



**TRADE & INDUSTRIAL POLICY STRATEGIES**

## **SECTOR JOBS RESILIENCE PLAN: AGRICULTURE VALUE CHAIN**

Trade & Industrial Policy Strategies (TIPS) is a research organisation that facilitates policy development and dialogue across three focus areas: trade and industrial policy, inequality and economic inclusion, and sustainable growth

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## **FOREWORD**

The National Climate Change Response White Paper requires the development of Sector Jobs Resilience Plans (SJRPs). These plans aim to protect vulnerable groups that may lose their jobs or livelihoods as a result of climate change impacts, related either to physical effects or to the transition to alternatives.

The proposals for the SJRPs, and the evidence supporting them, are presented as a suite of related documents. These are The SJRP toolbox: Summary for Policy Makers and proposals for five value chains that seem particularly likely to be affected: coal, metals, petroleum-based transport, agriculture and tourism.

The research for this project was conducted by Trade & Industrial Policy Strategies (TIPS) for the Department of Environment, Forestry and Fisheries, and funded by GIZ.

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## **ABBREVIATIONS**

CoGTA	Department of Cooperative Governance and Traditional Affairs
CPI	Consumer Price Index
DEA	Department of Environmental Affairs
dti (the)	Department of Trade and Industry
EPWP	Expanded Public Works Programme
GDP	Gross Domestic Product
KPI	Key Performance Indicator
NDOA	National Department of Agriculture
R&D	Research and Development
SEIAS	Socio-Economic Impact Assessment System
SJRPs	Sector Jobs Resilience Plans
TOR	Terms of Reference
UIF	Unemployment Insurance Fund

## EXECUTIVE SUMMARY

The National Climate Change Response White Paper requires the development of Sector Jobs Resilience Plans (SJRP) that could protect vulnerable groups who could lose their jobs or livelihoods as a result of the climate impacts, either related to physical effects or to the transition. This document provides initial proposals for the SJRP for the agricultural value chain.

A SJRP is needed for the agricultural value chain because climate change, especially higher temperatures, more frequent and severe droughts, and heavier rainfall, will have a severe impact on low-income households in the value chain. In particular, farmworkers have already seen large-scale losses of jobs and income due to droughts, and emerging farmers and gardeners in the historic labour-sending regions have experienced reduced production. Employment numbers are indicated in the table below.

**Table 1. Employment in agriculture**

Stage of the value chain	Employment (number of jobs)
Farmworkers	800 000
Emerging farmers	150 000
Food gardening and cattle herding	1 500 000

The proposed SJRP for the agricultural value chain aims to reduce climate-change related impacts on these vulnerable groups. The proposals centre on:

1. Clarifying responsibility for implementing the SJRP within government.
2. Maximising the diffusion of technologies that can limit the extent of job losses and lower incomes resulting from climate change for farmworkers and for gardeners and emerging farmers in the historic labour-sending regions.
3. Promoting economic diversification in communities that rely disproportionately on farming.
4. Where job loss is unavoidable, assisting farmworkers to transition to new livelihoods through active labour market policies.
5. Providing income support and drought relief during severe droughts to farmworkers, emerging farmers and gardeners in the historic labour-sending regions.

This document first reviews the main dynamics in the agricultural value chain, in particular trends in production, climate-change related impacts, and the nature and resources available to the vulnerable groups. It then lays out the proposals for the SJRP, in each case providing an initial impact assessment and the main implementation phases and risks, which are derived from the underlying theory of change.

## 1 KEY DYNAMICS

Agriculture is an important source of employment and exports as well as being critical for food security, although it accounts for under 3% of the gross domestic product (GDP). This section of the report locates climate-change related impacts in the sector's broader growth and employment trends. It then outlines the main vulnerable groups in the sector – essentially workers on commercial farms, as well as emerging farmers and gardeners in the historic labour-sending regions.

### 1.1 Production, location and exports

From 1998 to 2005, agriculture grew an average of 2.5% a year; from 2005 to 2018, its growth accelerated, but only to 2.9%. In contrast, the rest of the economy expanded 3.7% a year from 1998 to 2005, then slowed to 2.3% a year. As a result of these trends, the share of agriculture as a whole in the GDP fell from around 4% in 1994 to just under 2.5% in 2005, then stabilised. In contrast, food processing has ranked among the fastest growing manufacturing industries in recent years, rising from a low of 1.7% of the GDP in 2007 to 2.6% in 2018.

The main branches of agriculture are livestock, horticulture and food crops. In 2017/18, livestock (around half poultry by value) accounted for 50% of agricultural production, horticulture for just under 30%, and field crops, 20%. From 2000 to 2017, horticulture and animal production each grew by around 150% in constant rand terms. In contrast, field crops expanded by only 15%, although with significant fluctuations. To date, however, assessments of the impacts of climate change have centred on maize and wheat, which accounted for under 15% of the value of all agro-industrial production in 2018.

The Western Cape and KwaZulu-Natal accounted for over 40% of agro-industrial production in 2018. Provinces in the west and central areas of South Africa contributed 45% of agricultural production in 2018, compared to 27% of output in other industries. Agriculture comprises a disproportionately large share of provincial value added in the western provinces, especially the Northern Cape, as well as in KwaZulu-Natal.

Deciduous fruit farms are located principally in the Western and Eastern Cape. Limpopo produces almost a third of plantation citrus; the Eastern Cape, Mpumalanga and the Western Cape, around a fifth each; and KwaZulu Natal most of the rest. (Schultz and Schutte 2016:33)

In 2018, just over half of South Africa's 13 million cattle was owned by households in the historic labour-sending regions, almost exclusively in the Eastern Cape and KwaZulu Natal. The national 2015/16 drought followed by a series of more localised droughts led to significant culling from 2015 to 2018. The national herd shrank by 7% in this period.

The agricultural value chain, especially horticulture, was more important for exports than for the GDP as a whole, accounting for over 10% of total foreign sales in the late 2010s.

### 1.2 Dualism in South African agriculture

The suppression of African agriculture before 1994 led to deep inequalities in ownership and control across the value chain. The resulting structure can be understood as a split between an internationally competitive agro-industrial sector, on the one hand, and impoverished and largely dysfunctional household production in the historic labour-sending regions on the other. In this context, the emergence of formal smallholders remained limited. In the historic labour-sending regions, even before the impact of climate change, most households could

not survive from farming alone due to lack of land, irrigation, infrastructure and supportive market and training institutions.

Over 90% of agricultural products sold in South Africa's formal retail outlets in the 2010s came from around 50 000 agro-industrial farms. In the mid-2010s, 10 agri-businesses with turnover in excess of R100 million a year accounted for between 70% and 80% of company income tax paid in agriculture, forestry and fishing (calculated from SARS 2018). In 2016, a third of formal employers in agriculture fell into the highest-earning decile of employed people and half into the highest-earning 30%. Of all formal farm owners, only a quarter were black, and the figure dropped to a fifth for those in the best-off 30% of income earners (calculated from Statistics South Africa 2016a).

The agro-industrial value chain was even more concentrated in storage, processing and retail. The five largest supermarket chains accounted for almost 60% of income in the industry in 2015 (Statistics South Africa 2017a:20). In food processing, the top five companies accounted for a quarter of total income in 2014, and the top 20 for half (Statistics South Africa 2016b:33).

In 2017, 785 000 people were employed in industrial agriculture, 300 000 in food processing, and 80 000 in the production of wine and other alcoholic beverages. Statistics South Africa found virtually no informal farm employees. Industrial agriculture contributed 5% of total employment and food processing 2% (but over a quarter of manufacturing jobs). Employment in industrial agriculture and food processing climbed by around a quarter from 2010 to 2018, although for 20 years before that agriculture had shed jobs fairly steadily (calculated from Statistics South Africa 2017b and 2019).

At the other end of the scale from South Africa's industrial agriculture powerhouse are the gardens kept by households in the historic labour-sending regions. Most families there worked less than half a hectare, and viewed it as a supplementary activity rather than a central source of income or food. The tendency to equate farming in the historic labour-sending regions with "subsistence" farming in the rest of Africa is therefore misleading.

In the historic labour-sending regions, 1.7 million people were engaged in agricultural production, and 154 000 saw it as their primary source of income or food in 2018. Limpopo held almost a third of these households, while the Eastern Cape and KwaZulu Natal accounted for almost a quarter each.

The share of people in the historic labour-sending regions who undertook any farming dropped from around half in 2010 to two fifths in 2018, and the number involved declined from almost two million. The fall was sharpest in Limpopo and the North West, presumably at least in part because of the growth in opportunities around the mining towns.

### **1.3 Climate-change related impacts**

The agricultural value chain is, by definition, heavily affected by changes in the climate, especially by increased heat and the associated rise in droughts and by more tempestuous rainfall. Within agriculture, however, the employment and climate-change related impacts vary substantially between branches, by location, and by type of producer. In the short to medium term, the specific nature, location and timing of impacts remain uncertain, although the long-run trajectory is clear. This uncertainty means that the SJRP must include both strong monitoring mechanisms and an ability to adapt to challenges as they arise.

By region, droughts have become more likely in the Western Cape and Limpopo over the past 50 years, while temperatures have risen twice as fast in inland provinces as along the coast. Still, various factors make it virtually impossible to forecast the impact of climate change on agriculture with much precision. First, South African weather is extremely variable even without climate change, as well as subject to long cycles that complicate mid-term projections. In addition, although climate change has been underway for a century, local trends in rainfall and drought may change as heating persists. Finally, forecasts for climate change typically do not provide estimates except on at least a 20-year time horizon. Moreover, they vary substantially depending on model assumptions and the available data. (See South African Weather Service 2017; DEA 2018; Schultze 2016). The SJRP will therefore have to build in mechanisms to incorporate changes in outcomes and expectations.

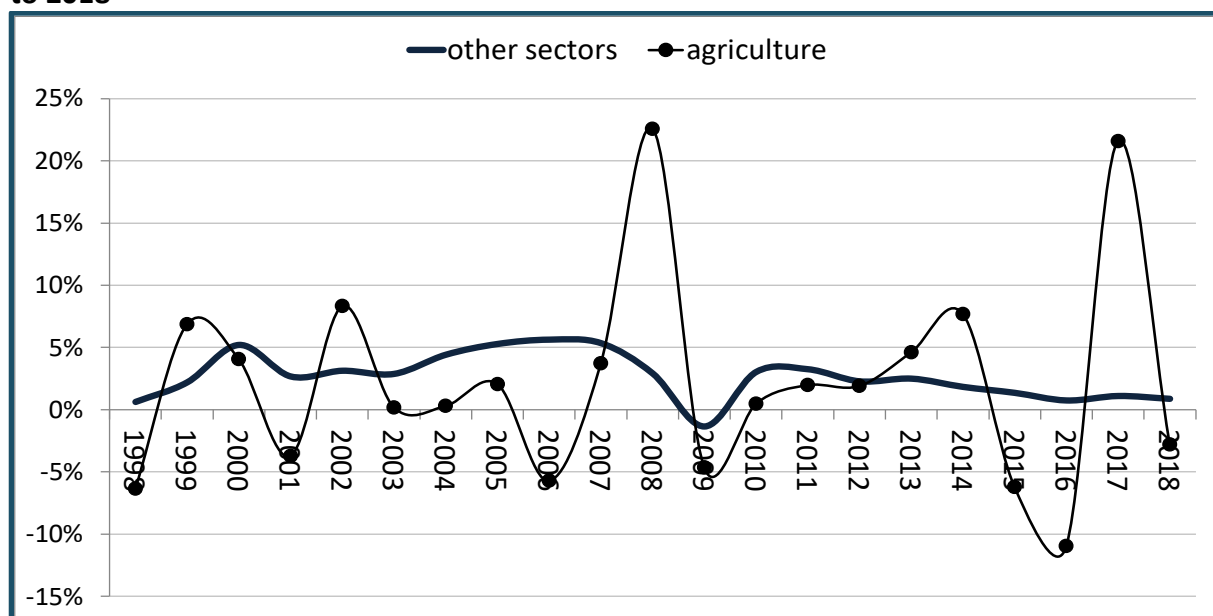
The current modelling (see DEA 2018) suggests that that:

- South Africa as a whole has already seen temperatures increase at twice the rate of the globe as a whole, and this trend is likely to continue; and
- Temperatures will rise more in the northern interior than along the coast.

Rainfall is likely to decline in the Southern Cape by up to 30% by 2050 (GreenCape 2019:10). It might increase in most of the rest of the country except in the northeast, while becoming more erratic. The higher temperatures generally make droughts more likely even if rainfall increases in some areas. In addition, they generate stress for crops and animals, and for farmworkers, and may enable new diseases and pests.

Variable weather has brought sharp fluctuations in agricultural production over the past five years, largely due to an increase in the frequency and intensity of droughts. Graph 1 shows that the steep declines in production are typically followed by a rapid rebound in the following year, leading to considerable variation in the growth rate. As the graph indicates, the severity of the 2015/16 drought was unprecedented in the previous 20 years, while 2018 again saw a decline as a result of regional droughts.

**Graph 1. Annual percentage change in value added in agriculture and other industries, 1998 to 2018**



Source: Calculated from Quantec. EasyData. Interactive dataset. Downloaded from [www.quantec.co.za](http://www.quantec.co.za) in May 2019.



The forecast climate change will have differentiated impacts on the branches of agriculture.

**Livestock production** will be affected by heat stress for animals as well as veld degradation and fires, and possibly higher feed costs. The impact is generally harsher for smallholders.

During droughts, large-scale farmers can afford to buy fodder and move their animals between grazing areas. They are also prepared to cull their animals early on, fetching a reasonable price. Smallholders are usually harder hit both because they cannot afford mitigation strategies. Moreover, many see their cattle as an asset and are reluctant to slaughter them, but if they die from the drought then they fetch very little. In severe droughts, both groups of farmers end up accelerating sales of cattle as well as higher mortality rates, but small farmers in the historic labour-ending regions lose a larger share of their herds (see Maluleke and Mokwena 2017:35).

Livestock are not eligible for insurance against drought or for significant credit from the banks, which increases the impact of drought even on large farmers. The reason is that, given relatively weak traceability systems, farmers can dispose of animals without accounting to creditors and insurers.<sup>1</sup> Government provides fodder as drought relief, but some observers complained that it was provided late.<sup>2</sup>

In **horticulture**, higher temperatures and the associated heat stress and droughts, as well as shifts in rainfall, will affect production, but the impacts will vary by product. Because the branch is a major employer, downsizing is associated with significant job losses.

Even before climate change, South African producers of deciduous fruit faced high temperatures by international standards, as well as limited water. Fruit that has been damaged by heat can be sold to processors, but only at a much lower price than fresh sales (Hortgro Science 2018:30). As early as the 2020s, the area suitable for apples could fall by a quarter, with some farmers shifting to pears, which are more adaptable (DEA 2014:17; Schulze 2016:28). The amount of land suitable for wine could fall by over a third in the next 20 years, with vineyards that do not have access to irrigation particularly hard hit. Still, the effects of the climate crisis will likely be worse in Europe, Australia and California. As a result, unless international transport costs surge, export demand could improve in the medium term (DEA 2014:18).

The effects of climate change in the Western Cape could be mitigated through developing more drought-resistant cultivars or shifting to different kinds of produce, for instance from apples to pears. In addition, water-saving and heat-shielding technologies, such as drip irrigation and netting, could be pursued more vigorously. In the vineyards, the share of drip irrigation has now reached around half (GreenCape 2019:9). But new technologies may require a significant up-front investment. In 2019, Hortgro estimated the cost of irrigation design and materials for new apple and pear plantations at over R35 000 a year, or 8.5% of the total establishment costs for new orchards. In contrast, water itself remained fairly cheap, at just over R2 000 a year, making it financially difficult to justify investments (Hortgro 2019:6).

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<sup>1</sup> Interview with Red Meat Producers Organisation, September 2019.

<sup>2</sup> Interview with Western Cape Department of Agriculture and Agricultural Research Council, October 2019.

Citrus requires substantial amounts of water, and some varieties need relatively cool temperatures. As a result, the effects of climate change will differ between Limpopo and southern regions.

In Limpopo, analysis of rainfall over the past century as well as models show lower rainfall but possibly more monsoon floods, which would constrain both citrus and vegetable production. The net impact on the Limpopo River seems important in this regard: if rains increase to the northwest of South Africa, as projected, and monsoons move south, it could maintain its flow, allowing farms in the region to bolster irrigation. There do not appear to be published studies about this, however, and the capital costs of expanding irrigation could also be considerable.

Higher temperatures in the Eastern and Western Cape could necessitate a change in cultivars, increase the need for shade netting, and affect the colour of fruit (higher temperatures bring less bright colours). But some varieties do better at higher heat, and they could replace the current products (Schulze and Schutte 2016:37ff).

Generally, increased heat leads to new kinds of pests and blights, especially if combined with more humidity. It would also require more consistent and greater cooling during transport after harvest.

For **field crops**, heat stress is also a factor, although it varies depending on the varietal and crop. Estimates suggest that maize would be more affected than wheat, although the area suitable for wheat would shift toward KwaZulu-Natal. Access to irrigation will become increasingly important, but also possibly more difficult as competition for water increases. Soya production could, however, benefit from the temperature increase, which would make it possible to expand production into areas that were historically considered too cold.

One study projected a decline in maize yields in the order of 25% from the northern Free State through most of the North West and Mpumalanga, but limited impacts in the rest of the country. It also anticipated some improvements in more southerly regions in the Eastern Cape and the Free State that are currently too cold for maize. Still, the net effect would be a decline in maize production to the point where imports would become consistently necessary, resulting in higher food prices (Johnston et al. 2014:199ff). Transport costs raise the price of imports around a third above local products.

The main climate-related policy impacts are likely to emerge around water use; freight and packaging; and emissions from cattle. Again, the implications vary significantly by branch.

Industrial agriculture currently uses between 50% and 60% of available water resources in South Africa. As pressure on water resources rises, households are likely to demand more water at the cost of agriculture. That could lead to higher prices for farmers or to lower allocations. Current estimates suggest that deciduous fruit farms pay only around R2 000 a year for water (Hortgro 2019:6ff). As noted, water use could be reduced through more efficient irrigation methods, but only for some crops and at a financial cost.

Commercial agriculture and food processing may be affected if carbon taxes and other mitigation measures raise the cost of bulk transport, especially for overseas exports. South Africa's only large-scale agricultural exports outside of the region are composed mostly of fresh fruit and juices, as discussed above, although beef saw rapid growth in the late 2010s. Transport comes to around 13% of the cost of these exports (Hortgro 2019:6).

Formal production in the agricultural value chain depends heavily on electricity for irrigation as well as for the cold chain for fresh fruit, vegetables and meat, and for processing. In addition, it depends on petrochemicals for diesel for farm machinery; products for packaging; and agro-chemicals. Increased costs for fossil fuels will affect costs and productivity through these channels.

Shifts in demand may also affect production. Consumers in the global North have also begun to favour local products, in part to limit emissions from bulk transport, under the “locavore” slogan. This trend has already affected South Africa’s wine sales, with a move toward packaging in the United Kingdom rather than in South Africa justified explicitly as a way to reduce bulk freight. The result was reduced local packaging sales and employment, as well as lower total revenue from wine sales. Unless emissions from long-distance freight are reduced, this trend could affect other South African exports increasingly in the future.

The main impacts on food processing and retail will derive from higher input costs as a result of changing agricultural conditions, as well as from changes in consumer demand.

Because food is a necessity with relatively inelastic demand, most but not all increases in the cost of agricultural inputs will likely be passed on to consumers. During the 2015/16 drought, the consumer price index (CPI) for food climbed by 12.3% in the year to June 2016, compared to 5.6% for all items. Processed food prices climbed 9.6% while for unprocessed foods they rose 14.9%. Producer prices for agriculture rose 19%, with a 40% increase for cereals.

As with agriculture, higher prices for fossil fuels would affect processing, transport, the cold chain and packaging for both food manufacturing and retail. In addition to the effects on domestic inputs, costs could rise substantially for producers using chocolate and coffee, which are entirely imported. Higher fuel prices could also affect overseas exports of processed foods, which are dominated by fruit juices and wine. Other processed exports mostly go to the region and would be less affected.

Because food consumption as a whole is not likely to decline, food retail should not see any major impacts on employment from changes in its product range or cost structure. For this reason, no SJRP will be developed for food retail.

## **2 VULNERABLE GROUPS AND COMMUNITIES IN THE AGRICULTURAL VALUE CHAIN**

Agriculture remains one of the most unequal sectors in the economy. The impacts of climate change are, however, likely to differ substantially between workers and their communities in the formal agro-industrial value chain, on the one hand, and households in the historic labour-sending regions, for which gardening and livestock constitute a subordinate component in complex livelihood strategies.

### **2.1 Farmworkers**

When droughts or higher temperatures lead to farm closures or consolidation, they typically result in job losses for both permanent and seasonal farmworkers. The prolonged drought in the Western Cape saw a net loss of around 40 000 farm jobs, or around a fifth of the total in horticulture, field crops and mixed farming.

Farmworkers had remarkably limited resources to respond to job losses. Median earnings for farmworkers came to R2 500 a month for women in 2017, and R2 800 for men. Only 15% of women farmworkers and 18% of men had a retirement fund although they belonged to the Unemployment Insurance Fund (UIF) at the same rate as other formal workers.

Farmworkers' lack of resources emerged in the fact that around 9% of other workers, but only 5% of farmworkers, relied in part on savings to tide them over while unemployed. Only 0.7% of former farmworkers said they received support from the UIF, compared to 1.7% of other jobless workers. For both farmworkers and other workers, the main source of support for jobless people was household members.

The main physical asset for most low-income South African households is their homes, since very few own land or capital. Farmworkers, however, mostly lived in housing that was tied to their work. They could not buy their homes and, if they lost their jobs, could be evicted after 30 days' notice.

Farmworkers had far lower levels of formal education than other formal workers. Fewer than one in seven had matric or more. Over a third had only primary, and half had some secondary. As a result, although farmworkers comprised just 6% of all formal workers, they made up over a third of those without primary schooling.

Integration of farmworkers into society appears weaker than other formal workers as a result of both lower levels of education and because they live on farms. Their limited ties appear in unstable employment relations, low levels of organisation, and inadequate observance of labour rights. For instance, less than 60% of farmworkers say they get sick leave and only around half have permanent jobs. In addition, an unusually large share of farmworkers – over half – live in one or two person households, and they have unusually low levels of communications technology services. Farmworkers also have comparatively limited access to social services, social grants and remittances, which underscores comparatively weak social support.

### **2.2 Farm communities**

In 2018, using Quantec estimates, 80 municipalities derived more than 10% of their income from agriculture. The towns are listed in Appendix A. Of these towns, 20 were predominantly in the historic labour-sending regions, while 60 were in the rest of the country.

As a group, the farm towns held 5.7 million people, or around a tenth of the national total. Farm towns in historic labour-sending regions held 40% of the population of the group. A third of the farm-town population was in KwaZulu Natal, followed by the Western Cape with a fifth, the Free State with a seventh, and the North West with a tenth.

Farm towns generally had lower employment levels than the rest of the country outside of the historic labour-sending regions. The difference, however, was largely due to relatively strong representation of towns in the historic labour-sending regions. In 2018, half of adults in the farm towns outside these areas had income-generating employment, but only just over a quarter in the farm towns in the historic labour-sending regions. Both ratios were on a par with non-farm towns in similar regions. For farm towns as a group, almost 30% of employees were farmworkers.

Farm towns in both kinds of region lagged behind in GDP per person. In the historic labour-sending regions, the figure came to R27 000 a year, almost exactly half as much as for farm towns in the rest of the country. For the rest of the country outside of the historic labour-sending regions, however, the figure was R80 000. In non-farm towns in the historic labour-sending regions, it was R36 000, or almost a third higher than for farm towns in these areas.

Overall, then, productivity in farm towns was lower than in municipalities with more diversified economies. Low household incomes also reflected the importance of farm workers, who were generally worse paid than other workers.

### **2.3 Gardeners in the historic labour-sending regions**

Households that have farms or food gardens in the former labour-sending regions are also highly vulnerable to climate change. They will mostly take the form of reduced access to water and deteriorating food security as household produce fails, rather than loss of employment, since most do not rely primarily on farming for income or food.

Very low incomes were found in the historic labour-sending regions. “Woman-headed”<sup>3</sup> households in the historic labour-sending regions, irrespective of their farming activities, reported median cash incomes of under R2400 a month in 2018, according to the General Household Survey for that year. The median incomes of “man-headed” households ranged from almost R5000 a month for those that did not farm at all, to R3700 for households that did some gardening, to R3400 a month for households that depended on farming as their main source of food or income.

For comparison, in other parts of the country, the 2018 General Household Survey found that the median income of “woman-headed” households was R5 700 a month, and for “man-headed” households it was R10 000. Farming and gardening households tended to be more dependent on social grants and less on paid employment than other households.

In the historic labour-sending regions, access to land for farming did not, in most cases, mean that households had a disposable asset. The vast majority farmed in their yards, which meant they could not simply sell their farmland. Moreover, only around half of the total, and two

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<sup>3</sup> The concept of “woman-headed” households is problematic. In practice, households with an adult man were generally considered “man-headed,” irrespective of income or relative power. Equal partnerships cannot be captured by the surveys at all. As a result, “woman-headed” households generally have fewer working age adults, which in itself reduces their income in addition to the depressing effects of discrimination in employment, pay and household labour.

thirds of those who depended primarily on farming for a livelihood, actually owned the land. In terms of housing, 80% of households in the historic labour-sending regions owned their homes, but three quarters said their house was worth less than R100 000, compared to two fifths in other regions. Only just over one in 10 houses in the historic labour-sending regions was valued at over R2 million, compared to one in four in the rest of the country.

Over two thirds of people aged 18 to 64 in the historic labour-sending regions had less than matric, and only between 1% and 2% had a university degree.

Around nine out of 10 households with gardens in the historic labour-sending regions received social grants. That in itself would cushion them against some of the effects of climate change. Social grants were the main source of income for half of “woman-headed” gardening households in 2018, and for two out of five of those “headed” by a man. Relatively few households, however, got an old age pension or disability grant, which was at a level to lift two people out of poverty. They were more likely to get the child support pension, which was enough to support half a person at the poverty line.

### 3 PROPOSALS

This section presents proposals on mobilising capacity to drive implementation of the SJRP for the agricultural value chain; promoting technological adjustments to minimise the loss of jobs and livelihoods as far as possible; diversification of the economies of farm towns where viable and sustainable; active labour market policies to assist workers and emerging farmers to transition to alternative activities if necessary; and income support to assist farmworkers and gardeners in the historic labour-sending regions in cases of drought or floods.

Implementation of the SJRP will require coordination across a range of state agencies in all the spheres of the state. For most proposals, success also depends on the ability to mobilise stakeholders in the value chain. For this reason, it is important to be clear about the overall responsibility for implementation of the SJRP as well as the roles of the various public and private stakeholders. The first proposal responds to this necessity.

Each proposal is followed by tables that provide a brief impact analysis and phasing and risks for implementation.

The impact assessment uses the Socio-Economic Impact Assessment System (SEIAS) methodology, which centres on evaluating costs, benefits and risks for different stakeholders, using detailed description when meaningful quantification is not possible. In this case, the aim is primarily to identify potential costs and risks as well as benefits, without attempting an in-depth discussion.

The phasing lays out each step from the initiation of the proposal to the achievement of the desired socio-economic impact. For these steps, it identifies the requirements for success and the main risks. The aim is to enable both a better understanding of the internal logic of the proposal itself, and to indicate where risk mitigation is required.

#### 3.1 Mobilising implementation capacity

**Aim:** Establishing a structure to drive the SJRP in agriculture.

**Proposal:** Presidential Climate Change Co-ordinating Commission (PCCCC) to establish a unit to coordinate across government and with stakeholders. The unit will require capacity and

resourcing to deal with the sector, which is large, diverse, unequal and complex, and which faces immediate as well as longer-term threats. It should work closely with the national and provincial departments of agriculture and rural development. The SJRP unit would also be responsible for monitoring high-level outcome indicators as well as performance indicators for the main programmes; assisting with unblocking where required; and assisting with changes in measures, if necessary, to achieve the desired outcomes.

**Table 2. Impact evaluation**

<b>Dimension</b>	<b>Vulnerable groups and communities</b>	<b>National departments</b>	<b>Organised business</b>	<b>Organised labour</b>
Benefits	Improved alignment to promote of measures designed to benefit them	Reduced difficulty of coordinating with other departments	Single point of engagement Improved alignment across state agencies	Single point of engagement Improved alignment across state agencies
Costs	Time and energy required to engage on SJRP and its implementation Cost of maintaining unit may reduce resources available for other measures	Might have to compromise on disagreements with other state agencies Time and energy required to engage on SJRP and its implementation	Time and energy required to engage on SJRP and its implementation	Time and energy required to engage on SJRP and its implementation
Risks	Unit lacks adequate staff, competencies or resourcing to carry out functions	Unit lacks adequate staff, competencies or resourcing to carry out functions	Unit lacks adequate staff, competencies or resourcing to carry out functions Might not agree with some measures in SJRP	Unit lacks adequate staff, competencies or resourcing to carry out functions Might not agree with some measures in SJRP

**Table 3. Phasing and risks**

Action	Requirements	Risks
Phase 1: Decision on unit structure	PCCCC establishes unit to drive SJRP for the agriculture sector	Mandate is delayed PCCCC does not define role, powers and tasks of the SJRP unit appropriately or clearly
Phase 2: Unit is adequately resourced	PCCCC allocates adequate positions and funds Hiring procedures ensure strong competencies (policy expertise, innovative approach, ability to manage planning and implementation processes with stakeholders inside and outside of government)	Unit is unable to obtain adequate resources Unit employs people without required competencies and qualities
Phase 3: Unit implements SJRP for agricultural sector effectively	Clear, timely mandates and clarity on relationship to relevant departments and state agencies Efficient platforms to engage stakeholders inside and outside of government Resources to monitor implementation of SJRP Resources and authority to unblock and/or initiate a course correction as required	Mandates are delayed or relevant partners within government can circumvent or ignore them Platforms for engagement on the SJRP do not include key stakeholders in agriculture, who then circumvent them, and/or are poorly facilitated, leading to delays and disputes Inadequate resourcing in terms of funding or capacity, so unable to monitor implementation, or unblock and/or course correct
Phase 4: Vulnerable groups in the agricultural value chain are effectively supported	Unit is able to ensure government implements SJRP for agriculture effectively, with on-going improvements and course corrections as information and certainty improves and better solutions emerge	Unit lacks necessary resources, information, capacity and authority



## 3.2 Technological adjustment

### 1. Improved projections of impact by region and early recognition of job and livelihood losses due to droughts and severe rainfall

**Proposal:** The National Department of Agriculture (NDOA) to develop monitoring systems with regular reports to the PCCCC on climate-change projections and on areas threatened by drought or affected by severe rainfall. The monitoring systems for drought and rainfall should include job losses by temporary and full-time farmworkers as well as the impact on production by households and farmers. The SJRP unit for agriculture should develop a protocol for responses to reports of imminent or actual drought, depending on how long it has lasted and its severity.

**Table 4. Impact evaluation**

Dimension	Vulnerable groups and communities	National departments	Organised business	Organised labour
Benefits	National government gets early warning of droughts and floods, and undertake efforts to mitigate the effects on livelihoods and job and on production, which ultimately moderates food prices	Improved information flow on extent and impact on livelihoods and jobs of floods and droughts  Guidance on appropriate and effective measures	Drought relief reduces social conflict and rural-urban migration  Improved information on droughts	Learn about job losses due to droughts or floods, which may affect members
Costs	Gardeners and emerging farmers in the historic labour-sending regions would have to report on impacts on production if monitoring system requires  Cost of monitoring system may reduce resources available for other measures	Setting up monitoring system  Implementing response measures	Need to comply with monitoring requirements, including impact on employment	

Dimension	Vulnerable groups and communities	National departments	Organised business	Organised labour
Risks	<p>System does not identify localised floods or droughts</p> <p>System does not provide reliable reports on impacts on employment and/or production of gardeners in historic labour-sending regions and emerging farmers</p> <p>Government does not respond despite information</p>	<p>System is inefficient and does not identify localised floods or droughts</p> <p>Government agencies do not respond as required</p>	<p>System does not identify localised floods or droughts</p> <p>Government does not respond despite information</p>	<p>System does not provide reliable reports on employment impacts of droughts or floods</p>

**Table 5. Phasing and risks**

Action	Requirements	Risks
Phase 1: PCCCC requests national Department of Agriculture (NDOA) to set up system	Mandate for PCCCC	NDOA does not comply or delays implementation
Phase 2: NDOA establishes system, possibly starting with a localised pilot	Adequate expertise, resources and time	<p>Inadequate resources are provided</p> <p>Systems do not function as anticipated</p> <p>Producers do not answer questions on production and employment reliably or at all</p>
Phase 3: NDOA reports cases of drought and/or flood to PCCCC as they arise	Reliable results from the monitoring system	Results from monitoring system are not reliable
Phase 4: PCCCC ensures appropriate response	PCCCC has mandate, capacity and resources to respond	PCCCC does not have resources or adequate support from

Action	Requirements	Risks
to protect vulnerable groups	Relevant government departments and agencies support the PCCCC's actions	government institutions to implement effective measures  PCCCC's measures are not appropriate or are delayed too long to be helpful
Phase 5: Impacts of drought or flood are mitigated for vulnerable groups	Appropriate and effective measures are implemented	Measures are not appropriate, or are not implemented in time to make a difference

## 2. Ensure diffusion of appropriate technologies among commercial and emerging farmers

**Proposal:** The PCCCC to work with NDOA and other relevant government agencies to audit existing initiatives by crop and identify weaknesses in the innovation and diffusion system, including both public and private institutions (especially business associations) in all provinces but especially in Limpopo, the North West, the Northern Cape and the Western Cape. The project should include an overview of research commissioned by business associations and how it is communicated, as well as public and not-for-profit research and development. It should generate measures to accelerate diffusion when necessary.

**Table 6. Impact evaluation**

Dimension	Vulnerable groups and communities	National departments	Organised business	Research agencies inside and outside of government
Benefits	Reduced loss of production due to climate change, moderating loss of jobs and livelihoods as well as food prices	Improved understanding of factors that prevent adoption of appropriate technologies leads to more effective measures	Greater access to technologies that reduce the impacts of climate change on agricultural production	If audit succeeds, improved diffusion of innovations and improved relationships with producers
Costs	Cost of audit may reduce resources available for other measures	Cost and time required for the audit and, where necessary, to change government systems to support innovation	Engagement with audit process takes time and energy	Time and energy required for (a) engagement with audit process and (b) changes to existing systems of diffusion and engagement with producers
Risks	Some technologies may displace workers  Audit ignores special situation of producers in historic labour-sending regions, or misunderstands it	Audit is inaccurate, leading to inappropriate reforms	Audit is inaccurate, leading government to institute counter-productive reports  Government requests changes in business research and development (R&D) systems that will require resources to implement	Audit is inaccurate or government draws inappropriate conclusions, leading to inappropriate reforms

**Table 7. Phasing and risks**

Action	Requirements	Risks
Phase 1: PCCCC engages with NDOA and relevant agencies to design audit	PCCCC has capacity to identify and engage with relevant government agencies  NDOA and other agencies are willing to co-ordinate with the PCCCC	Needed agencies are left out of engagement or too many irrelevant agencies are included  NDOA and other agencies do not prioritise the engagement or the project, so do not participate meaningfully
Phase 2: SJRP and partners undertake analysis of innovation system in agriculture	Realistic and clear project plan based on appropriate methodology, with well-define key performance indicators (KPIs) and time frames  Adequate resources, expertise and staff	Methodology is confused or inappropriate  Plan is unclear, poorly phased, and hard to monitor
Phase 3: Results of audit point to measures to improve adoption of appropriate technologies	Audit identifies blockages to adoption that can practically be addressed	Audit does not identify or define blockages clearly, so specific measures cannot be derived  Audit prioritises factors that are not important and neglects critical blockages
Phase 4: Measures to improve adoption of relevant technologies are implemented	SJRP and partner agencies have the power, resources and capacity to design and implement appropriate measures	SJRP and partner agencies lack the necessary capacity and authority
Phase 5: Accelerated adoption of new technologies reduces job and livelihood losses in agriculture due to climate change	Measures are appropriate and implemented well	Measures are not appropriate, or they are not well implemented

### 3. Ensure more efficient use of water in agriculture

**Proposal:** The PCCCC, in collaboration with relevant departments and agencies, to develop a plan (a) to reduce water wastage in irrigation schemes, to revive and improve the efficiency of irrigation schemes in the historic labour-sending regions where possible, and to extend the network of farm dams; and (b) to phase in a more economic price for water for farmers over the next five years, based on effective measurement and payment systems.

Proposals should be costed, with resourcing negotiated with National Treasury and other possible sources, such as the Development Bank of Southern Africa and the UIF. The project should include a review of regulations on dams that may deter farmers from capturing rain water. There is some urgency about this process, since currently water-intensive crops like citrus and berries are expanding at the cost of more sustainable products because they enjoy high prices, despite growing water shortages.

**Table 8. Impact evaluation**

<b>Dimension</b>	<b>Vulnerable groups and communities</b>	<b>National departments</b>	<b>Organised business</b>	<b>Irrigation and water boards</b>
<b>Benefits</b>	<p>Reduced loss of production to drought, moderating loss of jobs and livelihoods as well as food prices</p> <p>Increased productivity around irrigation schemes and small dams in historic labour-sending regions</p>	<p>Improved water use and reduced loss of jobs and livelihoods due to drought</p> <p>Increased revenues for water increases state resources (depending on elasticity of demand for water)</p>	<p>More reliable water including during droughts</p> <p>Reduced delays in approvals for farm dams</p> <p>Stronger position in competing for water with other users</p>	<p>Improved resourcing and support for improving bulk water schemes</p> <p>Increased revenue from agricultural water use (depending on elasticity of demand)</p>
<b>Costs</b>	<p>Higher price for water for emerging farmers and gardeners, unless they are exempted</p> <p>Opportunity cost of resources used to improve irrigation schemes</p>	<p>Time and resources required to develop and implement plan</p>	<p>Higher price for water use in farming</p>	<p>Cost of implementing plan</p>

Dimension	Vulnerable groups and communities	National departments	Organised business	Irrigation and water boards
Risks	Water price is set excessively high, leading to loss of jobs and/or livelihoods	Plan is ineffective or not resourced Expansion in farm dams leads to depletion of ground water	Plan is ineffective or not resourced May be asked to help pay for improvements in irrigation schemes Water price is set excessively high	Plan is ineffective Do not get adequate resources from state or commercial farmers

**Table 9. Phasing and risks**

Action	Requirements	Risks
Phase 1: PCCCC engages with NDOA and relevant agencies to develop plans	PCCCC has capacity to identify and engage with relevant government agencies NDOA and other agencies are willing to co-ordinate with the PCCCC Parties have expertise, resources and capacity to develop realistic plans	Needed agencies are left out of engagement or too many irrelevant agencies are included NDOA and other agencies do not prioritise the engagement or the project, so do not participate meaningfully Agencies do not have requisite expertise, resources or capacity
Phase 2: PCCCC and partners implement the plans	Plans are appropriate and well designed, and incorporate sufficient systems for course correction to avoid significant errors Parties have expertise, resources and capacity to implement the plans	Plans have poorly designed or inappropriate measures Systems to monitor actions and outcomes are inadequate or do not lead to course corrections where needed Parties lack the expertise, resources and capacity to implement the plans

Action	Requirements	Risks
Phase 3: Water is used more efficiently in agriculture, reducing the effects of drought and thereby saving jobs and livelihoods	Implementation of plans leads to more efficient use of water in agriculture, reducing strains on national water system and improving productivity in agriculture	Plans are inappropriate or are not implemented

#### 4. Systems to protect farmworkers when commercial farmers lose crops due to drought or heavy rainfall

**Proposal:** The PCCCC, with the National Department of Agriculture and other relevant government departments, to fast-track an insurance scheme to protect all farmers against droughts and heavy rainfall, as long as they do not dismiss or substantially reduce pay and benefits for farmworkers, including temporary workers. Only cattle farmers have any form of drought relief at present.

The project will require innovative approaches and probably some government subsidies, but would help stabilise the industry as weather becomes more uncertain.

**Table 10. Impact evaluation**

Dimension	Vulnerable groups and communities	National departments	Commercial farmers	Insurance agencies
Benefits	Insurance stabilises employment and production in agriculture, moderating food prices	Stabilised agricultural systems Reduced need for ad-hoc drought relief	Insurance against growing risk of droughts and floods	Increased business from agriculture
Costs		Time and resources to negotiate and establish system	Payment for insurance Time and resources to negotiate system	Time and resources to negotiate and establish system



Dimension	Vulnerable groups and communities	National departments	Commercial farmers	Insurance agencies
Risks	Poorly designed insurance system could raise production costs, leading to downward pressure on pay and upward pressure on food prices	Unable to design a viable system System requires substantial subsidies	Insurance may be too expensive to be worthwhile	Insurance may be too expensive to be viable Low take-up if farmers underestimate risk, or excessive pay-outs if actuarial estimates are wrong

**Table 11. Phasing and risks**

Action	Requirements	Risks
Phase 1: PCCCC engages with NDOA and other relevant government agencies to develop position paper on insurance scheme	PCCCC has capacity to identify and engage with relevant government agencies NDOA and other agencies are willing to co-ordinate with the PCCCC Parties have expertise, resources and capacity to develop realistic position paper	Needed agencies are left out of engagement or too many irrelevant agencies are included NDOA and other agencies do not prioritise the engagement or the project, so do not participate meaningfully Agencies do not have requisite expertise, resources or capacity
Phase 2: SJRP and team engage with organised agriculture and insurance industry to develop scheme	PCCCC has capacity to identify and engage with relevant government agencies Business associations are willing to engage on the insurance scheme Parties have expertise, resources and capacity to develop realistic scheme	Needed agencies or business associations are left out of engagement, or too many irrelevant groups are included Parties do not prioritise the engagement or the project, so do not participate meaningfully Parties do not have requisite expertise, resources or capacity

Action	Requirements	Risks
Phase 3: Scheme is implemented	<p>Clear responsibility for implementing and administering the scheme</p> <p>Public or private agency charged with implementation has adequate capacity and interest in implementation</p>	<p>Scheme is handed over to an agency that does not prioritise its implementation, or is not capable of implementing it effectively</p> <p>Responsibility and roles in implementation are not clear</p>
Phase 4: Producers and production are stabilised over time, saving jobs and livelihoods and moderating food prices	Scheme works to enable farmers to stay in business and maintain production in long run, leading to more stable employment, livelihoods and food supply	Schemes does not work because it underestimates costs or overestimates benefits to farmers

### 5. Ensure diffusion of appropriate technologies among gardeners in historic labour-sending regions

**Proposal:** The PCCCC, with the national and provincial departments of agriculture, should commission a study of (a) the contribution of gardens to food security in the various historic labour-sending regions; and (b) blockages to diffusion of appropriate technologies to the producers. The study should take into account the significant differences between regions within the historic labour-sending areas, so it will require substantial resourcing. It should point to innovative solutions, which should not involve the extension services unless the capacity to strengthen them is clearly demonstrated.

**Table 12. Impact evaluation**

Dimension	Gardeners in historic labour-sending regions	National and provincial departments
Benefits	Government promotes diffusion of appropriate technologies that mitigate the effects of climate change on food security	Improved understanding of gardening in historic labour-sending regions leads to better support measures, including adaptation to climate change
Costs	Time required to participate in study	Funding, time and capacity to conduct study
Risks	Government finds that gardens are not critical for food security, so does not provide substantial support	Study comes up with inaccurate or trivial findings, leading to inappropriate or no measures

**Table 13. Phasing and risks**

Action	Requirements	Risks
Phase 1: PCCCC engages with national and provincial departments of agriculture to develop TOR for study	<p>PCCCC has capacity to engage with departments of agriculture</p> <p>Departments of agriculture are willing to co-ordinate with the PCCCC</p> <p>Parties have expertise, resources and capacity to develop realistic and appropriate terms of reference (TOR)</p>	<p>Provincial departments do not prioritise engagement</p> <p>TOR are poorly drafted, leading to study that is not useful</p>
Phase 2: SJRP and departments of agriculture commission study	<p>Funds are available</p> <p>Procurement procedures adhered to and lead to contract with service provider with requisite expertise and capacity</p>	<p>Funds are not available</p> <p>Procurement procedures fail, lead to excessive delays, or lead to selection of inappropriate service provider</p>
Phase 3: Study is completed and generates findings that point to policy improvements	<p>TOR are clear and service provider adheres to them</p> <p>Service provider has capacity and expertise to implement the study and interpret the findings in useful ways</p> <p>Resources are adequate to complete the study</p>	<p>TOR are ambiguous and/or service provider does not fulfil them</p> <p>Service provider is not competent to carry out or interpret the study</p> <p>The resources provided are inadequate to carry out the study successfully</p>
Phase 4: Policy improvements lead to enhanced support for gardeners in historic labour-sending regions, strengthening food security	<p>Study leads to appropriate and effective policies</p> <p>Government implements the new policies effectively</p>	<p>Policies derived from study are not appropriate or effective</p> <p>Government does not implement the policies or implements them poorly</p>

### 3.3 Diversification of local economies

**Aim:** Assist farm towns especially in the Northern Cape, North West and Limpopo to diversify.

**Proposal:** The PCCCC, the Department of Cooperative Governance and Traditional Affairs (CoGTA), the Department of Trade and Industry (the dti) and other relevant departments should develop a system to support farm towns to identify and develop viable additional, sustainable economic opportunities that will generate employment and livelihoods. The system should incorporate strong risk management systems, including monitoring,

unblocking and course-correction mechanisms, to avoid imposing additional losses on already poor towns. It should also be realistic about the limitations on options for small, remote towns, as well as the capacity and resource limitations facing rural municipalities.

**Table 14. Impact evaluation**

<b>Dimension</b>	<b>Vulnerable groups and communities</b>	<b>National departments</b>	<b>Organised business</b>	<b>Municipal governments in farm towns</b>
Benefits	Higher levels of employment and economic opportunities and incomes	Farm towns require less support in long run, reducing burden on national government Economic growth is strengthened Rural-urban migration is reduced	Plans open up new economic opportunities Maintaining employment and incomes for vulnerable reduces social conflict	Increased income, employment and growth in towns Higher revenues
Costs	Time required to engage in planning process	Resources, time and expertise required to develop realistic plans Costs of implementing the plan	Time required to engage in planning process Resources for new investments	Costs of developing and implementing the plan
Risks	Plans do not work, leading to higher costs for towns that are already poor	Plans do not work, leading to higher costs for towns that are already poor Unable to identify viable options	Plans do not work, leading to wasted effort and loss of invested resources	Plans do not identify viable options or fail, imposing costs on town and failing to prevent continued decline

**Table 15. Phasing and risks**

Action	Requirements	Risks
<p>Phase 1: PCCCC engages with CoGTA, the dti and other relevant agencies to design system to support farm towns in diversifying</p>	<p>PCCCC has capacity to identify and engage with relevant government agencies</p> <p>Other government departments are willing to co-ordinate with the PCCCC on the project</p> <p>Parties have expertise, resources and capacity to design effective system</p>	<p>Needed agencies are left out of engagement or too many irrelevant agencies are included</p> <p>Departments do not prioritise the engagement or the project, so do not participate meaningfully</p> <p>Agencies do not have requisite expertise, resources or capacity</p>
<p>Phase 2: PCCCC and partners implement the system</p>	<p>System is appropriate and well designed, and incorporates sufficient mechanisms for course correction to avoid significant errors</p> <p>Parties have expertise, resources and capacity to implement the system</p>	<p>System is poorly designed or inappropriate</p> <p>Mechanisms to monitor actions and outcomes are inadequate or do not lead to course corrections where needed, so implementation fails</p> <p>Parties lack the expertise, resources and capacity to implement the plans</p>
<p>Phase 3: System generates effective measures and projects</p>	<p>Resources for new investments are available</p> <p>Local stakeholders buy into proposals</p> <p>System addresses real constraints on local diversification with practical, sustainable measures</p> <p>System has adequate risk management systems to avoid major losses</p> <p>Projects enable and reward new investment by businesses and others</p>	<p>Parties are unable to mobilise resources, develop realistic proposals, maintain local support, manage risks, or attract increased investment</p>

Action	Requirements	Risks
Phase 4: Local economy diversifies and grows, reducing the effects of a decline in agriculture due to climate change impacts on jobs and livelihoods	Successful measures to diversify economy	Projects and policies fail to bring about diversification, leading to failure of enterprises and worse job losses

### 3.4 Active labour market policies

**Aim:** Assist farmworkers to deal with job losses due to climate-change related impacts.

**Proposal:** The PCCCC to work with relevant government units and stakeholders to improve support for permanent and temporary farmworkers and food workers who face job losses due to droughts and other climate-related impacts. Proposals should explore: (a) ways to transfer equity in housing to farmworkers who have been long-term renters (on the model of the transfer of township rental housing in the 1990s), so that they are not automatically evicted if dismissed and have resources to move if necessary; (b) encouraging farmworker unionisation to give them greater protection, as well as supporting service organisations; (c) promoting worker ownership of commercial farms as far as possible; and (d) strengthening support for an efficient transition to new work, including improved reporting of job losses by employers; assistance to move to areas with more employment, plus recognition of prior learning certification and appropriate retraining. The process should include protection against dismissals of farmworkers during the policy-development phase. It should take into account that low levels of formal education make retraining and transition to other industries difficult for farm workers.

**Table 16. Impact evaluation**

Dimension	Permanent and temporary farmworkers	National departments and agencies	Commercial farmers	Organised labour
Benefits	<p>Reduced impact of job losses on housing</p> <p>Union gives greater power and voice in engaging with employer and government</p> <p>More options if jobs are lost</p>	<p>Reduced unemployment and higher productivity and incomes in longer run reduces demands on state</p>	<p>Modern labour relations with less dependency on employer housing</p> <p>Greater flexibility in labour relations in the long run</p> <p>Reduced social conflict over job losses</p>	<p>More members</p> <p>More stable members on farms, with greater leverage in negotiations</p>
Costs		<p>Capacity, resources and expertise required to implement programmes</p> <p>Conflict with commercial farmers over equity in houses and farms and limits on dismissals</p>	<p>Reduced control over housing on land and over farms if increase in worker ownership</p> <p>Unionisation will likely bring higher wages and greater protection for farmworkers</p>	<p>Need to deploy organisers and develop recruitment strategies for new members</p>

Dimension	Permanent and temporary farmworkers	National departments and agencies	Commercial farmers	Organised labour
Risks	<p>Employers accelerate dismissals when proposals are mooted</p> <p>Measures are not implemented due to farmer resistance, lack of funding, or lack of capacity in relevant agencies</p> <p>Unable to take advantage of training due low formal education</p>	<p>Unable to implement measures effectively due to lack of capacity or resources, or because cannot effectively assist farmworkers to get new jobs</p> <p>Farmers dismiss more workers to avoid impact of measures</p>	<p>Aggravated conflict on farm if unable to transition easily to modern labour relations</p> <p>Measures on housing and worker participation impose excessive costs</p>	<p>Unable to recruit new members</p> <p>Employers accelerate dismissals to reduce unionisation and avoid worker ownership</p>

**Table 17. Phasing and risks**

Action	Requirements	Risks
Phase 1: PCCCC engages with relevant government departments and agencies to develop specific measures to support farmworkers, including exploration of proposed options	<p>PCCCC has capacity to identify and engage with relevant government agencies</p> <p>Other government departments are willing to co-ordinate with the PCCCC on the project</p> <p>Parties have expertise, resources and capacity to design effective system</p>	<p>Needed agencies are left out of engagement or too many irrelevant agencies are included</p> <p>Departments do not prioritise the engagement or the project, so do not participate meaningfully</p> <p>Agencies do not have requisite expertise, resources or capacity</p>



Action	Requirements	Risks
Phase 2: PCCCC leads engagement with stakeholders on proposals	Stakeholders are prepared to engage constructively PCCCC has mandating system in place plus capacity and time to ensure meetings are convened and to engage constructively	Commercial farmers and other organised business representatives are not prepared to engage constructively PCCCC is not able to manage engagements efficiently or effectively
Phase 3: Government implements the measures, with PCCCC as champion	Measures are appropriate and well designed, and incorporate sufficient mechanisms for course correction to avoid significant errors Parties have expertise, resources and capacity to implement the system Stakeholders, including commercial farmers, support or at least can live with the measures	System is poorly designed or inappropriate Mechanisms to monitor actions and outcomes are inadequate or do not lead to course corrections where needed, so implementation fails Parties lack the expertise, resources and capacity to implement the plans Commercial farmers sabotage and resist implementation, which may lead to worse outcomes for farmworkers
Phase 4: Farmworkers' job security, pay, working relations and mobility improve without harming productivity or employment levels on commercial farms	Measures succeed in improving farmworkers' job security and voice as well as their ability to transition to new jobs if they are retrenched	Commercial farmers view the measures as so burdensome that they do not implement them, or they downsize Farmworkers' formal education levels are too low to take advantage of training opportunities or find alternative employment if retrenched.

### 3.5 Social protection

#### 1. Improve support especially for low-level, poorly educated farmworkers who lose jobs due to droughts or changing production patterns.

**Proposal:** PCCCC to engage with UIF and the Expanded Public Works Programme (EPWP) to enhance support for farmworkers in drought areas if their hours or jobs are reduced. The process should build on reports of droughts and dismissals from the monitoring process proposed in section 3.2.

**Table 18. Impact evaluation**

Dimension	Farmworkers	National departments	UIF and Department of Employment and Labour	EPWP and Department of Public Works and Infrastructure
Benefits	Income support or public employment if income or jobs lost due to climate change	Greater stability in farming areas and reduced rural-urban migration	Meet mandate of protecting workers faced with job loss  Reduced pressure to return surplus to fiscus or members	Meet mandate of providing support for unemployed people
Costs		Time and capacity to engage with UIF and EPWP	Cost of programmes  Development of new systems to support farmworkers during droughts	Cost of programmes  Development of new systems to support farmworkers during droughts
Risks	Support is delayed or trivial	May have to provide resources to leverage UIF and EPWP support	Unable to provide funds due legal restrictions  Stakeholders do not prioritise farmworkers so disapprove of proposal	Contestation over prioritisation of farmworkers

**Table 19. Phasing and risks**

Action	Requirements	Risks
Phase 1: PCCCC engages with EPWP and the UIF, and their oversight departments to develop options for assisting farmworkers facing job or income losses due to drought or floods	PCCCC has capacity to engage effectively  Agencies and departments are willing to engage constructively	PCCCC does not have sufficient understanding of EPWP and UIF resources and constraints to engage effectively  Agencies and/or their oversight departments avoid serious engagement
Phase 2: Parties develop effective options	Laws and regulations governing agencies permit options  UIF and EPWP are willing to prioritise farmworker communities facing downturns	UIF and EPWP find that they cannot legally prioritise farmworker communities facing downturns or are unwilling to do so  Options are on a very small scale  Options do not include feedback mechanisms to ensure continual improvement
Phase 3: EPWP and UIF implement programmes	EPWP and UIF have sufficient and appropriate resources and capacity to roll programmes out rapidly when floods or droughts occur	UIF funding programmes would be more innovative, and they go wrong (e.g. long delays, do not reach priority regions or individuals)  Drought and flood monitoring does not provide sufficient information to trigger programmes timeously, or trigger them too often leading to depletion of resources
Phase 4: Farmworkers are at least partially protected from job and income losses due to increased droughts and floods	EPWP and UIF programmes are rolled out successfully when droughts or floods occur	Programmes are not rolled out timeously in areas facing droughts or floods

**2. Support for gardeners in historic labour-sending region during severe droughts and if heat or heavy rains make land unusable**

**Proposal:** The PCCCC should work with the Department of Social Development on a special temporary social grant for households that earn in the poorest three deciles (measured

against the national population) that are located in severe drought areas in farm towns or in historic labour-sending regions. The grant would last the duration of the drought and should be set at the level of the old-age pension.

The PCCCC and the national and provincial departments of agriculture should develop a protocol for providing support to cattle and crop farmers and gardeners in the historic labour-sending regions. The protocol should include stronger dissemination of information on the prospects for the drought, which is particularly important for planning culling of cattle and for planting and watering decisions. It should also include provision of fodder, ensuring interventions are more timely, consistent and sufficient. The protocol should be costed and resourced.

**Table 20. Impact evaluation**

Dimension	Emerging farmers and gardeners in historic labour-sending regions	Department of Social Development	Departments of agriculture	Affected municipalities
Benefits	<p>Income support for poorest households during severe droughts</p> <p>Reduced losses of cattle and crops due to drought</p>	<p>Improved anti-poverty and social protection network</p>	<p>Lessened impact of drought on production, land degradation and herds</p>	<p>Reduced deprivation during severe droughts</p> <p>Increased resources for households help sustain local economy</p>
Costs	<p>Time to apply for grants, and possibly travel to get them</p> <p>Engaging on information provided and innovation in farming practices</p>	<p>Cost of grants and information programme</p> <p>Requires a fundamental shift in how social grants are provided</p>	<p>Requires a significant reorganisation and expansion in drought information services</p>	<p>Time and staff to help identify and communicate with beneficiaries</p> <p>Helping to manage disputes or protests that may arise out of programmes</p>

Dimension	Emerging farmers and gardeners in historic labour-sending regions	Department of Social Development	Departments of agriculture	Affected municipalities
Risks	<p>Programmes are not initiated timeously or at all when drought hits an area</p> <p>Conflict over how long grants should last and who should qualify</p> <p>Households cannot prove income in order to qualify for grant</p> <p>Producers do not trust information provided</p>	<p>Drought monitoring is ineffective, so programmes are not triggered</p> <p>Programmes effectively encourage households to remain in regions that are no longer habitable</p> <p>Unable to identify or communicate effectively with intended beneficiaries</p> <p>Contestation and possibly corruption over who benefits and amounts provided</p>	<p>Drought monitoring is ineffective, so programmes are not triggered</p> <p>Unable to identify or communicate effectively with intended beneficiaries</p>	<p>Programmes are not initiated timeously or at all when drought hits an area</p> <p>Significant protests emerge over allocation and amount of grants, or when they should end</p> <p>Corruption around allocation of support</p>

**Table 21. Phasing and risks**

Action	Requirements	Risks
Phase 1: PCCCC engages with relevant government departments and agencies to develop specific measures	<p>Other government departments are willing to co-ordinate with the PCCCC on the project</p> <p>Parties have expertise, resources and capacity to design effective system</p> <p>Regulations and laws on social grants permit proposed system</p>	<p>Departments do not prioritise the engagement or the project, so do not participate meaningfully</p> <p>Agencies do not have requisite expertise, resources or capacity</p> <p>Regulations and laws on social grants rule out proposed system and parties are not willing to amend them</p>

Action	Requirements	Risks
Phase 2: Parties establish new systems required to implement programmes during severe droughts	<p>Parties have capacity and resources to implement systems</p> <p>Implementation process integrates feedback systems to enable early identification of problems and unblocking or course correction</p> <p>Parties engage with stakeholders (e.g. unions, municipalities) to ensure adequate knowledge and support of programmes</p>	<p>Parties do not have resources or capacity to implement system</p> <p>Implementation process ignores problems as they arise, leading to ultimate failure</p> <p>Stakeholders do not understand or support programme, so they block it by mistake or intentionally</p>
Phase 3: Drought monitoring programme triggers support programmes	<p>Drought monitoring system has been established and is reliable</p> <p>Systems to provide programmes are responsive and effective</p>	<p>Drought monitoring system has not been established or is not accurate</p> <p>Systems to provide programmes do not work and there is no unblocking system to fix problems as they arise, leading to delays or failure to operate</p>
Phase 4: Poor gardeners and emerging farmers in historic labour-sending regions receive support during severe droughts	Programmes deliver as required	Programmes do not deliver

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