Table of Contents

Executive Summary

Agriculture continues to face pressure from a growing population and changing consumption patterns, which requires it to produce more food. Historically, agricultural land expansion was used to meet food demand. This, however, has resulted in increased soil erosion, land degradation, deforestation, and greenhouse gas (GHG) emissions. Increased competition for land use has also increased the cost of expanding agricultural land, and the demand for industrial agriculture growth. Whilst industrial agriculture has become the leading contributor to land degradation, deforestation, water pollution, climate change, and biodiversity loss, it still fails to meet the global food needs with more than 800 million people suffering from hunger, globally. This calls for improved and more sustainable agriculture and food systems, including production, processing, and distribution.

Women, girls, youth, and people living with disability remain in the broader architecture of industrial agriculture in Zimbabwe including key players such as big national public and private sector companies, financiers, and policymakers.

The study was conducted at a national level, and it used a parallel design mixed method, which included desk research, a survey questionnaire, and a key informant interview guide. The survey was disseminated to 30 stakeholders and 22 (73.3%) responded.

The findings show that there are different stakeholders involved in industrial agriculture with public entities such as ARDA, COTCO, TIMB, GMB, AMA, and private sector players such as Tongaat Hulett, National Foods, CAIRNS (large contract groundnut producer), Goldstar, China Tobacco Cooperation or Hippo Valley Estates involved in different agribusiness value chains, including contract farming, out-grower schemes, provision of inputs, buying of outputs, processing, and marketing. The study further shows that contract and debt financing were among the major funding instruments largely provided to smallholder farmers and SMEs in the form of production inputs and bank loans for those who met the bank requirements, although farmers felt short-changed in contract farming agreements due to compromised negotiating capacity. The study also indicates that financing for women farmers and SMEs was limited due to limited capacity for women to meet the Bank requirements and loans offered specifically for women were very low to meet their demands, apart from that the loans had short tenors and high-interest rates due to high macro-economic risk and limited savings by the public. Significant financing for sustainable agriculture was from development agencies and NGOs, with a focus on resilience building as well.

Whilst planned activities on AFOLU in line with the country's NDC are promising, the rate of deforestation due to tobacco curing and the absence of curing technologies remains a challenge. Minimal progress was reported on IPPU as tracking of NDC implementation since its launch is still to be conducted. Policies to support climate smart agriculture are available but their uptake remains limited, and women's potential remains compromised as it is not fully tapped into. The study also identified great strides in the policy space to accelerate sustainable agriculture and inclusion, including the ongoing development of the Agroecology Promotion Policy and Strategy document, and the recently adopted Carbon Credits Framework and Climate Change and Gender Action Plan. It was also noted that due to the changing climate and depleting soil quality, the Government is also promoting other sustainable farming practices although they are still at a small scale such as Pfumvudza which has shown positive results in enhancing productivity apart from its blanket application which reduced its effectiveness in some areas.

The study recommends the need for improved climate justice advocacy capacity building for communities, institutions on contract farming so that it is a win-win for all parties involved, domesticate global best practices in agroecology and sustainable agriculture. It was also noted that there is a need to diversify the financing instruments and ensure that they meet the needs of the farmers including financial inclusion for women. There is a need to transition financing from industrial agriculture to more sustainable and climate-smart farming practices, technologies and approaches and explore how climate finance can be blended with traditional loans to provide grants

and concessional financing to farmers and SMEs involved in sustainable farming and to de-risk the sector and transition to more sustainable technologies. Climate financing can also improve inclusion, adopt and apply intersectionality to ensure that women from diverse backgrounds are made visible and can benefit from sustainable agriculture initiatives, hence RBZ and Ministry of Finance should work with development partners and climate funders. The study further recommended the need for greater acknowledgment and valuing of and investment in women as competent farmers, entrepreneurs, and key agents of change in promoting sustainable agriculture such as agroecology practices and climate smart technologies. It is important to address climate justice by giving women and marginalized communities their voices. It was noted that appropriate crop varieties under sustainable management production practices, specific production models, awareness raising among farmers and extension officers and adoption of sustainable quality technologies is important. Cognisant that Zimbabwe agro-zones are heterogenous, the agroecology farming models (e. g. Pfumvudza) should be specific and not blanket-based for them to be relevant and impactful. Climate solutions should be linked to ongoing policy formulation processes such as proposed Climate Bill, Agroecology Strategy and Zimbabwe Carbon Credits Framework. Lastly, there must be a relationship between agribusiness and policy and legislative Frameworks to ensure informed advocacy towards sustainable agriculture, low carbon and climate resilient development.

1. Introduction

Climate change is the greatest threat to humanity in the twenty-first century. Climate change has exacerbated the food problem, mostly in Sub-Saharan African countries. Agriculture is under pressure from a growing population and shifting consumption patterns to produce more food to solve the food crisis and this will require food production to increase by 70% by 2050 to feed the growing population[1]. Whilst climate change has significantly affected agricultural productivity, historically, agricultural land expansion has been used to meet food demand. This, however, has resulted in increased soil erosion, land degradation, deforestation, and greenhouse gas (GHG) emissions. Current global emissions reduction is not in line with modelled mitigation pathways consistent with the temperature goal of the Paris Agreement, and there is a rapidly narrowing window to raise ambition and implement existing commitments to limit global warming. Much more ambition is needed in domestic mitigation measures in NDCs to realize existing and emerging opportunities[2], to halve global emissions by 2030, reach net zero carbon emissions by 2050 globally, and promote equitable sharing of effort globally.

Modernized agriculture activities, particularly agribusiness, are not helping in any way but are increasingly recognized as a major source of GHG emissions. Total GHG emissions from agricultural systems, forestry, and fisheries, and other land-use sectors (AFOLU) have roughly doubled in the previous 50 years. The agricultural sector was responsible for almost 24% of the rise in total GHG emissions. Paddy crop cultivation produces the most GHG, notably methane and nitrous oxide. The use of fertilizers and heavy machinery, as well as increased land clearance for agriculture, continue to have negative impacts on the already changing climate and vulnerable communities.

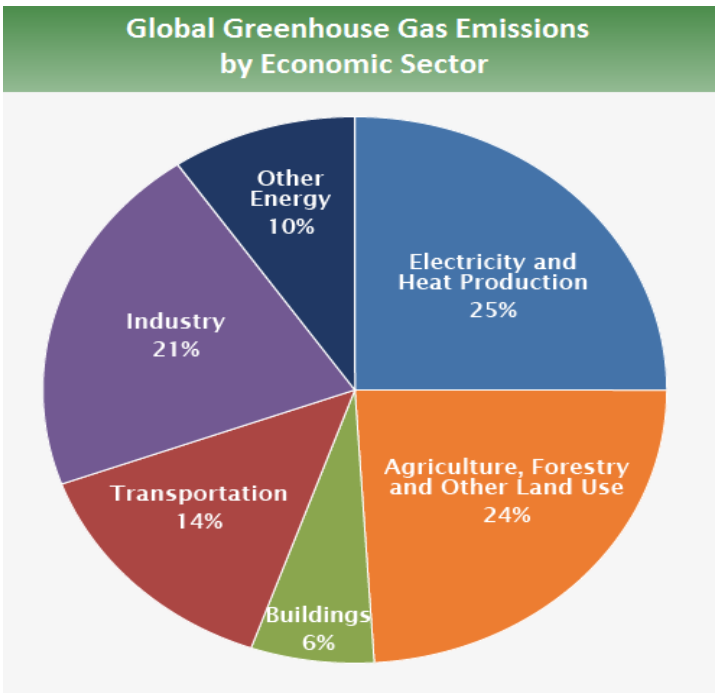

Figure 1: Global greenhouse gases by economic sector, IPCC,2020

Additionally, the rapid development of agribusiness has been necessitated by capitalist individuals and organisation for the purpose of not only increasing crop output but rather

[1] Whitfield, S., Challinor, A. J. & Rees, R. M. Frontiers in Climate Smart Food Systems: Outlining the Research Space. Front. Su

[2] https://www.uncclearn.org/resources/library/the-agricultural-sectors-in-nationally-determined-contributions-ndcs-priority-areas-

maximize profits and grow capital. This has caused increased investment in excessive agrochemical inputs by agro-based industries and large landholder farmers, resulting in an increase in the availability of phosphate, nitrate, ammonia, chloride, and various heavy metals in the soil, resulting in declining soil quality and increased environmental pollution. Given that agribusiness is harmful to both the environment and the climate, and that while climate change has had a significant impact on agriculture and food security, the impact of agriculture on the climate is equally significant, more sustainable, and climate-smart agriculture technologies, practices, and approaches, such as agroecology approaches, are required.

2. Background

The climate continues to change at an unprecedented rate because of human impacts such as our overreliance on and consumption of fossil fuels, as well as agricultural activities such as agribusiness. It is important to note that as the effects of climate change become more severe, millions of vulnerable people in developing countries mostly Sub-Saharan African countries face disproportionate challenges in terms of extreme events, health effects, food, water, and livelihood security, migration and forced displacement, loss of cultural identity, and other related risks, despite contributing insignificantly to the crisis.

Zimbabwe continues to face life-threatening recurrent natural disasters most emanating from unmitigated emissions from industry and agribusiness, the impact of these climate-induced hazards is becoming more glaring on women. The 2022 IPCC report on climate change adaptation and vulnerability[3] report indicated that, on average, climate disasters kill more women than men, expose women and girls more to socio-economic and psychological suffering, and lower the life expectancy of women more than men, yet most women (70%) work in the agriculture value chain. Indigenous peoples are also affected in a differentiated manner[4]. Persons with disability in Zimbabwe contribute about 9%[5] and are also affected differently. Furthermore, in most climate disasters, more than 75% of the people that suffer the most (loss and damage) and need humanitarian assistance are women and children. Women continue to be invisible in most countries' Disaster Risk Reduction (DRR) legislations, policies, and systems including Zimbabwe and continue to be victims of neoliberal policies and climate injustice both authored by emitters within the agribusiness sector.

Zimbabwe is not safe from the shortage of water that is affecting Southern Africa, with communities being at risk from groundwater drought. The droughts and floods, which are already affecting the availability, accessibility, quality, and quantity of the country's water resources, are expected to continue due to climate change[6]. Such floods in low-lying areas such as Tsholotsho have increased the vulnerability and exposure of communities. [7]

[3] https://www.ipcc.ch/report/ar6/wg2/
[4] G77 and China (2019). Submission on the Lima Work Programme, UNFCCC, Bonn
[5] Zimstat Report, 2017
[6] Ministry of Environment, Water and Climate (2014). National Climate Change Response strategy, Harare
[7] https://floodlist.com/africa/zimbabwe-floods-leave-246-dead-government-appeals-assistance.

Figure 2: Floods in Tsholotsho in 2017

Davis and Hirji (2014)[8] indicate that Zimbabwe's risk could rise 32% to 86% by 2100 if adaptation measures are not taken. A recent report by UNICEF (Climate Change and Children, 2021) noted that Zimbabwe is ranked very high (in the top three in Southern Africa) in the 2021 Global Climate Risk Index, and the latest evidence indicates that the country will continue to warm through 2080. The warming is projected to be most significant in the western and southern sections of the country, including Masvingo, Matabeleland North and Matabeleland South Provinces[9].

Figure 3: impact of the mid-season dry spell on maize

According to the Food and Agriculture Organization, Zimbabwe is an agro-based economy – with agriculture contributing 36% of the Gross Domestic Product in 2021. Agriculture is the backbone of Zimbabwe's economy and underpins the economic, social, environmental, and political lives of most of the people of Zimbabwe[10]. Agricultural activities provide employment and income for 60-70% of the

[8] Davis, R. and Hirji, R. (2014). Climate Change and Water Resources Planning, Development and Management in Zimbabwe. An Issues

[9] https://www.unicef.org/zimbabwe/climate-change-and-children

[10] Ministry of Finance and Economic Development, 2019. Medium term Plan

population, supply 60% of the raw materials required by the industrial sector and contribute 40% of total export earnings[11]. Agriculture is viewed as a significant sector in driving climate change adaptation and mitigation in Zimbabwe, and it has been recognised as such in both the country's initial and updated Nationally Determined Contributions (NDC) pledges to the United Nations Framework Convention on Climate Change (UNFCCC). Zimbabwe's revised NDC published in 2021 indicates that the Agriculture Forestry and Other Land Use (AFOLU) sector is the highest Green House Gas (GHG) emitter at 54%. This demonstrates the country's reliance on agriculture, as well as its high vulnerability to climate-induced shocks that influence production and productivity.

Furthermore, Seventy percent of Zimbabweans live in rural areas located in Agroecological Regions 4 and 5, which have poor soils and scarce water resources and rely mostly on rain-fed agriculture for a living. However, rainfall has been erratic due to climate change, resulting in decreased crop yields, lower livestock production, and insufficient pastures in communities[12] such as Mbire where AAZ operates. As a result, these communities have experienced household food insecurity, a loss of livelihood options, and a loss of income-generating potential, with women and young people suffering the greatest effects.

Considering this, Action Aid commissioned a research study to gather evidence that provides a strategic direction to climate justice advocacy and campaigning efforts by responding to the narrative that: **Climate change and the consequent extreme weather have become clear threats to agriculture and food security around the world. At the same time, the dominant industrial agricultural paradigm contributes significantly to the global climate emergency, largely to emissions from deforestation and factory farming. As a result, there is no solution to climate change that does not address the problems connected with the industrial agribusiness models. And, in Zimbabwe, industrial agriculture practices pose a threat to the people and compromise the ability of the country to fulfil her NDCs, whilst exacerbating gender inequality within the agriculture sector.**

As a result, the study examines how industrial agriculture activities in Zimbabwe contribute to climate change and climate injustices, as well as what can be done to raise awareness and inform future policy work that promotes sustainable agriculture practices and gender equality to meet Zimbabwe's NDC agriculture targets.

2.1. Research Objectives

1. To document the policies, statutes, and regulations that govern agriculture in Zimbabwe.
2. To identify major public and private financiers and funders of industrial agriculture, including financing methods.
3. To conduct a mapping exercise of stakeholders involved in industrial agriculture practices and activities.
4. To assess progress in the AFOLU and IPPU sectors, as well as the greenhouse emissions contribution of industrial agriculture and how this has impacted communities, especially women and young people.

2.2. Key Research Questions

1. What are the key policies, statutes or regulations governing agriculture and agribusiness in Zimbabwe?
2. Who are the major public or private financiers and funders of industrial agriculture and what

[11] https://www.fao.org/zimbabwe/fao-in-zimbabwe/zimbabwe-at-a-glance/en/

[12] https://zimbabwe.actionaid.org/stories/2022/zimbabwe-resilience-building-fund-zrbf-transforming-lives-zambezi-valley-story-opha

are their financing methods?

3. Who are the stakeholders involved in industrial agriculture practices and activities and are they gender responsive?
4. What is the status of greenhouse gases emanating from AFOLU and IPPU due to industrial agriculture?

3. Findings

Zimbabwe has very robust policies and strategies that seek to support sustainable climate agriculture and climate change issues including gender-responsive programming. However, reality and policy implementation are not always aligned as there may be other conflicting needs.

The Constitution of Zimbabwe Amendment number 21 of 2013 provides for environmental rights in section 73. Section guarantees every person the right to (a) an environment that is not harmful to their health or well-being; and (b) have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that- (i) prevent pollution and ecological degradation; (ii) promote conservation; and (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development. Constitutional provisions on socio-economic development include Empowerment and employment creation, Food security, Health services, and Security of tenure for occupiers of agricultural land. For this to be enjoyed, all agricultural practices such as agribusiness shall not reverse the constitutional gains and aspirations by causing environmentally, economically, and climate-unfriendly hazards or inequalities.

Table 1:Zimbabwe's enabling policy and regulatory framework.

Act/Policy	Objectives	Impact on Agribusiness
Constitution of Zimbabwe	Provides for environmental rights in section 73.	All agricultural practices such as agribusiness shall not reverse the constitutional gains and aspirations by causing environmentally, economically, and climate-unfriendly hazards or inequalities.
Vision 2030	Seeks to transform Zimbabwe into an upper-middle-income economy by 2030. To attain Vision 2030, there is a need for stakeholders from all sectors of the economy to incorporate resilience in the policies, strategies, and investments.	Continued mechanization of agriculture to achieve the goal, the long-term effect could be a nation that might be a recipient of loss and damage due to climate induced climate shocks.
National Environmental Policy and Strategies	aims to avoid irreversible environmental damage, maintain essential ecological processes, and preserve the broad spectrum of biological diversity to sustain the long-term ability of natural processes	With increased need for profits, agribusiness has entered virgin lands for increased production causing either displacements or environment degradation e.g., Chilonga and Chisubanje

	to meet the basic needs of the people, enhance food security, reduce poverty and improve the general standard of living of Zimbabweans	
Zimbabwe Agriculture Policy Framework (2019-2030)	To provide policy guidance and direction on how to promote and support the sustainable flow of local and external investment and resources necessary to transform the agricultural sector through increased and sustained agricultural production, productivity and competitiveness.	As the demand for food security increases, just transitions in agriculture are likely going to be overlooked as business and private sector search for profits
National Climate Policy and National Climate Change Response Strategy Low Emissions Development Strategy (LEDS)	Aims to enable Zimbabwe to establish the legal structures to regulate businesses in climate-related matters and enable them to reduce their GHGs. The main objective of the policy is to guide climate change management in the country, enhance the national adaptation capacity, scale up mitigation actions and facilitate the domestication of climate-related global policies	Limited adaptation and mitigation capacity by both farmers and the nation at large would mean failure to meet targeted NDCs

Among enabling policies, Zimbabwe has made strides to implement sustainable agriculture although more still needs to be done. This can be seen by the implementation of the national programme called Pfumvudza.

The Case of Pfumvudza: Munyarari Ward 20 Mutare District

Munyarari, Ward 20 of Mutare district was once largely ecological region III, with rainfall pattern ranging from 500 to 700 mm and according to the recent re-classification of agro ecological zones in conformity with climate variability and change, the area was re-classified to region VI with rainfall patterns ranging from 450 to 600 mm (Manatsa et al., 2020). According to Ministry of Agriculture, after implementation of Pfumvudza concept, findings show an increase in yields for all the crops (Figure 4). For example, under the maize crop the majority (48%) of the respondents produced 401– 600 kg whilst only 15% produced less than 200kg. Seventeen percent of respondents produced exceptional 600 – 800 kg of maize. The Agronomist confirmed increase in yields for 2020-2022 saying benefits of *Pfumvudza* were being recognized as such harvests of up to 800kg per plot size had never been witnessed in the ward before *Pfumvudza* implementation. The AGRITEX officer and the Agronomist also supported the findings, by indicating that the maximum yield of farmers in

2020/21 cropping season almost reached the expected 800 −1000kg per plot of *Pfumvudza*.

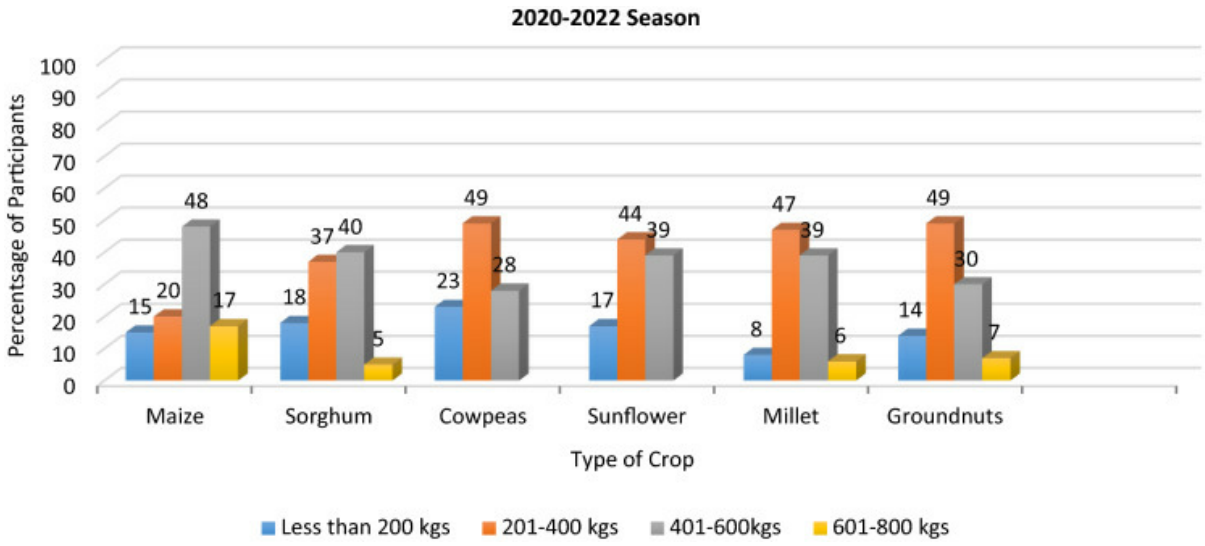

Figure 4: Pfumvudza crop yields for 2020 - 2022, Ministry of Agriculture, 2022

The other finding is that for agribusiness to thrive, global financial players play a critical role to ensure increased local agricultural production by providing financial inputs and setting potential markets in countries of funds origin. Agribusiness financial support is provided through a basic support network of global financial systems that are neoliberal and have ganged up with several replaced experienced commercial farmers who now utilize their expertise as agricultural management consultants. Various donors who support climate justice-centred initiatives also provide business and financial support to agribusiness after meeting a pro-poor criterion.

Table 2: Zimbabwe's agriculture initiatives, funders, and their funding priorities.

Agriculture Initiative/Program	**Name of Funding Institution/Source**	**Funding Priorities**
Zimbabwe Agricultural Development Trust (ZADT)	Created by SNV Netherlands, 'Development Organisation and Humanistic Institute for Development Cooperation (HIVOS)	Primary purpose of contributing to the recovery and improvement of the smallholder farming sector and improve the food security and incomes of rural households in Zimbabwe.
ZADT launched the Credit for Agricultural Trade and Expansion (CREATE) fund	Funding from DANIDA and British Embassy	Provides loan capital to banks that on-lend to value chain actors who have direct linkages with smallholder farmers. The fund is for value chain actors operating under input, output and processing windows in the agricultural sectors.

Agro Initiative Zimbabwe	TechnoServe	A national business plan competition. The program supports promising ideas in agriculture by awarding capital prizes and technical assistance to small- and medium-sized businesses that include smallholder farmers in their supply chains and can serve as models for the broader industry.
AFC Bank (largest lending bank)	Ownership is split between Ministry of Finance and Ministry of Agriculture.	AFC has three subsidiaries that support the farming sector in Zimbabwe. These include the Land bank, AFC insurance and AFC leasing. The Land bank is responsible for disbursing both commercial and concessionary loans to farmers and small-scale companies that are involved in climate smart technologies such as seed drills. Grant financing for climate proofed-pfumvudza intwasa programme provided to small holder farmers. Also involved in providing and tillage and harvesting facilities on a lease basis and weather indexed insurance for farmers.
Enhanced Agriculture Production and Productivity Programme	**Commercial Bank of Zimbabwe Bank** (Private ownership)	As of 2021 the bank supported the programme with over UD$70million to help farmers purchase inputs, working capital, pay for services such as electricity.
Innscor Africa through its subsidiary companies- o National foods Limited - 100% o National food properties – 100% o Breathway Food Caterers – 100%	Private ownership	According to the Ministry of Finance will invest US$53 Million in Zimbabwe in 2023 targeting new categories such as sorghum for beer production

o Red Seal Manufacturers – 100% o National Foods logistics – 50% o ProBrands -100% o In 2015 Simbisa was incorporated as a whole subsidiary of Innscor. o Zimgold- 100% o Colcom – 100% o Texas Meats – 100%		
Ministry of Agriculture through its national budget pronunciation allocated in 2023	Government of Zimbabwe	Ministry of agriculture the biggest vote of US$343 million targeting grain production, horticulture, business advisory, extension services, agricultural research, animal diseases prevention and control, agricultural engineering and mechanisation, water and sanitation, irrigation development and rural development[13].
Government of Zimbabwe	International developmental assistance	US$975 million dollars reached in 2021. Some of the development partners to contribute to this amount are International Fund for Agricultural Development (IFAD) with US$67.43 million, African development Fund; US$25.65milion, OPEC for International Development; US$15million, Zimbabwe Resilience Building Fund (US$95million), Foreign Commonwealth Development Office Livelihoods and Food Security Programme; 45 million pounds, European Union supported Zimbabwe Agricultural Growth

[13] www.farmersreviewafrica.com

		Programme (ZAGP); 40Million Pounds[14] and Afrexim Bank

3.1. Key Stakeholders

The industrial agriculture sector in Zimbabwe is dominated by stakeholders from both the public and private sectors. The key public sector players are ARDA, COTCO, TIMB, GMB, and AMA. These stakeholders are involved in different processes across the value chain which include contract farming, out-grower schemes, provision of inputs, buying of outputs, processing, and marketing. The key private sector players are Tongaat Hulett, National Foods, and CAIRNS (contract groundnut producers). The stakeholders are involved in contract farming, out-grower schemes, provision of inputs, buying of outputs, processing, and marketing. Companies such as Bain are involved in equipment production and trading, and they provide financing options such as higher purchases that can help one access farming equipment on credit due to high up-front capital. Irvines company is involved in chicken out-grower scheme. They provide all the critical inputs to the farmers and working capital and they buy back all the produce from the contracted farmers at an agreed price.

Table 3: Common crops driving industrial agriculture

Crop	**Major Agricultural Regions**	**Area covered by Ha**	**Output (tonnes) 2022 Season**	**Source of Funds, Funding Institutions, Support**	**Producers**
Wheat	Agroecological Regions 2,3,4 Mashonaland (38%) Midlands (17%) Masvingo (13%) Mashonaland West (11%) Manicaland (7%)	80,000	120 000 Tonnes (Pvt Sector) 20 000 (Presidential Scheme)	Denote Enterprise Crop Link Intergram StayWell	CFU Crop Producers Association ZFU ZNFU
Tobacco	Agroecological Regions 2 and 3	29,000,000	Mass Sold (Kgs) (2022): 252,603,251kg	China National Tobacco Cooperation Zimbabwe Government Tian Ze Brazil Government	Zimbabwe-China Tobacco Cooperation ZFU ZNFU
Sugarcan	Agroecological	34.5 net	2021-22 average	Triangle	Goldstar

[14] www.zepari.zo.zw

e	region 4 and 5 (Triangle, Hippo Valley, Mwenezi)	ton (2022)	farm cash income: $190,800 per farm (91% higher than the 2013-14 Average)	Tongaat Hullet	Tongaat Hulett Hippo Valley Estates

Whilst the cash crops play a significant role in contributing to the country's gross domestic product and creating jobs, there has been significant environmental degradation especial the increased rate of deforestation for curing tobacco and emissions from burning sugar cane before processing among other challenges. Hence, the need to promote sustainable production, processing and distribution of these crops among other food crops is important to achieve sustainable development and contribution to improved lives of the people of Zimbabwe.

3.2. Challenges of Industrial Agriculture in Zimbabwe

1. The fertilizer and chemical industries have a strong impact on the manufacturing sector's performance and the Zimbabwean economy in general, by virtue of it being one of the key drivers of the agricultural sector, which in turn is the main source of the contribution of GHG emissions as agribusiness chases profits and huge production. Currently, about 32% of fertilizer and chemicals supplies are produced locally, while about 68% are imported. Zimbabwe has a well-developed fertilizer industry whose ownership structure is cross-linked but dominated by big corporates with foreign share ownership. Fertilizers and technical services on crop nutrition are supplied by companies such as Zimbabwe Fertiliser Company (ZFC), Windmill, Omni, Proffer, Superfast, Farmers World, Bayer, Green Yard, Gricore, Prime Crop Protection, Prime Seeds, Avanos Seeds, National Tested Seeds, and a host of new, upcoming and smaller players. Suppliers of agrochemical and technical services on plant protection include ZFC, Agricura, Windmill, Pivotal, Curechem, Polachem, Intercrop, Citchem, and Technical Services Africa. Aerial application of crop inputs (fertilizer & chemicals), is provided by AgricAir Pvt Ltd, operating from Charles Prince Airport. The aerial application was common before the Fast Track Land Reform Programme (FTLRP). Companies such as Sable Chemicals are among the beneficiaries of the new technologies under the carbon markets and contribute strategically to the achievement of the country's NDC. Furthermore, the fertilizers and crop chemicals applied by commercial farmers tend to find their way to the water bodies, affecting the quality of water and making it expensive to treat the water. The communities downstream suffer from polluted water bodies.
2. Current agricultural policy and practice are dependent on a monopolistic force in input, production, processing, and marketing. For example, the current seed policy outlaws farmer-managed seed systems and open-pollinated varieties, therefore, affecting traditional/indigenous seed banks that many smallholder farmers relied on. The Seeds Act [Chapter 19:13] enacted in 1971, Seeds Regulations and Seeds (Certification Scheme) Notice 2000, and Plant Breeders' Act [Chapter 18:16] which criminalizes the sharing of open-pollinated seed varieties amongst farmers advancing the monopoly over the production, processing, labelling, and marketing of certified seed in Zimbabwe. There is an acknowledgment that indigenous farmers have knowledge of seeds suited for their farming areas. However, they are not allowed to propagate that seed which contributes to climate injustice and compromises resilience building.
3. Agribusiness (production, processing, and distribution) requires an efficient energy supply. The 2022 winter wheat season used excess energy that was initially planned for, hence creating an energy supply crisis for the country. Biofuels are the main sources of energy in

Zimbabwe that sustain agriculture with firewood (61%), electricity (13%) and petroleum (36%). Most of the population stays in the rural areas and they do not have access to electricity and petroleum and rely on firewood as their source of energy. The generation, transmission and distribution of electricity in Zimbabwe is done by the Zimbabwe Electricity Supply Authority (ZESA). Zimbabwe mainly relies on coal and hydroelectric power. To meet the total electricity demand for the nation, ZESA imports electricity from Zambia, Mozambique, and South Africa. Scaling up sustainable energy access and promoting productive use of energy can create a strong and sustainable energy-agriculture nexus in irrigation, processing and distribution for improved food systems.

4. Zimbabwe's main exports by dollar value are unwrought gold, nickel matte and oxide sinters, nickel ores and concentrates, unmanufactured tobacco plus tobacco waste, and iron ferroalloys. The 5 main exports represent over four-fifths (82.6%) of all Zimbabwean exports by value. Such a high percentage reveals Zimbabwe's highly concentrated portfolio of exported goods. Tobacco, Cotton, and fruits contributed over 16% of the exports in 2021, and agribusiness is at the centre of a plethora of climate impacts in the country.
5. Although women participate in agricultural production, their male counterparts virtually dominate the industry from an entrepreneurship lens[15]. Very few women own land and they are traditionally marginalized to access agriculture finance as they do not always meet the requirements by banks such as proof of income and collateral. Women form the major source of labour in large farms, holding lower-tier jobs with low wages. Noting that women's participation in leadership and decision-making is both a national and global challenge as evidenced by the few numbers of women in those positions,[16] including in the agriculture sector according to FoodTank (2019). This is further compounded by the socio-economic domain whereby patriarchy has deep roots, and this becomes apparent when women are in leadership. Hence, feminism becomes a more ideal approach to dealing with the deep roots of patriarchy and inequality.

6. Land ownership remains male-dominated, affecting women's decisions in land management, including deciding what to farm and when to farm in each farming season. Additionally, vulnerable communities lack land ownership and are equally marginalized. Different Statutory Instruments were made in terms of the Communal Land Act and Section 4 of the Act vests all communal land in the President. Section 6 of the same Act empowers the President to make additions or subtractions from any communal land. A case that shows how the marginalized can be voiceless is the case of the Chilonga Community in Chiredzi.
7. In many places, people living in rural areas in particular farmers and farm workers, particularly women and their families, are currently not able to play an effective role in the political and economic process, nor do they receive the support and incentives they need at all stages in the agriculture value chain. Women's capacity is compromised as they have limited or no access to land, finance, and agricultural inputs. The percentage of women landowners in Zimbabwe was less than 5% before and soon after independence, thereafter, rising to a range of 12% to 27% for both small- and large-scale farms to date.[17] Gender is one of the key crosscutting issues that affect the response to climate change and sustainable development as highlighted in Zimbabwe's National Climate Change Response Strategy which prioritizes the need to mainstream gender, children and youth, people living with HIV and AIDS, and other vulnerable groups into all climate change interventions.[18] Gender responsiveness through policies such as the Gender Action Plan[19] is critical. Hence, gender considerations are

[15] Microsoft Word - Maiyaki pdf.doc (academicjournals.org)

[16] https://foodtank.com/news/2014/12/women-in-agriculture-zimbabwe-strives-for-gender-equality/

[17] https://www.tandfonline.com/doi/abs/10.1080/10130950.2019.1690310?journalCode=ragn20

[18] https://swm-programme.info/documents/20142/407481/ZWE_MI_WE_20141231.pdf/00ca1677-6620-cce6-5fb3-367a57cfe71b?version=1.0&t=1626442737947&

[19] https://www.undp.org/zimbabwe/publications/zimbabwe-climate-change-gender-action-plan

indispensable in driving climate change response, and sustainable, equitable, and inclusive development[20], especially in inequality sectors that need transformation such as industrial agriculture.

8. Main players in the land farm mechanization sub-sector are William Bain & Co., AgVenture, Hastt Zimbabwe, Zimplow, Sabata Holdings, Brown Engineering, Munted Tractors, and Farmec. The Government of Zimbabwe is promoting mechanization through initiatives such as the Belarus Farm Mechanisation Scheme. These players are involved in providing: 1) Land preparation/soil working equipment (Ploughs, tillers, harrows, ridgers, rippers) 2) Planting equipment (Seed drills, fertilizer spreaders, planters, seeders that rely on fossil fuels) 3) Equipment for fertilizing and pest control (Fertiliser spreaders, sprayers (knapsack), cultivators with top dressing unit) 4) Harvesting Equipment (Combine harvesters, potato diggers, grain threshers, etc.) 5). Transport equipment trailers, diggers, harrows, cultivators, and scotch carts among others
9. The food, beverages, and tobacco are dominant processing sectors in Zimbabwe with the milling sector being the major one. Key players in the milling sector include Blue Ribbon, National Foods, Victoria Foods, Grain Marketing Board, and Premier Milling. The main products are wheat flour biscuits, maize meal, salt, sugar beans, rice, and vegetable oils with most of the products targeting export markets. Delta Beverages (a subsidiary of SAB Miller and ZSE listed) virtually controls the beers and beverage markets, National Foods (ZSE listed and part of Innscor, also ZSE listed) and the tobacco processing companies remain big emitters. Most of the beef produced in the country is marketed with minimal processing and value addition. Yet livestock production is responsible for the most toxic methane gas. Ironically, all canned beef available on the market is imported.
10. Most of the agribusiness products are not for domestic consumption, but for export markets. Zimbabwe has a state-of-the-art 4,500m^2 Freight and Handling facility at Robert Mugabe International Airport which is equipped with blast freezers, vacuum coolers, and scissor lifts which are GHG sources. Most of the fresh-cut flowers and fresh produce from Zimbabwe are still going to Europe via freighters. Air cargo handler is National Handling Service (AGS). All handling of export flowers vegetables, other produce, and hides is being done by the FX Logistics, Jacana, Barefoot, and Rollex handling agents.

The other finding from the study is that women in the forestry sector have been viewed as agents of change, who have the knowledge and capability to effectively manage the environment[21]. This can also be adopted in the agricultural sector where women are empowered to drive sustainable agriculture such as promoting the uptake of agroecology among other climate-smart practices and technologies. The strong character of Zimbabwean women and their capability to lead is also asserted by Chitando et al. (2023), who exhibit the Chihera strengths to define the strong African feminism approach[22], demonstrating that once women are empowered, they can bring the necessary change, including empowering women to own land and call for more sustainable and transformative policies as in the case of Chilonga.

[20] Gundu. V. N. (2022). The “imperceptible” glass ceiling in advancing gender-responsive climate action, Op-ed, Harare.

[21] Kristjanson, P. (March 19, 2019). Trees and forests are key to fighting climate change and poverty. So are women, World Bank B

[22] Chitando et al. (Eds) (2023). Chihera in Zimbabwe: A Radical African Feminist Principle, Palgrave Micmillan, Cham.

The Case Study of Chilonga Community

Different Statutory Instruments were made in terms of the Communal Land Act and Section 4 of the Act vests all communal land in the President. Section 6 of the same Act empowers the President to make additions or subtractions from any communal land. In the case of displacement of poor rural peasants in Chilonga in Chiredzi District where between February and March 2021, the Government issued a series of Statutory Instruments, the main object of which was to set aside a tract of Communal land measuring 12940 for the purpose of establishing an irrigation scheme for dairy farming in Chiredzi District. The irrigation will be used to produce livestock fodder grass, Lucerne (or Alfalfa). The company involved is Dendairy from Kwekwe, who have plans to develop Lucerne production for export. The company is owned by the Coetzee family. The land in question has been inhabited by the Hlengwe Xangani (Chilonga) Community since way before 1890. The impact of the Statutory Instruments is that some sections of the Chilonga Community might be affected to the extent that they face eviction to pave the way for the proposed irrigation project from which they would not benefit. The advocacy initiatives carried out by the women varied from local actions to national campaign. The Chilonga women became active and participated in the decision-making process of proposed evictions as primary actors who contribute to socio-economic value of the lucerne project through their expectance of its cost and benefits. The mobilised traditional leadership and their husbands who provided labour in surrounding commercial farms. They also targeted civil society to amplify their voice and concerns to national level. As a result, civil society in Zimbabwe made a joint statement highlighting that increased use of statutory instruments by the Executive at the expense of the Parliament was worrisome.[23]

According to the study's findings, progress in the IPPU and AFLOU is showing that even though the forestry sector remains constrained due to human, technological, and financial problems, as well as increased load-shedding, substantial strides have been made.

Table 4: Tree planting statistics from 2020 to 2022Table 5: Tree planting statistics from 2020 to 2022

Year	Tree Planting Statics	Hectarage/Cover/Ha
2020	16 531 421	10 332
2021	17 432 926	10 895
2022	19 721 542	12 325

Seventy percent (70%) of the trees that were planted are exotic and the bulk of the trees were planted in the tobacco-growing provinces, namely Mashonaland Central, Mashonaland East, Mashonaland West, and Manicaland under the commercial timber plantation and tobacco Wood Energy Programme. On average, a hectare of forest sequesters about 4.5 tonnes per hectare per year. Key Forestry programs include:

1. Tobacco Wood Energy Program
2. Global Environmental Facility 6 Cycle on Forest Restoration
3. National Tree Planting Day Activities
4. Agroforestry

[23] "We note with concern the increasing use of statutory instruments by the Executive, overthrowing the Parliament from its law-ma are facing displacements to pave way for commercial projects which they will never sustainably benefit from".

5. Tree Planting Initiatives in schools
6. Walkathon Program initiated by the Friends of the Environment (FOTE)
7. Horticulture Recovery Growth Program jointly with the Ministry of Agriculture

Agriculture remains heavily industrialized. The technologies remain backdated and GHG emissions pre-cursor gases such as dust especially in the cement industry continue to be an issue to neighbouring communities. One of the respondents indicated that women struggle to hang their clothes and open windows due to the impact of these precursor gases. Other emissions in the IPPU included emissions from the transportation of farm produce and storage especially in the refrigeration sector. There is still limited awareness of the products and the impact of aerosols and hydrofluorocarbons (HFCs). There is more awareness raising so that women can buy environmentally friendly products and lobby for such within their workspaces.

The IPPU sector is still full of different confidentiality clauses and the extent of improvements by the sector especially from a technology front is not readily available as it also contributes to any company's competitive advantage. Companies such as CAPRI are moving toward more environmentally friendly technologies although not at the pace that is required. The promotion and access to climate smart technologies the NDC and NDS1 is significant in improving the quality of agriculture in Zimbabwe. The Energy sector has increasingly advanced and the design of minimum energy performance standards for energy efficiency and energy products is an advantage. The enabling policy when importing solar products such as tax exemptions is key in promoting sustainable energy uptake. There is to derive more just transition opportunities along the value chain such as waste to energy, energy-efficient tractors and combine harvesters and precise application of fertilizers and pesticides.

3.3. Recommendations

The strategic entry points for agribusiness-centred climate justice-focused campaign in Zimbabwe on the impact of agribusiness on climate change must facilitate just transitions in both the agriculture and agricultural industry value chains. The key to this is to ensure that women are at the centre of such transformation and advocacy players, both as decision makers as well as advocates for change within the sector. Stakeholders in the climate justice movement through local and global networking and solidarity, will drive a strong accountability demand framework on both national and global ambitions that are under threat because of agribusiness that has promoted profits more than sustainable human development. Having carried out this research, it is critical to consider the following climate justice programming recommendations:

Figure 5: Engaging women in climate justice campaign

Table 5:Key recommendations on strategic issues

Strategic Issue	Recommendation
Research	1. Appropriate crop varieties under sustainable management production practices, specific production models, awareness raising among farmers and extension officers, adopting quality technologies, machinery is very rudimentary, therefore need in innovation for use in production, chemicals used in agribusiness have serious impact, weed management techniques like promoting crop cover, simple and cheap technologies, on-farm value addition. 2. There is a need for specific sustainable farming models for each agro-ecological region since they are heterogenous and CSOs must build agroecology literacy programs targeting women. 3. Promote gender-responsive climate-smart technologies that reduce labour for women and create more productive time and good health especially in tobacco farming.
Capacity Building on Advocacy	1. Promote and domesticate global recommendations by the government on key NDCs and COP negotiations promoting agroecology and other sustainable agriculture practices. 2. Industrial agriculture threat of climate change is a global phenomenon and hence locating the Zimbabwean context within the global threat is critical and needs agency and solidarity. On the receiving end of injustices of inequality, inequity and hopelessness by communities are the women who dominate the agribusiness value chain. The limited climate justice literacy and how it links with agribusiness must be the key knowledge that this campaign is supposed to target as it amplifies the voice of the most vulnerable and marginalized communities and the mercy of big corporates threatening both their food security and food systems. A people's campaign connecting with the global campaign and influencing spaces such as COPs will be a major step toward climate justice.

	3. Amplify the voices of women, girls, and disabled persons among other vulnerable groups through greater acknowledgement and valuing of and investment in them as competent entrepreneurs and change agents. There is need to give women back their voices, train them and give them exposure, create platforms and policies that force the country to think about them, engage them and support them. 4. Advocate for change of source of energy (energy efficiency and renewable energy). Most of the energy used in industrial agriculture comes from fossil fuels (transport) (ground and air), refrigeration, mechanisation, production or lighting) and this has caused increased GHG emissions therefore threating NDCs targets. AFOLU alone contributes 54% of GHG emissions whilst Agriculture alone without FOLU contributes 21% mostly from mechanisation and livestock production.
Climate Justice Movement Building	1. Create a civil society climate justice scoping and mapping exercise to understand the roles, skills and gaps within different organisations that are implanting climate justice work. 2. Build a climate justice campaign and organisations' capacity in advocacy against industrial agribusiness and ability to highlight its effects on climate change that has seen increased inequalities, GHG emissions which threaten the country ability to achieve its NDCs. This will include calling the government and agribusiness to promote reduction of loss of natural landscapes and increases biodiversity within communities. This will be done by supporting local food production through agroecology and limit importation of exotic foods or production or agriproducts for export markets. 3. Adopt and apply intersectionality (class, income, age, ethnicity, marital status) to ensure that women from diverse backgrounds are made visible and can flourish in the spaces that they operate in.
Policy Analysis	1. Tracking of climate policies and how they are

	affected by agribusiness especially on emissions from industrial agriculture is key within the agricultural and industrial sectors. Organisations that will form this campaign must be capacitated on how to track national GHG emissions through reviewing national inventories to measure and produce evidence-based information on the impact of agribusiness on climate change. 2. Link climate solutions to ongoing policy formulation processes such as proposed Climate Bill and Zimbabwe Carbon Credits Framework. 3. There must be a link of agribusiness and policy and legislative Frameworks to ensure informed advocacy.
Multi Sectoral Engagement	1. The biggest threat to this campaign will be persuading big multilateral and corporates from financing agribusiness especially financial institutions, product processing industries and GHG emitters. Through various climate justice campaigns organisations must push for Inclusive finance engagement, tracking and accountability by agribusiness firms with their financiers for sustainable climate smart practices which can be forwarded to small landholders by administering appropriate sustainability standards. There is no way that the battle against agribusiness on climate change can be won without farmers themselves. 2. Work with the Climate funders, Reserve Bank of Zimbabwe and Ministry of Finance to promote sustainability and inclusive financing for agriculture and climate smart technologies and approaches.
Legislation	1. Role of parliament in the fight for climate justice is important through policy and legislation formulation. Zimbabwe's NDS policy, vision 2030 and NDCs, and low carbon development are key in ensuring that the environment and climate change resilience comes first hence engagement of the Parliament and its subsequent portfolio committees is important. 2. Advocate for the implementation of sustainable food packaging solutions (circular economy) that includes reduce, reuse, repair and recycle. This must be seen throughout the value chain especially the seed production industry and

	agri-waste management sector. This will see the reduction of GHG emissions especially that of methane as agribusiness moves away from plastics to biodegradable packaging. There is also a potential for waste-to-energy generation which is not likely found in a linear waste management model used by many corporates within the agribusiness sector. This research must therefore inform sustainable waste management as one of the low-hanging fruits in its fight against agribusiness.

3.4. Conclusion

This research is timely, especially following the outcome of the IPCC 2023 report that indicates that the gap is closing for countries to keep the temperature rise below 1.5°C but with a concerted effort by all countries and peaking on emissions by most developed and emerging economies as soon as possible can help achieve the goal. Zimbabwe has the right to develop, and this right should be protected but this development should be more sustainable and not cause harm to vulnerable and marginalized persons and communities. More inclusive and sustainable agriculture should be promoted. Women and other vulnerable groups should not be at the mercy of the farming elites, but their voices should be heard, become agents of change, and actively contribute to green and sustainable economic development.