



food security and livelihoods affected by erratic weather
SRI LANKA — APRIL 2014

Report on the key findings of a survey conducted in April 2014 to assess the severity of the 2014 *Maha* season drought, and the impact this had on food security and livelihoods.

KEY FINDINGS

- **The *Maha* 2014 drought seriously damaged agricultural production - and is threatening to significantly limit the upcoming *yala* harvest.**
- **Three consecutive years of natural disasters has undermined household resilience: populations in affected areas have built up unsustainable levels of debts, have insufficient access to water for irrigation, have limited quality seed supply and are exposed to a continue decline in agricultural income.**
- **As a consequence, food insecurity has increased dramatically to an estimated 768,000. More than double the caseload in 2012.**
- **Household food consumption deteriorated sharply: 18 percent of households consume inadequate diets of low calorie and/or diversity. This used to be around 6 percent. A threefold increase.**
- **An immediate coordinated relief effort specifically targeting the vulnerable households, is recommended to prevent a further collapse in household resilience.**



ChildFund
Sri Lanka

DRS DANISH
REFUGEE
COUNCIL



UN OCHA



Save the
Children.



World Vision

DROUGHT: Insufficient rainfall - a driver of food inse-

The northeast monsoon, which supplies water for agriculture across the key paddy producing areas of the country, received below average rainfall for consecutive months between September 2013 and March 2014 leading to prolonged drought across most of the country. Estimates of vegetation cover in April 2014 are far below the average, especially in the northwestern, north-central, and southern parts of the country (Figure 1).

The availability of rainfall in this period is critical as it provides water for agriculture (paddy, vegetables, and other field crops) for the northern and eastern parts of Sri Lanka. Given that most of the rice consumed is produced in these areas, insufficient production can have detrimental effects on food security in the whole country. Reliance on imports is therefore likely to be higher, and food prices will likely reflect this trend as well.

At the household level too, erratic weather patterns have negative effects. Irrigation for agriculture in these areas is possible thanks to an extensive network of micro-tanks which receive water from the monsoons. When the monsoon ends abruptly or collapses altogether, the tanks are not replenished and agricultural activities are affected. As most of the households in the affected areas engage in farming activities (mainly paddy and mixed farming), their livelihoods are severely affected.

Livestock production, predominantly located in Kurunegala, is also likely to be severely affected — the lack of water for drinking and the dryness of grazing lands reduce the quality and quantity of livestock. As a consequence, both income and food sources are affected and households depend on a

variety of coping mechanisms, ranging from reducing meals, selling assets, and taking loans.

Over the last years, erratic rainfall during the northeast monsoon has become increasingly common leading to concerns that agricultural livelihoods in the so-called Dry Zone of Sri Lanka will become unfeasible and unsustainable in the long run. Addressing this challenge is an important priority for the Government and the international community.

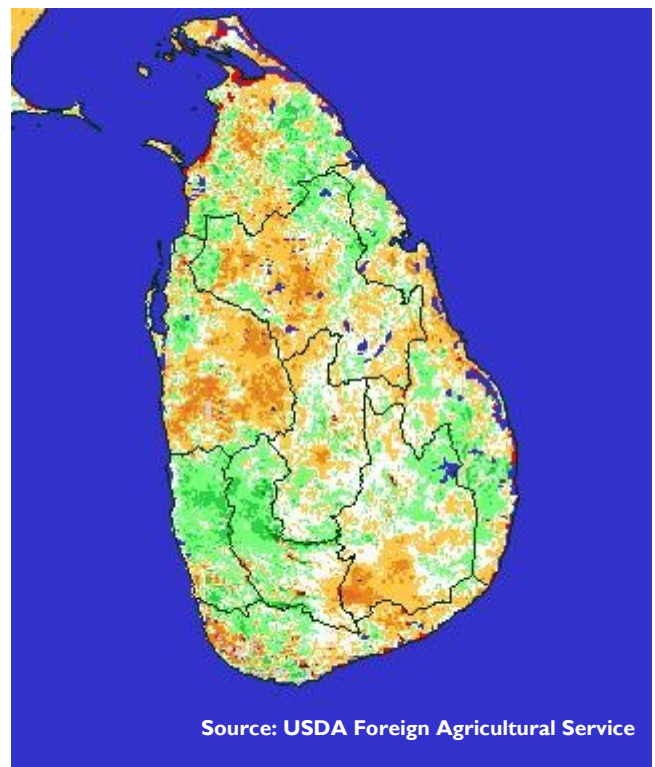
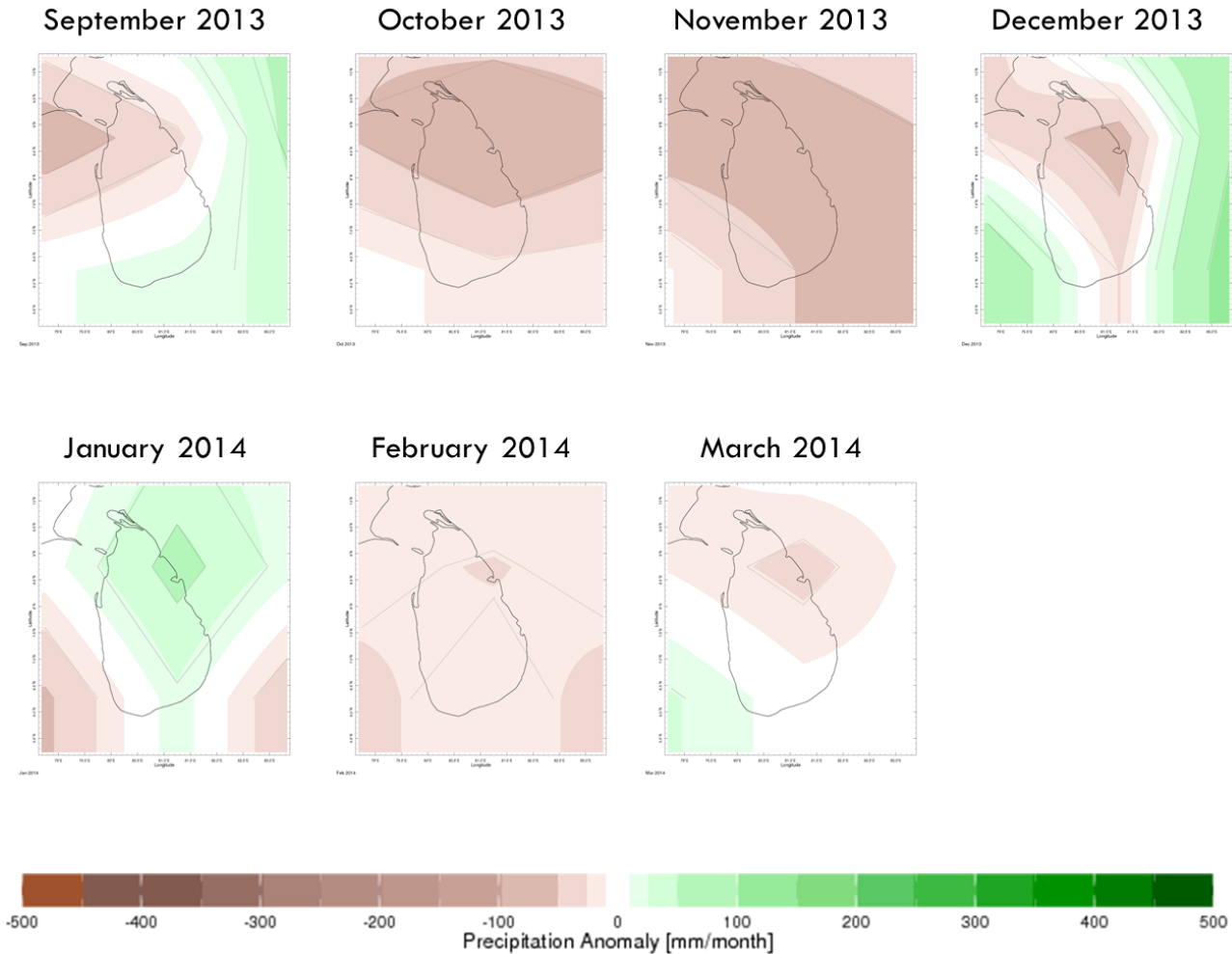


FIGURE 1 — NDVI ANOMALY COMPARED TO AVERAGE, APRIL 2014

Irrigation water available for Yala production season is insufficient; almost 60 percent report that irrigation water is completely insufficient.

Precipitation anomalies

September 2013-March 2014



Source: IRI Global Precipitation Anomaly Monitoring (2014)

Below average rainfall conditions between September and March have led to drought conditions in Sri Lanka, affecting 1.5 million people, with devastating effects on the livelihoods of the poorest populations.

Erratic rainfall has become increasingly common leading to concerns that agricultural livelihoods in the Dry Zone will become unfeasible and unsustainable

DROUGHT: Crop production implications

The lack of precipitation has damaged 83,746 hectares of paddy lands, or 13 percent of planted area. The production loss of paddy is estimated at 280,000 MT, or 15 percent of forecasted production.

Most of the affected paddy cultivation is in the North and East of the country (Figure 2). Here, community based discussions reveal that 44 percent of paddy was damaged or lost.

The total paddy production for 2014, depends on the *Yala* harvest in September/ October. Forecasts remain speculative at this stage, and depend on the progress of the South West Monsoon. However, it is likely that the *Yala* production will be significantly below average for the following reasons:

1. **Climate outlook is not favourable.** The 2014 El Niño phenomenon is expected to negatively affect the South West Monsoon, resulting in below average rainfall throughout the country.
2. **Insufficient current water supply in reservoirs for irrigation.** 85 percent of farming households in the drought affected areas report that water supply is insufficient for *Yala* cultivation. The ministry of irrigation estimates that at best only 58 percent of irrigated paddy fields can be cultivated, leading to a potential production loss of 285,000 MT.
3. **Maha crop did not provide quality seeds at farm level.** Almost all farming households (90%) will need to borrow to procure paddy seeds for *Yala*.
4. **Only 23 percent of farming households are preparing for paddy cultivation in *Yala*.**

Many farming households have adopted a risk adverse strategy and left land fallow or changed to different crop for the upcoming *Yala* season.

With a low *Yala* production forecast, the Department of Agriculture expects a rice deficit of around 163,000 MT for 2014 which is roughly equivalent to one month of total rice needs to feed the Sri Lankan population.

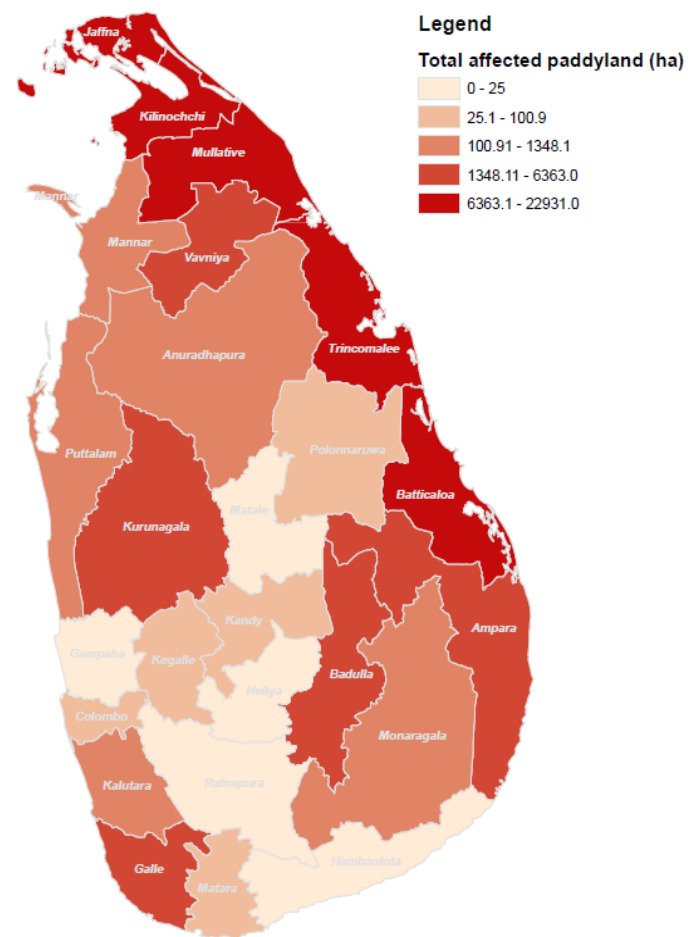
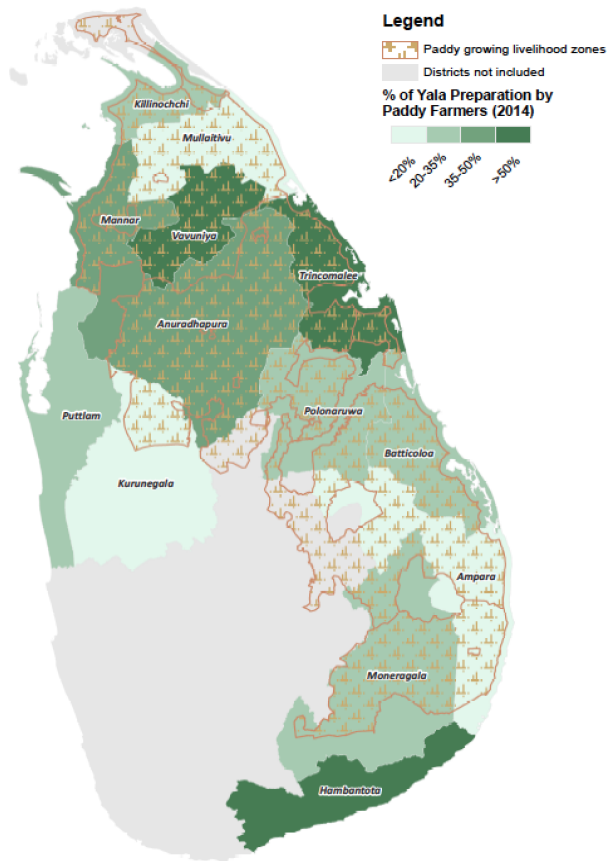


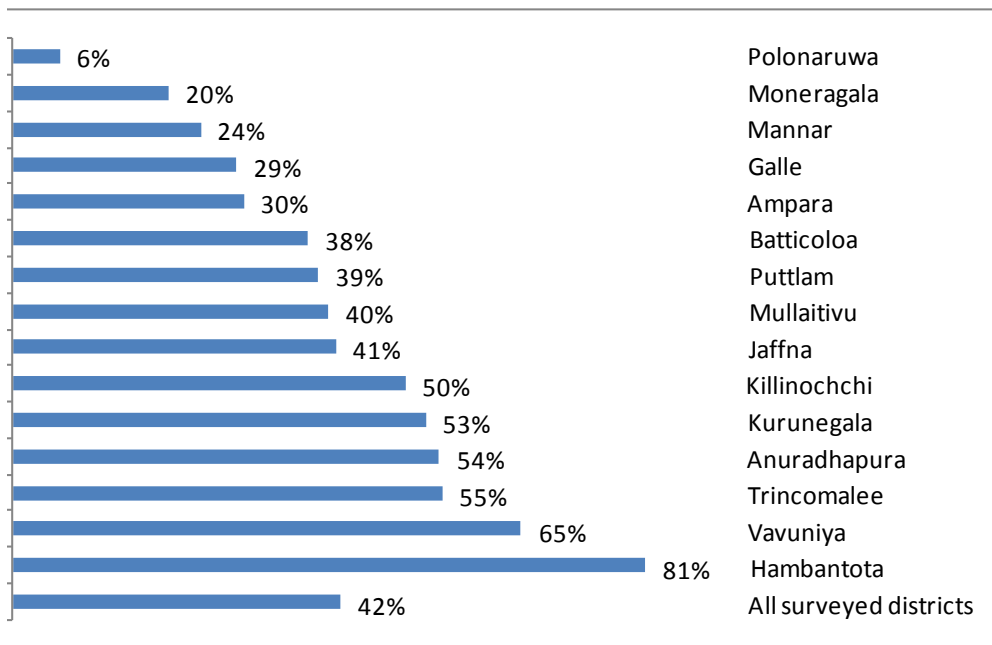
FIGURE 2 — PADDY CROP LOSSES

It is estimated that around 280,000 MT of paddy have been lost as a result of the poor rains in 2013/2014. Worst affected areas districts include Jaffna, Trincomalee, Mannar and Ampara.



On average, only 23 percent of farming households are preparing for Yala cultivation.

FIGURE 3 — YALA PREPARATION



Irrigation water available for Yala production season is reported to be insufficient. Overall, only 40 percent report that irrigation water is sufficient (FIGURE 4).

FIGURE 4 — IRRIGATION WATER AVAILABILITY DURING THE TIME OF ASSESSMENT

The rice deficit for 2014 could be equivalent to one month of total rice needs for Sri Lanka, or around 163,000 MT

DROUGHT: Livelihood implications

Agriculture dominates the Sri Lankan economy. Sixty percent of all households in the drought affected areas depend on farming as their principal livelihood. Eighty percent of them grow paddy. Five percent of households are landless and depend on unskilled farm labour for their income. They, together with fishing and estate worker households, belong to the poorest households in Sri Lanka.

Paddy and non-paddy farmers, fishermen, landless daily labourers, estate workers, and livestock farmers are among the livelihoods most affected by the drought.

IMPACT ON CROP FARMERS

According to the survey, paddy farmers lost on average more than 67 percent of their expected income. Highest losses correspond to DoA crop loss report and occurred in Batticaloa, Kilinochchi, Mullaitivu and Trincomalee.

Many farmers usually take out loans to pay for land

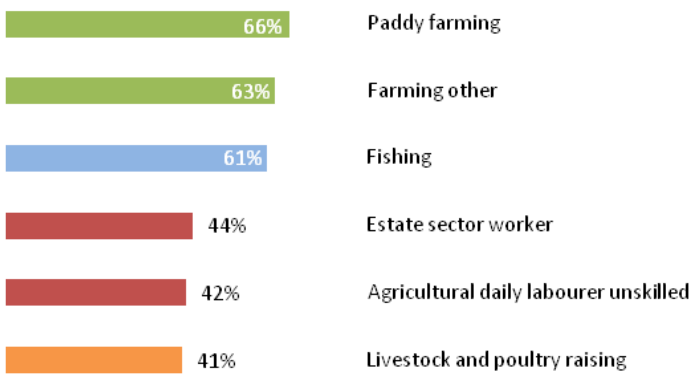


FIGURE 5 — % SEVERELY AFFECTED

Farming livelihoods were most severely affected

preparation, farming inputs and labour. When the crop fails these investments cannot be paid back.

Across all affected areas, 44 percent of paddy farmers took out loans for last year's Yala production. Only 27 percent has been settled thus far. For the Maha production, 48 percent of farmers took out loans. Only 18 percent of farm households have been able to repay the loans as per schedule.

Figure 6 shows that 74 percent of loans taken by paddy farmers is used for agricultural inputs including seeds, fertilizers, tools and machinery.

The survey reveals that household loans taken by farmers have significantly increased. If the Yala season proves equally devastating, loans may reach unsustainable high levels for even more farmers than currently is the case — 28 percent of paddy farmers already have a debt burden 50 percent or more than their estimated annual income, 11 percent have

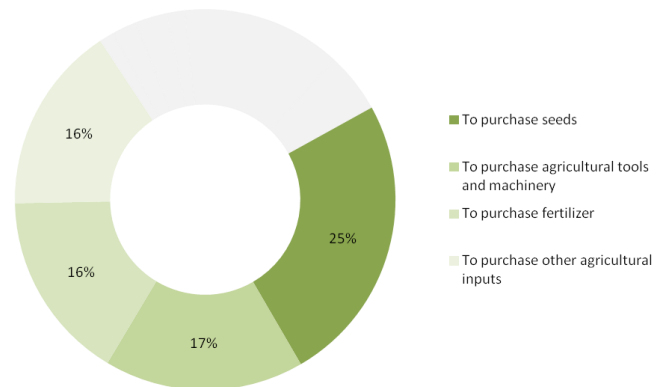


FIGURE 6 — USE OF LOANS BY PADDY FARMERS

outstanding debts more than their estimated annual income. It may put the farmers at risk of bankruptcy and destitution.

Seeds could not be generated by the drought affected crop. As a consequence, 90% of farm households reported that they will be depending on procuring quality seeds by borrowing funds. This may put pressure on the available quality seed supply in the country.

IMPACT ON FISHING HOUSEHOLDS

Households depending on fishing for their livelihoods are among the poorest in the country.

Almost half reported to be seriously impacted by the drought due to lack of water for inland fishing as well as through reduced livelihood options such as daily labour which supplements their household income. Actual working days was about half of what was expected. Community discussions reveal that the catch was also reduced. Reduced local demand for fresh fish may also have impacted their livelihood. Their reported income during March was reduced by 51 percent.

IMPACT ON DAILY AGRICULTURAL WAGE AND ESTATE LABOURERS

On average, an agricultural daily labourer expected 21 days of labour during the harvesting month of March. This year, agricultural wage labourers managed to get employed on average for

Almost three quarters of loans were used for agricultural inputs required for the Maha crop.

only 13 days. A drop of 62 percent. This immediately translated into a reduction of more than 42

percent in income for a household depending on daily wage labour.

Income for estate workers reportedly reduced by 56 percent in March also due to limited actual working days.

Household debts have increased significantly for daily labourers to procure essential supplies, including food. One fifth of loans provided to daily labourers is used for food purchases.

IMPACT ON PASTORAL LIVELIHOODS

Livestock has also been affected as a result of insufficient pastures and water. 41 percent of livestock and poultry farmers report that they were severely affected. 83 percent of communities interviewed report that milk production is reduced, with significant impact on income. On average, livestock farmers reported a very high decline in income for the month of March of 72 percent.

Lower availability of milk and meat products may also impact nutrition.

Paddy farmers lost on average more than 67 percent of their expected income

DROUGHT: Food security implications

The food security situation has deteriorated sharply as a result of the drought. The proportion of households with an inadequate diet is estimated to have tripled: in normal conditions, the proportion of households with poor or borderline food consumption in the northern provinces is estimated to be around 6 per cent; by comparison, the recent survey suggests that 18 per cent of the population in the affected areas have limited meal diversity and/or quantities.

The most affected areas are the rainfed depending paddy growing areas of Ampara, Moneragala and Kurunegala. The mixed paddy and palmyra region in the north of the country (Vavuniya, Jaffna, Mullaitivu and Kilinochchi) were also largely affected with at least 20 percent of households exhibiting inadequate food consumption.

Food insecurity has traditionally been measured by combining current inadequate food consumption with indicators of a household's level of resilience (see next section).* In doing so, a total estimated 768 thousand people in the drought affected areas are food insecure or 9 percent of the population.

In Mulaitivu, half the population was identified as food insecure, 31 percent in Killinochchi, 24 percent in Moneragala, 22 percent in Ampara and 21 percent in Mannar. Figure 8 shows the geographic distribution of the number of food insecure by district. The highest numbers are found in the rainfed paddy growing areas of Ampara and Moneragala.

The number of food insecure has risen dramatically in the past 3 years as a consequence of a gradual erosion of resilience among the rural population due to consecutive natural disasters of droughts and floods.

Recovering and strengthening households resilience is essential and urgent especially given the likelihood of these natural events becoming more common as a result of global climate change.

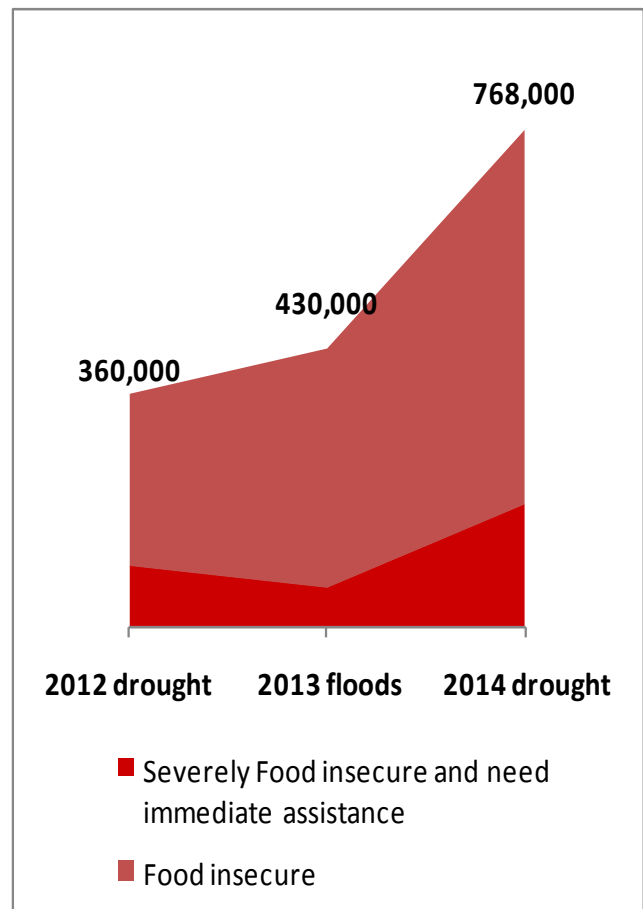


FIGURE 7 — NUMBER OF FOOD INSECURE

The number of food insecure more than doubled since 2012.

* Food insecurity was measured as a cross-combination of current food consumption, the household's income level and share of expenditure on food. Three categories were identified: severely food insecure, moderately food insecure and food secure.

District	Number of Food Insecure People	Total population	%
Mullaitivu	44,637	91,947	49%
Kilinochchi	34,651	112,875	31%
Moneragala	108,677	448,142	24%
Ampara	143,461	648,057	22%
Mannar	20,771	99,051	21%
Vavuniya	27,000	171,511	16%
Batticaloa	70,759	525,142	13%
Anuradhapura	80,136	856,232	9%
Kurunegala	130,802	1,610,299	8%
Jaffna	37,973	583,000	7%
Trincomalee	21,892	378,182	6%
Polonnaruwa	16,500	403,335	4%
Puttalam	12,037	759,776	2%
Hambantota	9,178	596,617	2%
Galle	10,150	1,058,771	1%
All surveyed districts	768,624	8,342,937	9%

FIGURE 8: FOOD INSECURITY BY REGION

Highest incident of food insecurity can be found in Mullaitivu, Kilinochchi and Moneragala.

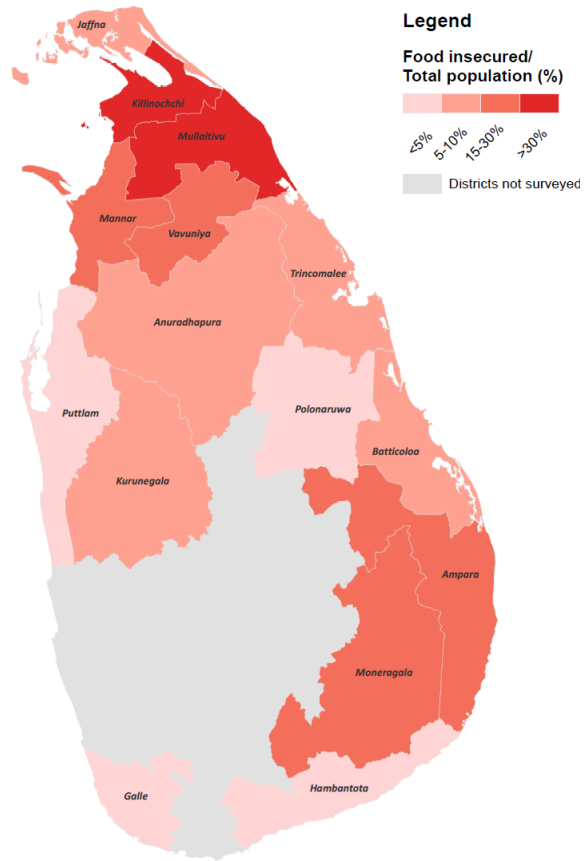


FIGURE 9: FOOD INSECURITY (%)

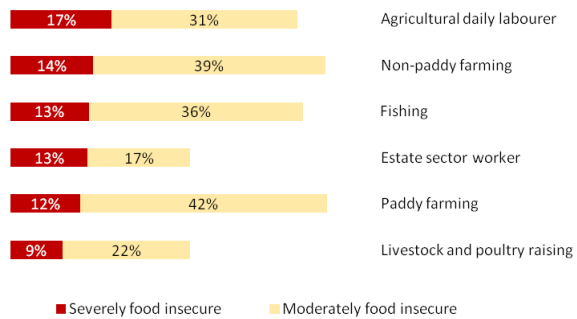


FIGURE 10: FOOD INSECURITY BY LIVELIHOOD

Agricultural daily labourers have highest incidence of severe food insecurity.

The number of food insecure has risen dramatically in the past 3 years as a consequence of a gradual erosion of resilience among the rural population

DROUGHT: Negative coping mechanism

The worsening state of food insecurity is also reflected in the lack of coping. Figure 11 shows the average percentage of households that had no choice but to i. limit meal portion, ii. restrict adult meal consumption, and/or iii. reduce the number of meals taken in a day. The proportions of households finding themselves in a situation of having to restrict their food intake is particularly high in Killinochchi, Jaffna, Batticaloa, Moneragala and Trincomalee.

In order to avoid hunger, households tend to shift to less preferred and less expensive foods including wild foods, buying food on credit, borrowing and pawning, and out-migration.

The Coping Strategy Index (CSI) combines a number of households behaviours.* Results are mapped in Figure 12. It shows a distinct geographical pattern of reliance on high coping in the northern and eastern parts of the country. About one fifth of households in affected areas

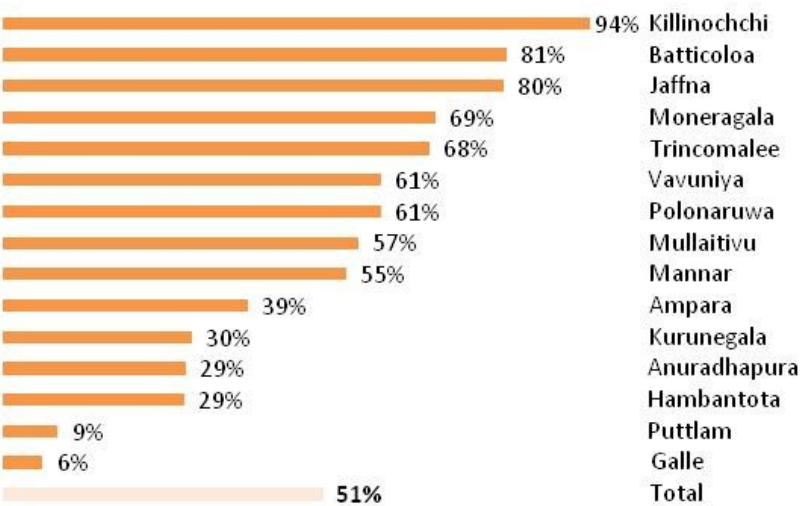


FIGURE 11 — LACK OF COPING

Resilience levels are very low in Northern and Eastern parts of the country.

were demonstrating high coping activities, while 29 percent showed moderate coping behaviour. This indicates a low level of resilience capacity among the affected population.

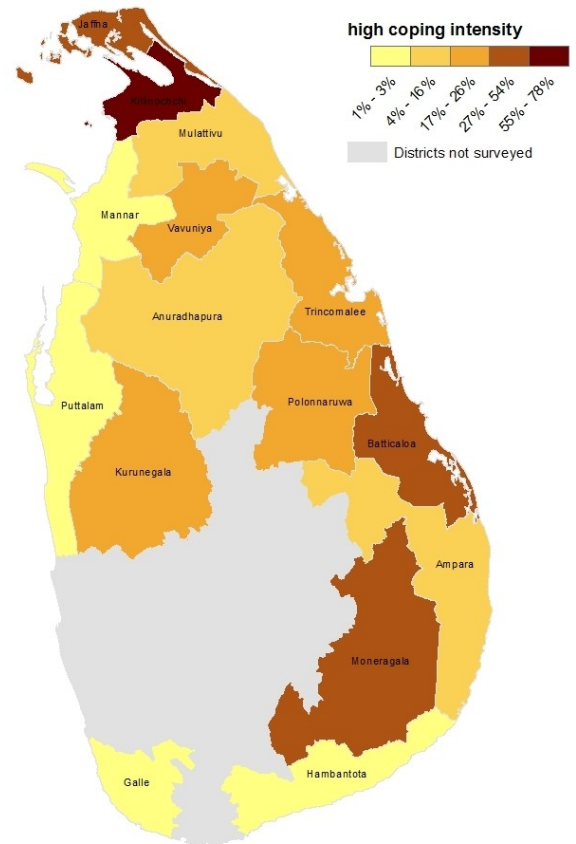


FIGURE 12 — USE OF NEGATIVE COPING STRATEGIES

Approximately one fifth of all surveyed households were found to be using negative coping strategies in order to manage the impacts of the drought. This indicates a low level of resilience capacity among the poorest communities.

Another indicator of low resilience is the share of cash expenditure on food. Over half of the surveyed households are spending >65% of their income on food — this proportion is even higher in Mullaitivu, Batticaloa, and Killinochchi where three quarters of surveyed households are spending large amounts of their income on food. (Figure 13).

The significant lower income earnings in March 2014, will affect the ability to purchase food. In addition, lower crop yields, means more dependency of farmers on markets for food. The high proportions of expenditure on food already observed leaves little leeway for households but to lower their expenditure on food and reduce quality and/or quantity of their diet.

Market price inflation of essential commodities is another factor that can jeopardize people’s access to food, especially given higher market dependency. According to HARTI, significant increases in the price of rice were limited to the northern districts. Average farmgate gate prices for paddy increased only slightly compared to last year, from LKR 22 to LKR 24/kg.

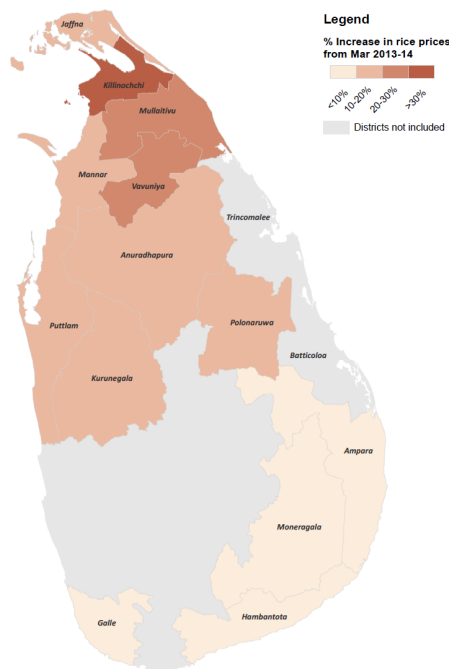


FIGURE 14 — INCREASES IN PRICE RISES FROM MARCH 2013

Significant rice price increases were observed in the North of the country.

* Note: The coping strategy index (CSI) measures five coping strategies: a) relying on less preferred and less expensive foods; b) relying on relatives or borrowing food; c) limiting portion size at meals; d) restricting consumption of adults in order for smaller children to eat; and e) reducing number of meals eaten in a day.

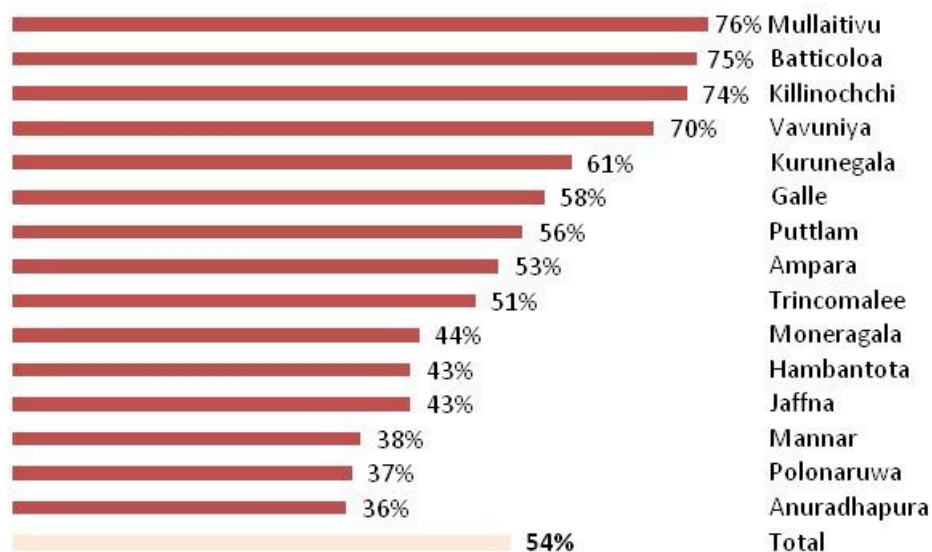


FIGURE 13 — VERY HIGH SHARE OF EXPENDITURE

Over half of the affected population spends more than 65% of expenditure on food.

The reduction in frequency and portions of meals reflects how household resilience is being undermined by consecutive disasters.

DROUGHT: Coping through loans and credit

The drought has resulted in significant reductions of income due to loss of harvest and employment, damage to agricultural land, and other key livelihood assets. The average income in these areas is reported to be 37% lower than the national poverty line for the month of March (Figure 15).

In most of the affected areas, even where incomes are normally relatively high, actual incomes are much lower than what would be expected. For instance, in Kurunegala, incomes are down by 81%, and in Vavuniya by 67% compared to the expected income.

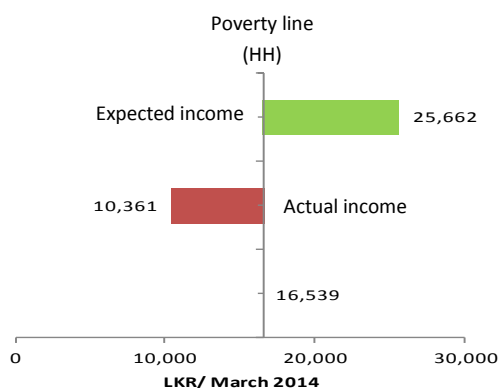
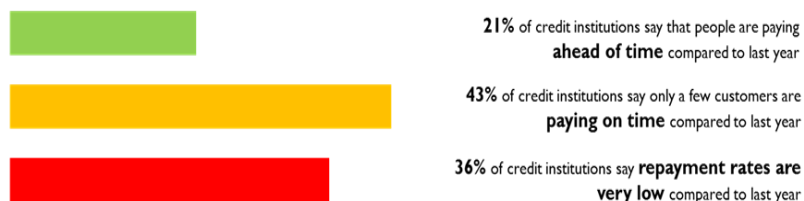


FIGURE 15 — IMPACT ON INCOME

Incomes have fallen significantly as a result of the drought. In most cases, incomes have fallen below the national poverty line of 3,811 LKR per person per month. The average income is reported to be 37% lower than the household poverty line.

REPAYMENT PATTERN



OVERALL, THE DEFAULT RATE APPEARS TO BE INCREASING

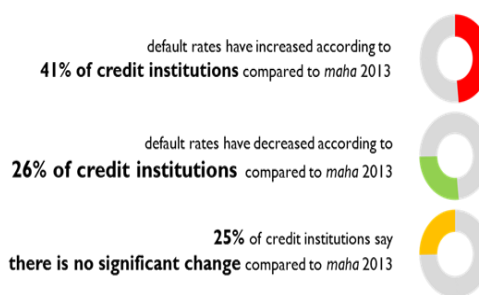


FIGURE 16 — REPAYMENT AND DEAFULT

Farmers struggle to repay their outstanding loans. Forty percent of credit institutions report a risk of higher default.

As a result, farmers may not be able to repay their outstanding loans, people will be forced to pawn valuable items to cover the income gap. Credit and loans will build up until income levels have been restored.

Around 15% of the loans are being used to purchase food—highlighting that meeting basic food needs is still a priority for one sixth of the population. This is particularly the case in the northern areas.

A survey under 150 credit institutions reported weak repayment patterns compared to last year with 79 percent of institutions reporting that less people than normal service their outstanding debt as per schedule with increased risk of default.

For agricultural loans, the current settlement rate is about 55 percent, and almost half (48 %) of credit institutions report that the risk of default on agricultural loans has increased compared to last year's Maha season.

Almost three quarters of paddy farmers report that they will not be able to take out new loans for the upcoming Yala season as they will be unable to afford repayment of the loans.

Pawning of jewellery items has also significantly increased with 71 percent of credit institutions reporting that the risk of default has gone up, mainly due to lack of income by the debtor.

FIGURE 17 — PAWNING



MORE PEOPLE ARE PAWNING JEWELRY BUT ARE UNABLE TO REPAY



72% of credit institutions observe that the number of **customers pawning jewelry** has **increased** this year

DEFAULT RATE



21% of credit institutions say that the default rate of customers **pawning jewelry** has decreased

7% of credit institutions say that the default rate of customers **pawning jewelry** has not changed

71% of credit institutions say that the default rate of customers **pawning jewelry** has increased

Pawning of jewellery items is significantly up. Default rates have increased due to lack of income.

Around 15% of the loans are being used to purchase food — This highlights the fact that meeting basic food needs is still a priority for one sixth of the population.

OUTLOOK: A second drought in 2014?

This assessment showed that livelihoods—especially those depending on paddy farming and wage labour in the Dry Zone—were severely affected by the drought. Livestock and fishing livelihoods have also been impacted. Lower household income and spending has resulted in lower diet diversity and quantity.

Resilience capacity is under threat with high built-up debt burdens, inadequate water reservoir levels for irrigation, and continue decline in agricultural income. The current predicament of agricultural-based livelihoods is expected to get worse in the upcoming Yala season as, with the possibility of a strong El Niño, rains may fail again.

An early warning for a potential El Niño has been issued by several meteorological organisations. An El Niño episode would limit rainfall during the southwest monsoon, potentially resulting in a second consecutive failed harvest. This would exacerbate current livelihood and food security concerns. For the 1.5 million people who are coping with the erratic weather patterns of 2013/2014, another failed harvest would have detrimental effects on their already vulnerable livelihoods.

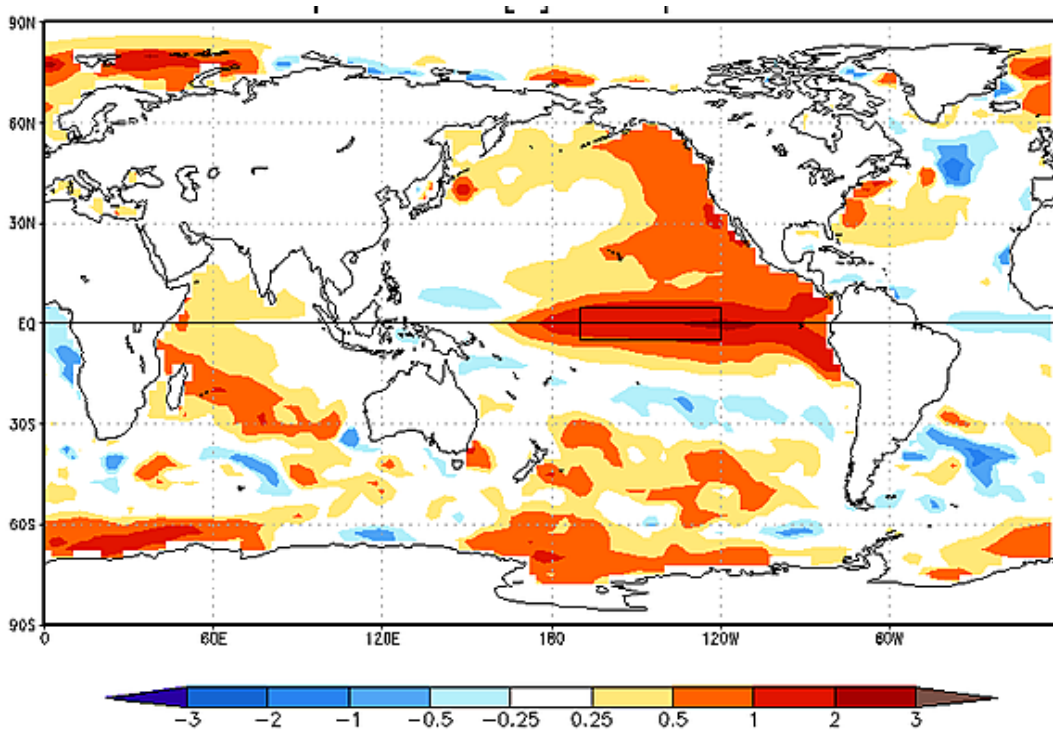


FIGURE 18 — SEA-SURFACE TEMPERATURE ANOMALIES, MARCH-APRIL 2014

Anomalous sea surface temperature (SST) has been identified in the eastern Pacific. This condition is associated with El Niño and can be an early sign of this phenomenon. While it is still early to ascertain that the anomalies in SST are due to El Niño, this weather phenomenon can exacerbate drought conditions.

RECOMMENDATIONS

A series of consecutive natural disasters is undermining household resilience especially in the rural areas of North Sri Lanka and in the rainfed paddy growing areas in the East, Southeast and Northwest . It will take at least up to the *Yala* harvesting season in September for crop farmers to recover from the current drought impacts, provided that the *Yala* harvest is plentiful—which, for reasons set out in this report, does not seem likely. Agricultural labourers, estate workers and fishermen are among the most vulnerable livelihoods in the country and require immediate assistance to overcome the drop in their income.

To prevent a further collapse in household resilience and strengthen this in the future — also with an eye on possibly a more regular pattern of droughts and floods due to climate change — a twin-track approach of immediate and longer-term action is required:

Immediate assistance:

- Immediate assistance is required for a minimum period of 6 months to prevent further livelihood erosion and improve diet intake. This should be targeted to the most vulnerable.
- Provision of soft- credit, seeds and agricultural support is needed for crop farmers.

Longer-term assistance:

- Improved irrigation schemes and water catchment areas is needed and can be achieved through public work programmes
- Expansion in the use of drought/flood resistant crops and drip irrigation techniques is required.
- Expansion in the number of DRR projects to ensure the country can cope with the increasing number of climate induced shocks. Specially rehabilitation of traditional water storage and management systems, including the village level small scale tanks systems, is needed.

Food Security Profile

of affected population

		Adequacy of consumption (FCS)			
		Poor	Borderline	Acceptable	
Geographically	1 All affected population	2%	16%	81%	
	5 Jaffna	1%	15%	84%	
	6 Killinochchi	4%	15%	81%	
	7 Mullaitivu	0%	15%	85%	
	8 Mannar	3%	16%	81%	
	9 Vavuniya	3%	28%	69%	
	10 Anuradhapura	2%	9%	89%	
	11 Polonaruwa	1%	17%	82%	
	12 Trincomalee	2%	20%	78%	
	13 Batticaloa	2%	14%	84%	
	14 Ampara	4%	13%	83%	
	15 Moneragala	2%	20%	78%	
	16 Kurunegala	3%	20%	77%	
	17 Puttalam	1%	14%	85%	
	18 Galle	4%	7%	89%	
	19 Hambantota	4%	24%	72%	
	Livelihood	24 Paddy farming	2%	16%	82%
		25 Farming other	4%	20%	77%
		26 Livestock and poultry raising	0%	9%	91%
27 Fishing		1%	13%	86%	
28 Agricultural daily labourer unskilled		3%	20%	77%	
29 Estate sector worker		4%	4%	91%	
Wealth	35 Poor (reported expenditure below poverty line)	3%	20%	77%	
	36 Non-poor (reported expenditure above poverty line)	2%	13%	85%	

Food Security Profile

of affected population

		Vulnerability			Food insecurity			
		3		4	5			
		Coping Strategy Index (CSI)		High Debt Burden (outstanding debt > 50% of annual expenditure)	Severe food insecure	Moderately food insecure	Food secure	
High coping	Moderate coping							
Geographically	1 All affected population	23%	35%	24%	12%	38%	50%	
	5 Jaffna	54%	30%	33%	9%	24%	67%	
	6 Killinochchi	78%	21%	61%	15%	58%	27%	
	7 Mullaitivu	16%	47%	21%	6%	36%	58%	
	8 Mannar	3%	63%	9%	9%	29%	62%	
	9 Vavuniya	19%	52%	24%	12%	42%	46%	
	10 Anuradhapura	14%	35%	15%	6%	23%	71%	
	11 Polonaruwa	25%	34%	16%	3%	52%	45%	
	12 Trincomalee	26%	56%	8%	19%	39%	41%	
	13 Batticaloa	33%	54%	13%	15%	45%	40%	
	14 Ampara	14%	31%	29%	13%	55%	32%	
	15 Moneragala	45%	29%	30%	24%	48%	28%	
	16 Kurunegala	20%	38%	16%	15%	40%	45%	
	17 Puttalam	1%	9%	13%	10%	21%	69%	
	18 Galle	3%	4%	29%	10%	19%	71%	
	19 Hambantota	1%	18%	46%	14%	39%	47%	
	Livelihood	24 Paddy farming	28%	38%	27%	12%	42%	46%
		25 Farming other	27%	32%	17%	14%	39%	47%
		26 Livestock and poultry raising	17%	26%	13%	9%	22%	70%
27 Fishing		40%	37%	21%	13%	36%	51%	
28 Agricultural daily labourer unskilled		9%	42%	19%	17%	31%	51%	
29 Estate sector worker	0%	0%	0%	13%	17%	70%		
Wealth	35 Poor (reported expenditure below poverty line)	31%	34%	28%	25%	75%	0%	
	36 Non-poor (reported expenditure above poverty line)	17%	35%	20%	1%	8%	91%	



This is a joint report of the Ministry of Economic Development and the Ministry of Disaster Management of the Government of Sri Lanka and the World Food Programme. The assessment was carried out with support from the Disaster Management Centre (DMC), Department of Meteorology, Department of Irrigation, District Secretariats, Hector Kobekaduwa Agrarian Research & Training Institute (HARTI), FAO, UNICEF, OCHA, Save the Children, World Vision, The Sri Lankan Red Cross, the Danish Refugee Council and Child Fund International.

Data reported in this document were collected in April 2014. A total of 1,500 households were interviewed, 150 focus group discussions were held, and 300 trader & credit interviews were organized in 15 districts.

Only households living in areas affected by erratic weather were considered for this assessment. Probability proportional to size sampling was used to select households.

The survey included questions on food consumption, impact on livelihoods, coping strategies, market function, and preferred modalities of support.

The 2013/2014 drought is considered to be among the worst to have hit the country. Over 728 thousand people are estimated to be food insecure as a consequence of the drought, and will need assistance to prevent a further breakdown of their resilience, and meet their livelihood and basic food requirements

WFP will work with the Government and partners to identify the most appropriate interventions and support the affected population.

Photographs:

Laksiri Nanayakkara, Varunanathan Kajananan, Gerd Buta (WFP)

