




AGRICULTURAL MECHANIZATION IN ZIMBABWE, OPPORTUNITIES AND CHALLENGES PRESENTED BY THE PFUMVUDZA REGENERATIVE CONSERVATION AGRICULTURE INITIATIVE.

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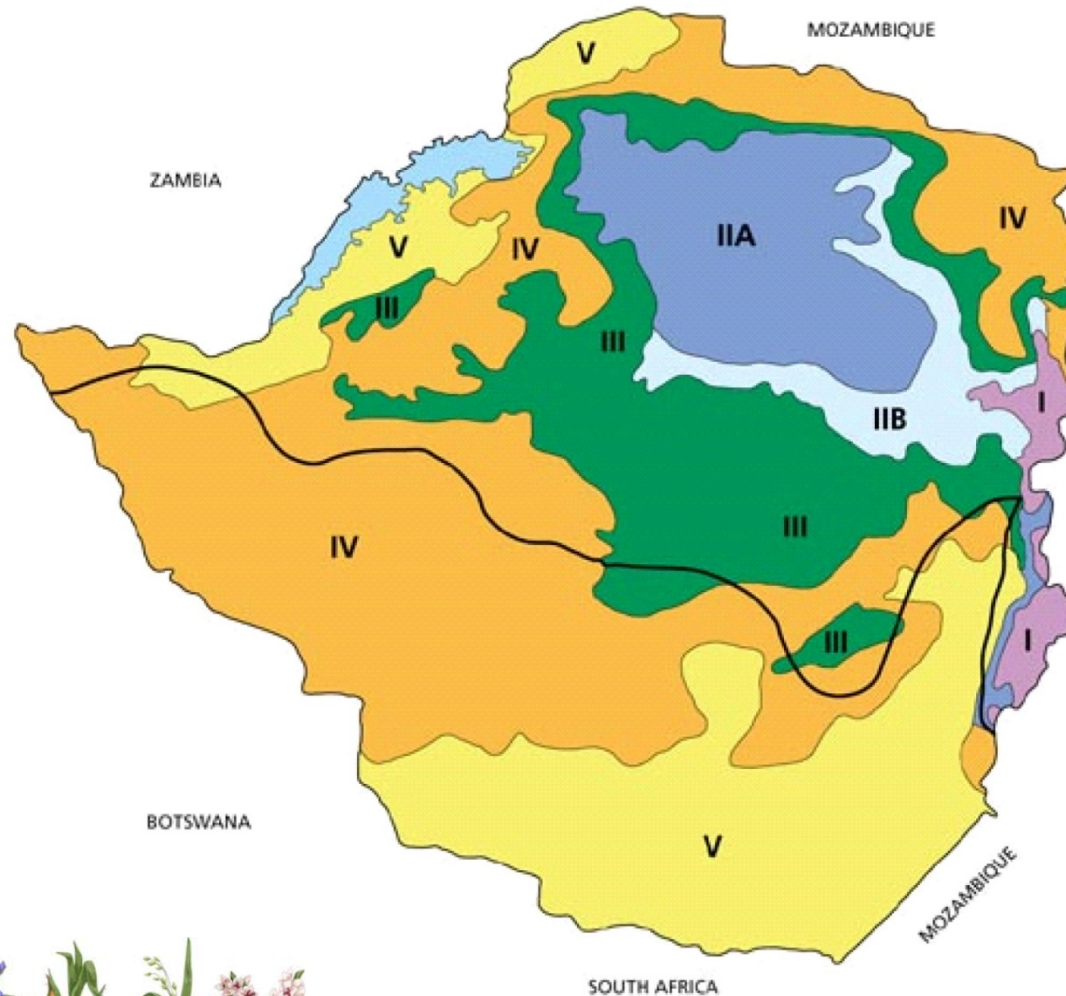
Ministry of Lands, Agriculture, Fisheries, Water and Rural Development

LAND TENURE & FARMER ORGANISATION IN ZIMBABWE

Land Category	Total Area	Individual Size	Ownership	1980 (Million ha)	2010 (Million ha)
Large Scale Commercial farms	1,377,000	2,200 ha	+/-300	15.5 ha	3.4 ha
			white & black farmers		
Small Scale Commercial farms				1.4 ha	1.4 ha
A2	2,918,334.	318 ha	16,386 farmers	0.0 ha	3.5 ha
A1	5, 759,153	6 ha	145,775 farmers	0.0 ha	4.1 ha
		(excluding grazing)			
Old Resettlement	3,500,000	46ha (including grazing)	76,000 farmers	0.0ha	3.5ha
Communal	16, 400,40	12ha (includes grazing & forest)	3,000,000+ farmers	16.4 ha	16.4 ha
National Parks & Forests				5.1 ha	5.1 ha
State Farms				0.5ha	0.7 ha
Urban Land				0.2 ha	0.3 ha
Unallocated Land				0.0 ha	0.7 ha

Agro-Ecological Tailoring - Status of Agriculture in the Country

5 NATURAL FARMING REGIONS



Region	Area (000 ha)	% of total land area (%)	Annual rainfall (mm)	Farming Systems
I	613	1.56	> 1 000. Rain in all months of the year, relatively low temperatures	Suitable for dairy farming forestry, tea, coffee, fruit, beef and maize production
II	7 343	18.68	700-1 050. Rainfall confined to summer	Suitable for intensive farming, based on maize, tobacco, cotton and livestock
III	6 855	17.43	500-800. Relatively high temperatures and infrequent, heavy falls of rain, and subject to seasonal droughts and severe mid-season dry spells	Semi-intensive farming region. Suitable for livestock production, together with production of fodder crops and cash crops under good farm management
IV	13 010 036	33.03	450-650. Rainfall subject to frequent seasonal droughts and severe dry spells during the rainy season	Semi-extensive region. Suitable for farm systems based on livestock and resistant fodder crops. Forestry, wildlife/tourism
V	10 288	26.2	< 450. Very erratic rainfall. Northern low veldt may have more rain but the topography and soils are poor	Extensive farming region. Suitable for extensive cattle ranching. Zambesi Valley is infested with tsetse fly. Forestry, wildlife/tourism



Agro-Ecological Region Tailoring

- Maize crop for regions 1,2 and partially 3
- Millets & Sorghum for Regions 4,5 and partially 3

THE ROLE OF GOVERNMENT IN THE AGRIC - ECONOMY

1. AGRICULTURAL ECONOMY - POLICY

Invest more resources in the development of infrastructure to support agricultural production, value addition, marketing and trade

National Development Strategy (NDS) 2020 – 2025

Agriculture & Food Systems Transformation Strategy (AFSTS) 2020 - 2025

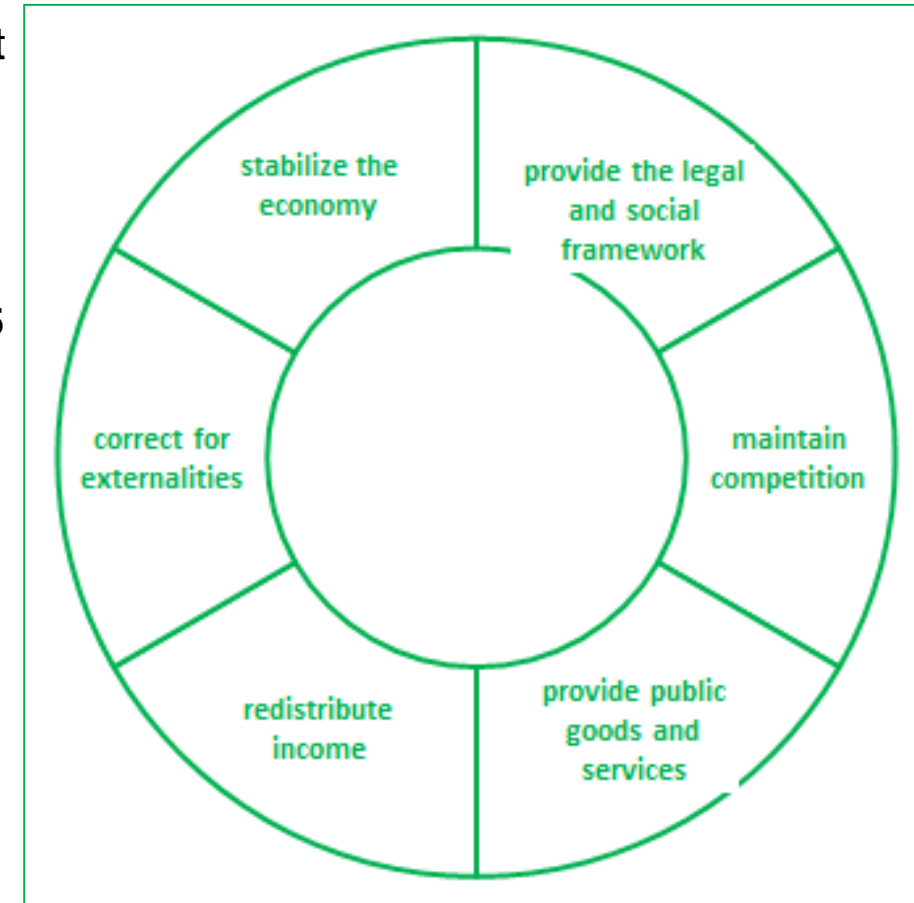
Other Subsidiary Policies & Strategies

2. AGRICULTURAL ECONOMY - STRATEGIC INVESTMENTS

Infrastructure, Machinery, Equipment & Technologies

Government Led Initiatives and Facilities

Private Sector Led Initiatives



Key Issues for Pfumvudza Mechanisation for Resilience Building

Land Preparation & Tillage Equipment

Planting & Sowing Equipment

Chemigation & Fertigation Equipment

Watering Equipment

Harvesting Equipment

Postharvest Processing Equipment

Preservation & Storage Equipment / Infrastructure

Agroprocessing Technologies Equipment

Address critical needs: **Financing, Labour, Farm Power shortage & Support Infrastructure**

Provide **effective and optional solutions** (Tillage, seeding, chemigation, watering, harvest, transport, shelling, storage)

Provide **income opportunities** for men and women in rural settings

Modernizes and make farming **attractive for youth & i-Generation**

Appropriate-scale machinery – designed to suit the needs of smallholders 1st & others



SMALLHOLDER / PFUMVUDZA MECHANISATION STARTER PACKAGE 2022- DATE



Direct Seeder + Tool bar



Trailer



Sheller/Thresher



Two-wheel tractor

Item	Cost (USD)
2-wheel tractor	1750
Toolbar	600
2-row planter	750
Sheller	1050
Trailer	800
Total	USD4,970

Payable over 3 years



BENEFITS FROM THE NATIONAL AMDA FRAMEWORK

(AGRICULTURAL MECHANISATION DEVELOPMENT ALLIANCE)

• Short term

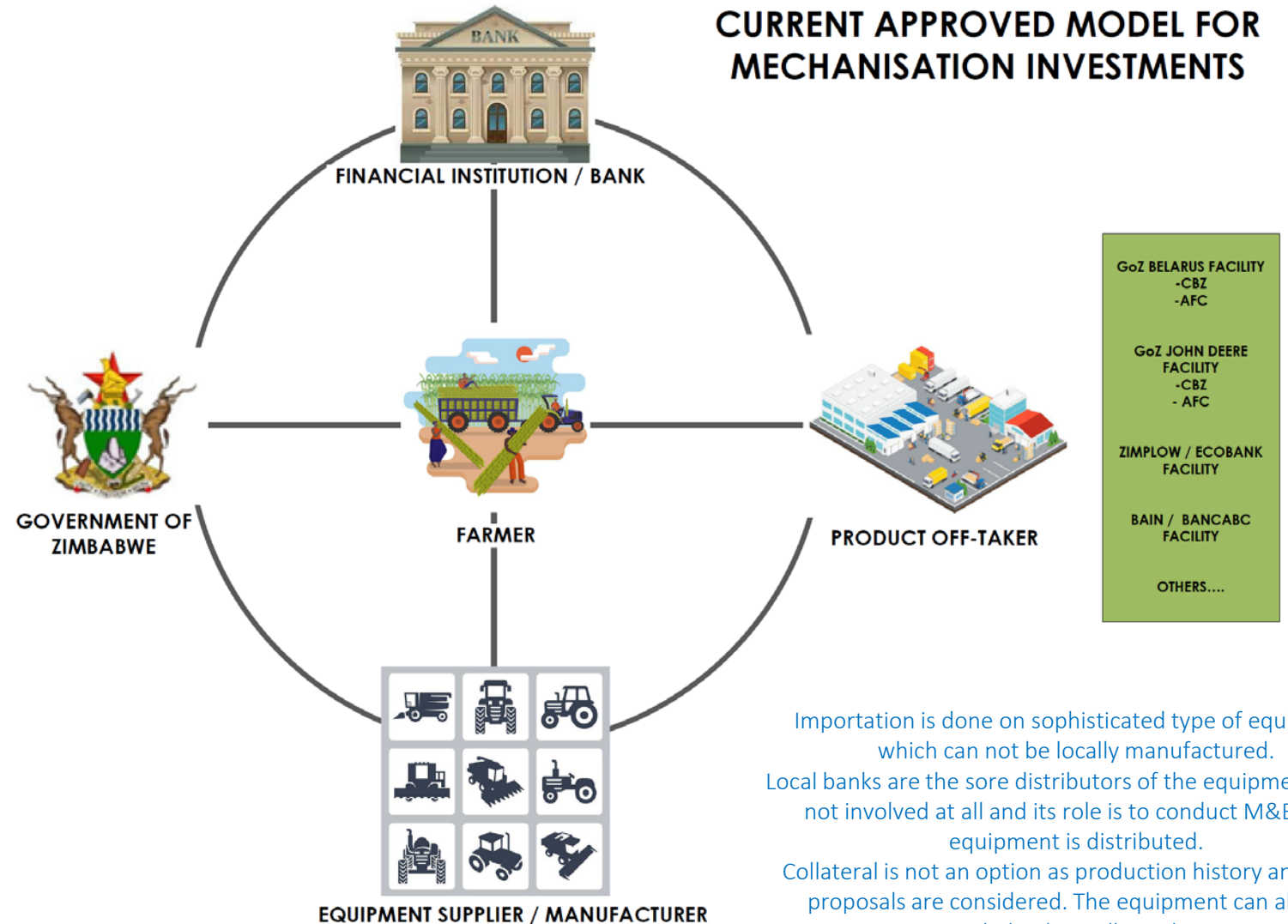
- Mechanisation Policy & Strategy
- National Standards Development
- Mechanisation and robotics
- Imports & 2nd Generation engineering

• Medium term

- Local Manufacture
- Automation & Robotics
- IoT & IR4 Technologies

• Long term

- Autonomous Systems
- Integrated Value Chain



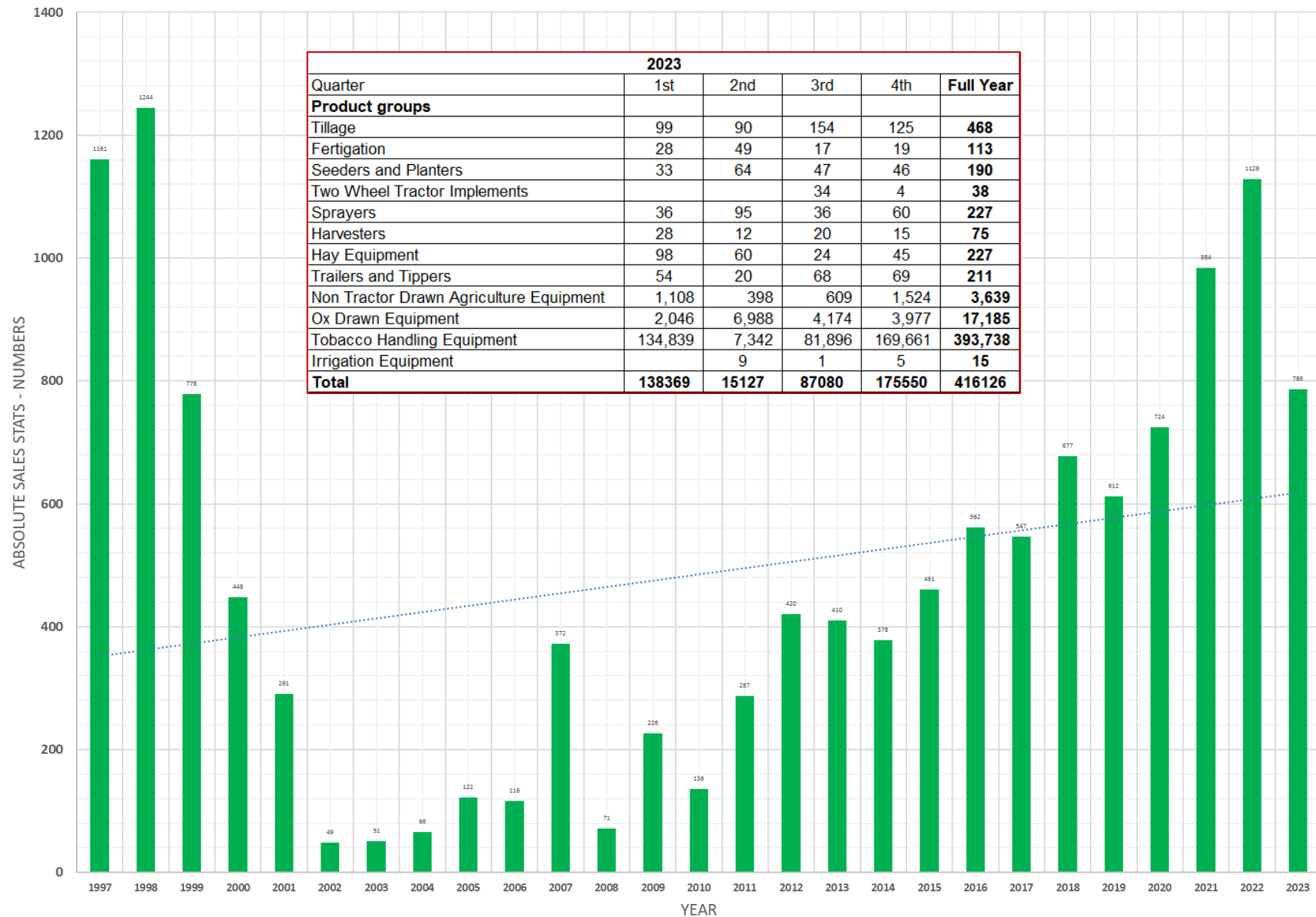
Importation is done on sophisticated type of equipment which can not be locally manufactured. Local banks are the sore distributors of the equipment. GoZ is not involved at all and its role is to conduct M&E once equipment is distributed. Collateral is not an option as production history and viable proposals are considered. The equipment can also be pledged as collateral.

MECHANISATION FLEET ASSET AND TRADE STATISTICS

2023

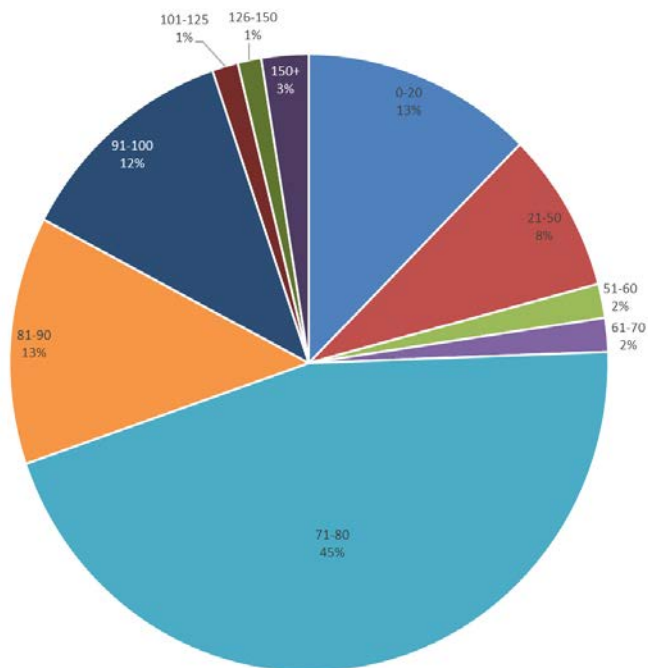
Quarter	1st	2nd	3rd	4th	Full Year
HP Range					
0-20	6	4	27	61	98
21-50	10	15	20	21	66
51-60	4	2	6	2	14
61-70	8	1	5		14
71-80	67	91	109	89	356
81-90	25	30	25	22	102
91-100	16	33	23	23	95
101-125	3	2	3	3	11
126-150	2		5	3	10
150+	7	7	2	4	20
Total	148	185	225	228	786

TRACTOR SALES STATISTICS 1997 - 2023



2023					
Quarter	1st	2nd	3rd	4th	Full Year
Product groups					
Tillage	99	90	154	125	468
Fertigation	28	49	17	19	113
Seeders and Planters	33	64	47	46	190
Two Wheel Tractor Implements			34	4	38
Sprayers	36	95	36	60	227
Harvesters	28	12	20	15	75
Hay Equipment	98	60	24	45	227
Trailers and Tipplers	54	20	68	69	211
Non Tractor Drawn Agriculture Equipment	1,108	398	609	1,524	3,639
Ox Drawn Equipment	2,046	6,988	4,174	3,977	17,185
Tobacco Handling Equipment	134,839	7,342	81,896	169,661	393,738
Irrigation Equipment		9	1	5	15
Total	138369	15127	87080	175550	416126

TRACTOR SALES 2023 VS TRACTOR POWER RATING



25% SMALLHOLDER RANGE UP TO 60HP

BAIN NEW HOLLAND FACILITY IN PICTURES

Land Preparation & Tillage
Equipment

Planting & Sowing
Equipment

Chemigation & Fertigation
Equipment

Watering Equipment

Harvesting Equipment

Postharvest Processing
Equipment

Preservation & Storage
Equipment / Infrastructure

Agroprocessing Technologies
Equipment



**USD20 MILLION
BAIN NEW HOLLAND FACILITY
TRACTOR FLEET DECEMBER 2023**



Key Challenges Facing Pfumvudza Mechanization in Zimbabwe

- Farmer Profile vs Capital Intensive Nature of Mechanisation
- Investment Risk, lack of collateral etc.
- Unfair competition on locally produced products
- Skills flight especially for engineers
- Many farmers are still ignorant of the use of farm machines
- Lack of Standards – Importation of substandard machines
- Lack of funding i.e. M&E, R&D, training/extension, surveys, facilities etc
- Seasonality of operations – Idle Capacity
- High Cost of Maintenance & Equipment Hire

Minimum Soil Disturbance Equipment



Species diversification & Permanent Soil Cover



Key Opportunities for Mechanization in Zimbabwe

- National Policy & Strategy Formulation
- Value Chain Diagnostic studies – the business case for value chain players & Increased Investments
- Investments in R&D & Technology Transfer – 5 prototypes for commercialisation in 2022
- ZWS- Equipment Standards Development – National Quality Standards Framework
- Agricultural Energy Efficiency & Energy efficient Mechanisation
- Climate Smart Agricultural Mechanisation Technologies
- New Model Development for Alliances and Investment Partnerships
- Big Data & Informatics Centre
- Development of interactive web tool for National Mechanisation
- New Training Curriculum Development
- Code of practice for Manufacturers and suppliers of Mechanisation Equipment
- Industry Cluster / Community Centres
- Rural employment – downstream benefits for mechanisation
- Community processing centres – improved livelihoods

CONCLUSION

- Mechanization plays a pivotal role in Zimbabwe's **growth and recovery path** based on 2030 Agenda
- Zimbabwe's economy is agro-based and **mechanization** should play a critical role in the **competitiveness and productivity** of the nation
- The nation needs a **dedicated policy and blueprint** to support mechanization efforts (CURRENT DEVELOPMENT CYCLE)
- The aim is to **adopt a value chain approach** to grow the mechanization portfolio and associated value chain actors
- **Global Best Practices** – Country must upscale to **IR4 Technologies** and regional and global alliances are key in this journey.

Thank you for your attention!