order to get some form of freedom of choice back into their lives. So, the most reasonable solution would be to give them that freedom of choice by stocking a variety of food items and allow the inmates to have that ability to choose for themselves which food items they will purchase from the tuck shop.

#### **4.1.3 Policies**

The government should be transparent in the decisions that are made as well as the information such as policies and communications should be freely available to the people that will be affected. Most of its people must be in consensus about what is happening in the country and the way that it is governed. The people should through equal and inclusive governance provide opportunities for its people to maintain a good life. The governing body should be effective and efficient in the way that policies are implemented. From this the government and its members should be accountable for all the decisions they make and the general outcomes of policy implementation. Both males and females should contribute directly or indirectly. People should be able to vote also freely and put those people in power who they think will be able to lead their community or province the best (Good Governance, 2014).

#### **4.1.4 Governance**

Those in power focus a great deal on food production as opposed to a focus on food production to better nutritional status of the population. Most often small-scale farmers bear nutrition-specific farming techniques in mind (FSN summary report, 2009). Commercial farmers focus on producing for the masses and quality is often lacking, however they do have the capacity to make use of modern techniques to optimise the quality of the produce. Yes, the masses do need to be fed that is why sustainable techniques are used to ensure that crop are maximised to prevent any losses through unnecessary wastage or poor farming techniques. When it comes to the rural areas various projects by many non-governmental organisations teach small-scale farmers to implement modern and better

techniques to ensure a quality crop. The sustainable development goals in their attempt to improve agriculture are contained in the Sustainable Development Goal 1 to end poverty in all its forms everywhere and Sustainable Development Goal 2 to end hunger, achieve food security and improved nutrition and promote sustainable agriculture (United Nations, 2015). Through the commitment of the countries that chose to implement these goals improvements can be made in their countries regarding improved nutrition through agriculture.

#### **4.1.5 Agriculture in DCS**

As DCS is a government institution effective service delivery with optimal use of limited resources is very important. Due to cost containment the budget of all divisions in DCS is limited and correctional officials need to plan well to ensure effectiveness. DCS needs trained correctional officials for skills development, especially in agriculture. Trained officials are employed by DCS, such as officials having a diploma or degree in plant or animal production. However, once employed officials may be rotated to another part of agriculture, should the need arise. To achieve optimal yield, effective agricultural methods and tools must be used. Most processes in the agricultural activities of DCS are mechanised and thus improve effectiveness. Continuous monitoring and evaluation are done to keep track of production and quality produce. Correctional officials are accountable for all aspects involved, ranging from the correctional officials in the field to the correctional officials who are managers.

Support is given through Head Office and the Regional Office especially when it comes to those correctional centre farms that are under performing. Work studies are done to determine shortage of staff. Most often as security members are used in agriculture the number of officials on paper seems correct; however the agriculture division usually suffer at the “cost” of security.

Furthermore, the incorporation of current environmental issues must be considered when implementing the agricultural methods. For, example the scarcity of water cannot be ignored as DCS need to comply with all current aspects of agriculture. Several challenges such as wastage of resources by government officials, lack of personnel and poorly trained officials must be addressed to achieve optimal service delivery according to the Batho Pele Principles contained in the White Paper on Transforming public Service and Administration (Republic of South Africa, 1997:15).

#### **4.1.6 Nutrition in DCS**

Those incarcerated by DCS range from pregnant women, women with infants and or toddlers, young men and women aged 16 and up, adult men and women and the elderly. Furthermore, those with various diseases such as HIV/AIDS, cardiovascular diseases and other non-communicable diseases, all need to be taken care of through the health system of DCS. All inmates need to consume healthy and nutritious food provided by DCS, thus the normal and therapeutic meal plans.

Health care professionals such as professional nurses, doctors and dieticians are used in the health care of the inmates. If they are unable to help the inmates, they are referred to a doctor or hospital outside of DCS. The specific nutritional requirements of a range of inmates are taken into consideration and the guidelines provided in Therapeutic Diet Manual of 2016; the 12-day cycle meal plan and the Approved Nutritional Document of 2016 are followed by the health division of DCS.

A separate nutrition division works closely with the food preparation unit to ensure that the prescribed meals are prepared and that the ration scales are followed. The nutrition division deals with the budget of the food preparation unit and normal procurement procedures are followed, to buy ingredients and equipment for a big-scale kitchen. The maintenance of the equipment is shared between the nutrition division, the maintenance division and the Manager Facilities, depending on the management area.

So, the commitment of DCS to address nutrition-related issues can be seen through the extent that resources are made available such as staff and a budget. Compiling manuals for each division such as the health and agricultural division which derives from various national policies shows that the drive and commitment is there. However, as identified by Mwadime (2011:155) the problem exists that politicians and even managers on ground level are not interested in the fact that programs addressing nutrition are implemented or not.

What makes it disconcerting for the average Joe is that inmates receive good health care treatment by having consultations with a health care practitioner and a medical doctor at their fingertips, which is seen at both the Breederiver and Brandvlei Management Areas. If these health care practitioners are unable to help them the inmate is referred to an outside clinic or hospital. This is especially true in the case of an emergency treatment such as in the case of an assault or injury. Inmates are required by law as it is their right to good health care treatment but many of the poor citizens of the country and those in rural areas find it difficult to access good health care services. That is why some politicians may be hesitant to support and monitor the situation of health care in prisons. This was seen in the Bush administration which basically blocked the Surgeon General's Report about the state of health in correctional facilities in America, (Wilper *et al.* 2009, 671).

#### **4.1.7 The links between agriculture and nutrition in DCS**

A clear link between the agricultural division and the health division of DCS exists. By having monthly nutrition meetings, the general health and well-being of the inmates are taken seriously by the Department of Correctional Services. According to Mwadime (2011:154) leaders of a country must be made aware of the nutritional and health status of their people and should put policies in place to ensure that this issue is addressed. Not only is awareness needed but also commitment. Furthermore, the problem of poor nutrition and health cuts through various sectors such as agriculture, health, education and sanitation. Thus all relevant parties must take part in addressing

this problem. Co-ordinated nutrition-related policies and manuals should make sure that new nutrition-based frameworks are put in place also involving budget related activities and changes in the normal operations of the different divisions. That is why having nutrition meetings monthly, is crucial in making sure that malnutrition, under-nutrition, obesity and other non-communicable diseases and sick inmates are getting the best help possible while they are incarcerated. Those involved in these meetings in DCS are:

- the Manager Nutrition;
- the Head of the Centres (at Brandvlei Management Area, the Head of the Youth Centre, Head of Medium Centre and Head of the Maximum Centre);
- the Manager Directorate Development and Care (for agriculture and health divisions);
- a representative of the Supply Chain and Logistics;
- a representative of the Bakery;
- Nursing staff/ health care workers;
- representative of the food preparation unit and
- the Manager Operational Support (responsible for the facilities of the management area such as buildings and equipment of the food preparation unit).

Furthermore, depending on the Management Area and the number of inmates that are being locked up, those involved in these nutrition meetings will vary. Support can be provided to the efforts of all these internal role players to ensure the nutritional needs of the inmates are met. One can see that some of the responsibilities overlap and that good communication between the different divisions are needed to ensure effective implementation of the different manuals. The responsible person for the specific duties should be clearly identified for accountability.

Optimal nutritious food cultivation from the agricultural division and consequent supplementation to the existing food supply is discussed at these meetings and each division is also accountable to the Area Commissioner of the Management Area. The Area Commissioner of the management area is kept up to date with the progress and performance of each division in the management area. Documents such as the Area Commissioner's Comprehensive Compliance Improvement Plans and the Annual Performance Plans are used to establish whether the divisions comply with their set targets and operations.

#### **4.2 Self-reliant correctional facilities of DCS in terms of meeting the nutritional requirements of the inmates**

As the core function of DCS is the safe keeping of inmates as well as their rehabilitation, the latter can be achieved through skills development in the agricultural division and food preparation unit. These skills will equip them to find possible employment on farms or even producing a small yield

through home gardens to assist in food and nutrition security. This is very important especially since employment of those with a criminal record is very difficult and they often return to crime to make a living (Jiler, 2006:29). Home gardens are a possible solution with the right knowledge and skills. An income can be generated with the sale of extra produce from the harvest which can positively affect the nutrients being consumed on household level (Kadiyala *et al.*, 2014:47). Home gardens can be a source of food and income.

Inmates that are involved in agricultural activities and food preparation can develop certain skills. What is great about these opportunities is that they are given the chance to change and to develop themselves. With the help of social work and psychological programmes inmates are helped to improve their behaviour (White Paper on Corrections, 2005). Internal training is given to inmates on a regular basis to keep up the standards. External service providers are also used, to provide accredited training. An example is the safety procedure training done by MEGA Health and Safety, which was sponsored by Grain SA. This training was given to 9 members and 16 inmates at Brandvlei Management Area, which took place on the 17 and 18<sup>th</sup> of April 2018. (Jackson, 2019)

Some of the correctional officials believe having inmates return and work in the food gardens as interns at correctional centres is a good idea. This shows that they are confident that inmates have changed and that the effort that they have put in by encouraging rehabilitation has paid off. Nevertheless, DCS and every government institution are prohibited from employing anyone with a criminal record. This however is a major contradiction but also in DCS especially ex-offenders might be drawn back into a life of crime.

It was difficult for the researcher to decide on the right questions to include in the interviews and the questionnaires. The researcher had to design the interview forms and questionnaires for ethical approval and without prior knowledge about the legislations and manuals guiding these divisions, it was difficult to design questions which directly relate to the manuals or related legislation. Moreover, the researcher was not aware of the nutritional division which exists in DCS and could have focused more on its role in DCS. As seen in the organogram (Annexure G), nutrition falls under the directorate Development and Care, together with the agricultural, health and education divisions. However, with the theoretical background about food and nutrition security the researcher was able to design the questions for the interviews and the questionnaires and was confident to use them as part of the tools to gather relevant information for this research assignment.

The guiding documents that encompass the policies used by DCS were analysed and proved to be very insightful together with the policies that guide the operations of DCS. The guiding manuals and accompanying documentation also consisted of record keeping, checklists, maintenance and reporting to different levels of accounting correctional officials and managers. For one, there are

such a lot of administration and red tape in functioning of the agricultural division that it creates a lot of work. The agricultural division with its various projects needs a manager in each project to deal with the administration and thus cannot get to the physical work on the farm. Thus, the number of correctional officials who are physically involved in the agricultural activities must correlate with the staff available for the division.

Each division does have enough members available, but the problem lies with the shift pattern that is followed. Currently, there are only 3 days per week in which the staff is fully present. The rest of the time half of the staff is off duty due to the shift pattern that is followed. This shift pattern, known as the seven-day establishment was agreed upon and made in the Bargaining Chamber in 2005 according to the Public Service Administration (PSA) (2011:1). Labour unions such as PSA were also involved in this process as required.

Furthermore, as the correctional officials, involved on the farm, are security members, and they can be utilised for other security jobs, such as escort duty or night shift. This makes it difficult for the agricultural division to work effectively. Also, a double lane management system is in place, where the correctional officials working in the agricultural division also falls under a correctional centre. Therefore, the manager agriculture does not have a say to how the correctional official working in his division can be utilised by the correctional centre. When a correctional official is unable to take out an agricultural team, it means that the inmates cannot work and therefore unable to earn money. So, when there is a shortage of staff inside the prison, which is very often, the correctional officials are used to fulfil their custodial duties. This double lane management system creates problems for the agricultural division especially as the safe keeping of inmates always comes first.

The possibility exists that correctional facilities could operate independently. With the right leadership it is possible for the agricultural division to fully support the food and nutritional needs of the inmates. Leaders such as Heads of Centres, the Area Commissioners and the top Management of DCS in each region as well as on national level should be the ones who should drive this process. Focus however, is mostly on the safe keeping and rehabilitation of inmates. The self-sufficiency of correctional centres through agricultural activities is not a primary focus especially when faced with problems such as over-crowding, violence, gangsterism, smuggling and shortages of staff. DCS does have the resources, knowledge available and the support of external service providers to be self-reliant. Politics, governing systems, corrupt and fraudulent government officials are some of the other factors that hinder the process too.

At the moment self-reliance basically depends on the correctional facility and the ability of the correctional centre farms to produce enough food for the region. The system of having the produce delivered to a central correctional facility such as Drakenstein in the Western Cape, enable the region

to meet the food requirements of the region. Where there are shortfalls it is registered and other correctional facilities that have surplus are able to provide in their needs. However, not all regions are in a position like the Western Cape and have their own challenges when it comes to meeting the food and nutritional needs of the inmates.

#### **4.3 The constraints in achieving the objectives in the daily operations of agricultural and health care activities**

Many challenges exist in the agricultural and health divisions of DCS that have a negative impact on the daily operations.

The tender process is time consuming and it makes it difficult for the agriculture division to procure animals for breeding and seed/trees for plant production, for instance. The process must be started in good time so that it fits into the planting schedules. Furthermore, other potential suppliers need to comply with the tender regulations. To be considered as a potential supplier most often small-scale farmers are not compliant, especially when it comes to tax compliancy which must be renewed annually. Due to all the red tape, many commercial farmers do not want to deal with government institutions. The difficulties are not just found in the tender process but also for companies to be listed as a possible supplier on DCS's data base. Most often 3 quotes must be used to purchase anything in a government institution and only one will become the supplier, therefore companies are not keen to do this either. It is not necessarily so that the company that provides the most economically viable price will become the supplier as factors such as BBBEE and gender equality are considered.

Optimally about 130 inmates should be utilised for offender labour in agriculture, but on average about 72 inmates are going out to work each day. This comes to about 6 to 8 inmates for every correctional official. However, the numbers of offender labour per member ranges between 1-10 inmates at the vegetable gardens due to a smaller work area that is covered. At the sheep camps it ranges between 1-6 inmates per member, at the dairy about 2-3 members for those 12 inmates dealing with the milking of the cows, an inmate that operates the tractor and 1 monitor. The cleaning team works differently but comes on duty once the milking team is done. There are two shifts at the dairy, an early morning shift and the afternoon shift. The correctional officials are divided accordingly. Inmates are then taken back to the correctional centres and taken out again for the afternoon shifts. They do have some sort of resting place at the dairy, but they are not kept there the whole day.

Many times the correctional officials will work double shifts. Sometimes they need to take out the milking team, return them and then take out the cleaning team. This also delays their daily operations and put strain on the correctional officials.

The transportation of inmates to the food preparation unit takes time and delays operations in especially the preparation of breakfast. It delays the rest of the programmes scheduled for the day such as the formal school programme. If the operations in the kitchen are not effective it impacts on all other programmes because no inmate is taken to another programme without having breakfast first.

The appointment of correctional officials in crucial managerial posts can take up to 4 years. The workload in the meantime is spread between those remaining in junior managerial positions and therefore their workload increases exponentially. The expectation is that work must be done well and kept up to standard and when the workload is too much correctional officials cannot even touch base. Some become despondent and others leave the Department, taking their experience with them. Therefore, the well-being of the correctional officials must be considered too.

Overcrowding of correctional centres and the huge intake of inmates makes the regular health care and follow-up consultations with the health care practitioners difficult. Baseline health checks are done, but some of the tasks get overseen, such as health education. Regular TB-screening is done, but consultations for HIV/AIDS testing gets a back seat, due to time constraints.

The food preferences of the inmates make a huge impact on what is served daily. A variety of food is introduced into the meal plan. However, should the inmates complain about that food choice, it is taken off the meal plan. Consequently, the same food items will be included in the meals. This has happened many times before. For instance at Brandvlei Management Area, the agricultural division introduced beetroot and beans to increase variety in vegetables served daily. However, the inmates were not happy about these vegetables and it was taken off the meal plan. (Jackson, 2019)

The serving time of meals is a challenge and inmates receive both the light meal and main meal at the same time. Breakfast served may be at 7:30 am, the main meal served at 13:30 and the light meal also issued at 13:30. This is dependent on the security members available and the shifts which they work, which influences when the meals are served. Thus, the problem arises that the next meal will only be served 17 hours later. Inmates are to then keep their bread – which is often the light meal for later in the evening, but this could be used to barter for other food items such as sugar, or toiletries or even tobacco. This however is determined by the shift pattern adopted at the correctional facility. Should 3 meals be served daily the correctional centre must have a shift pattern which allows enough security members to be present.

Generally, this is a high security risk activity where many incidents of attacks on correctional officials occur or fights amongst inmates themselves. In over populated prisons the risk is even greater. Thus,

both the safety of the correctional officials and inmates must be considered when a shift pattern for the serving of the meals is decided on by the management. The needs of the inmates as well as that of the correctional officials must be considered. Therefore, the unions of the officials as well as the inmates are continuously bringing up their needs to the Department of Correctional Services to come to an agreement which will suit all the parties.

Where challenges occur regarding the protective clothing the financial division – Logistics and Supply chain are involved in the procurement of the shortcomings, should the budget of the nutrition section allow it. Tailors at the correctional centres also assist in making the adjustments to the garments.

## Chapter Five: Conclusion and Recommendations

Theoretical conclusions: Through the research assignment it is clearly seen that DCS and its agricultural and health divisions are on track in keeping the inmates as healthy as possible while they are incarcerated and to provide in all their nutritional needs. Legislation such as the Bill of Rights of the Republic of South Africa and the Correctional Services Act are in the forefront in guiding all other divisions and activities in DCS. There is a clear link between agriculture, health and nutrition.

Correctional facilities in DCS can become self-reliant but with the help of other correctional centres in their region. The role that the agricultural division play to ensure food and nutrition security for the inmates is vital especially for DCS to ensure self-reliance as far as possible. Dependency on outside value chains to provide for instance toiletries and other food items are kept to a minimum.

Production workshops make clothing, bedding and shoes. Correctional centre farms produce fruit, vegetables, milk and meat. Some correctional centres also have a bakery which produces bread for the inmates.

Empirically, however, activities described in the manuals are very good but cannot always happen as it should because of the many challenges that the members face. For example, having a shortage of staff prohibits the operations of the agricultural division in favour of security. In the health division this is also problematic as the medical staff is unable to complete all necessary tasks due to overcrowding and being under-staffed too.

The following recommendations are made.

The double lane management system must be looked at again as it creates confusion. The loop holes which it creates must be rectified. It would be more effective for the agricultural manager to be accountable for its correctional officials.

It is recommended that the shift pattern for the correctional officials should change so that the optimal number of correctional officials is on duty each day. With the current shift pattern only half of the staff is on duty most of the time and many of the operations including the scheduling of mealtimes are influenced. Shift patterns should be of such a nature that mealtimes are between eight to ten hours apart.

Enough money must be made available to appoint enough correctional officials per centre and for the different divisions.

Vacant posts should be filled as soon as possible. Where correctional officials retire, in-house training can be done to make sure that the posts are filled immediately, and for smooth transitions to happen.

The manuals used by the agricultural and health divisions should be revised regularly to ensure that the divisions function effectively. This can be done on both regional and national level.

Simplify the procurement process especially the tender process without making compromises. Much needed equipment can be acquired without causing delays in agricultural activities or cause unnecessary loss.

The training of inmates which covers agricultural activities, literacy, health care, and nutrition and food preparation will go a long way to improve general health and nutrition of the inmates. Female inmates should be involved in all these different aspects.

Training for the relevant staff should take place more often, which will refresh and encourage the correctional officials to perform their duties well.

Regular consultations with the health care practitioners are needed with the inmates to make sure that the prescribed meal plans are still relevant to maintain good health or treat disease.

Recommendations to prison authorities are made concerning supplementation of vitamins and minerals and can be distributed by the health professionals in order to improve the inmates' nutritional health.

Small changes to increase fibre intake can be made such as the use of whole wheat bread and brown rice for instance can make a world of difference to the diet of the general population to improve over-all health of the inmates. Chronic diseases can be prevented through such changes. The correctional centres should stick to their meal plans and a variety of food items should be provided and the kitchens should ensure that a variety of food items are in stock.

Further research possibilities in this field are numerous. As a whole DCS with the help of two management areas in the Western Cape were studied for this research assignment but it would be interesting to see in detail how other correctional centres in some of the other provinces are performing. Also, on the other hand research around the actual nutritional status of inmates in South African correctional centres; the health of female prisoners, the health of babies and children in prison and the extent that overcrowding affect the health status of inmates will be valuable inputs to improve and maintain the nutritional status and health of the inmates.

## References

- Anderson, K. 2010. Krueger, Schiff, and Valdés Revisited: Agricultural Price and Trade Policy Reform in Developing Countries since 1960. *Applied Economic Perspectives and Policies*, 32(2):195-231.
- Babbie, E. & Mouton, J. 2001. Qualitative data Analysis. *Practice of Social Research*, South African ed.: 489-516.
- Baybutt M., Acin E., Hayton, P. & Dooris M. 2014. Promoting health in prisons: a settings approach. *Prisons and Health*, 21:180-184.
- Barrett, C. 2010. Measuring food insecurity. *Science*, 327:825-828.
- Black, R. 2013. Maternal and child under-nutrition and overweight in low-income and middle-income countries. *The Lancet*, 382(9890):427-451.
- Bleasedale, T., Crouch, C. & Harlan, S. 2010. Community gardening in disadvantaged neighbourhoods in Phoenix Arizona: Aligning programs with perceptions. *Journal of Agriculture*, 3(1):99-114.
- Brandvlei Management Area: Farm Plan, 2018/2019.
- Brunicardi, E. 2018. *Organisations planting the seeds for food justice in prisons*. [Online]. Available [foodtank.com](http://foodtank.com) [2019, February 22].
- Book, A.S. Readings in AGRIBUSINESS A Source Book Training 4.
- Choudhury, E. 2016. Questionnaires Method of data collection. Advantages and disadvantages [Online]. Available: <http://www.yourarticlelibrary.com> [2016, March 14].
- Christiaensen, L., Demery, L. & Kuhl, J. 2011. The (evolving) role of agriculture in poverty reduction – an empirical perspective. *Journal of Development Economics*, Elsevier, 96(2):239-254.
- Collins, S.A. & Thompson, S.H. 2012. What Are We Feeding Our Inmates? *Journal of Correctional Health Care*, 18(3):210-218.
- Creswell, J.W. 2012. *Qualitative Inquiry and Research Design: Choosing among five approaches*. SAGE Publications Inc.
- Dani, J., Burrill, C. & Demmig-Adams, B. 2005. The remarkable role of nutrition in learning and behaviour. *Nutrition & Food Science*, 35(4):258-263.
- Dangour, A.D., Kennedy, E. & Taylor, A. 2013. Commentary: The changing focus for improving nutrition. *Food and Nutrition Bulletin*, 34(4):194-198.
- Department of Correctional Services. 2016. Agricultural Procedural Manual.1-286.
- Department of Correctional Services. s.a. B Order. [Online]. [www.dcs.gov.za](http://www.dcs.gov.za) [2019, May 18].
- Department of Correctional Services. 2018. Vote No. 18. Annual Report 2017/18 Financial year [Online]. Available: [www.dcs.gov.za](http://www.dcs.gov.za) [2019, February 13].
- Department of Correctional Services. 2018. Financial Circular No. 1 of 2018/2019.
- Department of Correctional Services. 2009. Nutritional Service: Procedure Manual PR CN JS.
- Department of Correctional Services. 2016. Therapeutic Diet Manual Nutrition Services [Online]. Available: [www.dcs.gov.za](http://www.dcs.gov.za) [2018, June 15].

- Dinkel, S. & Schmidt, K. 2014. Health education needs for incarcerated women. *Journal of Nursing Scholarship*, 46(4):229-234 [Online]. Available: <http://doi.org/10.1111/jnu.12079> [2018, June 16]
- Dissel, A. s.a. Rehabilitation and reintegration in African prisons. *Human Rights in African Prisons* 155–177 [Online]. [http://www.s3amazonaws.com/academia.edu.documents/46994829/files\\_PDF\\_2220\\_08\\_African\\_Prison.pdf](http://www.s3amazonaws.com/academia.edu.documents/46994829/files_PDF_2220_08_African_Prison.pdf) [2018, August 20].
- Duyff, R. 2006. *American Dietetic Association Complete food and nutrition guide: 3<sup>rd</sup> ed.* Hoboken, N.J.
- Ecker, O., Breisinger, C. & Pauw, K. 2011. Growth is good, but is not enough to improve nutrition, in *leveraging agriculture for improving nutrition and health*. New Delhi: International Food Policy Research Institute:240-247.
- Ericksen, P.J. 2007. Conceptualizing food systems for global environmental change research. *Global Environment Change*. 1-12.
- Eves, A. & Gesch, B. 2003. Food provision and the nutritional implications of food choices made by young adult males, in a young offenders' institution. *Journal of Human Nutrition and Dietetics*, 16(3):167-179.
- Faber, M., Venter, S., Benade, A. 2002. Increased vitamin A intake in children through targeted home-gardens in rural South African community. *Public Health Nutrition*, 5(1):11-16.
- Faber, M., Witten, C. & Drimie, S. 2011. Community-based agricultural interventions in the context of food and nutrition security in South Africa. *South African Journal Clinical Nutrition*, 24(1):21-30.
- Food security and nutrition security – What is the problem and what is the difference? Summary of the FSN forum discussion. 2009. 34:1-5.
- Food security dimensions.2013. United Nations system Committee on Nutrition, Wüstefeld [Online]. Available: <http://www.fao.org> [2018, June 10].
- Food systems and diets: Facing the challenges of the 21<sup>st</sup> century. Foresight Report 1.0. Global Panel on Agriculture and Food systems for nutrition.
- Galhena, D., Freed, R. & Meredia, K. 2013. Home gardens: a promising approach to enhance household food security and wellbeing. *Agriculture & Food Security*, 2(1): 2-8.
- Gillepsie, S., Haddad, L., Mannar, V., Menon, P. & Nisbett, N. 2013. The politics of reducing malnutrition: Building commitment and accelerating progress. *Lancet*, 382(9891):552-569.
- Global Goals, African Realities: Building a Sustainable Future for All 2011-2015*. Africa Progress Report. 2015. [Online]. Available: [www.africanprogresspanel.org](http://www.africanprogresspanel.org) [2017, June 25].
- Global Partnership for Education*. 2018. [Online]. Available: <http://www.globalpartnership.org/education> [2018, June 10].
- Good governance*. 2014. [Online]. Available: [www.governancepro.com](http://www.governancepro.com) [2019, February 11].
- Gould, C., Tousignant, B., Brian, G., McKay, R., Gibson, R., Bailey, K. & Venn, B. (2013). Cross-sectional dietary deficiencies among prison a population in Papua New Guinea. *BMC international health and human rights*. 13(21):13-21.
- Governance*. 2019. [Online]. Available: <https://wikipedia.org/wiki/policy-governance> [2019, January 25].
- Helen Keller International – Asia-Pacific: Homestead food production model contributes to improved household food security, nutrition and female empowerment – experience from scaling-up programme in Asia (Bangladesh, Cambodia, Nepal and Philippines). 2011. *Nutrition Bulletin*, 8(1):1-8.
- International Food Policy Research Institute. 2010. *Agriculture, nutrition, health. Exploiting the links* [Online]. Available: <http://www.ifpri.division/publication/agriculture-nutrition-health> [2018, September 14].

- International Food Policy Research Institute. 2018. *Agriculture for nutrition and health (A4NH)* [Online]. Available: <http://www.ifpri.org/division/agriculture-nutrition-and-health-a4nh> [2018, August 19].
- International Food Policy Research Institute. 2016. *Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030*. Washington, DC:1-59.
- Jackson, D. 2019. Personal Interview. 18 February, Brandevlei Management Area, Department of Correctional Services.
- Jacobs, E.T. & Mullany, C.J. 2015. Vitamin D deficiency and inadequacy in a correctional population. *PubMed*, 31(5):659-663.
- Jiler, J. 2006. *Doing time in the garden: Life lessons through prison horticulture*. New York City: Willan Publishing.
- Jordan, A., Wurzel, R. & Zito, A. 2005. *The rise of 'new' policy instruments in comparative perspective: Has governance eclipsed government?* [Online]. Available: <https://doi.org/10.1111/j.1467-9248.2005.00540.x> [2019, January 14].
- Kadiyala, S., Harris, J., Headey, D., Yosef, S. & Gillespie, S. 2014. Agriculture and nutrition in India: Mapping evidence to pathways. *Annals of the New York Academy of Sciences*, 1331(1):43-56.
- Kennedy, E. & Bouis H.E. 1993. *Agriculture/nutrition linkages: implications for policy research* [Online]. Available: [www.eldis.org](http://www.eldis.org) [2018, January 23].
- Klaas, N. 2019. Personal Interview. 12 July, Brandvlei Management Area, Department of Correctional Services.
- Krueger, A.O., Schiff, M. & Valdés, A. 1988. Agricultural Incentives in Developing Countries: Measuring the Effect of Sectoral and Economywide Policies. *The World Bank Economic Review*, 2(3):255-271.
- Leach, B. & Goodwin, S. 2014. Preventing malnutrition in prison. *Nursing Standard*, 28(20):50-56.
- Leroy, J.L., Ruel, M., Frongillo, E.A., Harris, J. & Ballard, T.J. 2015. Measuring the food access dimension of food security. A critical review and mapping of indicators. *Food and Nutrition Bulletin*, 36(2):167-195.
- Lyons, H. 2012. Food, farming and freedom: Promoting a sustainable model of food justice in America's prisons. *Senior Capstone Projects*, 73:1-91.
- Mabena, K.M. 2017. Approved Agricultural Objectives: 2018/2019 Financial Year. Official Correspondence. Department of Correctional Services.
- Maslow's hierarchy of needs*. 2019. [Online]. Available: <https://en.m.wikipedia.org/wiki> [2019, January 25].
- Maxwell, S. 1996. Food security: A post-modern perspective. *Food Policy* 21(2):155-170.
- Molefe, G.M. 2017. Agricultural Operational Objectives for 1/4/2018-31/3/2019. Directorate: Production Workshops and Agriculture. Department of Correctional Services.
- Moreno-Black, G., Somasang, P. & Thamathawan, S. 1996. Cultivating continuity and creating change: women's home garden practices in northeastern Thailand. *Agri Hum Val*, 13(3):3-11.
- Murie, J., Messow, C. & Fitzpatrick, B. 2012. Feasibility of screening for and treating vitamin D deficiency in forensic psychiatric inpatients. *Journal of forensic and legal medicine*, 19(8):457-464.
- Mwadime, R. 2011. Accelerating national policymaking across sectors to enhance nutrition, in *Reshaping agriculture for nutrition and health*. Washington DC.: International Food Policy Research Institute. 153-162.
- National Curriculum Statement for Life Orientation Grades 10 – 12. 2003. Department of Education [Online]. Available: <http://education.pwv.gov.za> [2019, April 5].

- Nwosu, B., Maranda, R., Berry, R., Colocino, B., Flores, C., Folkman, K., Groblewski, T. & Ruze, P. 2014. The vitamin D status of prison inmates. *Plos One*; 9(3):1-8.
- Public Service Administration. 2011. Newsletter for the PSA members, e-mail, 23 May.
- Republic of South Africa. 1998. *Correctional Services Act, Act no. 111 of 1998*. Pretoria: Government Printer.
- Republic of South Africa. 2018/2019. Cost and Price Policy MWA: 2018/2019 Financial Year. Pretoria: Government Printer.
- Republic of South Africa. Department of Correctional Services. 2005. *White Paper on Corrections*. Pretoria: Government Printer.
- Republic of South Africa. Department of Public Service and Administration. 1997. *White Paper on Public Service and Administration*. Government Gazette no. 18340, 1 October.
- Republic of South Africa. 1999. *Public Finance Management Act no. 1 of 1999*. Pretoria: Government Printer.
- Republic of South Africa. 2011. *The National Development Plan* [Online]. Available: <http://www.policyresearch.limpopo.gov.za/bitstreamhandle/123456789/941/NDPVision2030.pdf?s> [2018, June 15].
- Republic of South Africa. 2014. *The National Policy on Food and Nutrition Security*. Pretoria: Government Printer.
- Republic of South Africa. 1996. *Constitution of the Republic of South Africa (Act No 108 of 1996)*. Pretoria: Government Printer.
- Robinson, O. 2018. *Can improving prison food help rehabilitate convicts, so they don't reoffend? 20 prisons and organisations around the world are finding out* [Online]. Available: [foodrevolution.org](http://foodrevolution.org). [2019, February 11].
- Ruel, M., Alderman, H. & the Maternal and Child Nutrition Study Group. 2013. Nutrition-sensitive interventions and programmes: How can they help to accelerate progress in improving maternal and child nutrition? *The Lancet*, 382(9891):536-551.
- Ruel, M., Quisumbing, A. & Balagamwala M. 2018. Nutrition-sensitive agriculture: What have we learned so far? *Global Food Security*, 17(September 2017):128-153.
- Sauro, J. *5 Types of qualitative methods* [Online]. Available: <http://www.measuringu.com> [2015, October 13].
- South African Qualifications Authority, 2009. Life Orientation Level 4 [Online]. Available: <http://www.education.gov.za> [2019, April 5].
- Setorglo, J., Steiner-Asiedu, M. & Adu-Oppong, A. 2016. The Development of Government Policies on Food and Nutrition, in Temple, N. & Steyn, N. (eds.) *Community nutrition for developing countries*. Athabasca University/UNISA. 362-373.
- Shekar, M. 2015. Nutrition and Agriculture: Bridging the gap [Online]. Available: <http://blogs.worldbank.org/health/nutrition-and-agriculture-bridging-gap> [2019, February 13].
- Sustainable Development Goals*. Food and Agriculture Organisation of the United Nations. [Online]. Available: [www.fao.org](http://www.fao.org) [2017, June 25].
- Talukder, A., Kiess, L., Huq, N., de Pee, S., Darnton-Hill, I. & Bloem, W. 2002. Increasing the production and consumption of vitamin A-rich fruits and vegetables: lessons learned in taking Bangladesh homestead gardening programme to a national scale. *Food Nutrition Bulletin*, 21(2):165-172.
- The sustainable development goals*. 2017. [Online]. Available: [www.businesscommission.org](http://www.businesscommission.org) [2017, March 14].
- Todaro, M. & Smith, C. 2015. *Economic Development: 12<sup>th</sup> Edition*. Pearson Education Limited, 458-459.

- Townsend, R. 2015. *Ending poverty and hunger by 2030: An agenda for the global food system*. Washington D.C. World Bank Group [Online] Available: <http://documents.worldbank.org/curated/en/700061468334490682> [2019, February 13].
- Turner, R., Hawkes, C., Waage, J., Ferguson, E., Haseen, F., Homans, H., Hussein, J., Johnston, D., Marais, D., McNeill, G. & Shankar, B. 2013. Agriculture for improved nutrition: The current research landscape. *Food and Nutrition Bulletin*, 34(4):369-377.
- UNICEF conceptual framework of malnutrition. 1991. [Online]. Available: <https://www.unicef.org> [2019, February 17].
- United Nations' Sustainable Development Goals. 2015. [Online]. Available: <http://www.un.org> [2017, March 16]
- UNICEF. 2015. *No country in sub-Saharan Africa has achieved gender parity in both primary and secondary education* [Online]. Available: <https://en.unesco.org/gem-report> [2015, October 11].
- Venugopal, K. 1999. Food security vs. nutrition security. *Health Millions*, 25(2):18-19.
- Vorster, H.H., Badham, C. & Venter, C.S. Food-based dietary guidelines for South Africa. 2013. *South African Journal of Clinical Nutrition*, 26(3):5-12.
- Williams, P., Walton, K. & Hannan-Jones, M. 2009. Prison food service in Australia- systems, menus and inmate attitudes. *Journal of Foodservice*, 20(4):167-180.
- Wilper, A., Woolhandler, M.P.H. & Himmelstein, D.U. The health and health care of US inmates: Results of a nationwide survey. 2009. *American Journal of Public Health*, 99(4):666-672.
- World Food Conference Rome, 1. 1975. Report of the World Food Conference, Rome 5-16 November 1974 New York: United Nations.
- Zaalberg, A., Nijman, H., Bulten, E., Stroosma, L. & Van der Staak, C. 2010. Effects of nutritional supplements on aggression, rule-breaking, and psychopathology among young adult inmates. *Aggressive Behavior: Official Journal of International Society for Research on Aggression*, 36(2):117-126.

## Annexure A



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY  
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### STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Dear Colleague

My name is Carmen Loxton and I am an educator working at Brandvlei Youth Centre (DCS). I am currently studying the Master's in food and Nutrition Security at the University of Stellenbosch. I would like to invite you to participate in a research project entitled: *An analysis of the guiding documents used by the agricultural and health divisions in the Department of Correctional Services to ensure food and nutrition security.*

Please take some time to read the information presented here, which will explain the details of this project and contact me if you require further explanation or clarification of any aspect of the study. Also, your participation is **entirely voluntary**, and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

As a correctional official working in either the agriculture or health division at a correctional facility of the Department of Correctional Services (DCS), your input regarding the implementation of policies and manuals would be valuable. It would assist me in my process of analysing the policies within these two divisions of DCS. Most often policies look good on paper but when it comes to the implementation thereof there are many challenges. Therefore, I would appreciate your input to assist me to establish what these challenges are and what interventions would be suitable to either improve the current food and nutrition system within the prison but also maintain its effectiveness in ensuring that the inmates receive healthy and nutritious food. Furthermore, the role that agriculture in DCS plays to produce nutritious food as well as its potential in becoming a prison that is self-reliant.

You would be required to fill in a questionnaire and you would remain anonymous. Voice recordings might be done too of interviews where needed. Your participation is entirely voluntary, and your input would be kept confidential. Again, should you wish to withdraw during the interview process, you would be free to do so without any negative consequences. You are also free not to answer certain questions but remain in the study. The data gathered through interviews would be summarised and remain as part of the research assignment required to complete the Master's in Food and Nutrition Security. The finalised research assignment will be viewed by the relevant faculty at the University of Stellenbosch and possibly a copy sent to the Department of Correctional Services. Should the Department of Correctional Services view the input of the research assignment as valuable some improvements in the implementation of the relevant policies might be made. Lastly, there will be no benefit or payment to those who participate in the research study.

If you have any questions or concerns about the research, please feel free to contact me on the following number 079 554 4291 or my supervisor Mr Hein Gerwel at the University of Stellenbosch on the following number 076 090 8012.

**RIGHTS OF RESEARCH PARTICIPANTS:** You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development. You have right to receive a copy of the Information and Consent form.

**If you are willing to participate in this study, please sign the attached Declaration of Consent and hand it to the researcher.**

*DECLARATION BY PARTICIPANT*

By signing below, I ..... agree to take part in a research study entitled.....  
 .....  
 ..... and conducted by ..... (Name of Researcher)

I declare that:

- I have read the attached information leaflet and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.
- All issues related to privacy and the confidentiality and use of the information I provide have been explained to my satisfaction.

Signed on .....

.....

**Signature of participant**

**SIGNATURE OF RESEARCHER**

I declare that I explained the information given in this document to \_\_\_\_\_ [*name of the participant*] [*He/she*] was encouraged and given ample time to ask me any questions. This conversation was conducted in [*Afrikaans/\*English/\*Xhosa/\*Other*] and [*no translator was used/this conversation was translated into \_\_\_\_\_ by \_\_\_\_\_*].

\_\_\_\_\_  
**Signature of Researcher**

\_\_\_\_\_  
**Date**

## Annexure B

Interview 1

Reference number: \_\_\_\_\_

### Purpose:

- *To gather information about the effective implementation of the health and the agricultural policies within the Department of Correctional Services.*
- *To determine the challenges facing these sections at the prisons and gathering information from those working in these sections about ways to improve effective policy implementation.*
- *Input about the rehabilitation process of inmates involved in agricultural activities.*

1. Explain your role in the agricultural section at your management area.
2. Do you think that the budget allocated to your section is adequate? Clarify your answer.
3. Do you have enough members working in your division to optimise production?
4. Explain how your production yield is determined and do you think that production can be increased?
5. Does your production provide in the needs of other management areas? If so, please name these Management Areas.
6. In which areas do you think production can be improved and how?
7. Are there any other challenges facing the agricultural section at your management area which influences production?
8. Do you have any input from the health section at your management area which determines your choice of produce or amount of yield? Clarify your answer.
9. Are you of the opinion that the percentage of food produced versus the percentage of food which is bought can be increased? Explain.
10. Does your management area have the possibility of becoming self-reliant? Explain how.
11. What do you think of the idea that food production in the agricultural section of DSC be either sold on the local market and therefore increase food security in the local communities?
12. Currently, what is the role of agriculture in the rehabilitation process of the inmates?

13. What are the work possibilities for the inmates once released?
14. How does their involvement in agricultural activities prevent them from returning to a life of crime or return to prison?
15. Do you think the idea of ex-inmates coming back as interns working in the prison food gardens is feasible in the South African context, so that they can earn an honest living? Explain your answer.

THANK YOU FOR YOUR TIME.

## Annexure C

Interview 2

Reference number: \_\_\_\_\_

**Purpose:**

- *To gather information about the effective implementation of the health and the agricultural policies within the Department of Correctional Services.*
- *To determine the challenges facing these sections at the prisons and gathering information from those working in these sections about ways to improve effective policy implementation.*
- *Input about the rehabilitation process of inmates involved in agricultural activities.*

1. Explain your role in the health section at your management area.
2. Do you think that the budget allocated to your section is adequate? Clarify your answer.
3. Do you have enough members working in your division to function effectively?
4. Explain the role that food and nutrition plays on the general health of the inmates?
5. Which categories of special nutritional needs of the inmates are being addressed and what does their menus look like?
6. How are the nutritional needs of the inmates determined?
7. Are there any challenges facing the health section at your management area which influences the food and nutrition needs of the inmates?
8. Provide any suggestions to maintain or improve the nutritional needs of the inmates.
9. Does the agriculture section and health section communicate about the production of healthy food for the inmates? Clarify your answer.
10. Are you of the opinion that food production at the prison can provide in the nutritional needs of the prison? Explain.
11. Does your management area have the possibility of becoming self-reliant? Explain how.
12. What do you think of the idea that food production in the agricultural section of DSC be either sold on the local market and therefore increase food security in the local communities?

THANK YOU FOR YOUR TIME.

## Annexure D

### QUESTIONNAIRE

Reference number: \_\_\_\_\_

#### Purpose:

- *To gather information about the effective implementation of the health and the agricultural policies within the Department of Correctional Services.*
- *To determine the challenges facing these sections at the prisons and gathering information from those working in these sections about ways to improve effective policy implementation.*
- *Input about the rehabilitation process of inmates involved in agricultural activities.*

Please tick [✓]the appropriate box.

#### 1. General information

1.1 Age:

<input type="checkbox"/>	20-30
<input type="checkbox"/>	30-40
<input type="checkbox"/>	40-50
<input type="checkbox"/>	50-60

1.5 Working experience in DCS:

<input type="checkbox"/>	0-10 years
<input type="checkbox"/>	10-20 years
<input type="checkbox"/>	20-30 years
<input type="checkbox"/>	>30 years

1.2 Race:

<input type="checkbox"/>	Indian
<input type="checkbox"/>	Black
<input type="checkbox"/>	White
<input type="checkbox"/>	Coloured

1.6 Working experience in current section:

<input type="checkbox"/>	0-10 years
<input type="checkbox"/>	10-20 years
<input type="checkbox"/>	20-30 years
<input type="checkbox"/>	>30 years

1.3 Post description:

\_\_\_\_\_

\_\_\_\_\_

1.7 Management Area:

1.4 Post level/Rank:

\_\_\_\_\_

1.8 In which section are you currently working?

<input type="checkbox"/>	agriculture	<input type="checkbox"/>	health
--------------------------	-------------	--------------------------	--------

**If you are working in the agricultural section of DCS please complete Question 2.**  
**If you are working in the health section of DCS please complete Question 3.**

#### 2. AGRICULTURE:

2.1 Which areas of agricultural activities is your Management Area involved in?

<input type="checkbox"/>	Dairy
<input type="checkbox"/>	Sheep

<input type="checkbox"/>	Cattle	Specify: _____
<input type="checkbox"/>	Fruit trees	
<input type="checkbox"/>	Vegetables	
<input type="checkbox"/>	Wheat	
<input type="checkbox"/>	Other	

**Resource allocation:**

2.1 Is the budget allocation adequate for your section?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No

Explain your answer:

2.2 Is the staff allocation adequate for your section?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No

If no, how can this situation be improved?

2.3 In which areas is the Department of Correctional Services effective concerning the agricultural section?

<input type="checkbox"/>	Staff allocation
<input type="checkbox"/>	Budget allocation
<input type="checkbox"/>	Production of food
<input type="checkbox"/>	Offender rehabilitation

2.5 How can effectiveness in product yield be improved?

<input type="checkbox"/>	Staff allocation	Specify: _____
<input type="checkbox"/>	Budget	
<input type="checkbox"/>	Modern methods	
<input type="checkbox"/>	Training of offenders	
<input type="checkbox"/>	Training of staff	
<input type="checkbox"/>	Better storage facilities	
<input type="checkbox"/>	Other	

2.6 Does your gender influence your contribution to your work in the agricultural activities?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No

Explain your answer:

**Agriculture as a means of rehabilitation:**

2.7 Is agriculture effective in its rehabilitation of offenders?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No

Explain your answer:

2.8 Explain the role of the offender in the production process.

2.9 What are the constraints in your Management Area that limits effective agricultural production?

2.10 What changes would you like to see in your work environment?

**3. HEALTH:**

**Resource allocation:**

3.1 Is the budget allocation adequate for your section?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No

Please explain your answer:

3.2 Is the staff allocation adequate for your section?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No

If no, how can this situation be improved?

**Diets of the inmates, hygiene, cooking methods and training**

## 3.3 How are the diets of the inmates determined?

	Predetermined menus	
	Specified diets for the religious	
	Specified diets for the elderly	
	Specified diets for the sick	
	Specified diets for the women/children/pregnant women	
	Other	Specify: _____

## 3.4 Could you please explain how the menus are compiled?

## 3.5 Daily meals for inmates consist of:

	Fats and oils
	Milk and dairy products
	Staple food
	Meat and meat alternatives
	Fruit
	Vegetables

## 3.6 Hygiene checks in the kitchen are done:

	Daily	
	Weekly	
	Monthly	
	Other:	Specify: _____

## 3.7 Hygiene checks are done using a:

	Checklist	
	Report	
	Worksheet	
	Other:	Specify: _____

## 3.8 Hygiene checks are done by:

	Inmates	
	Correctional officials	
	Managers	
	Other:	Specify:

---

3.9 Food is mostly:

	Cooked
	Boiled
	Fried
	Raw
	Baked
	Combination of above

3.10 Training of officials is done:

	Daily	
	Weekly	
	Monthly	
	Other:	Specify:

---

3.11 Training of officials include:

	Nutrition	
	Cooking methods	
	Hygiene	
	Prevention of wasting resources	
	Other:	Specify:

---

3.12 Consultations between the agriculture and health sections regarding the production of nutritious food for the inmates occur:

	Regularly	
	Occasionally	
	Seldom	
	Other:	Specify:

---

3.13 Explain the reason for your answer in 3.12.

3.14 What changes would you like to see in your work environment?

THANK YOU FOR YOUR TIME.

# Annexure E

An example of the 12-day cycle meal plan

12 DAY CYCLE MEALPLAN: 2016											
CYCLE 1											
DAY 1 : MONDAY		DAY 2 : TUESDAY		DAY 3 : WEDNESDAY		DAY 4 : THURSDAY		DAY 5 : FRIDAY		DAY 6 : SATURDAY	
<b>BREAKFAST</b>		<b>BREAKFAST</b>		<b>BREAKFAST</b>		<b>BREAKFAST</b>		<b>BREAKFAST</b>		<b>BREAKFAST</b>	
Sorghum porridge	80 g	Maize Meal	80 g	Oats	80 g	Sorghum porridge	80 g	Maize Meal	80 g	Oats	80 g
Bread	75.6 g	Bread	75.6 g	Bread	75.6 g	Bread	75.6 g	Bread	75.6 g	Bread	75.6 g
Margarine	10 g	Margarine	10 g	Margarine	10 g	margarine	10 g	margarine	10 g	Margarine	10 g
Syrup	10 g	Syrup	10 g	Jam	10 g	Syrup	10 g	Syrup	10 g	Jam	10 g
Milk Powder	28 g	Milk Powder	28 g	Milk Powder	28 g	Milk Powder	28 g	Milk Powder	28 g	Milk Powder	28 g
Coffee	1 g	Tea	1 g	Coffee	1 g	Tea	1 g	Coffee	1 g	Tea	1 g
Sugar	30 g	Sugar	30 g	Sugar	30 g	Sugar	30 g	Sugar	30 g	Sugar	30 g
Salt	3 g	Salt	3 g	Salt	3 g	Salt	3 g	Salt	3 g	Salt	3 g
<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>	
Bread	189.4 g	Bread	189.4 g	Bread	189.4 g	Bread	189.4 g	Bread	189.4 g	Bread	189.4 g
Margarine	25 g	Margarine	25 g	Margarine	25 g	Margarine	25 g	Margarine	25 g	Margarine	25 g
Syrup	25 g	Egg	1	Jam	25 g	Peanut Butter	20 g	Egg	1	Jam	25 g
Soup	20 g	Fruit Drink	15 g	Soup	20 g	Fruit Drink	15 g	Soup	20 g	Fruit Drink	15 g
<b>MAIN COURSE</b>		<b>MAIN COURSE</b>		<b>MAIN COURSE</b>		<b>MAIN COURSE</b>		<b>MAIN COURSE</b>		<b>MAIN COURSE</b>	
Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g
Vegetable	162 g	Vegetable	162 g	Vegetable	162 g	Vegetable	162 g	Vegetable	162 g	Vegetable	162 g
Vegetable	163 g	Vegetable	163 g	Vegetable	163 g	Vegetable	163 g	Vegetable	163 g	Vegetable	163 g
Pork	184 g	Beef	184 g	Fish	165 g	Chicken	200 g	Beef	184 g	Pork	184 g
Tea	1 g	Coffee	1 g	Tea	1 g	Coffee	1 g	Tea	1 g	Coffee	1 g
Milk Powder	7 g	Milk Powder	7 g	Milk Powder	7 g	Milk Powder	7 g	Milk Powder	7 g	Milk Powder	7 g
Sugar	10 g	Sugar	10 g	Sugar	10 g	Sugar	10 g	Sugar	10 g	Sugar	10 g
Gravy Powder	10 g	Salt	10 g	Gravy Powder	10 g	Gravy Powder	10 g	Gravy Powder	10 g	Gravy Powder	10 g
Salt	10 g	Salt	10 g	Salt	10 g	Salt	10 g	Salt	10 g	Salt	10 g
<b>DAY 7 : SUNDAY</b>		<b>DAY 8 : MONDAY</b>		<b>DAY 9 : TUESDAY</b>		<b>DAY 10 : WEDNESDAY</b>		<b>DAY 11 : THURSDAY</b>		<b>DAY 12 : FRIDAY</b>	
<b>BREAKFAST</b>		<b>BREAKFAST</b>		<b>BREAKFAST</b>		<b>BREAKFAST</b>		<b>BREAKFAST</b>		<b>BREAKFAST</b>	
Sorghum porridge	80 g	Oats	80 g	Maize Meal	80 g	Sorghum porridge	80 g	Oats	80 g	Maize Meal	80 g
Bread	75.6 g	Bread	75.6 g	Bread	75.6 g	Bread	75.6 g	Bread	75.6 g	Bread	75.6 g
Margarine	10 g	Margarine	10 g	Margarine	10 g	Margarine	10 g	Margarine	10 g	Margarine	10 g
Syrup	10 g	Syrup	10 g	Jam	10 g	Syrup	10 g	Syrup	10 g	Jam	10 g
Milk Powder	28 g	Milk Powder	28 g	Milk Powder	28 g	Milk Powder	28 g	Milk Powder	28 g	Milk Powder	28 g
Coffee	1 g	Tea	1 g	Coffee	1 g	Tea	1 g	Coffee	1 g	Tea	1 g
Sugar	30 g	Sugar	30 g	Sugar	30 g	Sugar	30 g	Sugar	30 g	Sugar	30 g
Salt	3 g	Salt	3 g	Salt	3 g	Salt	3 g	Salt	3 g	Salt	3 g
<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>		<b>LIGHT MEAL</b>	
Bread	189.4 g	Bread	189.4 g	Bread	189.4 g	Bread	189.4 g	Bread	189.4 g	Bread	189.4 g
Margarine	25 g	Margarine	25 g	Margarine	25 g	Margarine	25 g	Margarine	25 g	Margarine	25 g
Egg	1	Peanut Butter	20 g	Jam	25 g	Syrup	25 g	Egg	1	Peanut Butter	20 g
Soup	20 g	Fruit Drink	15 g	Soup	20 g	Fruit Drink	15 g	Soup	20 g	Fruit Drink	15 g
<b>MAIN COURSE</b>		<b>MAIN COURSE</b>		<b>MAIN COURSE</b>		<b>MAIN COURSE</b>		<b>MAIN COURSE</b>		<b>MAIN COURSE</b>	
Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g	Samp/M. Rice/M. Meal	100 g
Vegetable	162 g	Vegetable	162 g	Vegetable	162 g	Vegetable	162 g	Vegetable	162 g	Vegetable	162 g
Vegetable	163 g	Vegetable	163 g	Vegetable	163 g	Vegetable	163 g	Vegetable	163 g	Vegetable	163 g
Beef	184 g	Chicken	200 g	Pork	184 g	Chicken	200 g	Beef	184 g	Pork	184 g
Tea	1 g	Coffee	1 g	Tea	1 g	Coffee	1 g	Tea	1 g	Coffee	1 g
Milk Powder	7 g	Milk Powder	7 g	Milk Powder	7 g	Milk Powder	7 g	Milk Powder	7 g	Milk Powder	7 g
Sugar	10 g	Sugar	10 g	Sugar	10 g	Sugar	10 g	Sugar	10 g	Sugar	10 g
Salt	10 g	Salt	10 g	Gravy Powder	10 g	Gravy Powder	10 g	Salt	10 g	Gravy Powder	10 g

# Annexure F

## Therapeutic diet prescription form



**DEPARTMENT OF CORRECTIONAL SERVICES  
THERAPEUTIC DIET MANUAL**

Appendix A

**THERAPEUTIC DIET PRESCRIPTION FORM**

**Patient's information**

Surname and initials of inmate: \_\_\_\_\_

Registration number: \_\_\_\_\_

Section and housing cell number: \_\_\_\_\_

Date diet was prescribed: \_\_\_\_\_

**Diet information:**

Diet name: \_\_\_\_\_

Diet number: \_\_\_\_\_

Page number: \_\_\_\_\_

Duration: \_\_\_\_\_

**Detail of medical professional:** Doctor/ Dietitian/ Nurse

Surname and initials: \_\_\_\_\_

Signature: \_\_\_\_\_

**Comments:**

\_\_\_\_\_

\_\_\_\_\_

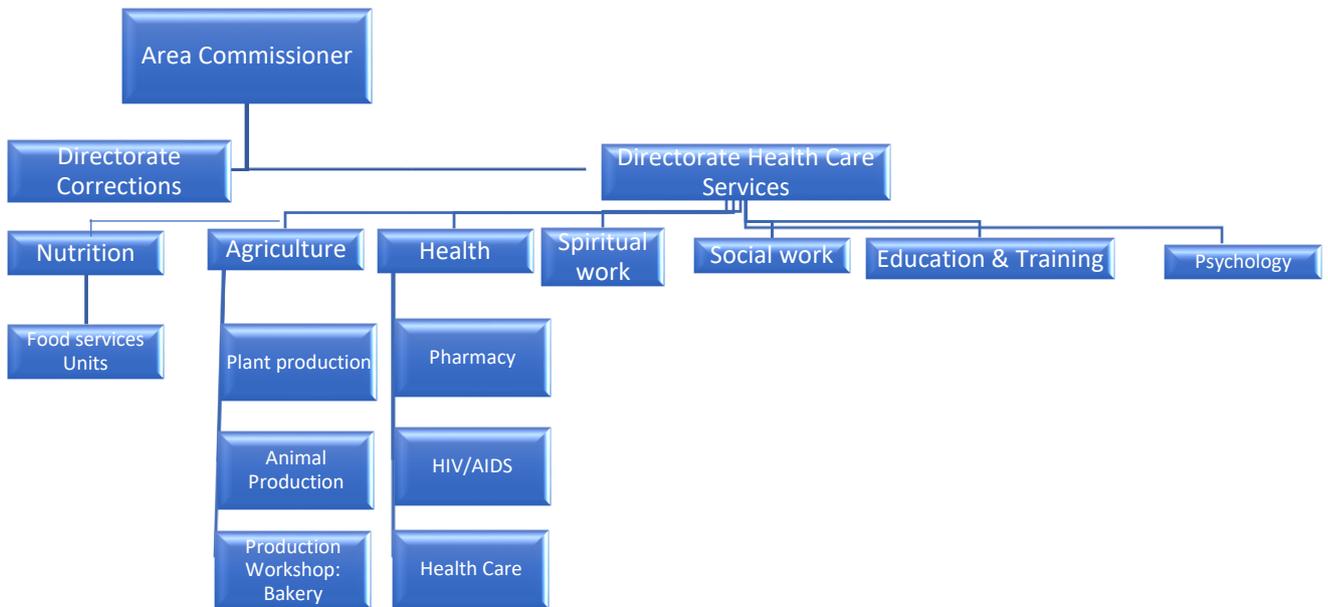
\_\_\_\_\_

\_\_\_\_\_

Signature: Health Manager

# Annexure G

Organogram: Directorate Health Care Services at a Correctional Services' Management Area



# Annexure H

Example of the 11-point checklist

14/3/12  
4/4/3



**ELEVEN POINT CHECKLIST  
FOOD SERVICE MANAGEMENT**

**CORRECTIONAL SERVICES W/CAPE**

FOOD SERVICE UNIT: BRANDVLEI MAXIMUM KITCHEN

DATE OF VISIT: 2018/09/24  
CHECKED BY: BOTES RG

DIMENSION	YES		
	POOR (0)	AVERAGE (1)	GOOD (2)
<b>1. PERSONAL HYGIENE</b>			
1.1 Are uniforms in a clean condition?			2
1.2 Is hair short and clean?			2
1.3 Is hands & nails inspections carried out daily? (See kitchen diary)			2
1.4 Are food handlers not wearing jewelry?			2
1.5 Do food handlers/staff refrain from eating in food prep/serving area?		1	
1.6 Are hands washed after a visit to the toilet?			2
1.7 Are hands washed between tasks, after tea and lunch breaks?			2
			<b>13/14</b>
<b>2. RECEIVING AREA</b>			
2.1 Is receiving area free from dirt and loose garbage?			2
2.2 Are food items inspected/checked immediately upon receipt for spoilage & infestation?			2
2.3 Are perishables food products immediately stored in the correct storage area?			2
2.4 Are empty containers discarded off immediately?			2
2.5 Are perishable products received at the correct temperatures?			2
2.6 Is there efficient control when food items are received?			2
			<b>12/12</b>
<b>3. DRY STORAGE AREA</b>			
3.1 Are all items stored away from the floor to allow easy cleaning?			2
3.2 Are racks stored away from walls to discourage nesting of insects?			2
3.3 Are food storage shelves clean and free from spoiled food?			2
3.4 Is the floor clean and free from spilled food?			2
3.5 Are stock properly stored and different kinds separately?			2
3.6 Are stores locked and keys in the possession of a member?			2
3.7 Are store rooms well ventilated?			2
3.8 Are store rooms free from dampness?			2
			<b>16/16</b>
<b>4. COLD STORAGE AREA</b>			
4.1 Are doors and strip curtains in cold rooms clean?			2
4.2 Is the inside of the cold rooms clean and tidy?		1	
4.3 Is there no food stored on the floor?			2
4.4 Are all food containers with food in, covered? (with lids or wrapping)			2
4.5 Are temperatures correct? (Should be recorded at least twice – 12 hourly – see diary)			2
			<b>9/10</b>

1 of 4  
14/3/12  
4/4/3

**ELEVEN POINT CHECK LIST**

DIMENSION	YES		
	POOR (0)	AVERAGE (1)	GOOD (2)
<b>5. FREEZERS</b>			
5.1 Is the door clean and free from ice?			2
5.2 Are the door seals in a good condition?			2
5.3 Is food protected against drying out and freezer burn?			2
5.4 Is food neatly stacked/packed and easy accessible?			2
5.5 Are temperatures correct? (Should be recorded at least twice – 12 hourly – see diary)			2
5.6 Are the keys in the possession of a member?			2
5.7 Are floors not slippery and free from ice?		1	
			<b>13/14</b>
<b>6.2 FOOD PREPARATION</b>			
<b>6.1 PRE-PREPARATION</b>			
6.1.1 Is separate areas provided for pre-preparation of vegetables, meat, dairy products and dry rations?			2
6.1.2 Are separate cutting boards used for different food products? (NB! Colour coding)			2
6.1.3 Are cutting boards washed between uses?			2
6.1.4 Are only enough stock retrieved from stores for preparation? (No unattended stock)			2
6.1.5 Are work surfaces clean?			2
6.1.6 Are vegetable racks/shelves clean and tidy?			2
6.1.7 Are non-fixed equipment moved to clean underneath and around?			2
6.1.8 Are basins tidy and free from utensils which lies around unnecessarily?			2
6.1.9 Are can openers, blades, handles and base plates clean?			2
6.1.10 Are fruit & vegetables washed before use?			2
6.1.11 Are refuse bins available in food preparation area and closed when not in use?			2
6.1.12 Is larger equipment like mixers and vegetable cutters clean and tidy?			2
6.1.13 Do food handlers work under supervision of a trained caterer at all times?			2
			<b>26/26</b>
<b>6.2 COOKING &amp; PREPARATION</b>			
6.2.1 Are all equipment & utensils in good working condition?			2
6.2.2 Are areas under & around equipment clean?			2
6.2.3 Are ventilation hoods and canopies as well as filters clean?			2
6.2.4 Are pans, pots and other food containers kept on the floor and not on racks?			2
6.2.5 Are food not kept outside the refrigerator for longer than 2 (two) hours?			2
6.2.6 Is hot water available for the cleaning of equipment & utensils?			2
6.2.7 Are large enough basins available to immerse large pots & utensils completely?			2
6.2.8 Are utensils & equipment washed before and after use?			2
6.2.9 Do food handlers work under supervision of a trained caterer at all times?			2
6.2.10 Are there two kinds of vegetables prepared daily?			2
6.2.11 What is the quality of the dishes prepared/cooked?			2
			<b>22/22</b>
<b>7. SERVING</b>			
7.1 Is the quantity of food served sufficient?			2
7.2 Is hot food served hot & cold food served cold?			2
7.3 Is serving utensils, such as ladles, tongs spoons and disposable gloves used when food is served?			2
7.4 Is food served attractively?			2
7.5 Is there enough eating utensils available? (Mugs, spoons, plates)			2
7.6 Is eating utensils clean?			2
7.7 Is serving done under the supervision of a trained caterer?			2
			<b>14/14</b>