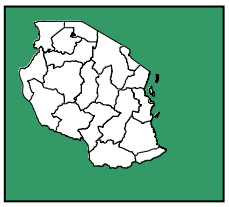
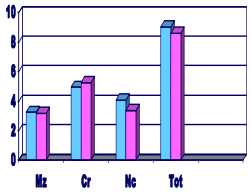


United Republic of Tanzania

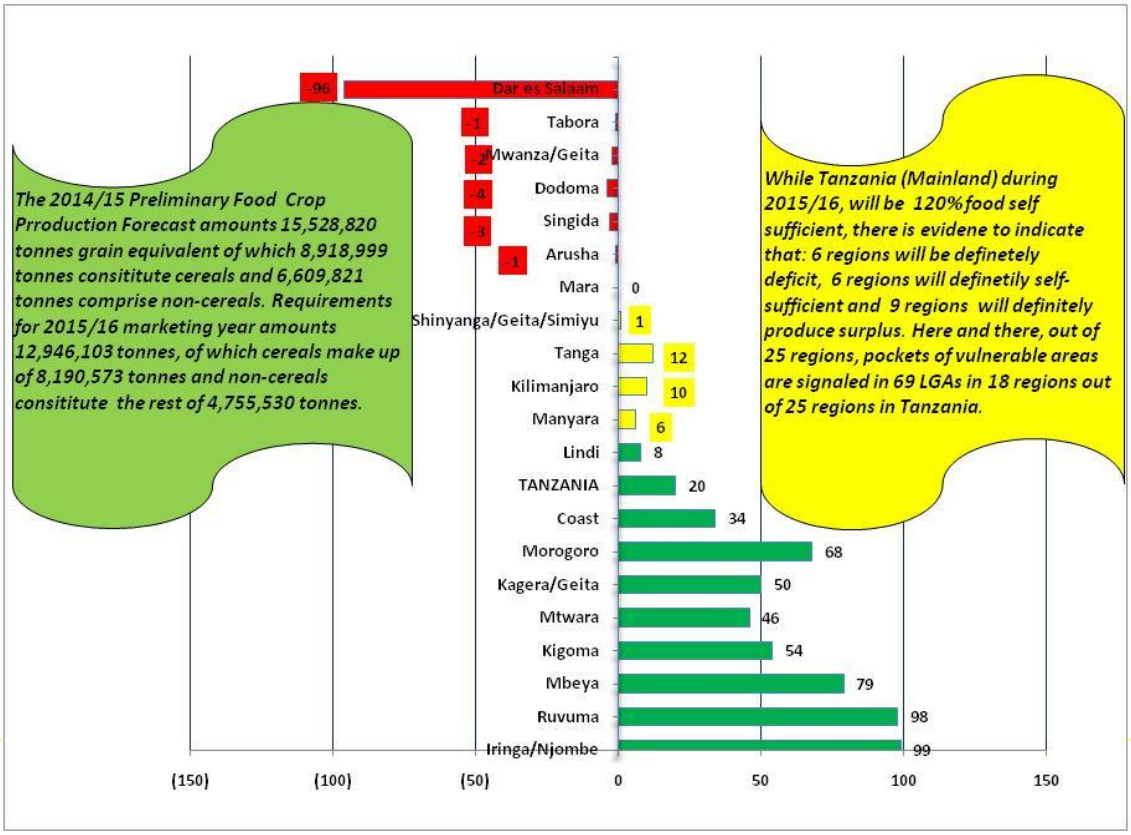
Ministry of Agriculture Livestock and Fisheries



AGSTATS FOR FOOD SECURITY

VOLUME 1: The 2014/15

Preliminary Food Crop Production Forecast for 2015/16 Food Security



National Food Security Division

Ministry of Agriculture Livestock and Fisheries

P.O. Box 9192,

Tel 2865950, Fax 2865951,

Dar es Salaam.

Foreword

Starting 1992/93, the then Ministry of Agriculture through its National Early Warning System has developed and operated the food security assessment procedure with some specially designed tools to capture data, initially at a seasonal frequency involving the use of a sample survey questionnaire (FSQ1) to address "subjectivity" problems and later on at a weekly and a monthly frequency involving routine reporting forms (WRS1-5 and RRS1) to address early warning issues for food security. This work was partly supported to ensure that good quality data and reports were produced under the technical guidance of the United Nations Food and Agriculture Organization (FAO).

Overtime, following challenges and opportunities surrounding the system these forms and questionnaires have been evolving towards the currently improved version where 10 different forms retrieving data from districts and sample villages towards assessing food situation and reporting with a reasonable statistical accuracy around the "AGSTATS for Food Security" Report to forecast eminent food security situation at national and sub-national level while opening doors of opportunities towards deeper insights of short-term to long-term interventions. While sample surveys using FSQ1 is now more than 22 years old addressing subjectivity problems in district estimates the routine reporting system using WRS1-5 and RRS1 has prevailed for more than 12 years addressing urgency and ad hoc issues amidst stringent budgetary constraint.

In recent years, following rampant data gaps occasionally experienced in some retrievals, it was necessary to introduce three additional forms which are retrieving more data to harmonize food security reflection at ground level to address the data gaps. The forms are TSA, Jed 6 and Jed 7 which are respectively intended to get local authority and expert opinion on general aspects of agriculture and food security as well as prices and rainfall data on record. For effectiveness purposes, the forms are used at the beginning and at the middle of consumption year which runs from 1st June to 31st May every year during respective preliminary and final forecast surveys conducted for validation purposes in company of the other structured forms explained earlier above. The outcome of these tools contributes to the output given by "AGSTATS for Food Security" and enables us to analyze production, requirement and food security status both at national and sub-national levels. Actions taken in sustaining food security acknowledge the need to involve stakeholders in all areas which must be supported by dissemination of this report. Improvement of data reliability, accuracy and timeliness in this output has been 100% subject to resource availability by Government and commitment on the part of professional capacity in place.

Together with all the successes as mentioned earlier above there have been some challenges accompanying our daily or routine activities in crop monitoring and early warning (CMEW) which if not addressed could hinder the development of our intention to achieve the desired Improvement. Amidst the implementation of this Preliminary Forecast exercise the team recognizes the presence of 4 newly instituted regions viz. Geita, Katavi, Njombe and Simiyu and in due respect initiated the process of disentangling them from parent affiliates namely Mwanza, Rukwa, Iringa and Shinyanga regions respectively. While the process continues from

2014/15 preliminary forecast, the results presented in this report reflects presence of "compound" regions namely: Rukwa/Katavi, Kagera/Geita, Mwanza/Geita, Shinyanga/Geita/Simiyu and Iringa/Njombe, implying that while the administrative regions are already established the process of disentangling continues towards establishing statistical baselines into the future of the institutionalized regions viz. Katavi, Geita, Njombe and Simiyu. The disentangling process will ultimately add the new regions into the list of 21 to 25 regions once done. With compound regions the number of regions remains 21 at SSR analysis level but despite the challenges around the process attempts have been made to present vulnerable areas in 25 regions.

Back in the history of Early warning system, a similar exercise happened while disentangling Dar es Salaam and Manyara regions from the hitherto Coast and Arusha regions respectively. The eventuality of this process will pave way to a lower level disentangling process that will cover new districts which are relatively numerous.

MAIN HIGHLIGHTS

The 2014/15 Preliminary Food Crop Production Forecast amounts 15,528,820 tonnes grain equivalent, of which 8,918,999 tonnes constitute cereals and 6,609,821 tonnes comprise non-cereals. Requirement for 2015/16 marketing year amounts 12,946,103 tonnes of which cereals make up 8,190,573 tonnes and non-cereals constitute the rest, 4,755,530 tonnes.

Based on these availability and requirement figures, a self sufficiency status of 120% is attainable in terms of total food crops whereby cereals make up 109% and non-cereals make up 139%. In terms of gap/surplus analysis, this is respectively 2,582,717 tonnes surplus of total food, of which a cereal surplus amounting 728,425 tonnes coexists with a non-cereal surplus amounting 1,854,292 tonnes.

While at national level the upper end self sufficiency is impressively evidenced by 9 regions (134 – 199%) that will definitely produce surplus and 6 regions (100-112%) which will be definitely self-sufficient, there is evidence to indicate that: 6 regions (4 - 99%) will be definitely deficit. Based on food security assessment criteria set by the Ministry of Agriculture Food Security and Cooperatives, surplus food production in the country has been observed over three consecutive years in the range of 120%-125% observed in 2012/13-2015/16.

Towards operational setting to curb food insecurity in the country vulnerable areas are well signaled in 69 districts in 18 regions out of the current total of 25 regions (162 LGAs). The identified vulnerable areas will be closely monitored while in-depth vulnerability assessments will be carried out as a necessary step towards appropriate intervention action.

It is however cautioned that the forecast is sensitive to vuli performance. While Normal Vuli contribution revises to 31% in the bimodal area perspective or 17% at national aggregate perspective which amounts 2,616,835 tonnes it currently stands at 25% in bimodal areas perspective or 14% at national aggregates perspective which amounts 2,145,664 tonnes.

The earmarked food surplus areas and food deficit areas are seen as opportunities and challenges that need to be appropriately addressed. Therefore, it is highly recommended that local market potential as per deficit regions signals should be well exploited prior to external orientation of any surplus food.

Background

During the month of June, 2015 the National Food Security Division (Crop Monitoring and Early Warning) carried out a regular Preliminary food crop production forecast survey to foresee food crop harvest status for 2014/15 and the corresponding availability for 2015/16. While the main objective was to establish the preliminary status accomplished through capturing the effect of significant crop production factors that ruled over the growth stages from seed germination towards maturity, specific objectives were threefold: **first,** to establish statistically if food crop production has a considerable influence in agricultural performance, **secondly,** if national and local level food security status can be accounted for using the forecasts and, **thirdly,** if food security vulnerability is satisfactorily perceived to warrant vulnerability assessment. The exercise involved collection of the 2014/15 data and information from all *162LGAs* of mainland

Tanzania in collaboration with Regional Agricultural Advisors (RAAs) and the District Agricultural Irrigation and Co-operative Officers (DAICOs) partly through routine crop monitoring and early warning tools and partly through actual fielding of MAFC teams of experts to ground proof crop performance in both unimodal and bimodal areas correspondingly in respect of *msimu, vuli* and *masika* rainfall patterns of the 2014/15 crop season. Comprehensive analyses covering different retrievals were undertaken and results are presented in this report. The results concentrate on national and regional level food security status with main highlights of regions and districts bearing areas at risk.

Methodology

Briefly, the methodology of crop forecasting essentially combined 3 consecutive steps; Eye Estimation Method (EEM) used by (DAICOs), Projective-Forecasting Method (PFM) used by MAFC and the Food crop production forecasting sample survey (FCPFS) with background of joint design, test and approval by National Bureau of Statistics (NBS) and MAFC under the technical guidance of the United Nations Food and Agriculture Organization (FAO) and later manned by MAFC. Later on, in the process of analyzing Self Sufficiency Ratios (SSRs) and National Food Balances Sheets (NFBS) also following the technical guidance of FAO, the methodology extends to the calculation of food production in *grain equivalent terms*. While Area and Production estimates largely borrows from DAICOs estimates and partially improved by projective forecasting methods, Yield is largely improved by Agro-meteorological approaches that borrow from plant-water-satisfaction indices and production is computed and presented in grain equivalent terms.

Calculation of SSRs follows a simple food adequacy principle whereby production is related with local food crop requirement surrounding consumption and other uses based on requirement parameters employed by CMEW (See Appendix 8) and are presented in percentage terms. The difference between pre-mature and preliminary forecast and final forecast is best based on the principle of *kobechakuota (*whereby different phenological stages are monitored and estimated in percentage terms and cropped area). The area estimated during preliminary forecast focuses at planted area while during final forecast the area switches to harvested area and the *kobechakuota* principle guides the estimates towards mature and harvestable crop. Initially, the crop is largely in the germination and vegetative stages which are later promoted into grain-filling stages. In both the extremes, only traces of flowering stages are visible.

Methodological development has often corresponded with challenges surrounding forthcoming parameters been estimated. Debatably, concerns have been raised around how challenging it is to address statistical reflection of newly formed regions from previously existing regions. For example, the 4 newly established regions Katavi, Geita, Simiyu and Njombe are to be untied from old affiliates through *Disentangling*. Given newly born regions, *disentangling* is a process of revisiting situational settings while acknowledging inherited background of parent region towards present (2014/15) baselines. For example, in food security situations, statistics associated with SSR, Gap/Surplus

analysis and vulnerable areas must be revisited based on agricultural measures/parameters used to measure food security.

Disentangling is essentially 5 step process covering (i) Identification and location, (ii) Establishing agricultural potential (iii) determining active crop cultivation trends, (iv) examining food supply and (v) mapping vulnerability trends. Thus, while the process continues through these steps, the results presented in this report reflect presence of compound regions namely: Rukwa/Katavi, Kagera/Geita, Mwanza/Geita, Shinyanga/Geita/Simiyu and Iringa/Njombe, reflecting that while the administrative regions are already established the process of *disentangling* continues towards establishing statistical baselines into the future of new regions namely Katavi, Geita, Njombe and Simiyu. With compound regions the number of regions remains 21 at SSR analysis level, but despite the challenges around the process, attempts have been made to present vulnerable areas in 25 regions.

Findings

SSR shows the extent of deficits and surpluses as a locally available and accessible surplus sink and emergency based vulnerability management before considering external market opportunities available in neighboring countries or elsewhere. From the analysis, it has been found that ***15,528,820*** tonnes of food crops will be available from farm production comprising ***8,918,999*** tonnes of cereals ***and 6,609,821*** tonnes of non-cereals (Table 1, Figure 1, Appendix 1 and Appendix 2) and will meet national food requirement amounting ***12,946,103*** tonnes of food by 120 percent implying a ***2,582,717*** tonnes of surplus food (Table 1, Appendix 2). An alternative approach is the national food balance sheet which relates country level availabilities and utilization accounts to guide policies of whether to export or import and the extent thereof.

Fig. 1

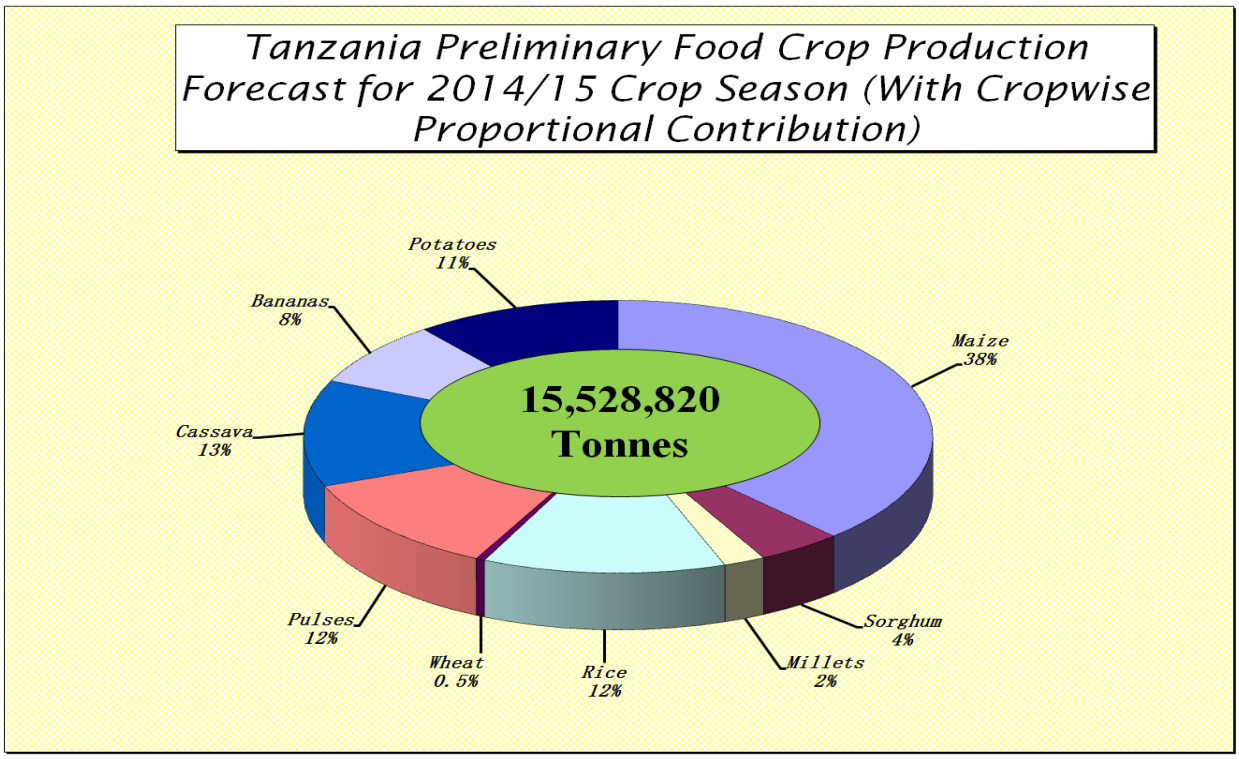


Table 4: The 2013/14 National Level Preliminary Food Crop Production versus Requirement and Gap/Surplus Analysis for 2014/15 (GRAIN EQUIVALENT)

Cereals	Maize	Sorghum & Millets	Rice	Wheat	Cereals
Production	5,902,776	1,006,831	1,936,909	72,483	8,918,999
Requirement	5,165,346	1,853,248	926,096	245,884	8,190,573
Gap (-)/ Surplus(+)	737,430	-846,416	1,010,813	-173,401	728,425
Non-cereals	Pulses	Banana	Cassava	Potatoes	Non-cereals
Production	1,807,760	1,194,844	1,962,148	1,645,070	6,609,821
Requirement	823,046	861,983	2,152,168	918,333	4,755,530
Gap (-)/ Surplus(+)	984,714	332,861	-190,020	726,736	1,854,292
TOTAL	*Cereals*	*Non-cereals*			*TOTAL*
Production	8,918,999	6,609,821			15,528,820
Requirement	8,190,573	4,755,530			12,946,103
Gap (-)/ Surplus(+)	728,425	1,854,292			2,582,717

Time series analysis

Time series analysis shows that, compared to previous season, a decrease of 5% in total production was observed; where by 9% decrease in cereals and 7% increase in non-cereals. Crop-wise swings vary from -7% in Potatoes to -57% in wheat with other crops standing as per Table 3 below and Appendix 6

Table 3 Time Series Analysis of Production of Major Food Crops in Tanzania, based on available series (1986/87 - 2014/15) (Thousand Tonnes and Percentages as indicated)

	Maize	Sorgh	Millets	Rice	Wheat	Cereals	Pulses	Cassava	Banana	Potatoes	Non Cerea	Total	
2014/15 (Prel)	**5,903**	**677**	**330**	**1,937**	**72**	**8,919**	**1,808**	**1,962**	**1,195**	**1,645**	**6,610**	**24,448**	**2015/16 (Prel)**
28yaverage	2,947	709	184	667	84	4,592	755	1,643	822	809	4,029	13,212	28yaverage
5yaverage	4,294	662	236	1,131	98	6,421	1,406	1,382	854	1,339	4,981	17,823	5yaverage
Trend Values	4,572	707	249	1,232	107	6,867	1,606	1,576	1,000	1,659	5,842	19,576	Trend Values
%age change from 28y-average	100	(5)	79	190	(14)	94	140	19	45	103	64	85	%age change from 28y-average
%age change from 5y-average	37	2	40	71	(26)	39	29	42	40	23	33	37	%age change from 5y-average
%age change from Trend Values	29	(4)	32	57	(33)	30	13	24	19	(1)	13	25	%age change from Trend Values
%age change from year t-1	(12)	(23)	(9)	15	(57)	(9)	7	18	12	(7)	7	(5)	%age change from year t-1

Compared to trend values computed from 1992/93-2014/15 (a reasonable period of reliable food crop statistics adopted by CMEW), total tonnage stands up by 85% with total cereals standing up by 94% and non-cereals up by 64%. Individual crops swing between -5% in sorghum and 45% in bananas. While bananas, potatoes, millets, rice, cassava, pulses and maize showing positive swings, wheat and sorghum are showing negative swings. Comparisons with other measures in trend analysis such as 28years average and 5 years average for total food crops, cereals and non-cereals as well as for different crops are as per Table 3 above and Appendix 6

Vuli Contribution

While Normal Vuli contribution revises to 31% Bimodal area perspective or 17% national aggregate perspective which amounts 2,616,835 tonnes it currently stands at 25% Bimodal areas perspective or 14% national aggregates perspective which amounts 2,145,664 tonnes (Table 4 and Appendix 3).

Table 4: Vuli contribution to 2014/15 total production - Normal and Current

REGION	Production (Tonnes)	contribution (%)- Normal Scenario	Normal-Vuli contribution (T)	Vuli contribution - 2014/15 (%)	2014/15-Vuli contribution (T)
Bimodal-Tz	8,494,690	31	2,616,835	25	2,145,664
Total-Tz	15,528,820	17	2,616,835	14	2,145,664

Self Sufficiency Ratio

In general while at national level Tanzania during 2015/16 will be 120% food self-sufficient, 18 regions contain vulnerable areas in 69 LGAs. Regions which have surplus in 2015/16 are as follows:Iringa/Njombe (199%) Ruvuma (198%), Rukwa/Katavi (191%), Mbeya (179%), Morogoro (168%), Kagera / Geita (150%), Kigoma (154%), Mtwara (146%), Coast (134%).

The regions with self sufficiency status are as follows: Tanga (112%), Kilimanjaro (110%), Lindi (108%), Manyara (106%), Shinyanga / Simiyu(101%) and Mara(100%). The regions with food shortage are as follows: Arusha (99%), Tabora(99%), Mwanza /Geita (98%), Singida (97%), Dodoma (96%)and Dar es Salaam (4%).

At sub-national level, the 2014/15 production is predicted to meet food requirement for 2015/16 marketing year in 15 regions of which 9 regions will produce surplus with SSR of 134% upwards to 199% and 6 regions will produce at SSR of 100%-112%. The rest (6 regions) will produce at a definitely deficit status with SSR of 4%-99%.

Notwithstanding, here and there, pockets of vulnerable areas are scattered over 69 LGAs in 18 regions of which 9 have produced surplus, 6 have only met local demand and 6 have produced at deficit levels.

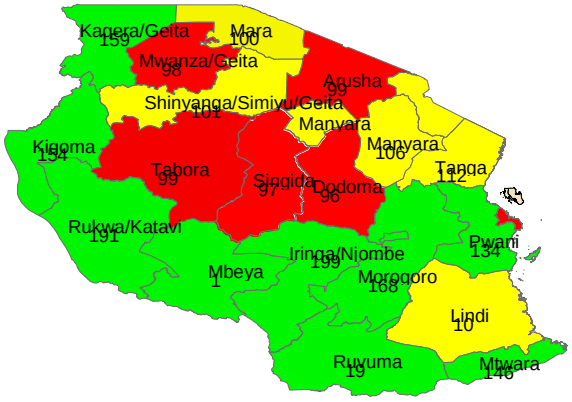


Figure 3: Tanzania Food Supply Analysis and Self Sufficiency Ratio for 2015/16

(Based on the 2014/15 Preliminary Food Crop Production Forecasts)

Vulnerability

From the above, it is notable that except for Dar es Salaam, which is largely non-agricultural, the deficit regions (5 therefore) bear 31 districts with high level of vulnerability and a warning is accordingly given. Further warnings are focused to 12 additional regions bearing pockets of food shortage in 38 additional districts, 31 from 7 definitely self sufficient regions and 7 from 5 definitely surplus regions.

The rampant vulnerability amidst self sufficiency and surplus food security status indicate that, the lower level down from national the worse; and the national self sufficient status masks the true colors that are better reflected at lower levels down towards household/individuals. Accordingly the following recommendations are worth implementation.

Recommendations

- According to the Preliminary Food Crop Survey of 2014/15 , a total of 69 LGAs in 18 regions have been identified to bear vulnerable areas and therefore they should be subjected to an in-depth vulnerability assessment in order to establish the number and all necessary details of the food insecure population.

- The Survey has established that the Food Self Sufficient Ratio stood at 120%. Therefore, The Government should provide funds to National Food Reserve Agency (NFRA) to enable the agency to buy the surplus grains from different regions in the country.

- To operationalize the Cereal and Mixed Crop board.

- Existing milling plants and silos (eg. those in Iringa and Arusha) to be rehabilitated and utilized in order to provide extended markets of cereals and other food crops for value addition.

- Traders/Millers are urged to add value to surplus food crops, before selling them locally or abroad. Value Addition to food crops will increase crops' shelf life as a result Traders/Millers will get more revenue due to improved food prices.

- Farmers and traders across the country should be urged to buy and export surplus food crops to neighbouring countries and SADC Countries so as to maximize foreign revenue

- The industrial sector (eg. breweries) should be encouraged to buy sorghum and millets from farmers and traders for industrial usage. This can stimulate increased production as the markets will be assured. Contract farming opportunity need to be explored fully in this area.

- Extensive Nutrition campaigns should be launched throughout the country so that blending of food crops e.g. maize and millets, maize and cassava etc are introduced to as many Tanzanians as possible.

Appendix 1: Tanzania Preliminary Food Crop Production Forecast by Region - 2014/15 (as of 31/05/2015)

(Area and Production in Hectares and Tonnes Respectively, Yield in Tonnes per Hectare)

Cereals																		
Region	Maize			Sorghum			Millets			Rice			Wheat			Cereals		
	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Production	
Arusha	133,704	1.5	195,532	30,412	0.5	15,542	7,706	0.9	6,923	55,119	2.4	129,863	15,023	1.9	28,502	241,965	376,363	Arusha
Coast	73,041	1.6	117,604	22,663	0.6	12,581	6,166	0.1	385	85,084	1.3	114,170	-	-	-	186,953	244,741	Coast
Dar es Salaam	1,809	0.9	1,642	1	0.5	1	0	0.1	0	2,427	0.7	1,796	-	-	-	4,238	3,438	Dar es Salaam
Dodoma	157,619	0.7	116,943	222,718	0.8	179,590	116,778	0.8	88,310	12,355	1.2	15,189	11,592	-	-	521,062	400,031	Dodoma
Iringa/Njombe	379,320	2.0	765,079	10,071	0.8	7,785	5,265	1.0	5,460	17,846	2.2	40,029	18,200	1.0	17,701	430,701	836,053	Iringa/Njombe
Kagera/Geita	133,011	2.2	289,861	19,304	1.2	22,310	10,588	1.0	10,922	36,024	1.7	62,402	-	-	-	198,928	385,496	Kagera/Geita
Kigoma	207,745	2.3	484,770	11,839	2.2	26,133	4,436	1.1	4,899	42,302	2.1	87,181	935	-	-	267,258	602,982	Kigoma
Kilimanjaro	112,295	1.9	214,160	1,505	0.8	1,157	1,584	1.0	1,567	14,272	2.7	39,042	4,257	1.3	5,435	133,913	261,361	Kilimanjaro
Lindi	86,888	1.0	88,002	52,203	0.8	42,589	10,461	0.8	8,291	19,378	0.7	13,237	11,166	-	-	180,096	152,118	Lindi
Manyara	223,088	0.7	164,955	10,649	0.8	8,502	3,304	1.9	6,441	1,916	2.9	5,498	9,619	0.9	8,195	248,577	193,591	Manyara
Mara	62,019	1.6	97,670	34,969	1.4	48,122	15,910	1.0	16,218	2,670	1.6	4,160	2,002	-	-	117,569	166,170	Mara
Mbeya	364,044	2.5	905,317	31,033	1.1	33,100	13,269	1.0	12,613	67,109	2.4	162,153	2,569	1.7	4,353	478,024	1,117,535	Mbeya
Morogoro	253,464	1.2	306,978	16,013	1.1	18,085	2,691	1.1	2,995	194,760	1.9	370,983	58	1.6	94	466,986	699,134	Morogoro
Mtwara	85,250	1.0	84,956	40,253	0.7	29,145	10,500	0.9	8,929	45,749	1.0	44,049	-	-	-	181,751	167,079	Mtwara
Mwanza/Geita	230,825	1.5	341,514	33,077	1.2	39,696	6,921	1.1	7,579	90,921	1.3	120,758	-	-	-	361,743	509,547	Mwanza/Geita
Rukwa/Katavi	216,512	2.0	425,681	27,103	0.7	20,130	19,703	1.1	21,750	72,362	1.9	138,949	7,793	0.8	6,455	343,473	612,964	Rukwa/Katavi
Ruvuma	174,077	2.5	427,827	5,579	0.9	5,271	8,772	1.2	10,526	63,221	2.0	125,840	2,065	0.7	1,461	253,714	570,926	Ruvuma
Shinyanga/Geita/Simiyu	341,379	1.0	329,275	41,426	1.0	39,665	19,793	1.1	21,514	191,980	1.3	240,537	-	-	-	594,577	630,991	Shinyanga/Geita
Singida	169,729	0.6	99,235	96,629	0.8	76,716	70,912	1.1	76,692	8,992	0.8	6,790	28	-	-	346,290	259,432	Singida
Tabora	247,386	1.0	259,034	37,846	1.1	41,630	14,926	1.1	16,419	93,197	1.5	139,795	-	-	-	393,354	456,878	Tabora
Tanga	134,545	1.4	186,741	10,544	0.9	9,026	2,905	0.6	1,627	36,784	2.0	74,489	295	1.0	287	185,073	272,169	Tanga
Total	3,787,751	1.6	5,902,776	755,836	0.9	676,772	352,591	0.9	330,059	1,154,467	1.7	1,936,909	85,599	0.8	72,483	6,136,244	8,918,999	Total

Non-cereals			1,006,831															
	Pulses			Cassava			Banana			Potatoes			Non-cereals			Food		
	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Yield	Production	Area	Production		Production		
Arusha	62,254	0.5	30,670	1,337	2.2	2,927	34,123	2.3	76,948	2,923	1.6	4,759	100,638.0	115,305	342,603	491,667	Arusha	
Coast	39,854	0.7	28,787	53,127	2.2	116,174	701	1.3	919	23,763	1.4	33,550	117,444.5	179,430	304,398	424,171	Coast	
Dar es Salaam	19,220	0.8	14,447	19,087	1.9	35,561	304	1.8	557	2,044	1.8	3,628	40,654	54,192	44,892	57,630	Dar es Salaam	
Dodoma	160,744	0.7	114,867	21,452	0.8	16,238	3	1.7	5	46,273	1.0	44,306	228,472.4	175,416	749,534	575,448	Dodoma	
Iringa/Njombe	37,901	2.0	74,932	2,809	3.5	9,808	476	3.4	1,612	65,669	2.8	184,759	106,854.8	271,111	537,556	1,107,164	Iringa/Njombe	
Kagera/Geita	100,645	1.2	121,115	111,031	2.4	265,446	147,690	3.0	444,166	30,712	2.9	88,736	390,079.1	919,463	589,007	1,304,959	Kagera/Geita	
Kigoma	85,962	1.5	127,051	11,552	1.8	20,370	72,830	2.5	181,452	18,927	4.1	78,413	189,270.3	407,285	456,528	1,010,267	Kigoma	
Kilimanjaro	50,696	1.1	53,925	30,345	1.0	29,885	70,380	2.0	140,760	22,815	1.0	21,847	174,236.3	246,417	308,149	507,778	Kilimanjaro	
Lindi	81,175	0.8	65,035	23,922	1.6	37,830			-	3,325	1.1	3,797	108,421	106,663	288,518	258,781	Lindi	
Manyara	104,591	1.2	122,912	43,089	1.8	77,483	2,845	2.1	5,878	24,847	2.0	50,011	175,373	256,284	423,949	449,875	Manyara	
Mara	26,909	2.6	68,642	74,413	1.4	106,671	17,168	3.3	57,312	52,634	1.7	90,019	171,123	322,644	288,693	488,814	Mara	
Mbeya	53,472	1.2	61,904	19,510	3.7	71,605	37,864	3.9	149,319	41,330	4.4	182,251	152,176	465,079	630,200	1,582,614	Mbeya	
Morogoro	66,718	0.9	61,611	109,930	2.4	263,490	21,868	2.6	57,426	15,802	2.2	34,231	214,318	416,757	681,304	1,115,892	Morogoro	
Mtwara	116,115	1.0	113,328	104,799	1.5	161,432	319	0.5	169	51,448	1.3	67,844	272,680.2	342,774	454,431	509,853	Mtwara	
Mwanza/Geita	141,986	1.0	145,470	135,999	1.4	194,757	10,492	1.0	10,806	132,728	1.5	196,146	421,204.1	547,179	782,947	1,056,726	Mwanza/Geita	
Rukwa/Katavi	116,612	1.4	168,577	39,318	3.2	127,196	7,044	2.8	19,629	30,744	2.4	73,903	193,718	389,306	537,191	1,002,269	Rukwa/Katavi	
Ruvuma	69,842	1.1	78,724	69,820	1.9	130,159	4,480	1.9	8,540	38,287	2.3	88,623	182,429	306,046	436,142	876,971	Ruvuma	
Shinyanga/Geita/Simiyu	126,869	0.8	102,038	80,329	1.1	90,435	34	0.6	20	156,588	1.2	188,016	363,820.1	380,509	958,398	1,011,500	Shinyanga/Geita	
Singida	70,475	0.7	49,890	39,183	1.1	42,435	7	1.5	10	40,888	0.7	30,494	150,552.4	122,829	496,842	382,261	Singida	
Tabora	54,312	0.8	44,260	46,559	1.5	69,839	-		-	77,058	1.2	92,470	177,928.9	206,568	571,283	663,446	Tabora	
Tanga	159,576	1.0	159,576	57,288	1.6	92,406	23,935	1.6	39,316	43,217	2.0	87,267	284,016.1	378,565	469,089	650,734	Tanga	
Total	1,745,928	1.0	1,807,760	1,094,897	1.8	1,962,148	452,562	2.6	1,194,844	922,022	1.8	1,645,070	4,215,409	6,609,821	10,351,653	15,528,820	Total	

Appendix 4.1: Tanzania Cereal Supply Analysis and Self Sufficiency Ratio for 2015/16 (Based on the 2014/15 Preliminary Food Crop Production Forecasts)

REGION	Total Cereals								
	PROD.	REQ.	Consumption[1]	Seed[2]	Feed[2]	Losses[2]	Trade[2]	Gap/ Surplus	SSR (Cer)
Arusha	376,363	315,190	270,486	7,018	4,045	22,700	10,941	61,172	119
Coast	244,741	200,348	171,923	4,681	2,430	14,084	7,230	44,393	122
Dar es Salaam	3,438	782,864	782,472	66	33	188	105	-779,425	0
Dodoma	400,031	373,353	324,744	8,062	3,946	31,182	5,419	26,678	107
Iringa/Njombe	836,053	384,062	253,578	11,694	15,381	69,025	34,384	451,991	218
Kagera/Geita	385,496	509,622	454,319	6,093	5,997	29,337	13,877	-124,126	76
Kigoma	602,982	424,379	335,659	9,195	9,882	46,744	22,899	178,603	142
Kilimanjaro	261,361	290,909	252,572	3,959	4,300	19,954	10,126	-29,549	90
Lindi	152,118	149,173	128,447	2,645	2,065	11,905	4,110	2,946	102
Manyara	193,591	261,530	232,109	2,830	3,389	15,844	7,357	-67,939	74
Mara	166,170	299,294	276,173	2,854	2,339	13,555	4,372	-133,124	56
Mbeya	1,117,535	596,783	432,221	16,983	18,381	86,445	42,753	520,752	187
Morogoro	699,134	427,754	349,944	13,752	6,266	37,607	20,185	271,380	163
Mtwara	167,079	212,033	191,069	3,081	1,928	11,424	4,531	-44,954	79
Mwanza/Geita	509,547	666,840	597,609	8,546	7,114	36,371	17,200	-157,293	76
Rukwa/Katavi	612,964	339,587	255,565	10,132	8,765	43,894	21,231	273,377	181
Ruvuma	570,926	295,068	214,599	9,108	8,651	41,620	21,090	275,858	193
Shinyanga/Simiyu/Geita	630,991	629,651	552,809	11,701	6,953	39,371	18,818	1,339	100
Singida	259,432	248,338	215,341	4,988	2,905	20,616	4,489	11,094	104
Tabora	456,878	426,923	368,782	8,197	5,529	30,501	13,914	29,955	107
Tanga	272,169	356,873	320,039	4,542	3,799	18,936	9,557	-84,705	76
Tanzania	**8,918,999**	**8,190,573**	**6,980,460**	**150,128**	**124,097**	**641,302**	**294,586**	**728,425**	**109**

Note: * General food deficit indicator -857.4826

NB:

1. Iringa/Njombe combines all districts of Iringa and Njombe regions.

2. Kagera/Geita combines all Kagera districts and Chato district of the Geita Region

3. Mwanza/Geita combines all districts of Mwanza region as well as Geita and Nyang'hwale districts of Geita region.

4. Rukwa/Katavi combines all districts of Rukwa and Katavi regions.

5. Shinyanga/Simiyu/Geita combines all districts of Shinyanga and Simiyu regions and Bukombe and Mbogwe districts of Geita region.

=> All these regions are in the process of been disentangled from the old afiliates.

Appendix 4.2: Tanzania Non-Cereal Supply Analysis and Self Sufficiency Ratio for 2015/16 (Based on the 2014/15 Preliminary Food Crop Production Forecasts)

REGION	Total Non-cereals								
	PROD.	REQ.	Consumption[1]	Seed[2]	Feed[2]	Losses[2]	Trade[2]	Gap/ Surplus	SSR (Nce)
Arusha	115,305	180,334	177,268	1,534	0	767	767	-65,030	64
Coast	179,430	115,551	112,672	1,439	0	720	720	63,879	155
Dar es Salaam	54,192	514,250	512,807	722	0	361	361	-460,058	11
Dodoma	175,416	224,313	212,826	5,743	0	2,872	2,872	-48,896	78
Iringa/Njombe	271,111	173,680	166,187	3,747	0	1,873	1,873	97,431	156
Kagera/Geita	919,463	309,857	297,745	6,056	0	3,028	3,028	609,607	297
Kigoma	407,285	232,684	219,980	6,353	0	3,176	3,176	174,600	175
Kilimanjaro	246,417	170,919	165,527	2,696	0	1,348	1,348	75,498	144
Lindi	106,663	90,683	84,180	3,252	0	1,626	1,626	15,980	118
Manyara	256,284	164,408	152,117	6,146	0	3,073	3,073	91,877	156
Mara	322,644	187,858	180,995	3,432	0	1,716	1,716	134,786	172
Mbeya	465,079	289,454	283,264	3,095	0	1,548	1,548	175,626	161
Morogoro	416,757	235,502	229,342	3,081	0	1,540	1,540	181,255	177
Mtwara	342,774	136,553	125,220	5,666	0	2,833	2,833	206,221	251
Mwanza/Geita	547,179	406,200	391,654	7,273	0	3,637	3,637	140,979	135
Rukwa/Katavi	389,306	184,346	167,489	8,429	0	4,214	4,214	204,960	211
Ruvuma	306,046	148,514	140,641	3,936	0	1,968	1,968	157,532	206
Shinyanga/Gei	380,509	372,496	362,293	5,102	0	2,551	2,551	8,013	102
Singida	122,829	146,115	141,127	2,494	0	1,247	1,247	-23,287	84
Tabora	206,568	246,113	241,688	2,213	0	1,106	1,106	-39,545	84
Tanga	378,565	225,700	209,743	7,979	0	3,989	3,989	152,865	168
Tanzania	**6,609,821**	**4,755,530**	**4,574,765**	**90,388**	**0**	**45,194**	**45,194**	**1,854,292**	**139**

Note: * General food deficit indicator

NB:

1. Iringa/Njombe combines all districts of Iringa and Njombe regions.

2. Kagera/Geita combines all Kagera districts and Chato district of the Geita Region

3. Mwanza/Geita combines all districts of Mwanza region as well as Geita and Nyang'hwale districts of Geita region.

4. Rukwa/Katavi combines all districts of Rukwa and Katavi regions.

5. Shinyanga/Simiyu/Geita combines all districts of Shinyanga and Simiyu regions and Bukombe and Mbogwe districts of Geita region.

=> All these regions are in the process of been disentangled from the old afiliates.

Appendix 4.3: Tanzania Total Food Supply Analysis and Self Sufficiency Ratio for 2015/16 (Based on the 2014/15 Preliminary Food Crop Production Forecasts)

REGION	Total Food										REGION
	PROD.	REQ.	Consumption[1]	Seed[2]	Feed[2]	Losses[2]	Trade[2]	Gap/ Surplus	SSR (Tot)	*Deficit indicator (*)*	
Arusha	491,667	495,525	447,754	8,551	4,045	23,467	11,708	-3,858	99	*	Arusha
Coast	424,171	315,899	284,595	6,121	2,430	14,804	7,949	108,272	134		Coast
Dar es Salaam	57,630	1,297,114	1,295,279	789	33	549	466	-1,239,484	4	*	Dar es Salaam
Dodoma	575,448	597,665	537,570	13,805	3,946	34,054	8,291	-22,218	96	*	Dodoma
Iringa/Njombe	1,107,164	557,742	419,765	15,440	15,381	70,898	36,257	549,422	199		Iringa/Njombe
Kagera/Geita	1,304,959	819,478	752,064	12,148	5,997	32,365	16,905	485,481	159		Kagera/Geita
Kigoma	1,010,267	657,063	555,638	15,548	9,882	49,920	26,075	353,204	154		Kigoma
Kilimanjaro	507,778	461,829	418,099	6,655	4,300	21,302	11,474	45,950	110		Kilimanjaro
Lindi	258,781	239,856	212,627	5,897	2,065	13,531	5,736	18,925	108		Lindi
Manyara	449,875	425,937	384,226	8,976	3,389	18,917	10,430	23,938	106		Manyara
Mara	488,814	487,153	457,168	6,286	2,339	15,272	6,088	1,662	100		Mara
Mbeya	1,582,614	886,236	715,485	20,078	18,381	87,993	44,300	696,378	179		Mbeya
Morogoro	1,115,892	663,257	579,286	16,833	6,266	39,147	21,725	452,635	168		Morogoro
Mtwara	509,853	348,586	316,289	8,748	1,928	14,257	7,364	161,267	146		Mtwara
Mwanza/Geita	1,056,726	1,073,040	989,263	15,819	7,114	40,008	20,837	-16,314	98	*	Mwanza/Geita
Rukwa/Katavi	1,002,269	523,932	423,053	18,561	8,765	48,108	25,445	478,337	191		Rukwa/Katavi
Ruvuma	876,971	443,581	355,241	13,044	8,651	43,588	23,058	433,390	198		Ruvuma
Shinyanga/Gei	1,011,500	1,002,147	915,102	16,803	6,953	41,922	21,369	9,352	101		Shinyanga/Gei
Singida	382,261	394,453	356,468	7,483	2,905	21,863	5,736	-12,193	97	*	Singida
Tabora	663,446	673,036	610,470	10,410	5,529	31,607	15,020	-9,590	99	*	Tabora
Tanga	650,734	582,574	529,782	12,521	3,799	22,925	13,547	68,161	112		Tanga
Tanzania	**15,528,820**	**12,946,103**	**11,555,225**	**240,516**	**124,097**	**686,496**	**339,780**	**2,582,717**	**120**		**Tanzania**

Note: * General food deficit indicator

NB:

1. Iringa/Njombe combines all districts of Iringa and Njombe regions.

2. Kagera/Geita combines all Kagera districts and Chato district of the Geita Region

3. Mwanza/Geita combines all districts of Mwanza region as well as Geita and Nyang'hwale districts of Geita region.

4. Rukwa/Katavi combines all districts of Rukwa and Katavi regions.

5. Shinyanga/Simiyu/Geita combines all districts of Shinyanga and Simiyu regions and Bukombe and Mbogwe districts of Geita region.

=> All these regions are in the process of been disentangled from the old affiliates.

Appendix 3:Vuli contribution to total food production - Normal and Current Based on Preliminary Forecast 2014/15

REGION	Production (Tonnes)	contribution (%)- Normal Scenario	Normal-Vuli contribution (T)	Vuli contribution (%) - 2014/15	2014/15-Vuli contribution (T)
Arusha	491,667	20	98,333	16	80,628
Coast	424,171	10	42,417	8	34,780
Dar es Salaam	57,630	10	5,763	8	4,725
Dodoma	575,448		-	-	-
Iringa/Njombe	1,107,164		-	-	-
Kagera/Geita	1,304,959	80	1,043,967	66	855,997
Kigoma	1,010,267		-	-	-
Kilimanjaro	507,778	35	177,722	29	145,723
Lindi	258,781		-	-	-
Manyara	449,875		-	-	-
Mara	488,814	45	219,966	37	180,361
Mbeya	1,582,614	5	79,131	4	64,883
Morogoro	1,115,892	15	167,384	12	137,246
Mtwara	509,853		-	-	-
Mwanza/Geita	1,056,726	55	581,199	45	476,552
Rukwa/Katavi	1,002,269		-	-	-
Ruvuma	876,971		-	-	-
Shinyanga/Geita	1,011,500	7	70,805	6	58,056
Singida	382,261		-	-	-
Tabora	663,446		-	-	-
Tanga	650,734	20	130,147	16	106,713
Bimodal-Tz	**8,494,690**	31	**2,616,835**	25	**2,145,664**
Total-Tz	**15,528,820**	17	**2,616,835**	14	**2,145,664**

Vulnerable Areas in 2015/16

According to the 2014/15 Preliminary Forecast

S/N.	Region *(Ranked by extent of districts containing vulnerable areas)*	SSR Status	TOTAL LGAs	Districts (Severity)	Districts *(Listed in order of dicreasing vulnerability)*
1	Dodoma	96		7	Bahi, Chamwino, Chemba, Kongwa, Mpwapwa, Dodoma MC, Dodoma DC
2	Singida	97		6	Ikungi, Iramba, Singida MC, Manyoni, Mkalamo, Singida V
3	Shinyanga	101		6	Kahama TC, Kishapu, Msalala, Shinyanga DC, Shinyanga MC, Ushetu
4	Lindi	108		6	Kilwa, Lindi DC, Lindi MC, Liwale, Ruangwa, Nachingwea
5	Tabora	99		6	Igunga, Nzega, Sikonge, Tabora MC, Urambo, Uyui
6	Arusha	99		5	Arusha DC, Longido, Monduli, Meru, Ngorongoro
7	Tanga	112		4	Mkinga,Kilindi,Korogwe DC na Tanaga jiji
8	Geita	98		4	Bukombe, Mbogwe, Nyang'wale, Chato
9	Kilimanjaro	110		4	Mwanga, Same, Rombo, Moshi
10	Manyara	106		4	Simanjaro, Mbulu, Kiteto, Babati DC
11	Mara	100		4	Rorya, Butiama, Bunda, Musoma DC
12	Simiyu	101		3	Meatu, Busega, Maswa
13	Mwanza	98		3	Magu, Kwimba, Misungwi
14	Morogoro	168		2	Morogoro (V),Morogoro (M)
15	Iringa	199		2	Iringa DC, Kilolo
16	Njombe	199		1	Wanging'ombe
17	Mtwara	146		1	Nanyumbu
18	Pwani	134		1	Rufiji
19	Mbeya	179		0	.
20	Rukwa	191		0	.
21	Katavi	191		0	.
22	Kagera	159		0	.
23	Ruvuma	198		0	.
24	Kigoma	154		0	.
25	Dar es Salaam	4		0	.
	Total	120	-	69	Jumla
	TANZANIA: Food Security Status: Definitely Self sufficient (120%); 11 definitely surplus, 7 definitely self sufficient and 7 definitely deficit; Vulnerability 18 regions; 69 LGAs	At regional level, Definitely surplus regions number 11, definitely self sufficient regions number 7 and definitely deficit regions number 7;	Regions containing Vulnerable areas number 18: 6 Deficit , 7 Self Sufficient, 5 Surplus	Districts containing Vulnerable areas 69: 31 in Deficit regions, 31 in Self Sufficient regions, 7 in Surplus regions	**In general,** While at national level Tanzania during 2015/16 will be 120% food self sufficient, 18 regions contain vulnerable areas in 69 LGAs: 31 in Deficit regions, 31 in Self Sufficient regions, 7 in Surplus regions ….=>=> **Hence an early warning against likely food defit status in these areas!!**

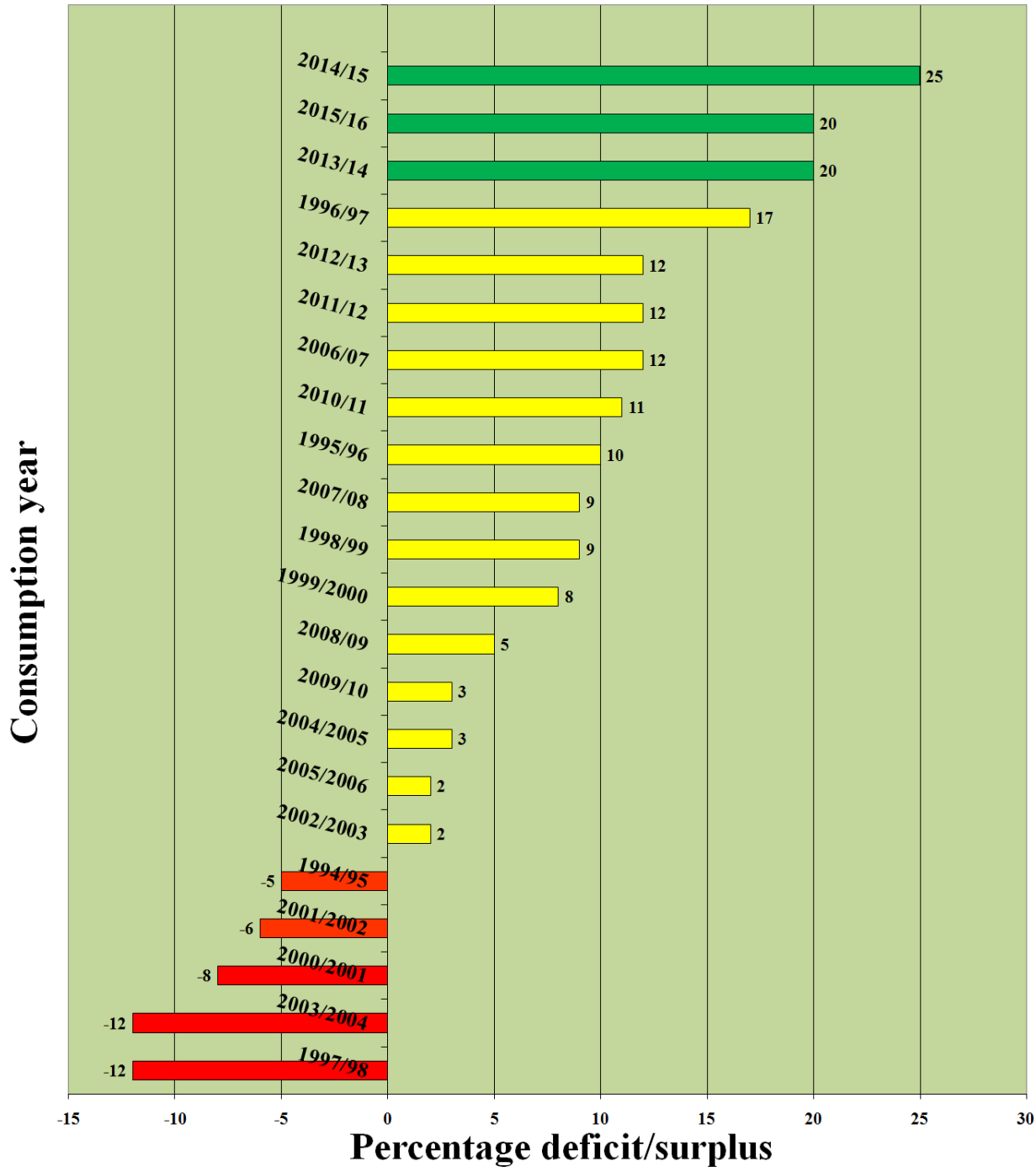
Appendix 5: Recall food situation at regional and district levels back to 2010/11

REGION	2010/11		2011/12		2012/13		2013/14		2014/15		2015/16		REGION
	Deficit regions (*)	Districts with Vulnerable areas	*Deficit regions (*)*	Districts with Vulnerable areas	*Deficit regions (*)*	*Districts with Vulnerable areas*	*SSR (%)*	*Districts with Vulnerable areas*	*SSR (%)*	*Districts with Vulnerable areas*	*SSR (%)*	*Districts with Vulnerable areas*	
ARUSHA & MANYARA		1: Longido	*	7: Arusha DC, Arusha MC, Karatu, Longido, Meru, Monduli, Ngorongoro	*	7: Karatu, Monduli, Meru, Ngorongoro, Longido, Arusha MC, Arusha DC	95	4: Longido, Ngorongoro, Arusha (DC) & Arusha	119	4: Monduli, Longido, Meru, Ngorongoro	99	5: Arusha DC, Longido, Monduli, Meru, Ngorongoro	ARUSHA
COAST				5: Kibaha TC, Kibaha DC, Bagamoyo, Mafia, Rufiji		3: Kibaha (M), Mafia, Rufiji	121	4: Bagamoyo, Kibaha DC, Mafia & Rufiji	137		134	1: Rufiji	COAST
DAR ES SALAAM	*		*		*		1	0	2		4		DAR ES SALAAM
DODOMA	*	5: Mpwapwa, Kongwa, Chamwino, Bahi, Dodoma M				6: Bahi, Chamwino, Dodoma M, Kondoa, Kongwa, Mpwapwa	99	3: Chamwino, Kongwa & Dodoma	111	5: Dodoma M, Kongwa, Bahi, Chemba, Chamwino	96	7: Bahi, Chamwino, Chemba, Kongwa, Mpwapwa, Dodoma MC, Dodoma DC	DODOMA
IRINGA		1: Iringa (V)				1: Kilolo	177	0	192		199	3: Iringa DC, Kilolo, Wanging'ombe	IRINGA/Njombe
KAGERA				2: Muleba, Bukoba V		1: Chato	150	0	138		159		Kagera/Geita
KIGOMA							182	0	159		154		KIGOMA
KILIMANJARO		1: Mwanga		5: Hai, Moshi V, Mwanga, Same, Siha	*	6: Hai, Mwanga, Moshi DC, Moshi TC, Rombo, Same	102	2: Mwanga & Same	134	3: Siha, Mwanga, Moshi DC	110	wanga, Same, Rombo, M	KILIMANJARO
LINDI		2: Lindi (V), Liwale				2: Kilwa, Lindi	136	5: Kilwa DC, Lindi (MC), Lindi DC, Liwale & Ruangwa	145	2: Ruangwa, Lindi DC	108	, Lindi MC, Liwale, Ruan	LINDI
MANYARA				3: Babati DC, Mbulu, Simanjiro,	*	5: Babati DC, Hanang, Kiteto, Mbulu, Simanjiro,	115	4: Simanjiro, Babati (MC), Mbulu & Babati DC	138	3: Kiteto, Mbulu, Simanjiro	106	njaro, Mbulu, Kiteto, Bal	MANYARA
MARA			*	3: Musoma V, Musoma M, Bunda		2: Musoma V, Rorya,	110	Musoma V, Rorya	115	3: Rorya, Bunda, Butiama	100	a, Butiama, Bunda, Musc	MARA
MBEYA						1: Mbozi	163	0	181		179		MBEYA
MOROGORO		*2: Mvomero, Morogoro (V)*				2: Morogoro V, Mvomero	132	2: Kilosa & Mvomero	137		168	2: Morogoro (V),Morogoro (M)	MOROGORO
MTWARA		2: Mtwara (V), Masasi		1: Masasi		1: Masasi	141	0	146	1: Masasi DC	146	1: Nanyumbu	MTWARA
MWANZA		*1: Kwimba*	*	5: Magu, Ilemela, Nyamagana, Geita, Misungwi		3: Magu, Kwimba, Misungwi	114	3: Magu, Misungwi, Kwimba	110	4: Kwimba, Magu, Ukerewe, Misungwi	98	7: Magu, Kwimba, Misungwi, Bukombe, Mbogwe, Nyang'wale, Chato	MWANZA/Geita
RUKWA							187	0	195		191		RUKWA/Katavi
RUVUMA							197	0	183		198		RUVUMA
SHINYANGA		4: Shinyanga (V) Kishapu, Meatu, Shiyanga (M)	*	5: Shinyanga M, Shinyanga V, Kishapu, Kahama, Meatu	*	7: Bariadi, Kishapu, Meatu, Maswa, Kahama, Shinyanga M, Shinyanga (V)	113	3: Meatu, Maswa, Busega	121	6:: Shinyanga DC, Kishapu, Meatu, Busega, Maswa, Bariadi DC	101	inyanga DC, Shinyanga	SHINYANGA/Geita/Simiyu
SINGIDA						4: Manyoni, Iramba, Singida V, Singida M	113	6: Singida Mc, Singida DC, Iramba, Manyoni, Mkarama & Ikungi	116	3: Iramba, Manyoni, Singida M	97	6: Ikungi, Iramba, Singida MC, Manyoni, Mkalamo, Singida V	SINGIDA
TABORA		1: Nzega		4: Nzega, Igunga, Sikonge, Tabora M	*	6: Nzega, Igunga, Tabora M, Uyui, Sikonge, Urambo	102	6: Tabora (M), Igunga, Nzega, Kaliua, Sikonge & Uyui	98	3: Sikonge, Tabora M, Urambo	99	6: Igunga, Nzega, Sikonge, Tabora MC, Urambo, Uyui	TABORA
TANGA		1: Tanga (M)		5: Lushoto, Mkinga, Pangani, Kilindi, Tanga TC		6: Tanga M, Mkinga, Pangani, Korogwe M, Korogwe V, Handeni	113	6: Pangani, Lushoto, Mkinga, Korogwe DC, Kilindi & Handeni	123	4: Korogwe DC, Pangani, Kilindi, Lushoto	112	,Kilindi,Korogwe DC na T	TANGA
TOTAL	2	22 districts (Prel2010: 36)	5	45 (Prel2011: 56)		63 districts:17 regions	120	50 districts:13 regions	125	41 districts in13 regions	120 (9, 6, 6)	69	TOTAL

Appendix 6: Time Series Analysis of Production of Major Food Crops in Tanzania, based on available series (1986/87 - 2014/15) (Thousand Tonnes and Percentages as indicated)

	Maize	Sorgh	Millets	Rice	Wheat	Cereals	Pulses	Cassava	Banana	Potatoes	Non Cerea	Total	
2014/15 (Prel)	5,903	677	330	1,937	72	8,919	1,808	1,962	1,195	1,645	6,610	24,448	2015/16 (Prel)
28yaverage	2,947	709	184	667	84	4,592	755	1,643	822	809	4,029	13,212	28yaverage
5yaverage	4,294	662	236	1,131	98	6,421	1,406	1,382	854	1,339	4,981	17,823	5yaverage
Trend Values	4,572	707	249	1,232	107	6,867	1,606	1,576	1,000	1,659	5,842	19,576	Trend Values
%age change from 28y-average	100	(5)	79	190	(14)	94	140	19	45	103	64	85	%age change from 28y-average
%age change from 5y-average	37	2	40	71	(26)	39	29	42	40	23	33	37	%age change from 5y-average
%age change from Trend Values	29	(4)	32	57	(33)	30	13	24	19	(1)	13	25	%age change from Trend Values
%age change from year t-1	(12)	(23)	(9)	15	(57)	(9)	7	18	12	(7)	7	(5)	%age change from year t-1

Appendix No. 6: National Food Self Sufficiency Trends Since 1994/95-2015/16: (SSR in Percentage Terms)



Appendix 8: Methodological Considerations-I.

Production expressed in T – (Grain Equivalent) = Area (Ha) * Yield (T/Ha). NB: **Grain equivalent calculations** assume a common denominator among all cereals while roots, tubers and plantains compare at 1:3 ratio.

Requirement R = Average Per capita Consumption requirement of 650g/day + Parameter % estimates of production that is committed to other uses. Consumption requirement is estimated as average kg. per person per crop as follows: Maize 86kg, Millets 18kg, Rice16 kg, Sorghum 18 kg, Wheat 5 kg, Bananas18 kg, Cassava 44 kg, Potatoes 19 kg, Pulses 13 kg totaling up to 237kg. Respective "other uses" are estimated as percentage extraction from produced crop that is used for mainly seed, feed, losses and trade as shown on the Table below.

Food Requirement Table

Parameters used for estimating food requirement per cop

Crop		Consumption	Other uses (% removed from Production)				
		Requirementper capita	Seed[2]	Feed[2]	Losses[2]	Trade[2]	Total
		Kilograms	Percent	Percent	Percent	Percent	% removed
Cereals	Maize[3]	86	1.3	2	8.7	4.4	16.4
	Millet[5]	18	2.3	0.6	7.7	0	10.6
	Rice[4]	16	2.5	0	2.5	1.8	6.8
	Sorghum	18	1.5	0.6	8.5	0	10.6
	Wheat	5	2.5	0	2.5	0	5
Non-Cereals	Bananas[7,8]	18	0	0	0	0	0
	Cassava[7]	44	0	0	0	0	0
	Potatoes[7,9]	19	0	0	0	0	0
	Pulses[6]	13	5	0	2.5	2.5	10
Total		237					

P/R=SSR (expressed in %). SSR Categories are: Deficit (<100%), Self Sufficient <=100<120%, Surplus >=120%)

Vulnerable areas (VA): derived directly from RRS1 questionnaire as filled-in by DALDO statistical experts is based on households expected to produce <=30% of norm.

Requirement per day per person = 0.650 kilograms Cereal Equivalent

1 = Per capita annual consumption Cereal Equivalent

2 = Percent used from total production

3 = Whole grain

4 = Paddy converts to rice at 65 percent ratio.

5 = Includes bulrush and finger millet

6 = Mainly beans but other pulses (groundnuts, peas, grams etc) included

Appendix 9: Methodological Considerations-II.

As highlighted in the Foreword to this report, the early warning system has been increasingly worked around subjectivity towards Objectivity, absence or late availability of data towards timeliness and inability to access data sources towards a staunch ability to address urgency and ad hoc data needs. While sample surveys using FSQ1 is now 20 years old addressing subjectivity problems the routine reporting system using WRS1-5 and RRS1 has prevailed for 10 years addressing ad hoc data needs for generating food security reports for decision making amidst stringent budgetary constraint common in Tanzania.

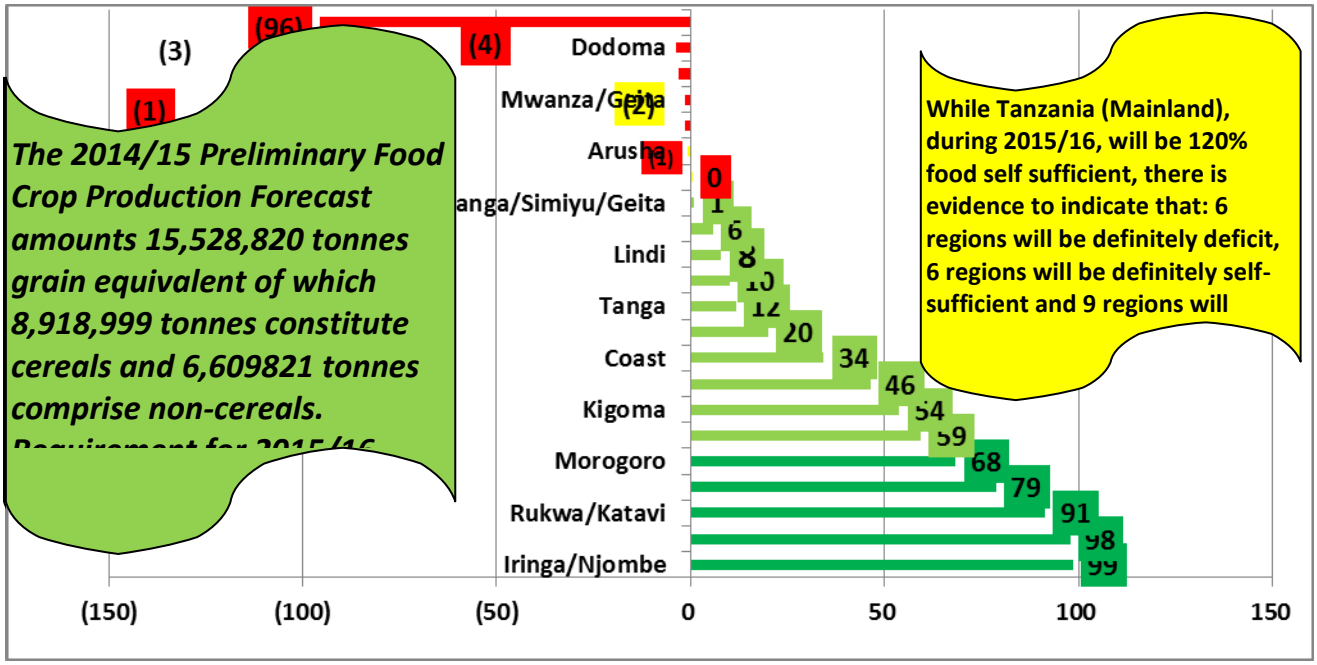
In a nutshell, the functions of the Field forms vary but resemble in that they are used by field MAFC staff to record, validate and prepare data for retrieval by Headquarter supervisors as follows:

1. *targets and implementation of crop cultivation at field level (**WRS1:** Weekly Retrieval System 1);*
2. *phenological phases applying Kobechakuota principle at field crops (**WRS2:** Weekly Retrieval System 2);*
3. *crop pests both at pre-harvest and post harvest phases (**WRS3:** Weekly Retrieval System 3);*
4. *food availability at local market (**WRS4:** Weekly Retrieval System 4);*
5. *rainfall precipitation as locally perceived (**WRS5:** Weekly Retrieval System 5);*
6. *various food security variables and principally area change per crop from previous season (**FSQ1:** Food Security Questionnaire 1 applied in NBS based sample villages);*
7. *various agricultural and food security variables on monthly basis (**RRS1:** Routine Reporting System 1);*
8. *conventionally reported information by local authority as guided by CMEW short list (**TSA:** TSA=Tripple S Analysis =SSS Analysis = Snap-Shot Stories);*
9. *average monthly prices at local markets (**Jed6:** Price table No. 6);*
10. *monthly rainfall mm and days as received per local station (**Jed7:** Rainfall table No. 7);*

The National Early Warning System has been instrumental in producing regular information to inform on crop target implementation, field crop progress along phenological phases, pest threat afield and aware houses, food availability and market forces, rainfall prevalence amidst drought/water stressed agriculture in Tanzania, detection of vulnerable areas as locally perceived by experts and improving on objectivity through a village sample survey.

Appendix 10: Total Food Supply Forecast at Regional level for the 2015/16 Marketing Year

(Based on the 2014/15 Preliminary Food Crop Production Forecast)



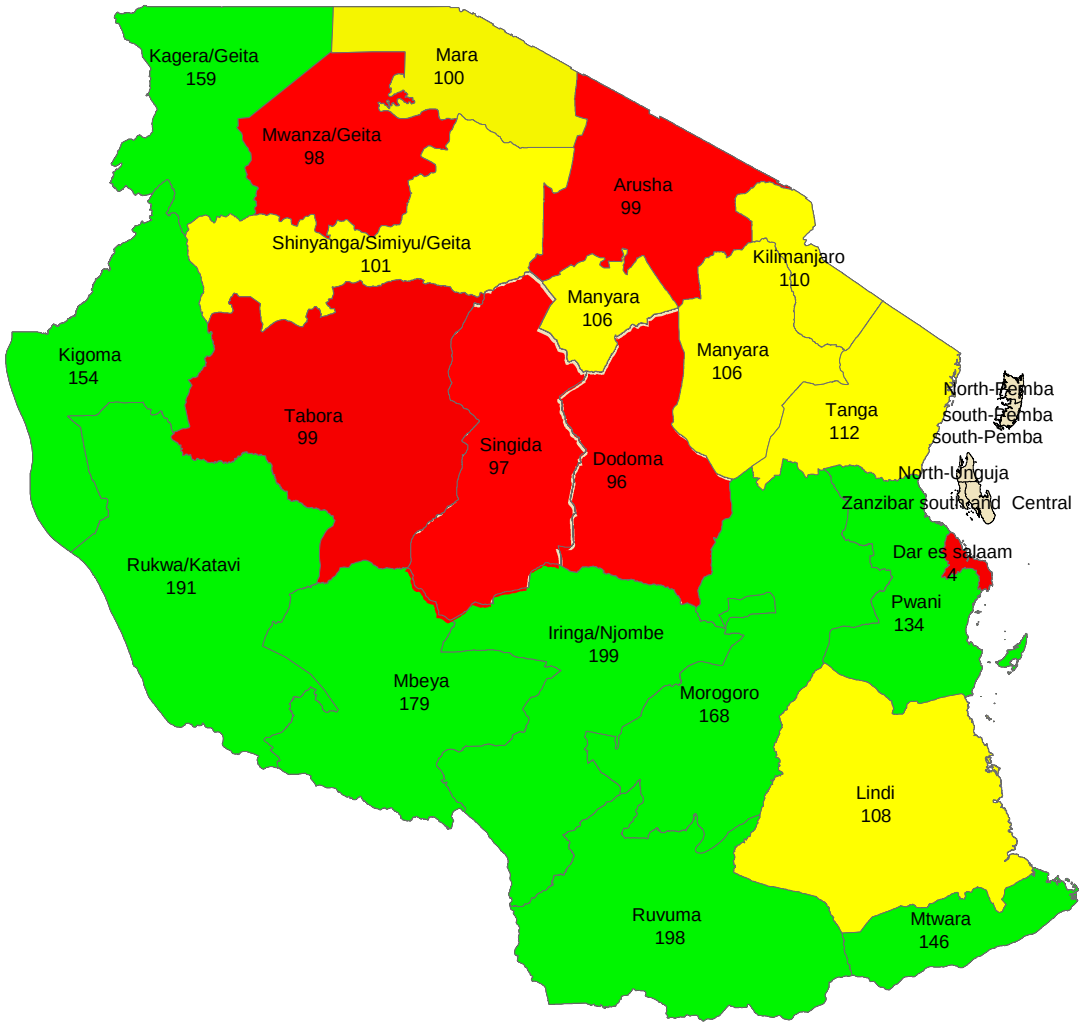
Vulnerable Areas in 2015/16

According to the 2014/15 Preliminary Forecast

S/N.	Region *(Ranked by extent of districts containing vulnerable areas)*	SSR Status	TOTAL LGAs	Districts (Severity)	Districts *(Listed in order of dicreasing vulnerability)*
1	Dodoma	96		7	Bahi, Chamwino, Chemba, Kongwa, Mpwapwa, Dodoma MC, Dodoma DC
2	Singida	97		6	Ikungi, Iramba, Singida MC, Manyoni, Mkalamo, Singida V
3	Shinyanga	101		6	Kahama TC, Kishapu, Msalala, Shinyanga DC, Shinyanga MC, Ushetu
4	Lindi	108		6	Kilwa, Lindi DC, Lindi MC, Liwale, Ruangwa, Nachingwea
5	Tabora	99		6	Igunga, Nzega, Sikonge, Tabora MC, Urambo, Uyui
6	Arusha	99		5	Arusha DC, Longido, Monduli, Meru, Ngorongoro
7	Tanga	112		4	Mkinga,Kilindi,Korogwe DC na Tanaga jiji
8	Geita	98		4	Bukombe, Mbogwe, Nyang'wale, Chato
9	Kilimanjaro	110		4	Mwanga, Same, Rombo, Moshi
10	Manyara	106		4	Simanjaro, Mbulu, Kiteto, Babati DC
11	Mara	100		4	Rorya, Butiama, Bunda, Musoma DC
12	Simiyu	101		3	Meatu, Busega, Maswa
13	Mwanza	98		3	Magu, Kwimba, Misungwi
14	Morogoro	168		2	Morogoro (V),Morogoro (M)
15	Iringa	199		2	Iringa DC, Kilolo
16	Njombe	199		1	Wanging'ombe
17	Mtwara	146		1	Nanyumbu
18	Pwani	134		1	Rufiji
19	Mbeya	179		0	-
20	Rukwa	191		0	-
21	Katavi	191		0	-
22	Kagera	159		0	-
23	Ruvuma	198		0	-
24	Kigoma	154		0	-
25	Dar es Salaam	4		0	-
	Total	120	-	69	Jumla
	TANZANIA: Food Security Status: Definitely Self sufficient (120%); 11 definitely surplus, 7 definitely self sufficient and 7 definitely deficit; Vulnerability 18 regions; 69 LGAs	At regional level, Definitely surplus regions number 11, definitely self sufficient regions number 7 and definitely deficit regions number 7;	Regions containing Vulnerable areas number 18: 6 Deficit , 7 Self Sufficient, 5 Surplus	Districts containing Vulnerable areas 69: 31 in Deficit regions, 31 in Self Sufficient regions, 7 in Surplus regions	**In general,** While at national level Tanzania during 2015/16 will be 120% food self sufficient, 18 regions contain vulnerable areas in 69 LGAs: 31 in Deficit regions, 31 in Self Sufficient regions, 7 in Surplus regions ....=>=> Hence an early warning against likely food defit status in these areas!!

Tanzania Food Supply Analysis for 2015/16

(Based on the 2014/15 Preliminary Food Production Forecast)



In general, While at national level Tanzania during 2015/16 will be 120% food self sufficient, 18 regions contain vulnerable areas in 69 districts….=>=> Hence an early warning against likely misfortunes!!