



GLOBAL AGENDA FOR  
SUSTAINABLE LIVESTOCK



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8<sup>th</sup> MSP meeting Ulaanbaatar, Mongolia, 11-15.06.2018

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CIPAV

# Classification and main drivers of silvopastoral system adoption in America

Ulaanbaatar, 8<sup>th</sup> MSP Meeting  
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Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
GOALS



## METHODOLOGY

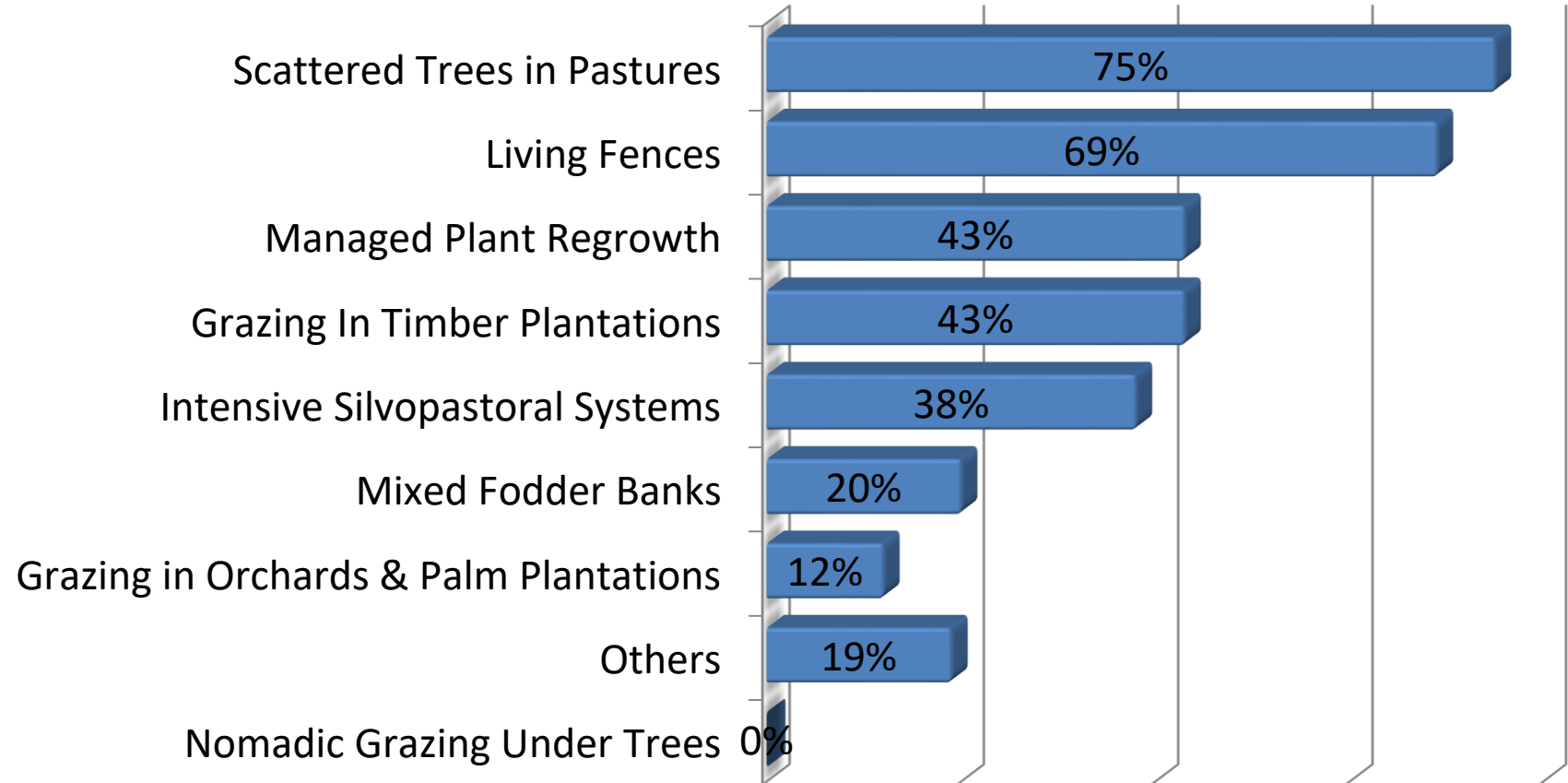
- Survey among SPS stakeholders in Latin America
- Literature review on SPS in the region
- Classification by type of arrangement
- Main instruments used in promotion of SPS
- Main drivers for SPS adoption



## SURVEY ON SPS PERCEPCIONS

### Question 1: Survey

In terms of area, which are the three most important types of SPS in your country?



## SURVEY ON SPS PERCEPCIONS

Country	Number of SPS described	Description	Area (Has)
Argentina	9	SPS with timber trees Managed native forests	134,000 42 million (Chaco)
Brazil	3	Grazing in timber plantations Grazing in natural regrowth forests Integrated Forestry-Agriculture-Livestock	800 1.5 millions
Colombia	3	Intensive Silvopastoral System	7,000
Mexico	1	Intensive Silvopastoral System	12,000
Paraguay	1	Grazing in timber plantations	5,000
Uruguay	2	Timber plantations in stripes Grazing in timber plantations	1 million aprox.
Central America	1	Timber species in fences and along roads	ND

## CLASSIFICATION BY TYPE OF ARRANGEMENT

- Grazing in native forests
- Grazing in timber plantations
- Grazing in orchards (fruit trees)
- Natural regrowth of trees in grazing areas
- Living fences and wind barriers
- Intensive silvopastoral systems
- Mixed fodder banks with trees and shrubs

## CLASSIFICATION BY TYPE OF ARRANGEMENT

### Grazing in native forests

Main examples	Characteristics
Patagonia (Argentina)	Mainly <i>Nothofagus antarctica</i>
Chaco (Argentina, Bolivia, Paraguay)	42 Million hectares
Mexico	Low deciduous forest <i>Prosopis sp.</i>
United States (Mainly west)	16% of grazed land area in USA is under forest.



## CLASSIFICATION BY TYPE OF ARRANGEMENT

### Grazing in timber plantations

Main cases	Characteristics
Argentina (Misiones and Corrientes)	<i>Eucalyptus</i> , <i>Pinus spp.</i> 80,000 has Beef Cattle ↔ Timber production
Argentina (Delta region)	<i>Salix babilonica</i> and <i>Salix hybrid</i> , <i>Populus deltoides</i> Aprox 50.000 has
Argentina (Northern Patagonia)	<i>Pinus ponderosa</i> ; Goats and cattle Aprox 18000 has
Paraguay	<i>Eucalyptus spp.</i> and hybrids. 5000 has.
Uruguay	<i>Eucalyptus globulus</i> and <i>grandis</i> <i>Pinus taeda</i> and <i>elliottis</i> . 1 million hectares
Espinal (Central Chile)	<i>Acacia saligna</i> , <i>Prosopis sp.</i> Used for recovery of degraded soils Low rainfall region.



## CLASSIFICATION BY TYPE OF ARRANGEMENT

Main cases	Characteristics
Brazil: Integrated Agriculture, Livestock, Forest	1.5 Million hectares of integrated silvopastoral or agrosilvopastoral systems. Planted in stripes to facilitate mechanization of all the process
Espinal (Central Chile)	<i>Acacia saligna</i> , <i>Prosopis sp.</i> Used for recovery of degraded soils Low rainfall region.



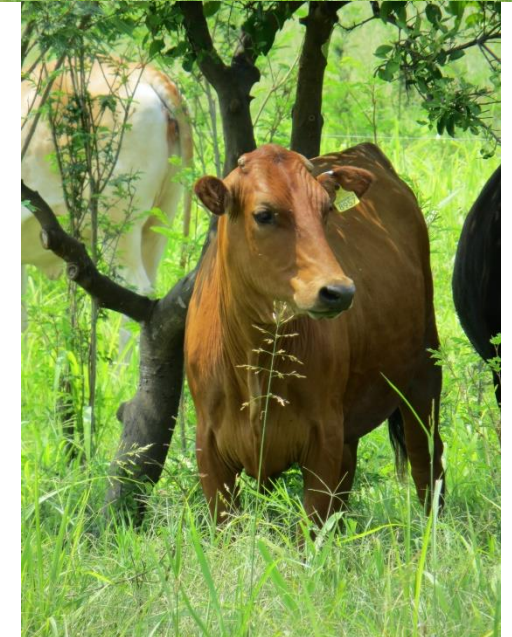
**Embrapa**



## CLASSIFICATION BY TYPE OF ARRANGEMENT

### Grazing and fruit production

Main cases	Characteristics
Mexico	<i>ISPS with lemon production</i> Area ND
Colombia	<i>Mangifera indica (Mango)</i> Area ND



## CLASSIFICATION BY TYPE OF ARRANGEMENT

### Natural regrowth of trees in grazing areas

Main cases	Characteristics
Brazil	Selective control of vegetation to allow the growth of valuable species
Colombia	Successful if sources of seed are near (or seed bank).
Central America	Provides wood for different uses in the farm One of the least studied systems



## CLASSIFICATION BY TYPE OF ARRANGEMENT

### Living fences, wind barriers

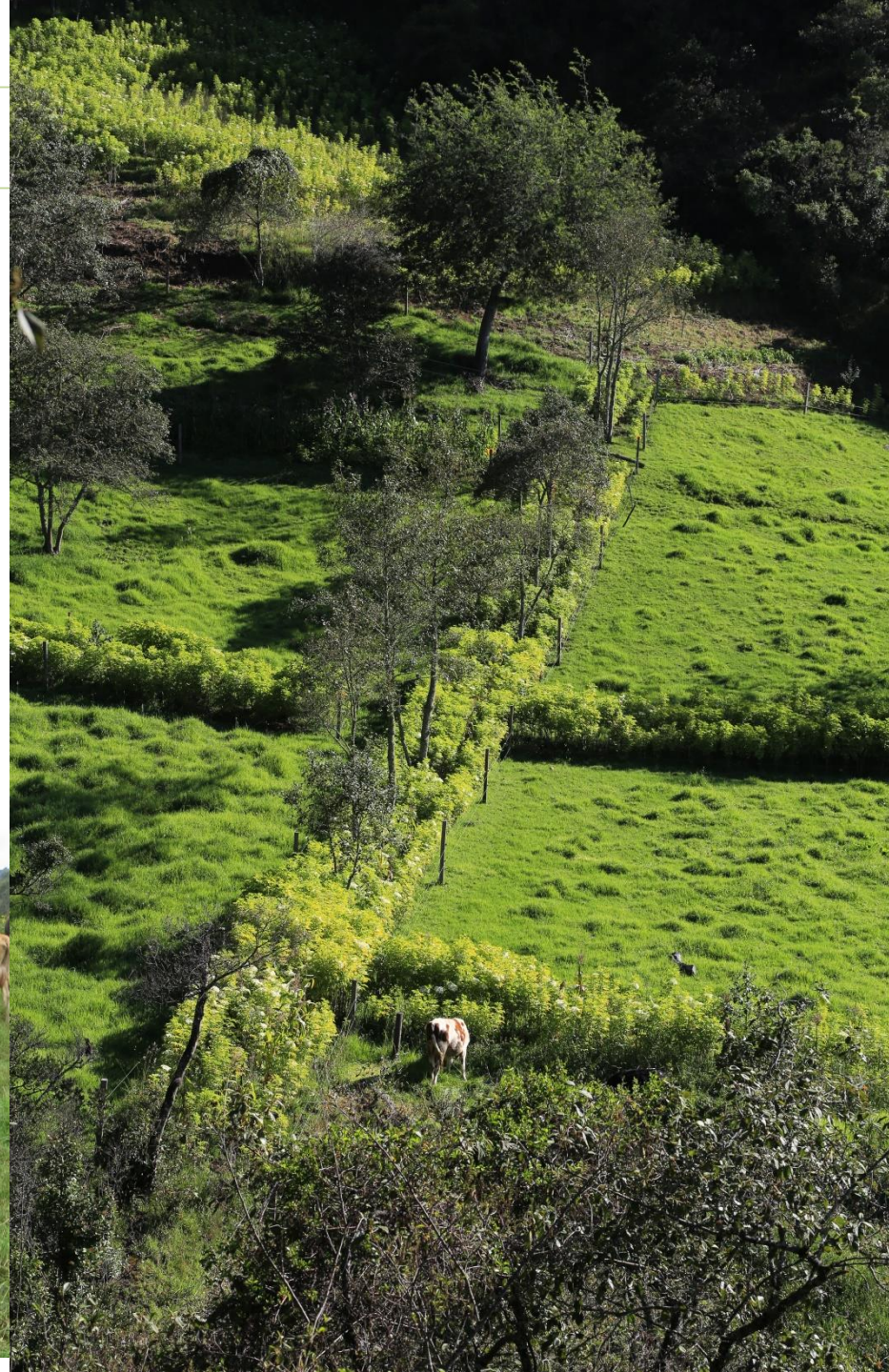
Main cases	Characteristics
Central America	Native and exotic species Tabebuia rosae, Bombacopsis quinata, Erythrina, Psidium guava Eucalyptus, Cupresus
Colombia	High altitude areas Eucalyptus, Acacia, Alnus



# CLASSIFICATION BY TYPE OF ARRANGEMENT

## Hedgerows

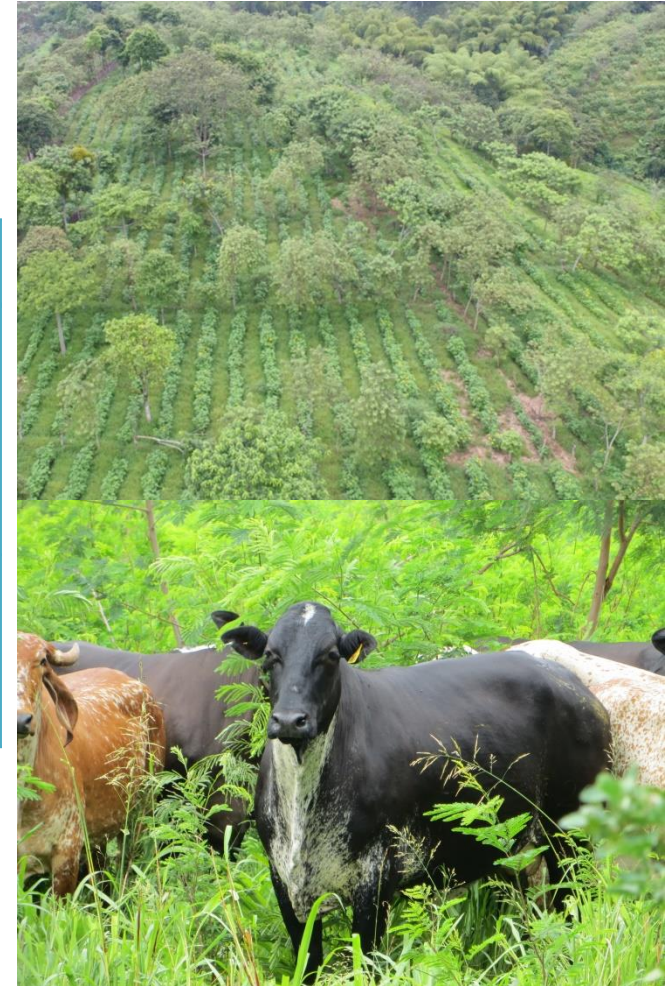
Main cases	Characteristics
Colombia, Ecuador	Aprox 3000 has Mainly <i>Tithonia diversifolia</i> (below 2400 masl) <i>Sambucus sp</i> (above 2000 masl)



## CLASSIFICATION BY TYPE OF ARRANGEMENT

### Intensive silvopastoral systems

Main cases	Characteristics
Colombia	6000 has. <i>Leucaena leucocephala</i> <i>Tithonia diversifolia</i> Shubs at > 6000 shrubs per ha
Mexico	12000 has <i>Leucaena leucocephala</i> + Megathyrus or Star grass



# CLASSIFICATION BY TYPE OF ARRANGEMENT

## Mixed fodder banks

Main cases	Characteristics
Central America, Colombia, Brazil	Mainly for small scale farmers <i>Trichanthera gigantea</i> <i>Gliricidium sepium</i> <i>Morus alba</i> <i>Tithonia diversifolia</i> <i>Sambucus sp.</i> Used for goats, cattle, sheep, pigs, chicken



## MAIN INSTRUMENTS USED IN THE PROMOTION OF SPS

Country	Type of Incentive
Argentina	Subsidies and a law for timber production Technical assistance to farmers
Brazil	Low cost credit lines under Low Carbon Agriculture Act. Technical assistance and support from companies (seedlings, machinery, tools, trade, insurance)
Colombia	Low interest credit lines Payment of environmental services (PES) Technical assistance
Costa Rica	PES
Mexico	Strong farmers' associations Up front incentives Technical assistance and provision of seeds and other inputs

# Main drivers for implementation

Country	Type of Incentive
Economic drivers	Reduction of fertilizer and feed costs Increase yield and efficiency Receive premium payments Increase value of farms
Altruism - Stewardship	Improved environmental awareness (increase biodiversity, reduce impact on natural resources (water and soil))
Climate change adaptation	Reduce impact of extreme weather Improved Animal Welfare and production
Comply with regulations or standards	Organic or ecological farming





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Thanks

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