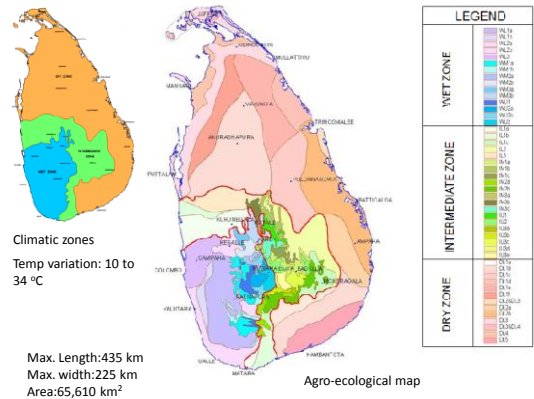




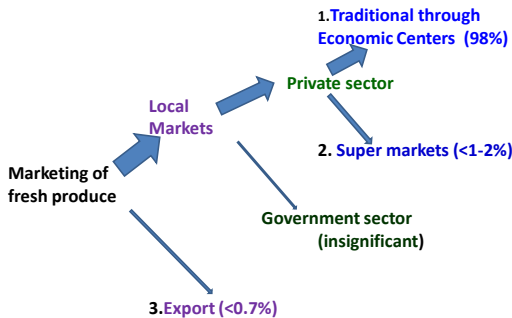
Sri Lankan Agriculture and Food security in a Nut Shell

- An agriculture based country
- Agriculture contribution to GDP 11.9% in 2010
- One third of the employment is also in the agricultural sector.
- Present vegetable consumption is 94g/day (34kg/year) need to be increased at least to 80kg per year (225g/day).
- Present fruit consumption is 30g/day (11kg/year) need to be increased >40kg

- Population- 20.8 million
- Estimated fresh fruit requirement - 995,712 t, (assuming 20% wastage)
- Fruit and vegetable cultivation: 20% of the agricultural lands
- Very high special variability of agro-ecology: 46 agro-ecological zones.
- Types of fruits and vegetables produce:
 - Tropical: mainly in the Low country dry zone (2/3rd of the country).
 - Temperate: Mainly in the upcountry wet zone



Fruits and Vegetables Distribution Channels

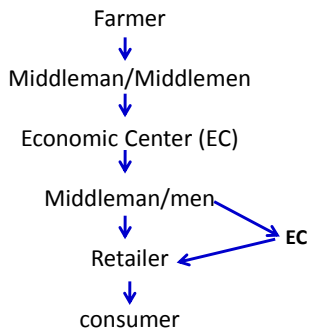


Fruits and Vegetables Distribution Channels



1. The traditional distribution channel

Complicated system, large number of turning points, rough handling, transport in open or closed trucks, and tractor trailers



- There is no proper pricing system
- Wholesalers get-together and decide the price



If supply is in excess:

- Very low price
- Very high Postharvest losses
- No temporary storage facilities

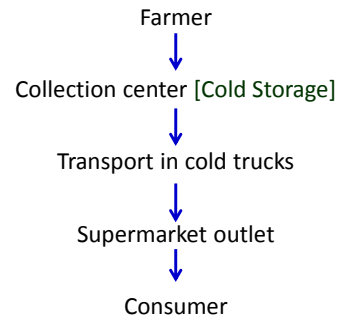


- There are twelve Economic Centers established in the country
 - But only three are running at their full capacity
- The main Economic Center at Dambulla handles about 4,000 t per day.



[Poor postharvest Management in the Economic center – video clip](#)

2. Major supermarket chains (03)



Present status of postharvest losses

Average losses of fruits and vegetables under traditional distribution chain – 30-40%

Stepwise Postharvest Losses of Produce Throughout the Handling Chain (Sarananda, 2005)

Crop	Postharvest Loss					Total
	Producer	Collector	Wholesaler	Retailer		
Fruits						
Banana	2	4	8	6		20
Papaya	6	10	20	10		46
Pineapple	2	4	8	4		18
Lime	4	8	16	12		40
Avocado	2	12	5	22		41


Contd.

Vegetables	Producer	Collector	Wholesaler	Retailer	Total
Beans	4	6	13	7	30
Carrot	3	6	12	4	25
Leeks	5	6	12	7	30
Cabbage	4	7	9	5	25
Tomato	5	10	15	10	40
Okra	3	10	13	20	46
Eggplant	2	5	6	7	20
Capsicum	6	7	10	12	35

Tomato from farm gate to wholesale Colombo (direct transportation -27% (Dharmasena, 2009).

2. Supermarket chains:

Have cold chains and loss is very low 2-6% (Perera et. al., 2004; Abeysekara, (undated))

- Supermarket chains maintain relatively high quality but the cost of handling is 50% greater than the traditional distribution (Abeysekara, (undated). )
- Prices 15-25% higher
- Due to cost limitations, the supermarket chains are not very much interested in running vegetable stalls.
- They maintain it to increase the availability of items for their customers. (Perera et. al., 2004)

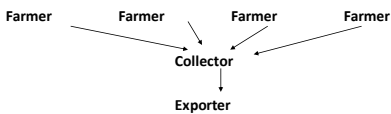
- Still the supermarket chains satisfy a minimum share of about 1-2% of the fresh fruit and vegetable supply of the country due to poor purchasing power of clients at present.
- Supermarket outlets are available only in city centers.
Urban population is about 15.1%
- Per capita income at present US\$ 2399.
Projected to be increased to 4000 by 2015.

- Farmers are getting 20% more income in the supermarket chains than traditional chains due to direct purchase, skipping the middleman (Abeysekara, (undated).
- Minimize the waste after harvest to a significantly low level, make more food available for human consumption.

3 Export distribution chain

The export demand cannot be supplied due to;

- **Poor quality** -Poor pre and postharvest handling practices
- **No continuous supply**
- **High cost of production**



Selected farmers produce high quality produce
 Production is collected by a collector
 Transported on the same day
 Sorting and grading is done
 Air freight transportation

Mainly to Maldives and Middle East countries



In Export channels more controlled at each step

Farmer:
 Maturity is controlled
 Collected to a rigid container

Collector:
 Transport in plastic crates
 Temperature controlled ??
 Transport early as possible



Comparison of four distribution chains

Parameter	Tradi. chain	Government assisted chain	Exporter chain	Supmkt. Chain
Price	very low	reasonable	high	high
Quality of produce	very low	moderate	very high	high
PH loss	30%-40%	10%-20%	5%-10%	2-6%
PH diseases	very high	Moderate	very low	low
Consumer satisfaction	very low	moderate	very high	high

Fruit and vegetable Imports and Exports

Year	Vegetable		Fruit	
	Impt. Qty(t)	Export. Qty (t)	Impt. Quantity (t)	Export. Qty (t)
2007	126,445	12,487	24635	11792
2008	237,675	19,398	26734	14415
2009	396,057	14,863	44795	13097
2010	500,482	11,528	51765	15809
	551,084		55473	

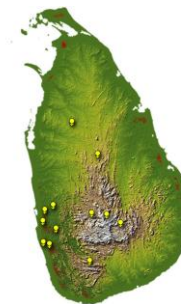
Future challenges in the fruit and vegetable postharvest sector

- Reduction of present postharvest losses
- Improvement of postharvest handling systems
- Introduction of quality management
- Improvement of safety standards
- Promotion of export through better postharvest management
- Management of surplus production
- Changing consumption to frozen or preserved forms
- Promotion of functional foods for improved health
- Production and postharvest Mgt. under climate change



U- Up country (>1200m amsl) T:10-27 °C
 M- Mid country (600-1200m amsl) T:19-30 °C
 L- Low country (<600m amsl) T:21-34 °C C

- Average temperature
- Dry zone → 28 OC
- Intermediate zone → 24 - 26 OC
- Wet zone → 24 OC
- Average Rainfall
- Dry zone → < 1,750 mm
- Intermediate zone → 1,750-2,500 mm
- Wet zone → > 2,500 mm



Locations of economic centers