2016/2017 Crop Forecast Survey Results Presentation

Ministry of Agriculture
and
The Central Statistical Office

10th May 2017

The Crop Forecast Survey combines the Small & Medium Survey with the Large Scale Census

Small & Medium Scale Survey
Defn: less than 20 ha cultivated

Small & Medium scale household survey covers approximately 13,600 households at enumeration stage

Large Scale Survey
Defn >20 ha cultivated

Large Scale covers approximately 1,500 large scale farms

Data collection was done between the 21st of March and 10th April 2016

Large Scale Farms in the Frame range include

Cultivating 20 to 46,000 ha

Zambia National Service Farms

Prisons Farms

School and other institutional Farms

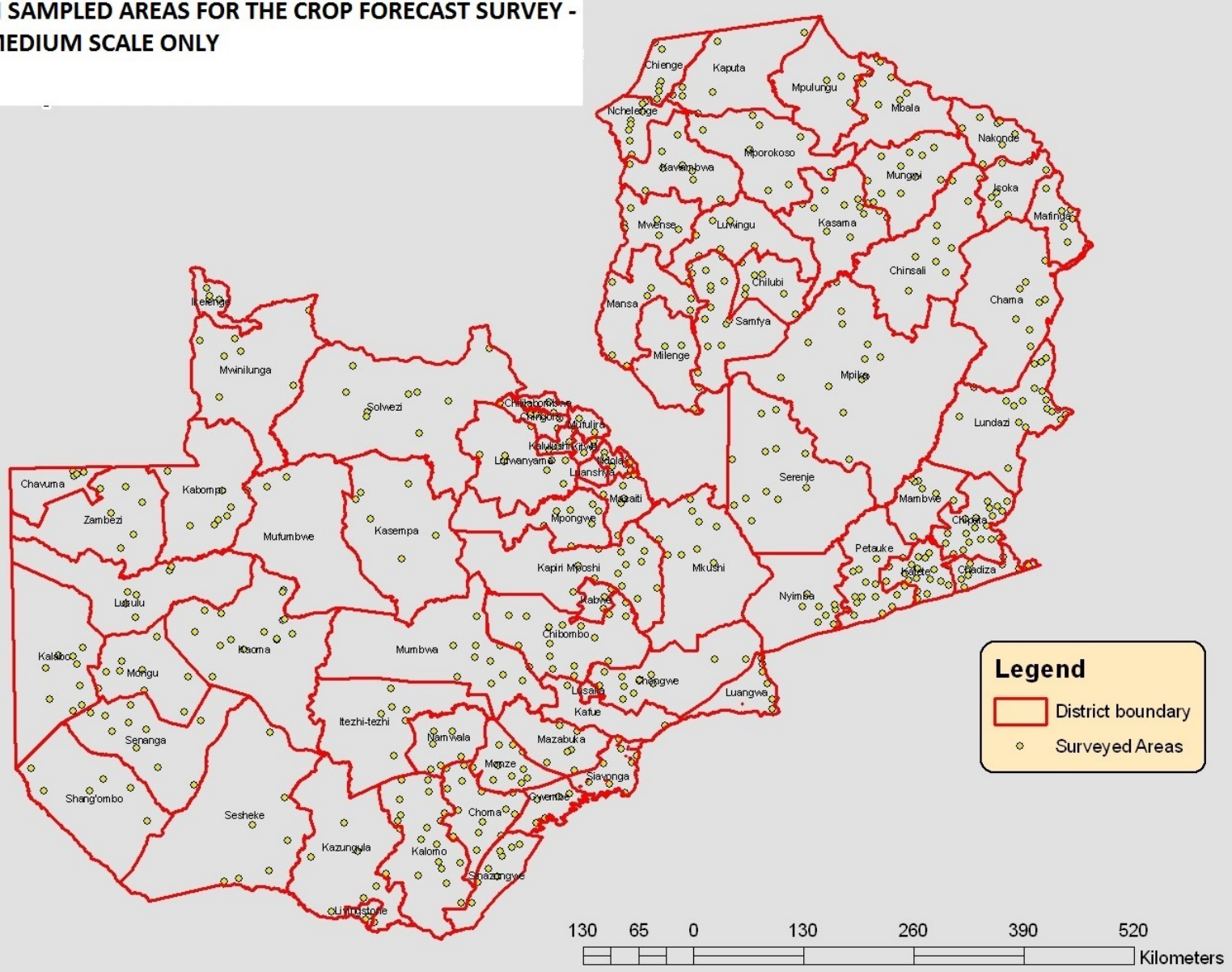
Small and Medium Category:

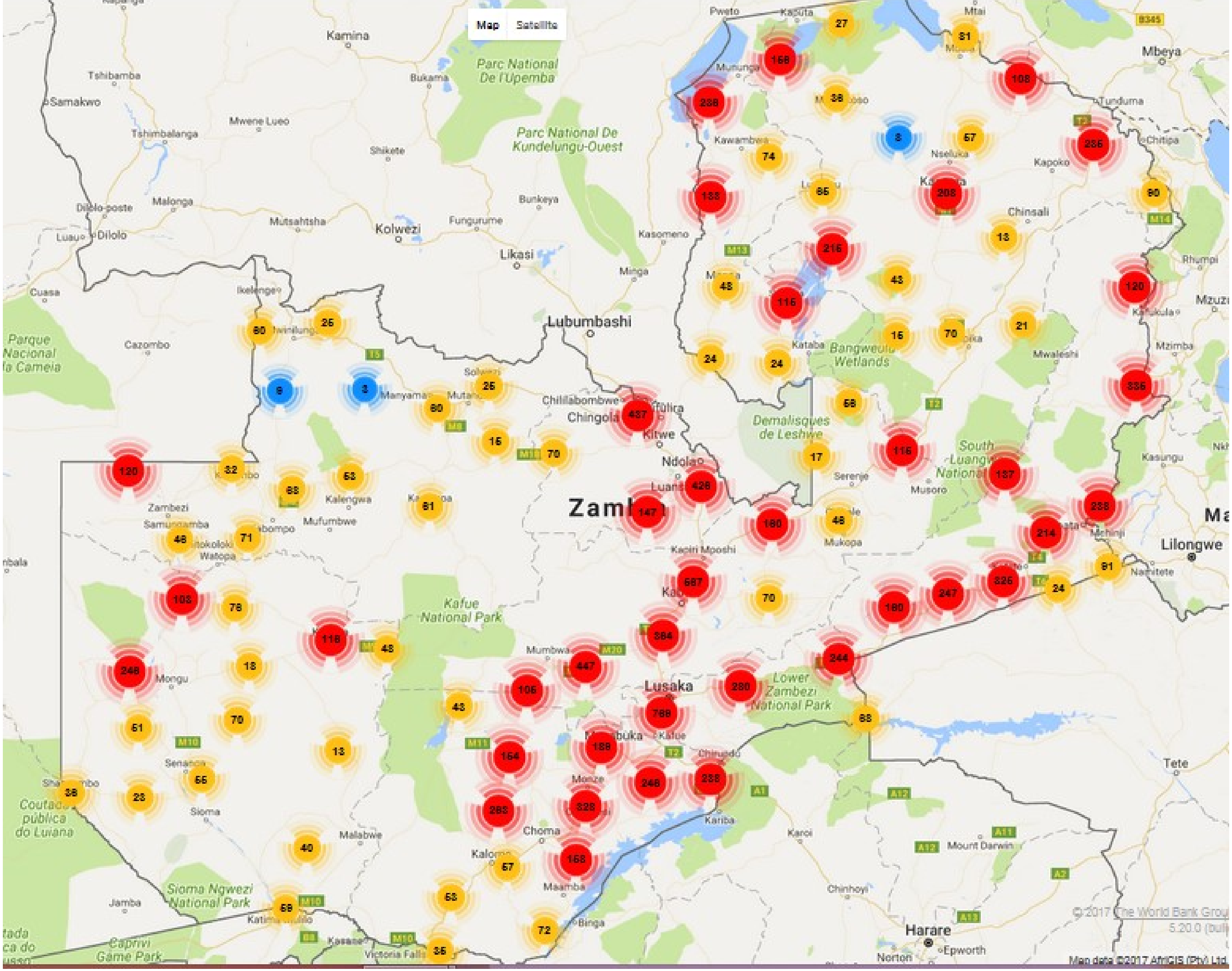
Small 0-5 ha

Medium 5-19.99 ha

Category of Field Staff	Number Employed
Small & Medium Scale data collection staff	510
Large Scale Farms Data collection Staff	50
Data Entry Staff	6
Data Analysis team	30

ZAMBIA WITH SAMPLED AREAS FOR THE CROP FORECAST SURVEY - SMALL AND MEDIUM SCALE ONLY





Map
Satellite
Kamina
Parc National De l'Upemba
Tshibamba
Bukama
Samakwo
Mwene Lueo
Tshimbalanga
Shikete
Parc National De Kundelungu-Ouest
Dilolo-poste
Malonga
Bunkeya
Dilolo
Luau
Mutsahtsha
Kolwezi
Fungurume
Kasomeno
Likasi
Minga
Cuasa
Ikelenge
Lubumbashi
Parque Nacional da Cameia
Cazombo
Solwezi
Manyama
Chililabombwe
Chingola
Kitwe
Ndola
Zambezi
Kalengwa
Mufumbwe
Kafue National Park
Mumbwa
Mongu
Lusaka
Lower Zambezi National Park
Kafue
Senanga
Sioma
Mulobezi
Choma
Monze
Kariba
Kalomo
Maamba
Sioma Ngwezi National Park
Jamba
Katima Mulilo
Caprivi Game Park
Kasane
Victoria Falls
Binga
Pweto
Kaputa
Mbeya
Tunduma
Chitipa
Kawambwa
Nseluka
Kapoko
Chinsali
Rhumpi
Mzuzu
Mzimba
Mwaleshi
Kataba
Bangweulu Wetlands
Demalisques de Leshwe
Serenje
South Luangwa National
Musoro
Kasungu
Mukopa
Kapiri Mposhi
Mchinji
Lilongwe
Namitete
Tete
Karoi
Mount Darwin
Chinhoyi
Harare
Epworth
Norton
Zambia
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Coefficient of Variation for Crops

Crop	Standard Error in metric tonnes (+/-)	Coefficient of Variation(%)
Maize	105,956.25	3.12
Sorghum	2,207.21	13.09
Rice	5,427.68	14.13
Millet	2,147.41	6.60
Sunflower	2,762.23	5.81
Groundnuts	8,642.44	5.21
Soya beans	11,570.98	7.66
Seed cotton	7,398.32	8.36
Mixed beans	2,805.32	6.19
Bambara nuts	491.63	11.23
Cowpeas	1,570.94	12.94
Sweet potatoes	17,402.39	8.45
Popcorn	1,495.72	19.10

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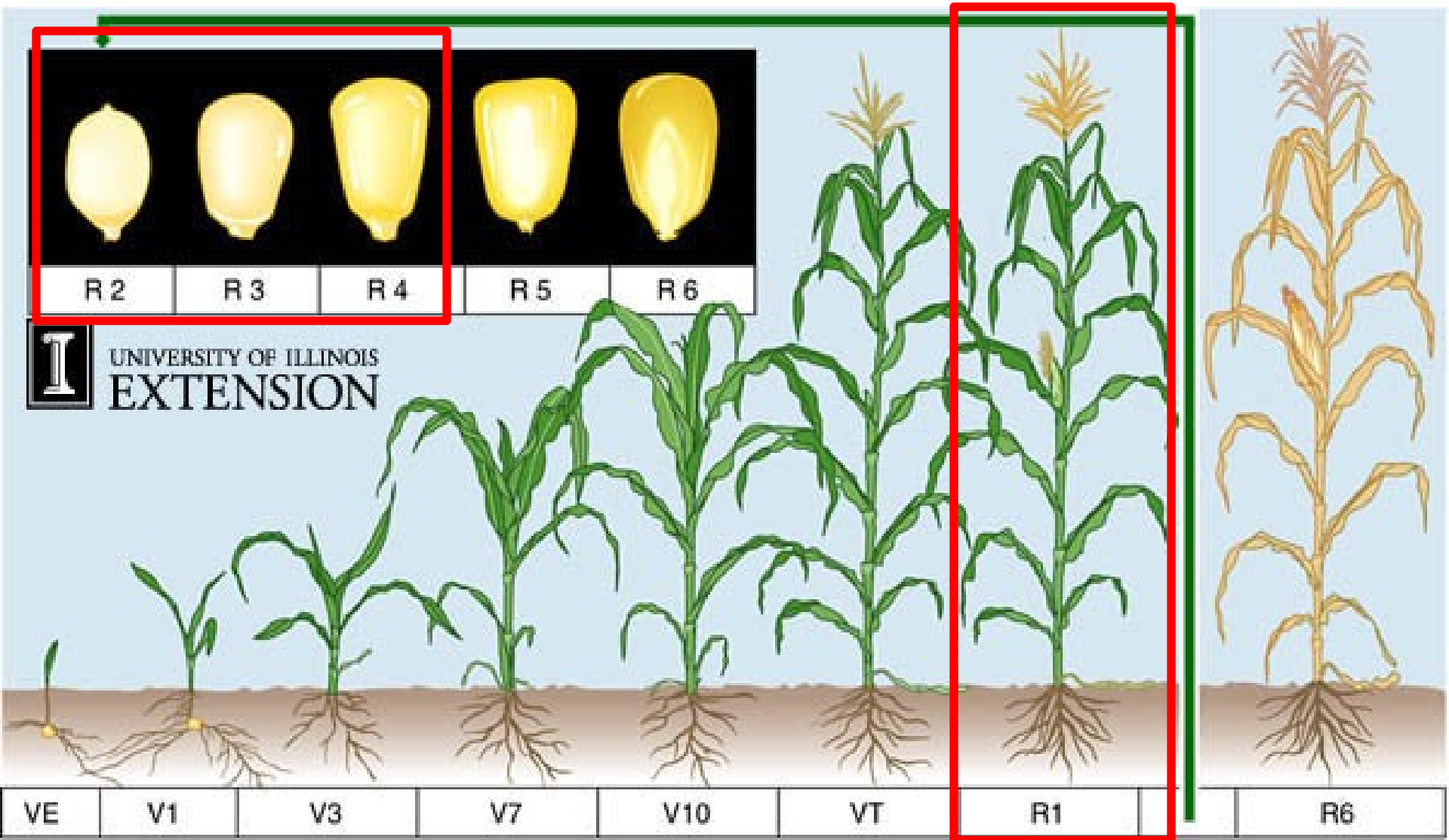
Field Data Collection took place between 25th March and 25th April 2017 when most crop had reached R1 to R4



Cost of Production Analysis based on the 2016/2017 CFS

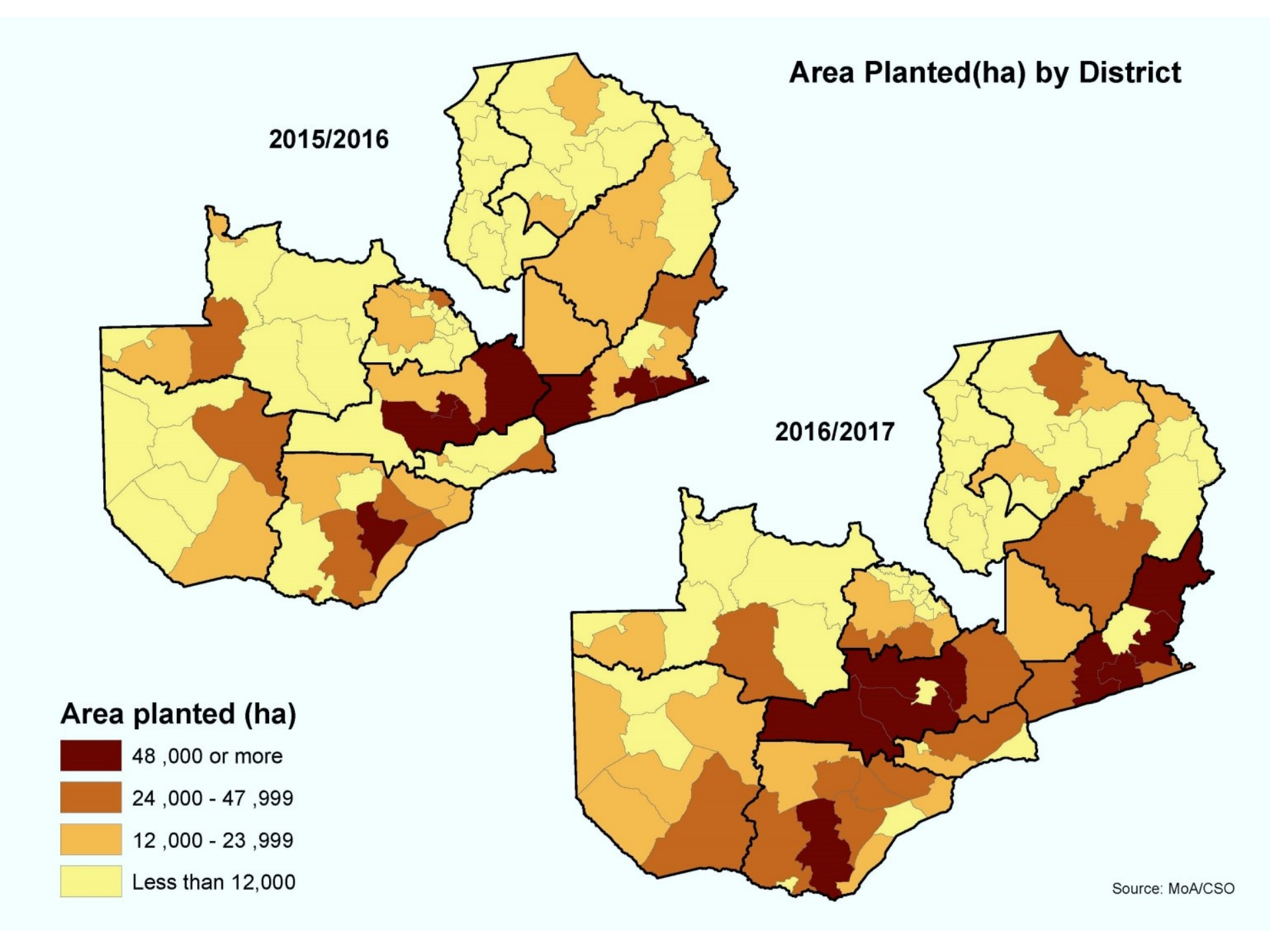
Cost components

- **Labour cost**
- **Fertilizer**
- **Seed**
- **Herbicides and**
- **Transport cost of Fertilizer to homestead**
- **Imputed Land rental Value**

Production Highlights

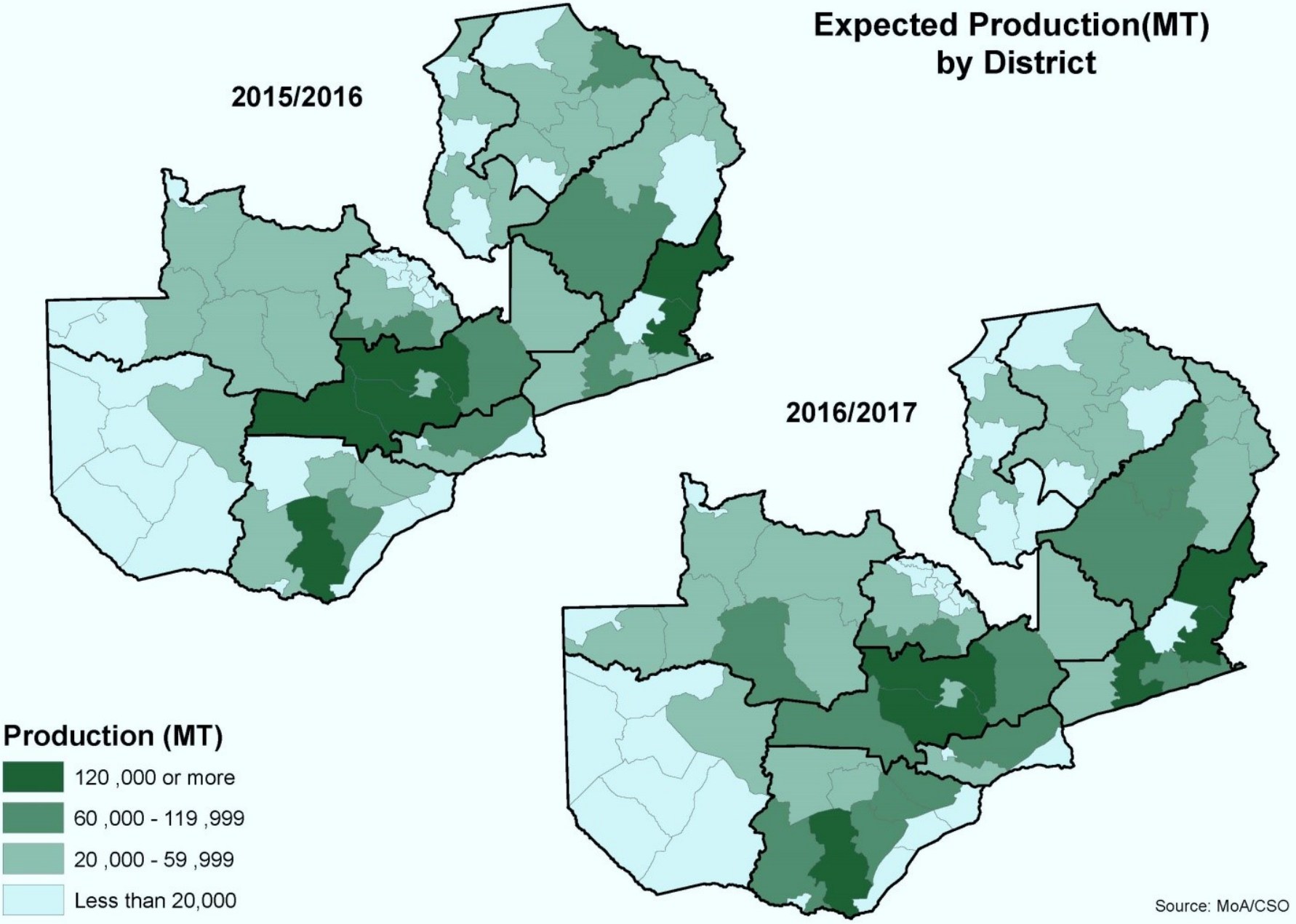
- Area planted to most crops has increased
- Maize and Soya beans have posted significant percentage increase in production
- Yields for most crops have increased
- Maize and soya production are highest ever recorded in Zambia's history

Crop	Area planted (ha)		
	2015/2016	2016/2017	% change
Maize	1,364,977	1,644,741	20.50
Maize for seed	7,355	7,173	(2.47)
Maize for silage	3,484	3,434	(1.44)
Sorghum	33,238	33,728	1.48
Rice	25,595	33,303	30.12
Millet	53,699	52,820	(1.64)
Sunflower	127,096	105,184	(17.24)
Groundnuts	222,952	269,611	20.93
Soya beans	145,763	231,630	58.91
Seed cotton	139,195	113,649	(18.35)
Irish potato	1,333	1,005	(24.63)
Virginia Tobacco	6,237	5,215	(16.39)
Burley Tobacco	4,846	5,428	12.00
Mixed beans	90,434	83,635	(7.52)
Bambara nuts	6,039	6,235	3.26
Cowpeas	20,866	26,438	26.71
Sweet Potatoes	69,299	55,312	(20.18)
Wheat		26,773	-
Barley	434	857	97.69
Popcorn	10,178	9,149	(10.11)


Area Planted(ha) by District
2015/2016
2016/2017
Area planted (ha)
48 ,000 or more
24 ,000 - 47 ,999
12 ,000 - 23 ,999
Less than 12,000
Source: MoA/CSO

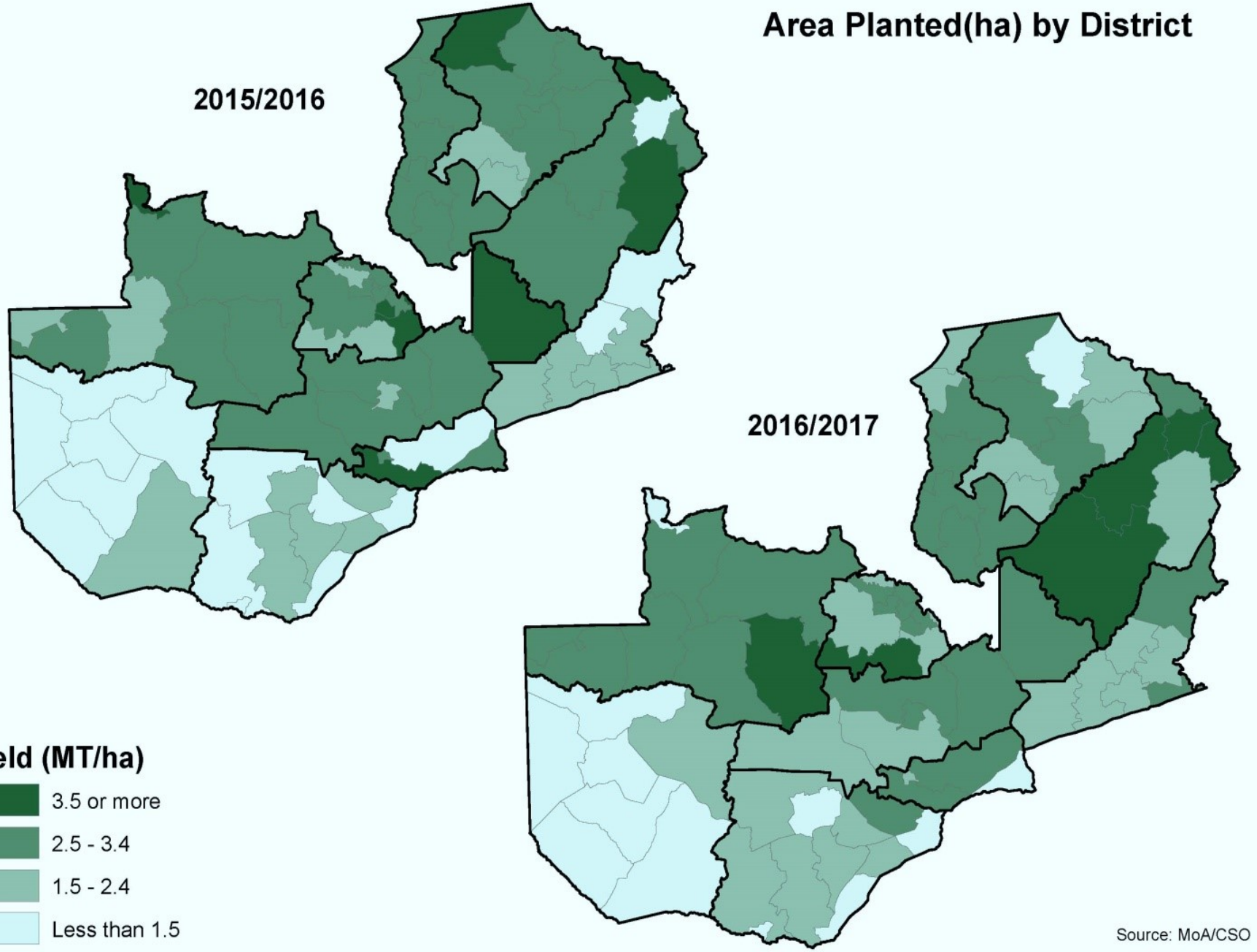
Crop	Expected production (MT)		
	2015/2016	2016/2017	% change
Maize	2,873,052	3,606,549	25.53
Maize for seed	42,128	39,084	(7.23)
Sorghum	14,107	17,337	22.90
Rice	26,675	38,423	44.04
Millet	29,973	32,566	8.65
Sunflower	61,073	50,220	(17.77)
Groundnuts	131,562	168,699	28.23
Soya beans	267,490	351,416	31.38
Seed cotton	111,902	89,293	(20.20)
Irish potato	24,428	31,750	29.97
Virginia Tobacco	12,540	12,079	(3.68)
Burley Tobacco	6,476	8,416	29.95
Mixed beans	45,351	45,938	1.29
Bambara nuts	5,428	4,377	(19.36)
Cowpeas	10,603	12,428	17.21
Sweet Potatoes	231,882	206,676	(10.87)
Popcorn	11,294	7,829	(30.68)

Expected Production(MT) by District



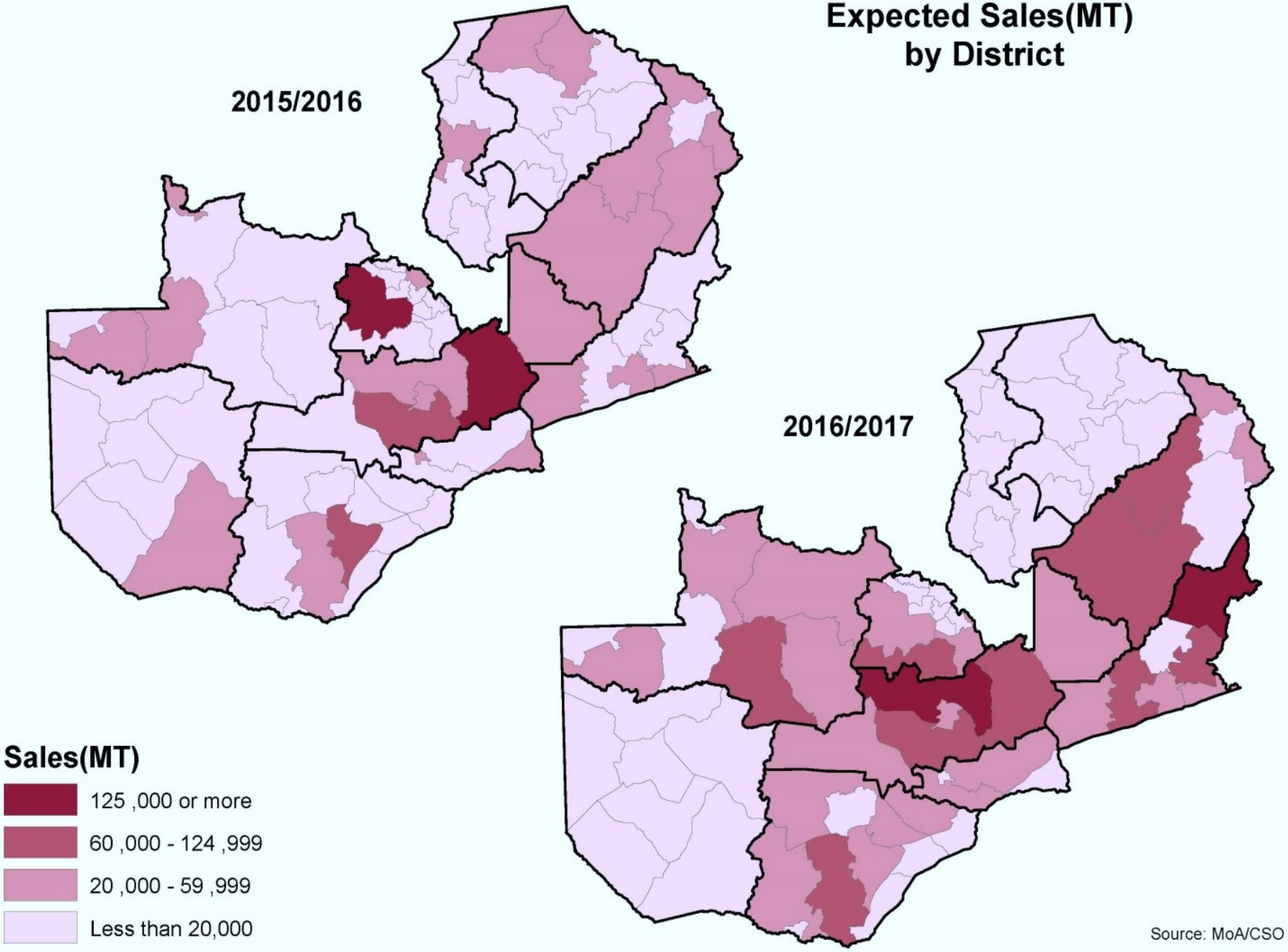
Crop	Yield rate (MT/ha)		
	2015/2016	2016/2017	% change
Maize	2.10	2.19	4.18
Maize for seed	5.73	5.45	(4.88)
Sorghum	0.42	0.51	21.11
Rice	1.04	1.15	10.70
Millet	0.56	0.62	10.46
Sunflower	0.48	0.48	(0.64)
Groundnuts	0.59	0.63	6.04
Soya beans	1.84	1.52	(17.33)
Seed cotton	0.80	0.79	(2.27)
Irish potato	18.32	31.60	72.45
Virginia Tobacco	2.01	2.32	15.20
Burley Tobacco	1.34	1.55	16.03
Mixed beans	0.50	0.55	9.53
Bambara nuts	0.90	0.70	(21.90)
Cowpeas	0.51	0.47	(7.49)
Sweet Potatoes	3.35	3.74	11.67
Popcorn	1.11	0.86	(22.89)

Area Planted(ha) by District

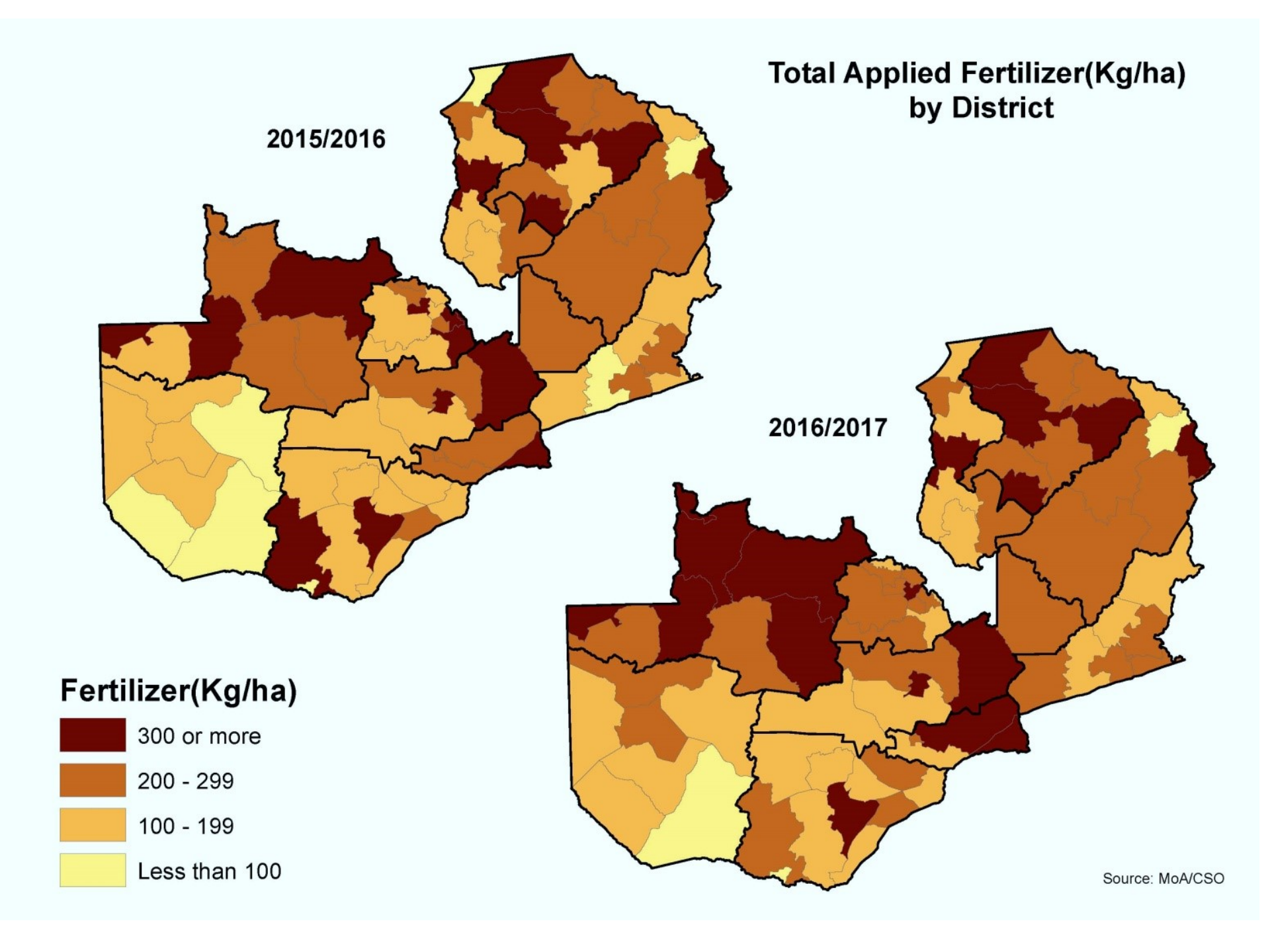


	Expected Sales (MT)		
Crop	2015/2016	2016/2017	% change
Maize	**1,859,513**	**1,969,993**	**5.94**
Maize for seed	**3,527**	**31,591**	**795.60**
Sorghum	**2,421**	**3,408**	**40.77**
Rice	**13,868**	**18,536**	**33.66**
Millet	**9,430**	**9,558**	**1.36**
Sunflower	**756**	**2,309**	**205.57**
Groundnuts	**50,129**	**80,626**	**60.84**
Soya beans	**267,490**	**288,336**	**7.79**
Seed cotton	**111,902**	**89,293**	**(20.20)**
Irish potato	**24,428**	**31,319**	**28.21**
Mixed beans	**24,067**	**25,062**	**4.14**
Bambara nuts	**1,612**	**1,526**	**(5.32)**
Cowpeas	**3,988**	**6,254**	**56.83**
Sweet Potatoes	**136,324**	**123,938**	**(9.09)**
Popcorn	**9,203**	**6,240**	**(32.2)**

Expected Sales(MT) by District



Crop	Fertilizer usage		
	2015/2016	2016/2017	% change
Maize	**242,894**	**307,077**	**26.42**
Maize (for seed)	**4,322**	**9,545**	**120.87**
Maize (for silage)	**1,971**	**1,358**	**(31.09)**
Green Maize	**96**	**144**	**49.72**
Sorghum	**158**	**148**	**(6.25)**
Rice	**61**	**112**	**82.95**
Millet	**36**	**54**	**51.97**
Sunflower	**200**	**124**	**(37.78)**
Groundnuts	**202**	**168**	**(16.60)**
Soya beans	**15,143**	**18,668**	**23.28**
Seed Cotton	**723**	**955**	**32.03**
Irish potatoes	**178**	**848**	**377.33**
Mixed beans	**334**	**278**	**(16.72)**
Cowpeas	**108**	**20**	**(81.56)**
Sweet potatoes	**309**	**191**	**(38.11)**
Popcorn	**906**	**705**	**(22.18)**
Virginia Tobacco	**2,152**	**2,908**	**35.12**
Burley Tobacco	**2,570**	**2,950**	**14.80**
Total (major crops)	**286,497**	**361,091**	**26.04**


Total Applied Fertilizer(Kg/ha)
by District
2015/2016
2016/2017
Fertilizer(Kg/ha)
300 or more
200 - 299
100 - 199
Less than 100
Source: MoA/CSO

2017 Districts contributing at least 50% to National Area planted (ha)

	District	Area planted (Ha)	% contribution
1	Kalomo	107,195	6.5
2	Chibombo	94,121	5.7
3	Lundazi	90,770	5.5
4	Chipata	89,178	5.4
5	Kapiri-Mposhi	82,936	5.0
6	Petauke	81,680	5.0
7	Katete	64,419	3.9
8	Mumbwa	61,196	3.7
9	Kazungula	45,835	2.8
10	Namwala	44,321	2.7
11	Choma	43,275	2.6
12	Mbala	42,843	2.6
13	Kalomo	107,195	6.5
	Contribution		51.5

2017 Districts contributing at least 50% to National Maize Production (MT)

	District	Expected Production (MT)	% contribution
1	Lundazi	296,474	8.22
2	Kapiri-Mposhi	212,550	5.89
3	Chipata	193,549	5.37
4	Kalomo	187,864	5.21
5	Chibombo	182,747	5.07
6	Petauke	133,715	3.71
7	Mbala	116,046	3.22
8	Katete	112,938	3.13
9	Mumbwa	111,279	3.09
10	Mpongwe	106,592	2.96
11	Mpika	102,752	2.85
12	Mkushi	96,131	2.67
	Contribution		51.37

Top 10 Districts with highest maize yields (2016/2017)	
District	Yield (MT/ha)
Chinsali	**3.82**
Mpongwe	**3.64**
Mpika	**3.60**
Mafinga	**3.58**
Luwingu	**3.55**
Isoka	**3.39**
Mkushi	**3.27**
Lundazi	**3.27**
Mwinilunga	**3.26**
Chilubi	**3.26**

Province	Total Hectarage (Small & Medium)		
	Planted	Affected by Army worms	Percentage Affected
Central	**281,872**	**92,807**	**33**
Copperbelt	**84,596**	**36,468**	**43**
Eastern	**388,436**	**33,764**	**9**
Luapula	**47,065**	**9,221**	**20**
Lusaka	**50,716**	**30,870**	**61**
Muchinga	**97,964**	**6,145**	**6**
Northern	**108,907**	**5,353**	**5**
North Western	**77,646**	**18,925**	**24**
Southern	**362,808**	**76,362**	**21**
Western	**104,489**	**39,455**	**38**
National	**1,604,497**	**349,371**	**22**

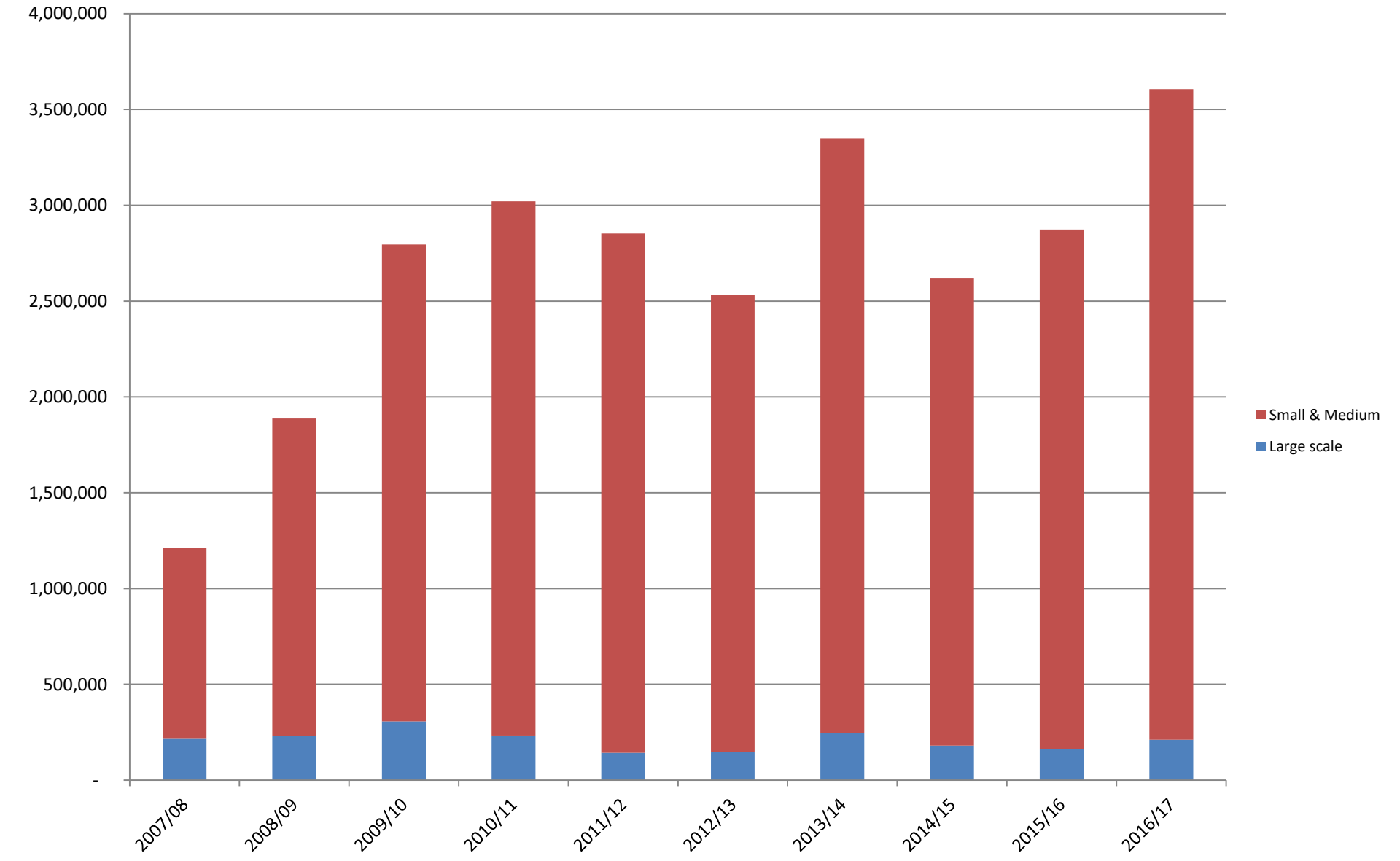
Comparison of Results-Cotton

Forecast	2016	2017	% Change
Cotton Board Estimate	116,000	117,693	
Crop Forecast Estimate	111,604	89,293	

Comparison of Results with industry….Cotton

Estimate	2016	2017
Cotton Board	116,000	117,693
Crop Forecast Survey	111,604	89,292
% Variance	4	24

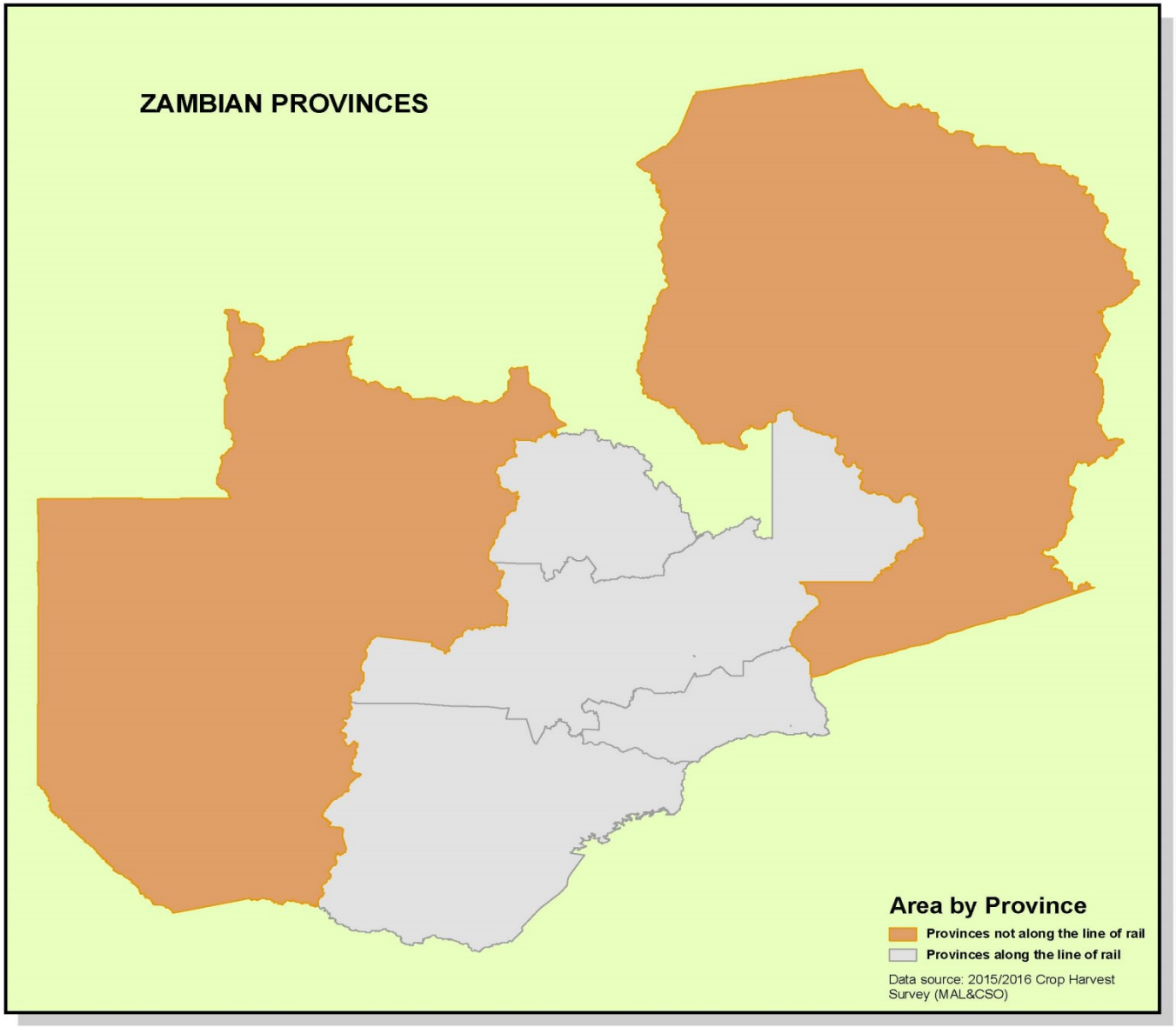
10 Year Contribution to National Maize Production by Small & medium and Large Scale Category



Percentage change by Category

Category	2015/2016	2016/2017	% Change
Small & Medium	2,709,940	3,395,591	**29.3**
Large Scale	163,113	210,958	**25.3**
Total	2,873,052	3,606,549	**25.53**

Line of rail vs Off line of rail



Marketable Surplus-Line of Rail

Province	Line of Rail		
	2016	2017	% change
Central			
Copperbelt			
Lusaka			
Southern			
Line of Rail			

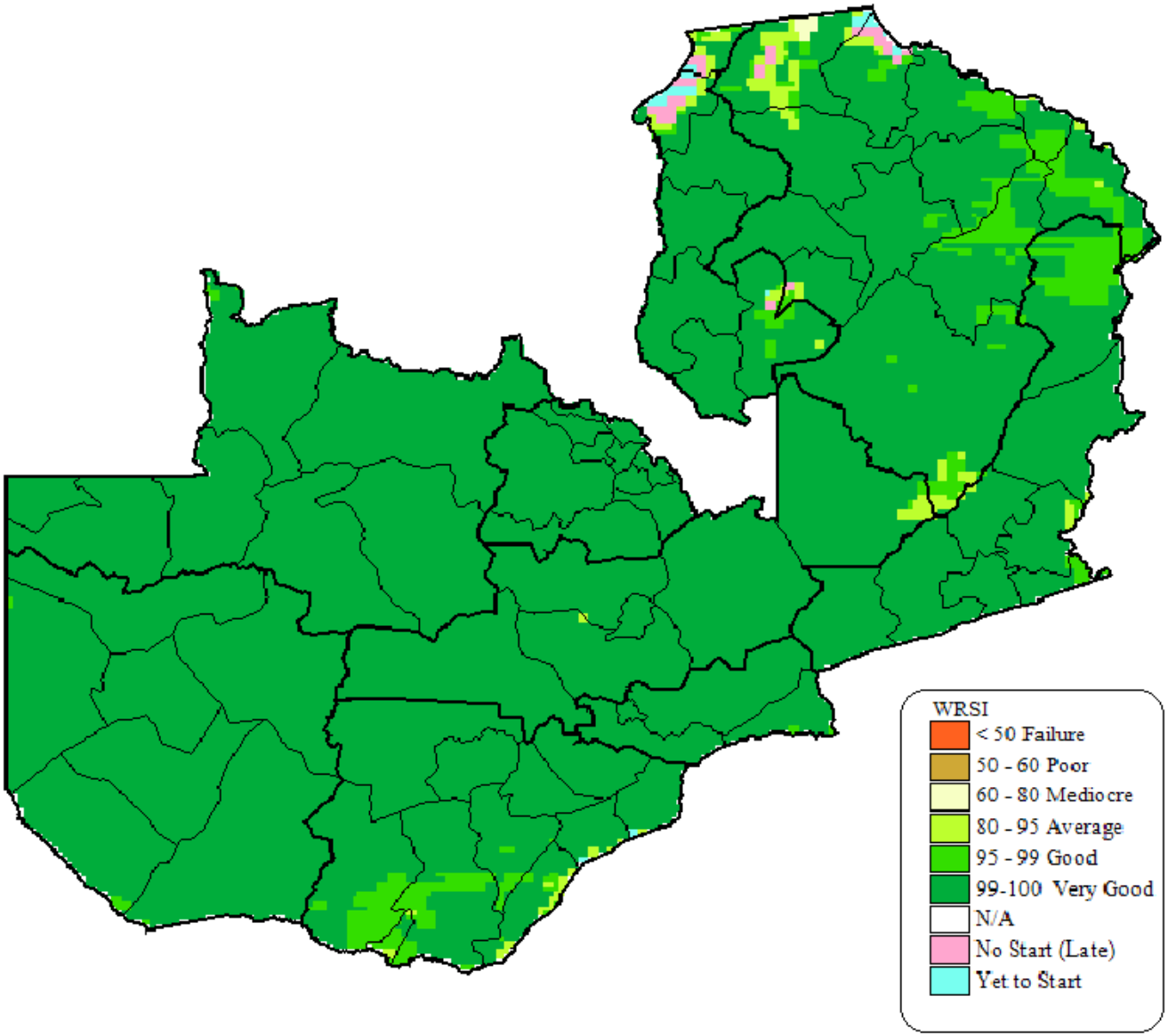
Marketable Surplus-Off the Line of Rail

Province	Off-line of rail		
	2016	2017	% change
Eastern			
Luapula			
Muchinga			
Northern			
North Western			
Western			
Total			

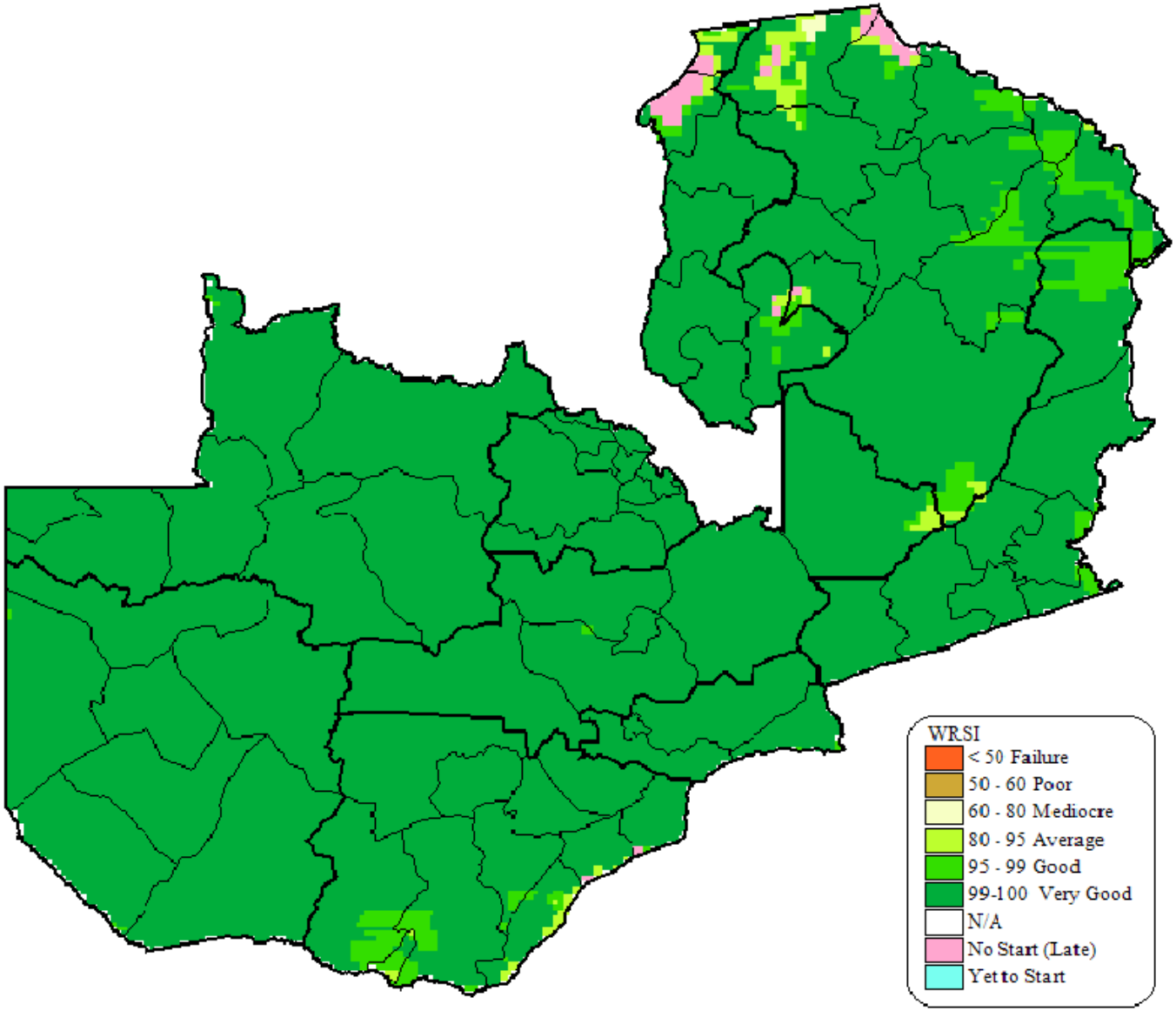
Major reasons for the change in production

- Improved rainfall
- Increased area planted to maize
- Increase in allocation of inputs especially to some high production areas e.g.....

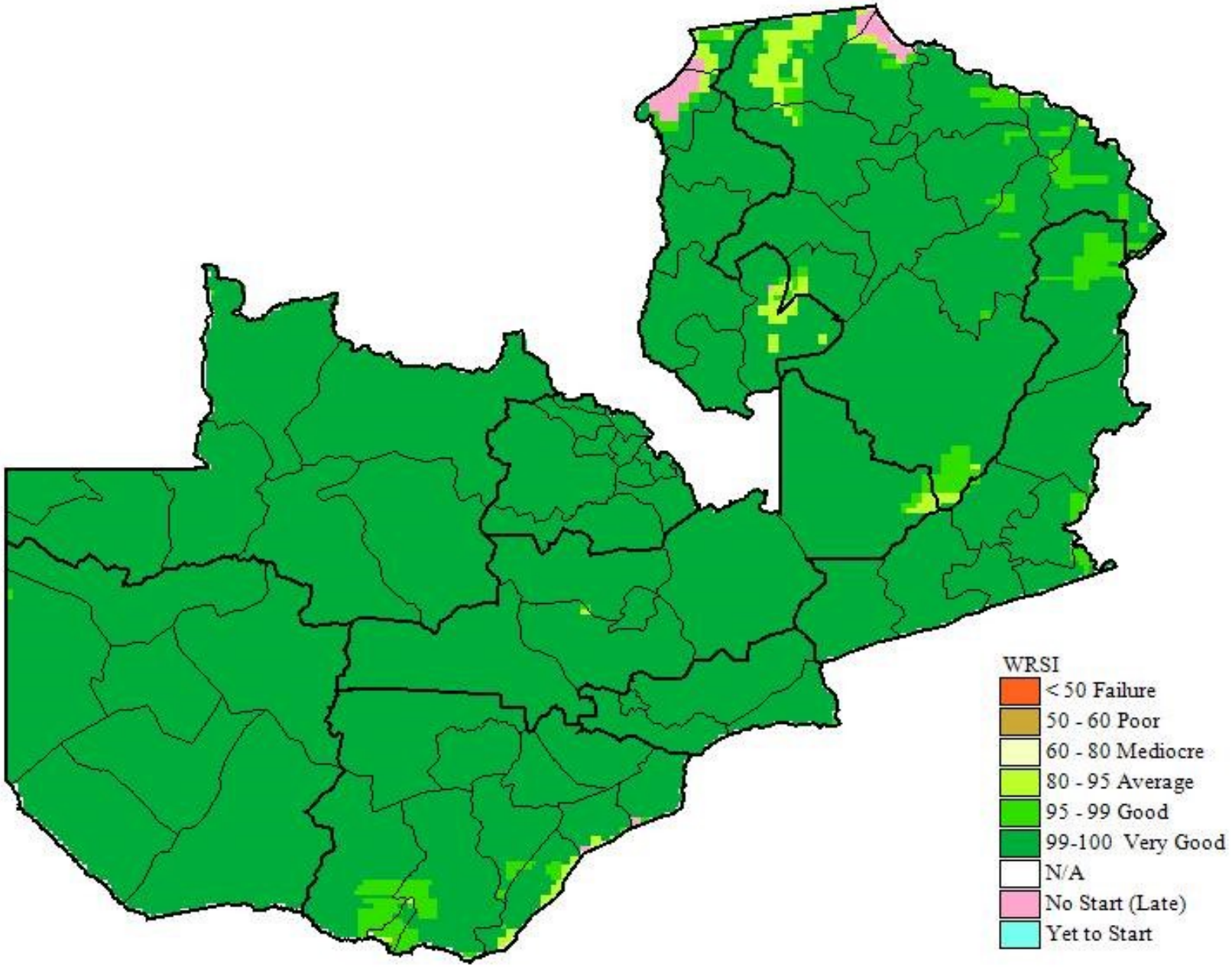
Zambia WRSI for maize in 2016/2017 season, as of dekad 3 of January 2017



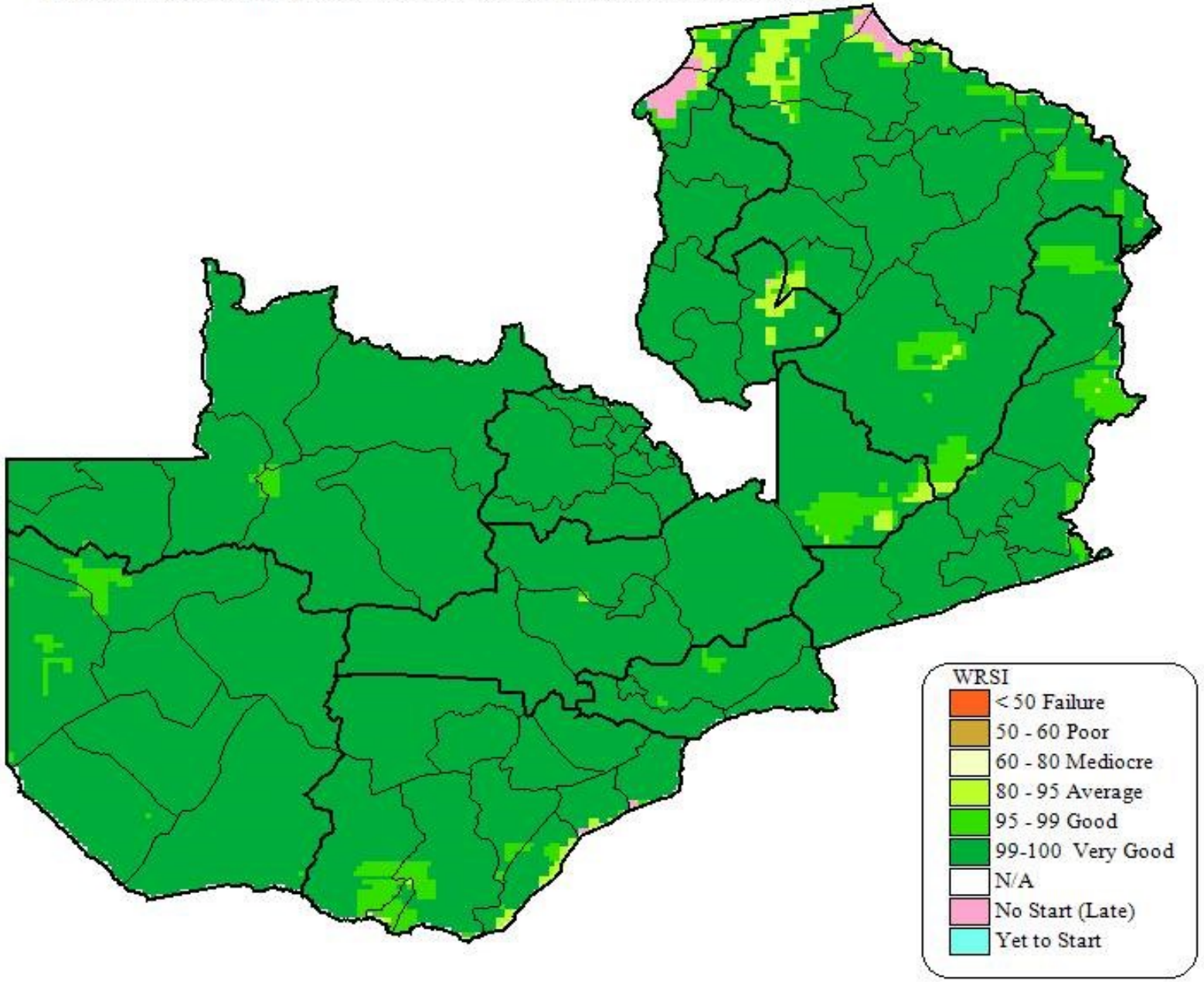
Zambia WRSI for maize in 2016/2017 season, as of dekad 3 of Feberuary 2017



Zambia WRSI for maize in 2016/2017 season, as of dekad 3 of March 2017



Zambia WRSI for maize in 2016/2017 season, as of dekad 3 of April 2017



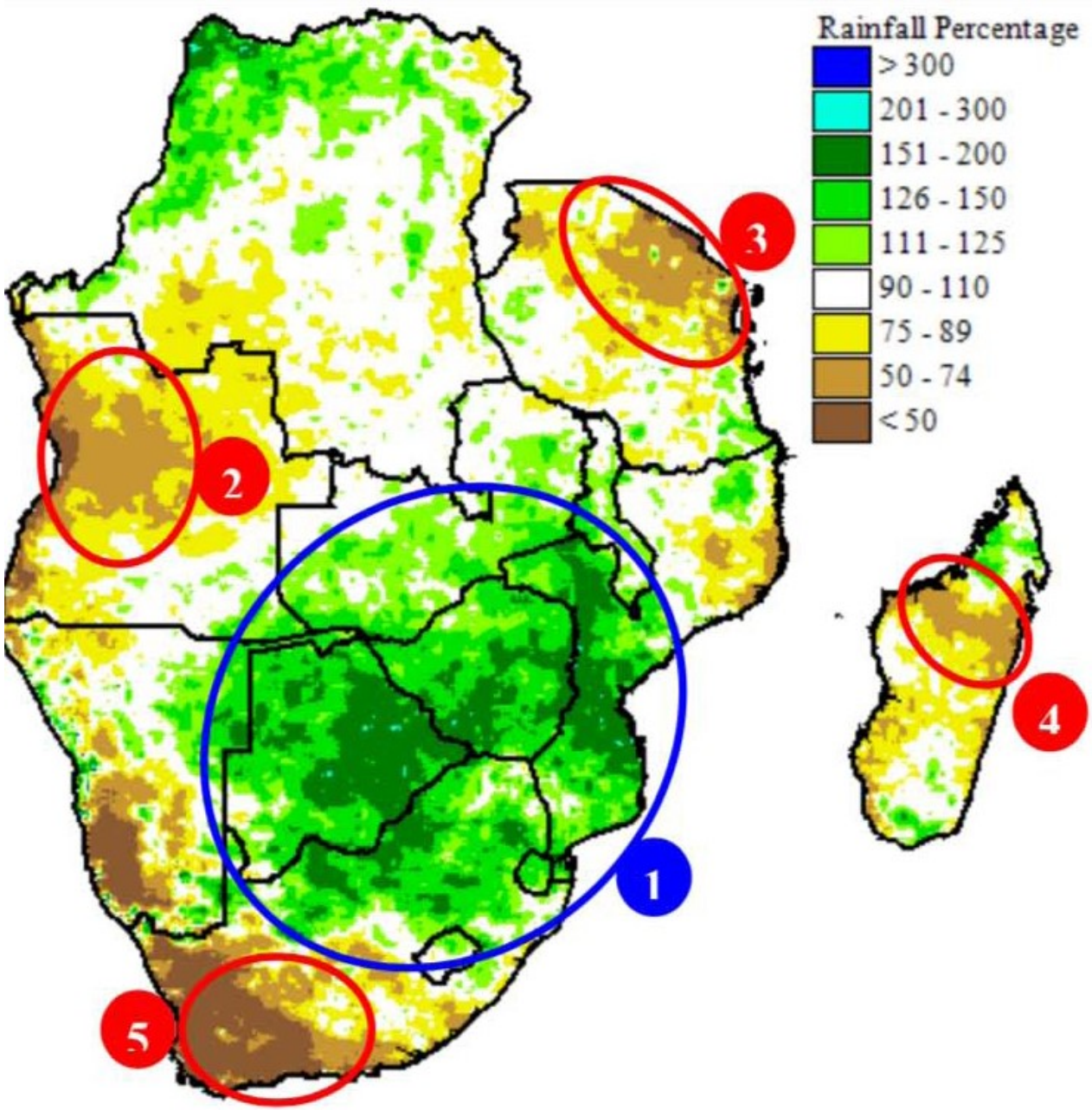


Figure 1. Rainfall for 1 Oct 2016 to 31 Mar 2017 expressed as percent of 15-year avg for the same period.

……Reasons for good performance

Limited impact of army worm damage

Province	Total Hectarage		
	Planted	Affected by Army worms	Percentage Affected
Central	281,872	92,807	33
Copperbelt	84,596	36,468	43
Eastern	388,436	33,764	9
Luapula	47,065	9,221	20
Lusaka	50,716	30,870	61
Muchinga	97,964	6,145	6
Northern	108,907	5,353	5
North Western	77,646	18,925	24
Southern	362,808	76,362	21
Western	104,489	39,455	38
National	1,604,497	349,371	22

Proportion of Small and medium area planted that will be harvested (%)

Province	2016	2017
Central	87	86
Copperbelt	93	92
Eastern	88	95
Luapula	94	88
Lusaka	85	84
Muchinga	91	94
Northern	96	93
Northwestern	92	83
Southern	70	82
Western	75	72
National	85	87

9 year trend in usage of hybrid seed by field

Seed Type	Season								
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Hybrid	45	51	57	61	61	64	67	61	58.7
OPV	0.5	0.4	0.3	0.4	0.3	0.1	0.2	0.3	0.8
Recycled and local	54	48	43	39	38	36	33	38	40

Main reason for not harvesting all planted fields

	What is the main reason for not harvesting/expecting to harvest whole area?							
	water logging	wilting due to drought	animal/bird destruction	other pests and diseases	floods, heavy rain	lack of fertilizer	Army Worms/Stock borer	Total
Central	18.5	0.5	1.4	5.0	8.1	39.3	12.0	100.0
Copperbelt	1.4	0.3	1.2	2.0	1.4	49.1	30.9	100.0
Eastern	17.9	0.3	1.6	2.9	9.7	26.6	22.7	100.0
Luapula	1.2	4.8	1.6	2.0	1.6	31.0	49.6	100.0
Lusaka	32.6	0.0	2.9	0.3	14.2	10.2	32.3	100.0
Muchinga	3.1	15.5	12.4	2.1	6.2	11.4	34.7	100.0
Northern	2.9	12.0	0.5	5.3	0.0	28.8	32.2	100.0
NorthWestern	1.4	0.5	0.5	8.7	1.1	43.9	29.0	100.0
Southern	24.2	0.6	3.4	4.6	16.8	19.2	14.4	100.0
Western	11.7	5.3	1.2	3.6	27.1	17.9	19.5	100.0

NATIONAL FOOD BALANCE SHEET

2016/2017 National Balance Sheet Review

- Previous Balance sheet surplus was 634,681 mt
- Previous balance sheet factored in 200,000 mt for informal trade to neighbouring countries

Formal Maize and maize product exports for period May 2016 to March 2017 are approximately 244,147 metric tonnes

ZRA/CSO Formal Trade Statistics: Formal maize Exports from May 2016 to March 2017 Balance Sheet period

Maize and maize product	MAY	JUNE	JULY	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Total
Maize (excl. seed)	7,893	20,407	21,286	6,779	21,601	23,069	22,271	28,110	9,809	5,505	8,380	175,110
Maize (corn) flour	0	0	0	0	0	0	0	0	0	0	0	0
Groats and meal of maize (corn)	30	0	35	0	0	0	0	0	480	0	2,778	3,322
Of maize (Corn)	0	30	0	0	0	0	0	0	30	0	0	60
Rolled or flaked maize (corn) grains	0	0	0	0	0	0	0	0	0	0	0	0
Other worked grains of maize (corn), nes	215	0	332	330	350	0	0	0	0	0	0	1,227
Maize (corn) starch	0	0	0	0	0	0	0	0	0	0	0	0
Brans, sharps and other residues of maize	2,010	10,023	4,479	7,340	9,799	6,337	4,983	5,986	4,775	3,924	4,771	64,428
Total	10,148	30,460	26,132	14,449	31,750	29,407	27,254	34,096	15,094	9,429	15,930	244,147

FRA Carry-over Stock Position as at 30 April 2016

FRA Stocks	Quantity (MT)
National Strategic Food Reserve (Uncommitted)	
Commitments to Millers (Committed but not paid for)	
Committed and Paid for	
Total	270,254

National Food Balance Sheet Carry-over Stocks (2017)

Carry-over stocks	Maize	Wheat	Rice	Sorghum & Millet	Cassava
Small & Medium Farms	28,172		285	476	
FRA	270,254	0	0	0	0
DMMU/OVP	0	0	0	0	0
MAZ	60,000	47,134	0	0	0
GTAZ (Includes 1191mt WFP and 1137 ZAMACE stock	206,388	5,436	0	460	100
Large Scale	4,503	1,952	68	8	0.13
Total	569,317	54,522	353	944	100

National Food Balance Sheet Highlights

SADC Food Balance Sheet Highlights

THANK YOU