



# **Sri Lankan Agriculture:** Goals, Challenges & E-solutions

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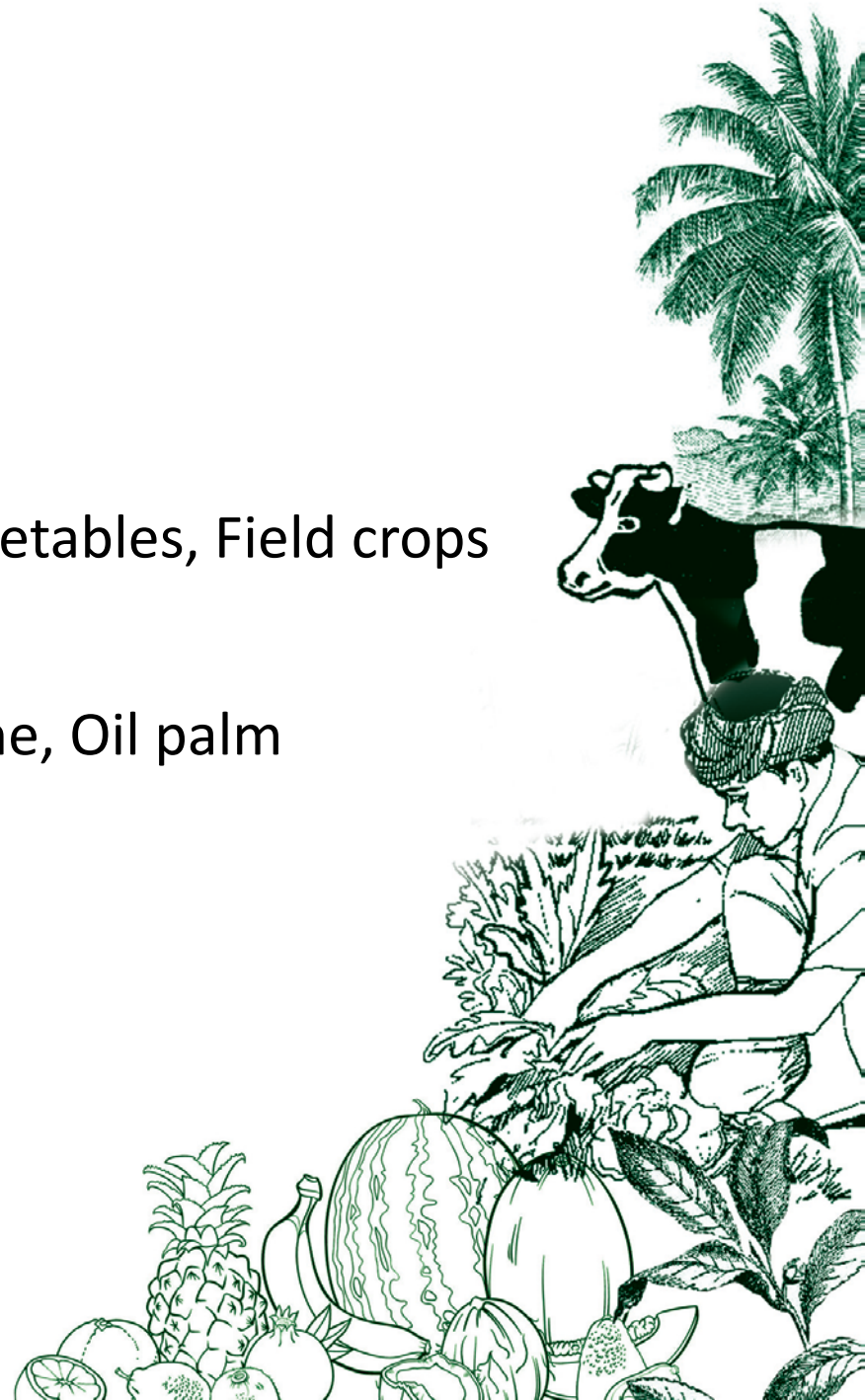
# Sri Lanka

- Area 65,610 km<sup>2</sup>  
rank 25<sup>th</sup>
- Population 20.9 M  
density 334 /km<sup>2</sup>
- Literacy Rate  
95.7% (2012)
- Agriculture to GDP  
10 % (2015)



# Agriculture sector

- Food crops
  - Rice (40%)
  - Other crops (22%) Fruits, Vegetables, Field crops
- Plantation crops (38%)
  - Tea, Rubber, Coconut, Sugarcane, Oil palm
- Ornamental crops
- Livestock
- Fisheries
- Forestry



# Sri Lankan Agriculture Today

- Population employed in primary production
  - 28.5%
- Self sufficient in
  - Rice, vegetables and tropical fruits
- Major exporter of plantation crop products
  - Tea, Coconut, Rubber and Spices
- Cultivated extent 3.53 mil Ha
  - hardly any arable land
- Average land holding size
  - 0.5 Ha

## ... Sri Lankan Agriculture Today

- Low level of mechanization
- High cost of production and low profitability
- High post-harvest losses
- High transaction cost
- Lack of market oriented production
- Low level of value addition to primary products
- Predominantly rain-fed agriculture
- Subsistence farming and mostly part time
- Limited agro-based industries
- Poor soil fertility management
- Low crop productivity

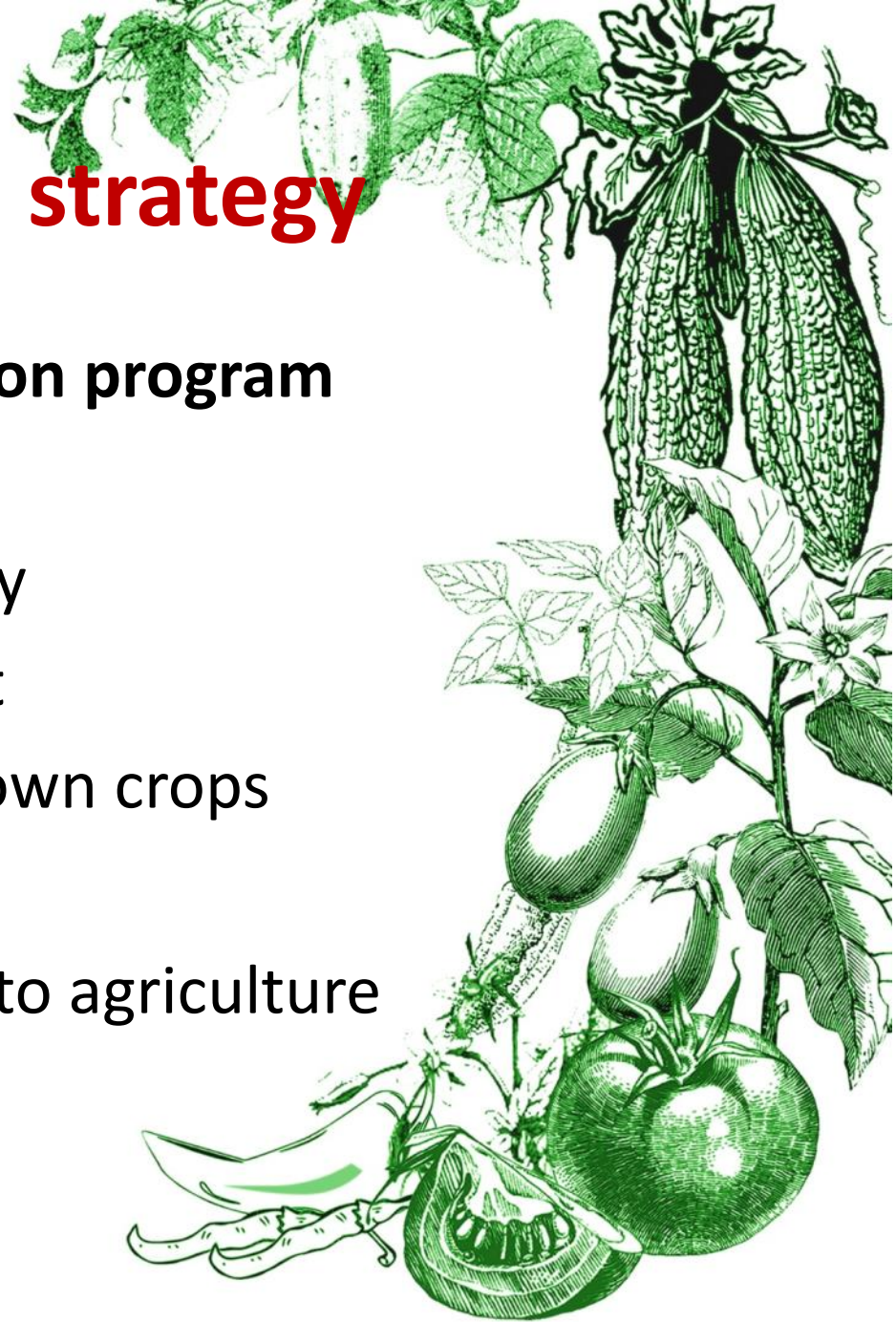
## ... Sri Lankan Agriculture Today

- R&D in central government
- Extension in central and provincial governments
- Mono-crop based plantation sector & authorities
- Low level of technology adoption
- Less priority to extension
- Youth getting away due to not attractive career
- Low adoption of ICTs

# Policy & production strategy

## National food crop production program 2016-2018

- Food and nutrition security
- Productivity enhancement
- Self sufficient in locally grown crops
- Export expansion
- Promote youth & women to agriculture
- Farm mechanization



## ... Policy & production strategy

- Market oriented production
- Establishment of farmer companies and empowerment of farmers
- Adoption of advance technologies and knowledge management in extension
- Environmental sustainability and food safety
- Public private partnership promotion
- R&D and use of traditional knowledge





# E- solutions Identified

- e-Market place for agriculture
- Integrated agriculture advisory service
- Food crop production real time data system
- e-Pest surveillance system
- Smart water management
- Logistics management information service
- Integrated NRM information system
- Research and technology information gateway
- e-Wild life surveillance system
- Agro-met data service and early warning system
- Social network among agriculture users
- Farm mechanization information service

# Present status of using e-services

- Websites [www.doa.gov.lk](http://www.doa.gov.lk) [www.goviya.lk](http://www.goviya.lk)
- Call centre service and e-SMS (1920 short code)
- *Krushifm* web radio [www.krushifm.lk](http://www.krushifm.lk)
- Use facebook, twitter, google+, vimeo, youtube
- *m-Nutrion* project with Dialog and CABI
- Market price Information System
- MISs in progress - Bio diversity of Food and Nutrition, Seed production, National Food Production Program, HRM in DOA

# Development of Sri Lanka E-agriculture Strategy

- 1<sup>st</sup> workshop in Dec. 2014 and final in Dec. 2015
- Many stakeholder consultations from multiple sectors
- 97 challenges identified under 8 key areas
- 9 strategic recommendations made
- A set of ICT solutions (48) identified
- Action plan for 2016- 2020 developed
- 'Strategy guide' published in June 2016
- Finally Ministry of Agriculture approved
- Next steps
  - To establish leadership/ steering/ stakeholder committees
  - To initiate priority e-solutions



*Thanks*

# Additional Information

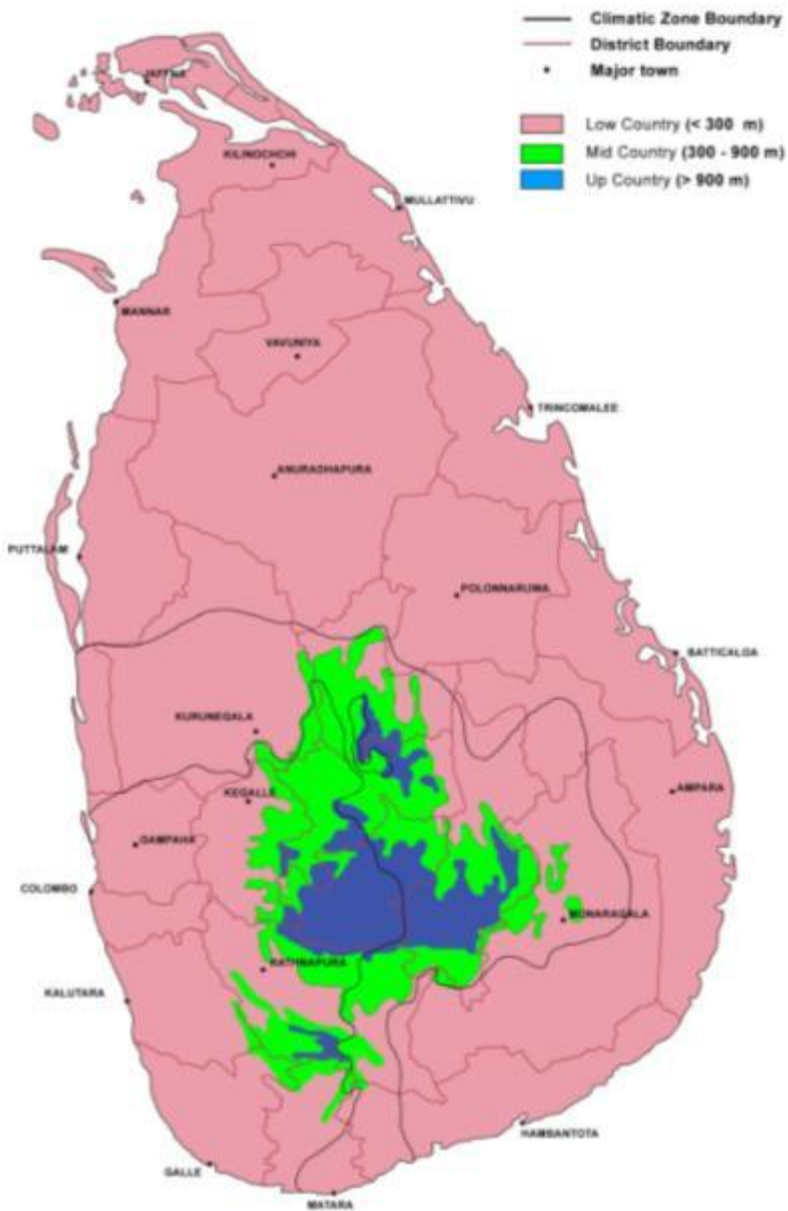
# Country Profile- Sri lanka

- Total area : 65,610 sq.km.  
(Land area : 62,705 sq.km. Inland waters : 2,905 sq.km)
- Population –20,966,000 persons
- Growth of mid- year population -0.9 %
- Population density -334 persons per sq.km
- Literacy Rate (2014) Average : 93.3%
- Gini coefficient of household income (2012/13) : 0.48
- Poverty Head Count Index : 6.7 (2012/13)

**(Central Bank Report 2015)**

## ... country

- Unemployment rate – 4.6 % of labour force
  - Employed persons ('000) : 8,554  
(Agriculture : 28.2% Industry : 26.0%  
Services : 45.8%)
  - Rural population – more than 70%
  - GDP at current market price (US\$ billion) -  
82.3
  - Per capita GDP at market price (US\$) - 3,924
- (Central Bank Report 2015)**



# Geography

- Mostly flat plains
- Mountains rising in the south-central part
- The highest elevation 2,524m
- Warm tropical climate
- 103 rivers
- 1,585 km coastline



# Climatic zones of Sri Lanka

## Average temperature

Dry zone 28 °C

Intermediate zone 24 - 26 °C

Wet zone 24 °C

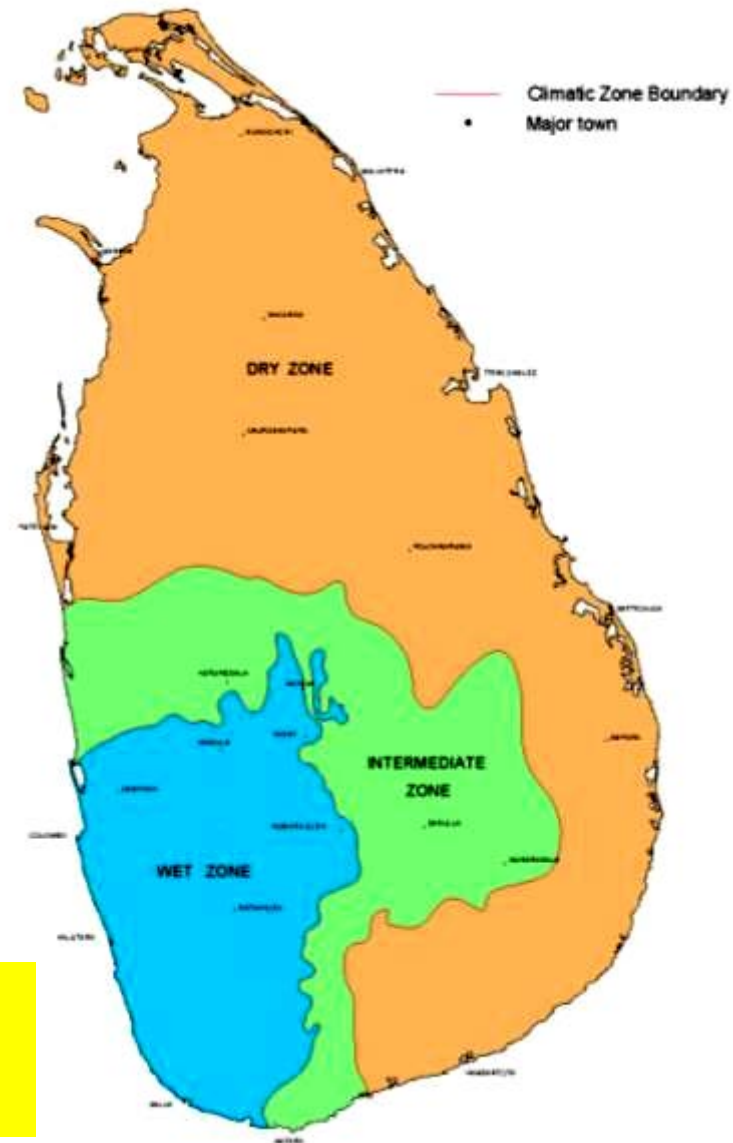
## Average Rainfall

Dry zone < 1,750 mm

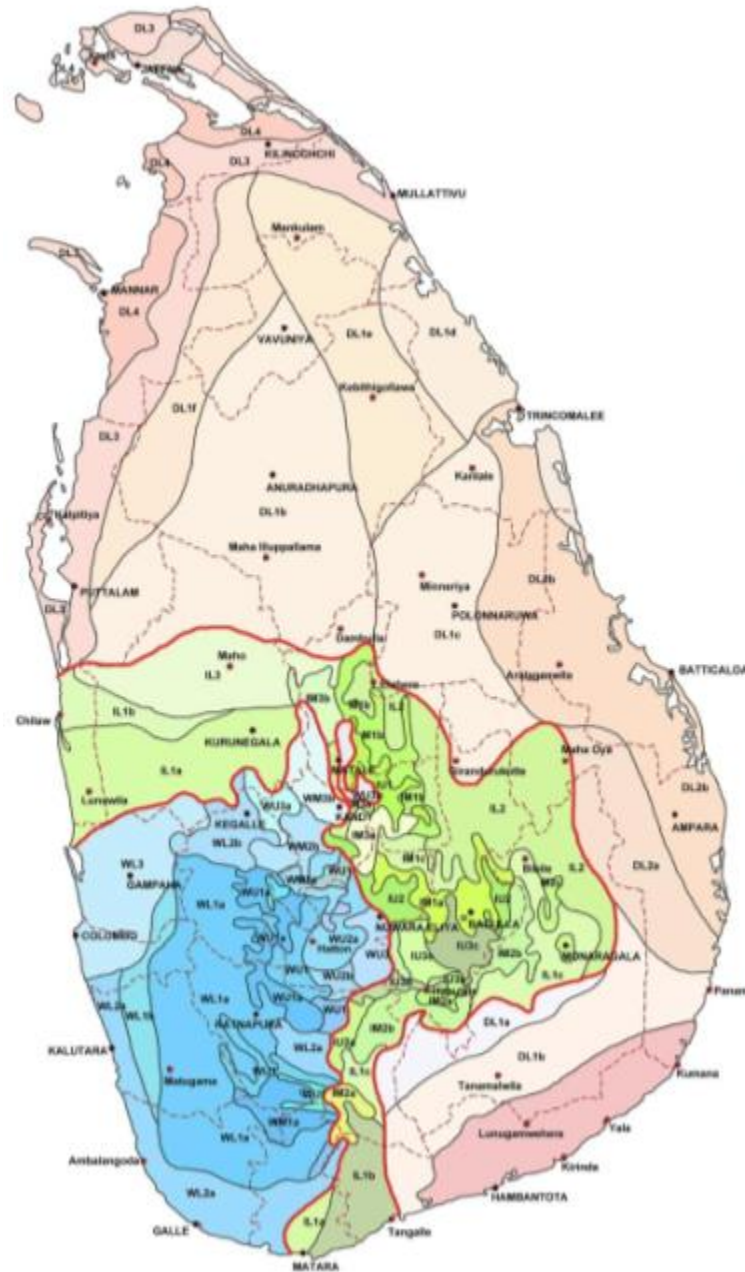
Intermediate zone 1,750 - 2,500 mm

Wet zone > 2,500 mm

**Average annual rainfall  
900 – 5,700 mm**



# Agro Ecological Zones - 46

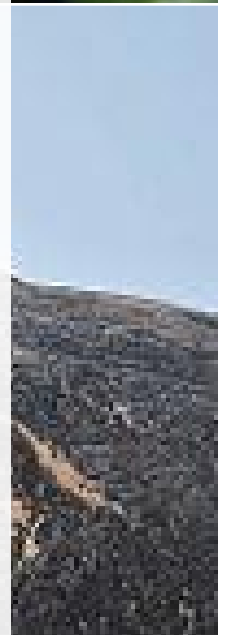
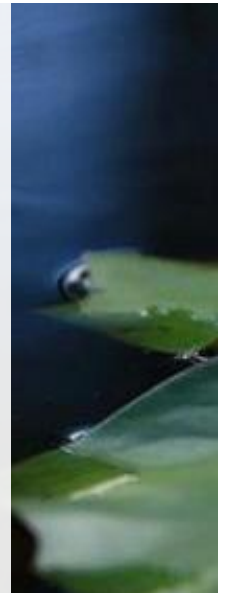
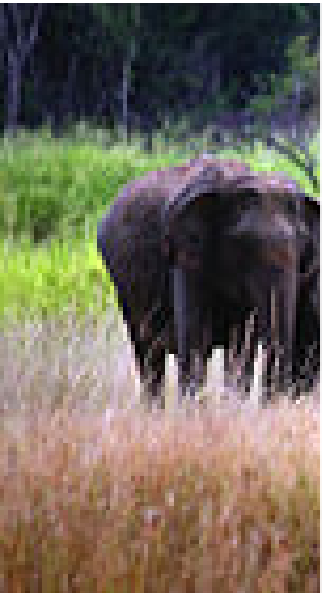


CLIMATIC ZONE	AGRO-ECOLOGICAL REGION	% EXPECTANT VALUE OF ANNUAL RAINFALL (MM)	
WET ZONE	UP COUNTRY	WU1	> 3,700
		WU2a	> 2,400
		WU2b	> 2,200
	MED COUNTRY	WM1a	> 3,500
		WM1b	> 2,800
		WM2a	> 2,200
		WM2b	> 1,800
		WM2c	> 1,600
	LOW COUNTRY	WL1a	> 3,200
		WL1b	> 2,800
		WL2a	> 2,400
		WL2b	> 2,200
INTERMEDIATE ZONE	UP COUNTRY	IU1	> 2,400
		IU2	> 2,100
		IU2a	> 1,800
		IU2b	> 1,700
		IU2c	> 1,600
		IU2d	> 1,500
	MED COUNTRY	IM1a	> 2,800
		IM1b	> 2,200
		IM1c	> 1,800
		IM2a	> 1,800
		IM2b	> 1,600
		IM2c	> 1,500
	LOW COUNTRY	IL1a	> 1,400
		IL1b	> 1,300
		IL1c	> 1,200
		IL2	> 1,000
		IL3	> 1,100
		IL4	> 1,100
DRY ZONE	LOW COUNTRY	DL1a	> 1,500
		DL1b	> 800
		DL1c	> 800
		DL1d	> 800
		DL1e	> 800
		DL1f	> 800
		DL2a	> 1,300
		DL2b	> 1,100
		DL3	> 800
		DL4	> 750
DL5	> 600		

# Flora and fauna

- One of 25 biodiversity hotspots in the world
- The highest biodiversity density in Asia (27% of the 3,210 flowering plants and 22% of the mammals are endemic)
- Untapped genetic potential of *Sinharaja* world heritage forest (vegetation density 240,000/ha)
- Home to over 250 types of resident birds

**Forest cover (high dense natural forest) around 49% in 1920, had fallen to approximately 24% by 2009**



# Agriculture Sector (Agstat 2015)

Crop	Area
Paddy	964,268ha ( 14% of total lands)
Other Field Crops	216,741 ha
Home garden	1,450,840 ha (22% of total land area)
Tea	229,262 ha
Coconut	295,552 ha
Rubber	207,628 ha
Forest	1,187,720 ha
Forest Plantation	63,525 ha
Scrub	779,604 ha

# Crop Production

Crop	Production
<b>Paddy</b>	3,380,780 mt (2014)
<b>OFC</b>	1,022,033 mt (2014)
Maize	240,588 mt
Green chilli	71,761mt
Dry chilli	14,108 mt
Big onion	101,166 mt,

COP of paddy 17.80 Rs/kg

## ... Crop Production

	area	production
<b>Vegetable</b>		
Upcountry	31,288 ha	483,855 mt
Low Country	59,230 ha	614,655 mt
<b>Fruits</b>		
Banana	56,216 ha	530,124 mt
Mango	29,744 ha	133,933 mt
Papaw	6,943 ha	93,672 mt

# Imports

Crop	Amount
Dry chilli	46,422 mt
Big onion	140,463 mt
Red onion	10,541 mt
Potato	111,727 mt
Maize	3,752,679 mt

# Three year National Food Production Programme

- NFPP -2016- 2018
- Ensure food security
- Produce supplementary food crops locally
- Minimize food import
- Increase farmer income



# Agriculture goals

## **In Food crop, livestock, fishery and Plantation crops**

- Make self sufficient in traditional local foods & save foreign exchange
- Ensure environment friendly high quality food availability
- Food security
- Crop production based on agro ecological zones
- Increase productivity
- Coordination between food production institutes
- High quality inputs
- Build healthy nation

# Agriculture Problems

- Food demand increase with population growth
- Imports of local food
- Poor farmers face diseases due to excess use of chemicals
- Environmental degradation
- Competition for land resource
- Inadequate use of suitable technology

## ... Agriculture Problems

- Youth away from Agriculture
- Problem in healthiness of food
- Post harvest losses
- Lack of international standards (export)
- Productivity low
- Climate changes
- Low quality of foods
- Gov.Expenditure higher than productivity

# E-solutions Identified as Individual Services

	<b>Individual Service Name</b>	<b>Service Owner</b>
1	Seed and planting materiel certification e-service	SCPPC
2	Seed Act implementation e-service	SCPPC
3	Pesticide registration e-service	ROP
4	Plant protection e-service	SCPPC
5	Plant genetic resources e-information service	PGRC
6	National Plant Quarantine Service e-service	NPQS
7	Seed and planting materiel information system	SPMDC
8	Agriculture technology e-information services	RRDI, FCRDI, HoRDI, FRDC, FMRC, NRMC
9	Research Information Management System	-do-
10	Information service for testing quarries e-service	-do-
11	Natural Resource Management e-services	NRMC

12	Food crops economics e-information service	SEPC
13	Agriculture schools students information system	ETC
14	Agriculture training information system	ETC
15	DOA exams e-information service	ETC
16	Commercial and high-tech agriculture support e-service	ETC
17	e-agriculture advisory service	ICC
18	e-agriculture library service	ICC
19	Agro tourism e- service	ICC
20	DOA web services	ICC
21	<i>Krushifm</i> web radio service	ICC
22	Procurement progress of goods, works and services	PMU
23	Human Resource Management e-information System	Admin.
24	e-Administration system (digital office, e-Communication)	Admin.
25	Resources Management Information System	Fin.
26	e-Financial system (digital office, e-communication)	Fin.
27	Stock Management Information System (e-inventory system)	Fin.

# E-solutions Identified as Integrated Services

	<b>Integrated Service Name</b>	<b>Owner</b>	<b>Participating Organizations</b>
1	Plant quarantine e-service	NPQS	Sri Lanka Custom Department, Sri Lanka Ports Authority, Civil Aviation Authority, Department of Import and export controller
2	Agro meteorology advisory service	NRMC	Meteorology Dept
3	Land use and soil conservation mapping and e-information system	NRMC	Survey Dept, Land Registration Dept
4	Environmental Impact Assessment e-information service	NRMC	Environment Authority
5	Geo-spatial information service	NRMC	Arther C Clark Center
6	Agriculture statistics e-information service	SEPC	Dept of Statistics

7	Food crop production and marketing information system	SEPC	Agrarian Service Dept, Mahaweli Authority, Ministry of Trade, Ministry of Economic Development, HARTI
8	Cultivation scheduling in major/ minor irrigation systems	ETC	Irrigation Dept, Agrarian Service Dept
9	Farmer organization information system	ETC	Agrarian Service Dept
10	Registration of suppliers e-information system	Eng.	Company registrar, Inland Revenue Dept, ICTAD, Financial Ministry
11	E-information service on Farm Machinery statistics	Eng.	Dept of Census & Statistics, Sri Lanka Customs, Dept of Agrarian Service
12	Inter-governmental e-communication system	Admin	Ministry of Public Admin
13	Integrated ledger management information system	Finance	General Treasury