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STREAM 1, POLICY BRIEF 2A

CLIMATE – SMART AGRICULTURE TO SECURE JOBS, WATER, FOOD

Policy brief prepared for the Labour Caucus in the Jobs Summit Economic Sector Interventions working group by the Institute for Economic Justice (IEJ).

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1. NATURE OF THE PROBLEM

The future of the agricultural sector as the largest employer, particularly in the rural areas, is at risk. Among other dynamics, this relates to unsustainable water supply and use practices in South Africa, and impacts of climate change such as changing rainfall patterns, prevalence of droughts, more extreme weather events, shifting distribution of insects, and crop diseases. These bio-physical impacts are experienced in the context of the economic structure of the sector, land reform and tenure issues, difficult labour practices, and regional and global trade patterns. Current farming practices in South Africa contribute to water stress, land degradation, and climate change, and are not designed for climate resilience. This is not sustainable for food security and decent job creation and maintenance.

In terms of water, the agricultural sector needs about 61% of South Africa's available fresh water resources to thrive. Catchment areas are where rainfall falls and is gathered into rivers, and fed into the engineered water infrastructure such as dams and pipes. The most important of these catchments are called 'strategic water source areas' – half of our country's river flow is provided by a tiny 8% of land area – and these are threatened¹. There are opportunities for new jobs linked to landscape regeneration to be created in the 'Catchment Economy' which will result in improved water yields and security for downstream users.

In terms of land, invasive alien plants, mining and unsustainable farming practices have degraded large tracts of land across the country, including areas that are home to South Africa's most fertile agricultural soils (more than half of these occur in Mpumalanga). This contributes to reducing the potential to yield incomes from farming, particularly for communities of subsistence and smallholder farmers.

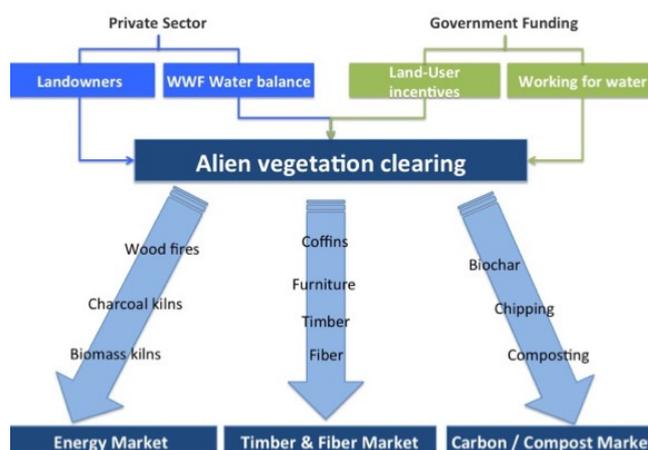
Big investments made by government and a few companies to safeguard their future supply of agricultural inputs are increasingly understood as a strategic necessity. Furthermore, there are a number of technologies and innovations being developed in commodity supply chains. However, unless there is a bespoke value chain model that provides for sustainable incomes particularly for poor farming communities, from healthy soils and secured water resources, the future of food supply remains unclear. South Africa will remain a net food importer and already marginalised South Africans will become more vulnerable to food insecurity and hunger.

'Climate-smart agriculture' (CSA) is a farming approach that could help the South African agricultural sector to diversify its farming practices and reduce the looming risks and improve food security of its citizens. The advantage of CSA is that it lends itself to job creation because it includes a number of agricultural practices that largely rely on labour to help restore degraded farming land and to manage strategic water source areas for the benefit of all. We argue that mainstreaming CSA in its many facets is

achievable because most of the practices have always been part of the farming culture and indigenous knowledge. This is true particularly of smallholder farmers who are increasingly becoming the most important and majority land owners in South Africa. Furthermore, the objectives of CSA are in line with South Africa's quest to meet the Sustainable Development Goals.

2. CURRENT APPROACHES BY SOCIAL PARTNERS

- A recent draft Water and Sanitation Masterplan includes actions to protect South Africa's SWSAs and links water to support for effective rural development and agrarian reform.
- The Department of Agriculture, Forestry and Fisheries (DAFF) published its draft Climate Smart Agricultural Strategic Framework for comment on 3 August 2018. The Draft Framework is a broad strategic guideline and includes a focus on building capacities amongst government, farmers, other stakeholders, as well as investments in research and technology, and the creation of a broadly enabling environment for CSA. A range of finance solutions are also proposed. Water access and utilisation receive considerable focus, but soil health does not appear to. Most of these approaches merely address the symptoms rather than the root causes of degraded natural resources and negligible job creation in the agricultural sector. Unless an inclusive, job creating value chain model is introduced, poor citizens will remain in the periphery of the production sectors.
- A 2017 draft Conservation Agriculture Policy to promote conservation agriculture (explained further below) adoption across all commodities beyond just the current application in the grains sector awaits finalisation. The Western Cape Department of Agriculture has strongly incorporated CA as a central component of climate resilient agriculture across the Province.
- Two recent innovative finance instruments have potential to support CA adoption in South Africa. These are: a blended finance instrument from the Banking Association of South Africa, with the Department of Agriculture; and a recently approved European Investment Bank credit line to the Land Bank, including a portion of credit earmarked for CSA.
- The Department of Environmental Affairs' Natural Resources Management (NRM) directorate has co-funded the private sector and land owners to clear land and implement landscape and riparian restoration in the Land Users Incentive Scheme. Local communities and NGOs such as WWF have bought in corporate funding and have tested enterprises using the biomass generated from clearing plants to create firewood and charcoal, and mulch and biochar to improve soil condition for crops.



Source: ToMA-WWF: Creating Value in the Biomass Value Chain, 2017.

3. THE PROPOSED APPROACH AND PROPOSALS

Approach

- Water should lead the discussion on farming for the future, including in the context of land reform, as most of South Africa's arable agriculture is deeply dependent on irrigation to maintain productivity and agricultural expansion, with only 3% of our soils considered as highly fertile. In many instances, access to water is the biggest constraint to optimising production and maintaining viable yields. The new draft Water and Sanitation masterplan advocates for improved water efficiency by farmers. Climate-smart production methods can enable South African farmers, both commercial and smallholder, to support a flourishing and labour-intensive food economy.

There are different approaches and technologies to achieve CSA:

- Agro-ecology broadly refers to practices that work with local ecosystems, for example by improving soil fertility and health, and plant quality, through available biomass and biodiversity instead of chemical inputs. It is gaining momentum worldwide as an effective way to tackle climate change and the related challenges of food security and nutrition².
- Conservation agriculture (CA) is an approach which involves minimal mechanical soil disturbance with no or reduced tillage, permanent soil cover and maximum diversity in selection of crops using rotation and cover crops, and all year around organic cover on soil using living plants and or with plant residues.

CSA works to protect water resources, reduce water requirements, reverse land degradation, improve soil health and soil moisture, and where possible avoid, reduce or remove greenhouse gas emissions which cause climate change. CSA increases productivity and reduces agro-chemical and irrigation input costs. These

measures build resilience in adapting to climate change and water scarcity, on farms and in the food system, thereby protecting jobs. CSA thus enhances achievement of national food security and development goals³. This means that CSA practices will need to be the fundamental basis of all farming practices.

Proposals

1. Extend CA adoption amongst grain farmers in South Africa and apply these lessons to other agricultural commodities

Around 15% of commercial grain farmers have adopted CA, but only 5% of smallholder farmers. The main barriers to uptake of CA are knowledge of CA; the cost of conversion from conventional agriculture to CA, including the cost of specialist machinery; the drop in yields during the conversion period; as well as not enough effective extension support. The last point is particularly true for smallholder farmers. Ongoing collating, monitoring and evaluating of farm-level agronomic and financial data for CA is needed.

2. Actively introduce CA and agro-ecological practices to the estimated 2 million household and smallholder farmers`

- These farms need to become far more central to an inclusive model of agriculture and sustained food security, job creation and sustained rural livelihoods plan for South Africa. India feeds close to 2 billion people using models of smallholder agriculture practising agro-ecology and have recently announced that the state of Andhra Pradesh is planning to transition 6 million smallholder farmers cultivating 8 million hectares of land to natural farming by 2024, supported by the Sustainable India Finance Facility. This initiative aims to reduce farmers' costs while increasing incomes, and restore ecosystem health through diverse, multi-layered cropping.
- Support a decentralised collaborative agricultural extension services model at the district level which explicitly promotes agro-ecological practices. This proposed approach involves retailers, industry, agronomists and NGOs to help government with extension. The South African Organic Sector Organisation's 'participatory guarantee system' of farmers, food processing companies, retailers and consumers provides an example of such a multi-stakeholder approach of knowledge-sharing, and is having success with smallholders getting access to new and alternative existing markets⁴.

3. Advance the many land rehabilitation and restoration opportunities

- Extend natural resource management and rangeland management models that include extensive rangeland beef production grass-fed beef and sheep farming, rather than the use of feedlots. Link to the venison game industry as part of the emerging wildlife economy. This can create sustained rural livelihoods, improved household level food security and nutrition and, reduce the increasing trend of urbanisation. Examples such as the 'Meat Naturally' Umzimvubu Catchment Partnership Programme and grass-fed beef initiatives in the grasslands biome can be scaled up.
- Translate the Working for Water, Working on Wetlands, and Working on Fire extended public works programmes into secure and decent jobs, since these workers perform labour essential to securing and sustaining our water supply through ongoing clearing of alien vegetation, catchment protection, wetland and river restoration and rehabilitation.
- Support SMEs and value chain development so that the biomass from cleared invasive alien vegetation may be used as a feedstock for decentralised bioenergy and biofuels, fibre for building materials and animal feed, and a soil conditioner as mulch or biochar.
- Natural vegetation planting and restoration on degraded rural land to create jobs and increase the carrying capacity of the land, which then improves rural economies and stores carbon. Department of Environmental Affairs, Rhodes University, farmers on marginal land and NGOs are working on the first communal spekboom farm in the Eastern Cape.
- Establish skilled and semi-skilled land and water rehabilitation enterprises in pre-closure and abandoned mines to meet the obligations of DMR and mining companies, and on areas exited by forestry plantations.

4. Further investigate biofuels for aviation

This may be a new opportunity for agriculture, while recognising both the potential for job creation in sub-Saharan Africa and the complexities that biofuel crop production raises. A 2018 study by the International Institute for Applied Systems Analysis and WWF concludes that there is potential for jet biofuel that can be produced mostly using perennial biofuel feedstocks, which require less frequent and less intensive cultivation of soils. A potential feedstock for biofuels in South Africa may be

crop residues. Some 50 000 to 100 000 person-years of employment (one person employed for one year) could be created by introduction of energy cropping for biofuels production in South Africa.

4. POLICY IMPLICATIONS

- Incorporate promotion of and support for the adoption of agro-ecological principles in the draft Conservation Agriculture policy, Water and Sanitation Masterplan, Climate Smart Agriculture Framework, Department of Health's Food Security policy, National Adaptation Strategy spearheaded by the Department of Environmental Affairs, and policy supporting decentralised and collaborative extension services – and finalise them.
- Clarity is required on water licence re-allocations and provision of water infrastructure.
- Ensure clear governance and institutional stability in the water sector in readiness for new funding streams which require a return on investment.
- Certainty is required on land expropriation and water reforms to solicit sustained investment in commercial farming, and recapitalisation and support for land reform beneficiaries, focused on maintaining and increasing productivity of regions with high productivity soils.

5. FINANCING

- Finance needs to be provided at scale to shift farming towards CSA agriculture. The Land Bank as a development finance vehicle of government must take the risk as first funder for farms that convert to CA from conventional agriculture, and in developing appropriate financing schemes for smallerholder farmers to upgrade farming practices, improving yields and livelihoods. Commercial banks need to provide considerable scale and reach to this funding. Tenure of land as collateral is a key consideration for debt financing and policy certainty is critical to support sustained investment.
- Green or Blue (water) Bonds can be issued by water boards and metros. Institutional governance must ensure that the investment impacts job-rich opportunities on the ground, possibly in conjunction with some investment in new or rehabilitated built infrastructure.
- The Catchment Economy jobs will require effective

cost recovery in water tariffs and better management of the water value chain. An increase in the raw water charge to ensure adequate investment back into ecological infrastructure is necessary.

- Priority and sustained investment in the strategic water source areas on the Natural Resource Management 'Working for ...' public works programmes can come from blended finance: a component of water tariffs ring-fenced for investment back into ecological infrastructure and Green or Blue (water) Bonds.
- Monies for mine rehabilitation already held by mining companies and DMR should rapidly be used to develop necessary skills in this area and grow the mine rehabilitation sector.

6. THE ROLE OF STATE INSTITUTIONS AND SOCIAL PARTNERS

- Government must legislate and regulate the policies for protecting water source areas (contained in the National Water and Sanitation Master plan), and effectively manage the water value chain. Adequate budget should be provided to state institutions who are currently underfunded to manage water source areas, e.g. Cape Nature, especially where this includes labour-intensive opportunities.
- Government must finalise legislation, frameworks, and extension service models for CSA.

Farmers must adopt agro-ecological practices, including CA. A number of organisations exist that can help promote and support the adoption of CA, such as:

- Grain South Africa, the grain commodity organisation, provides support on CA to its members, and hosts CA promotion days for small-scale farmers.
- Conservation Agriculture Western Cape, a forum of 185 paying members including producers, researchers and related sectors, aims at knowledge sharing to advance CA.
- The Southern African Confederation of Agricultural Unions (SACAU) is the apex organisation for farmer unions in southern Africa and broadly supports CSA.
- Unions must support farmworkers in the transition to CSA including through skills upgrading to limit farmworker vulnerability.

7. SEQUENCING AND TIMEFRAMES

1. Government to finalise the policy pieces outlined under Section 4 above within 2018.
2. Establish broad district networks of organisations to deliver agricultural extension services at scale to smallholder farmers. These services must provide agro-ecological support, linked to water licensing and subsidised finance, as necessary.
3. Government with Grain South Africa to ramp up advocacy for CA amongst commercial grain farmers, by increasing education and awareness, mobilising appropriate finance, and conducting and collating studies that track the experiences of CA amongst different crops in different parts of the country to better make the case.
4. Unions to work with Government and farmer associations on a just transition for farmworkers to protect them from job losses due to shifts in agricultural practices and weather events, and upskill and retrain for CSA.

1. National Water and Sanitation Master Plan Water Security and Water Governance in South Africa Agbiz Congress.

<https://agbiz.co.za/uploads/2018-Congress/Trevor.pdf>

2. www.fao.org/publications/highlights-detail/en/c/1113542

3. www.fao.org/climate-smart-agriculture/en

4. www.saoso.org Participatory guarantee systems are locally-focused quality assurance systems which certify producers based on active participation of stakeholders.