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Sustainable Biodiesel Production from Cottonseed Chain in Brazil

Prof. PhD. Marcos Fava Neves

Markestrat – Marketing & Strategic Projects and Research Center

FEARP/USP

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- Organization founded in 2004 by PhDs and MsCs in Business Administration, Agronomy and Economy.
- Focus on Marketing and Strategy mostly applied on Agribusiness.
- MARKESTRAT is committed to develop customized projects for clients in its competence areas, demanding therefore a deep understanding of clients` needs and opportunities.
- We believe a project will be more successful if the contracting organization is able to acquire the needed competences to implement further new routines and tools.
- Therefore, several training and education programs are offered, along with consulting projects.
- MARKESTRAT also works strongly based on relationship networks with the further enlargement of competences towards offering a wide range of products and solutions on management and strategy

Ribeirão Preto,
São Paulo and Salvador

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RIBEIRÃO PRETO
CAPITAL BRASILEIRA DO AGRONEGÓCIO

Competencies Network

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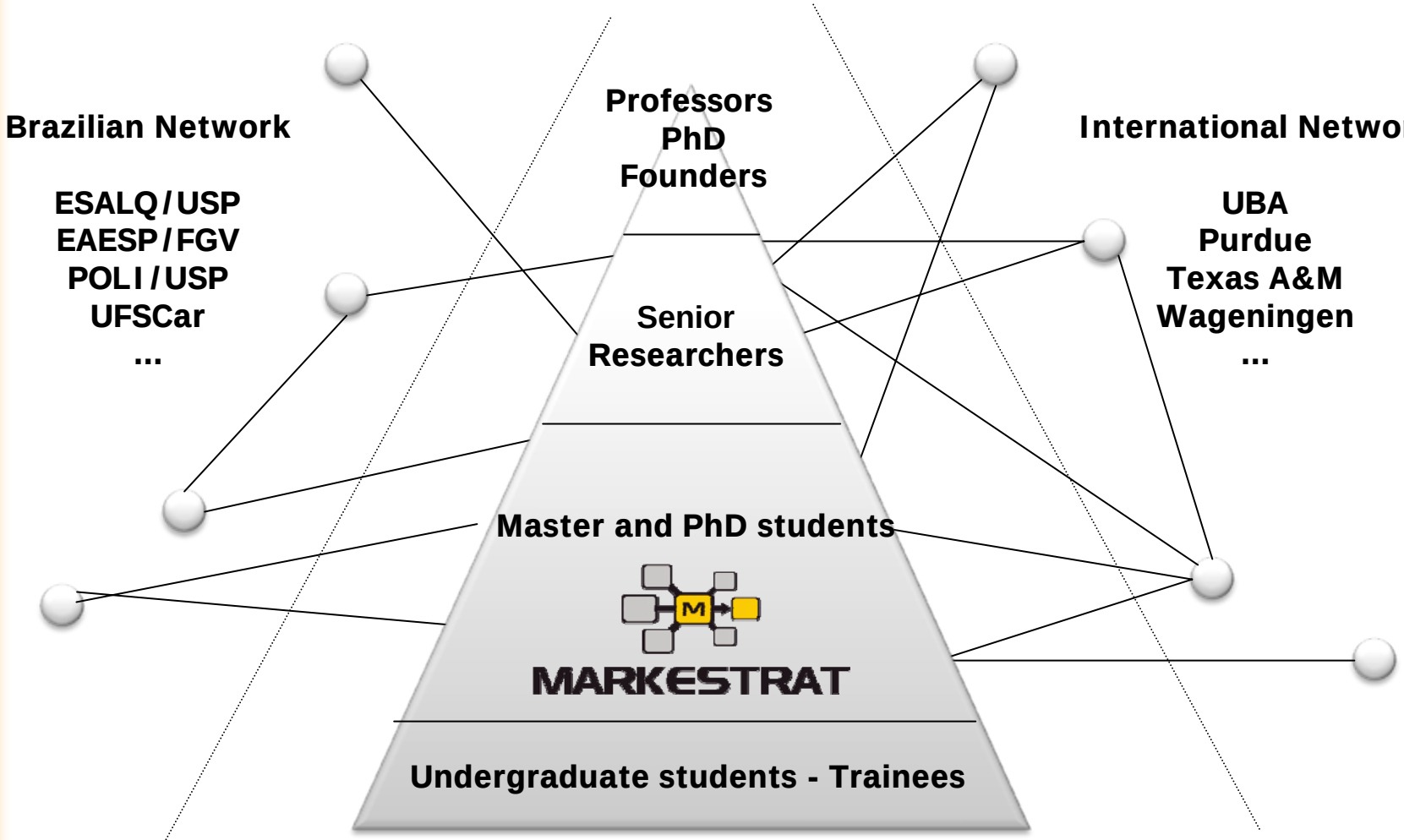

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MARKETING & STRATEGY PROJECTS AND RESEARCH CENTER

ABOUT US | SOLUTIONS | CLIENTS | PARTNERS | PUBLICATIONS | TEACHING | TRAINING | CONTACT

PUBLICATIONS

Estratégias para a Laranja no Brasil

authors: Marcos Fava Neves, Frederico Fonseca Lopes

Read Article

WELCOME

Welcome to our website. Here our clients and partners can obtain information on our group. Information related to Strategic Planning Processes and Marketing Management, which aim highly competitive organizations, are constantly being included in this space. Check out this information under the "Publications" and "Teaching and Training" sections. Leave your comments in the "Contact Us" section. Click on the icon below and begin your research so you can get to know us better. Thank you!

Learn More

INFORMATIONS

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Scope

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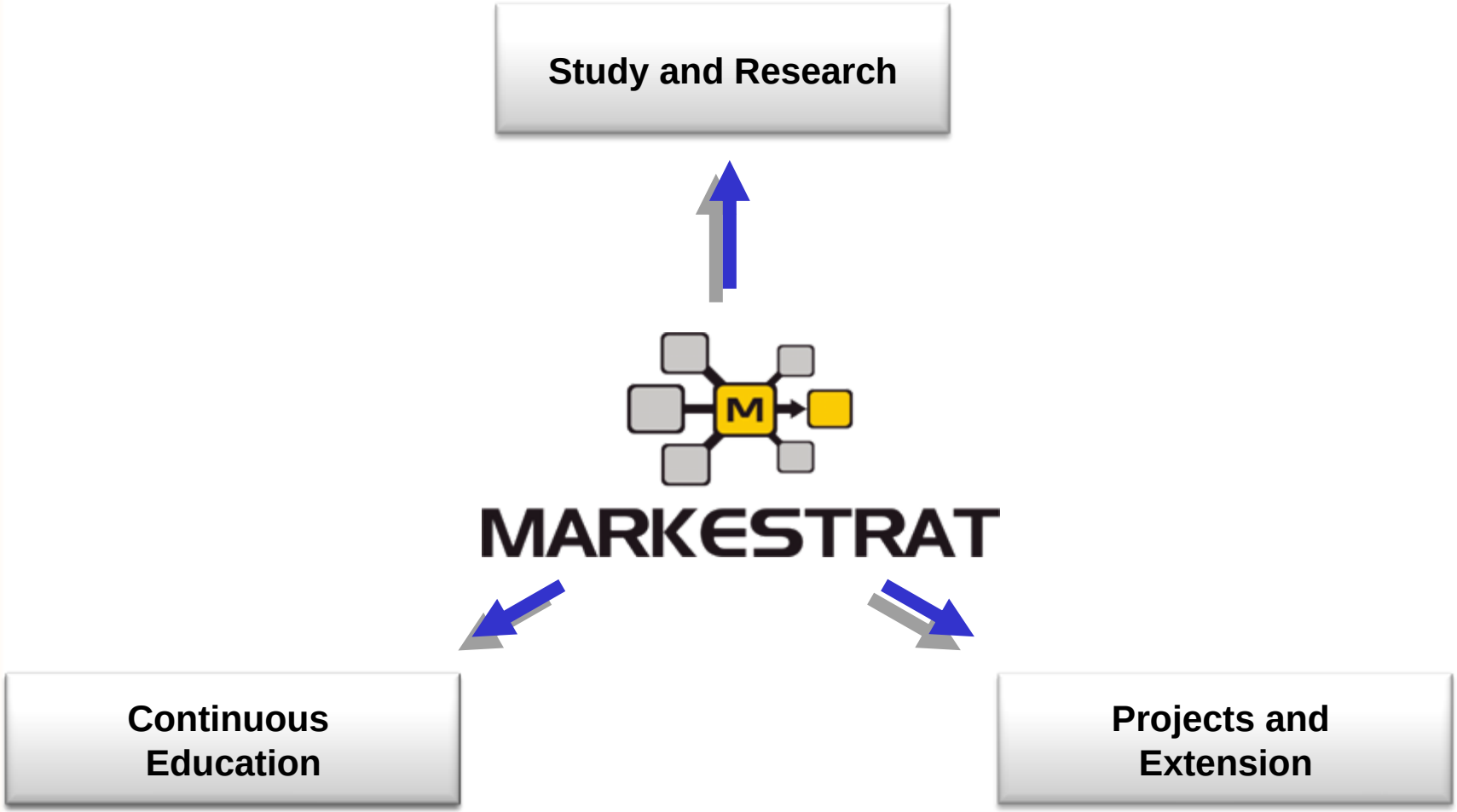

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Paper Structure

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- Introduction
  - Potential Demand of Biodiesel
- Question
  - Is it feasilble to produce biodiesel from cottonseed at the Valley of Sao Francisco Valley?
- Method:
  - Integrated Sustainable Project Analysis
- Results
  - The analysis of the economic viability

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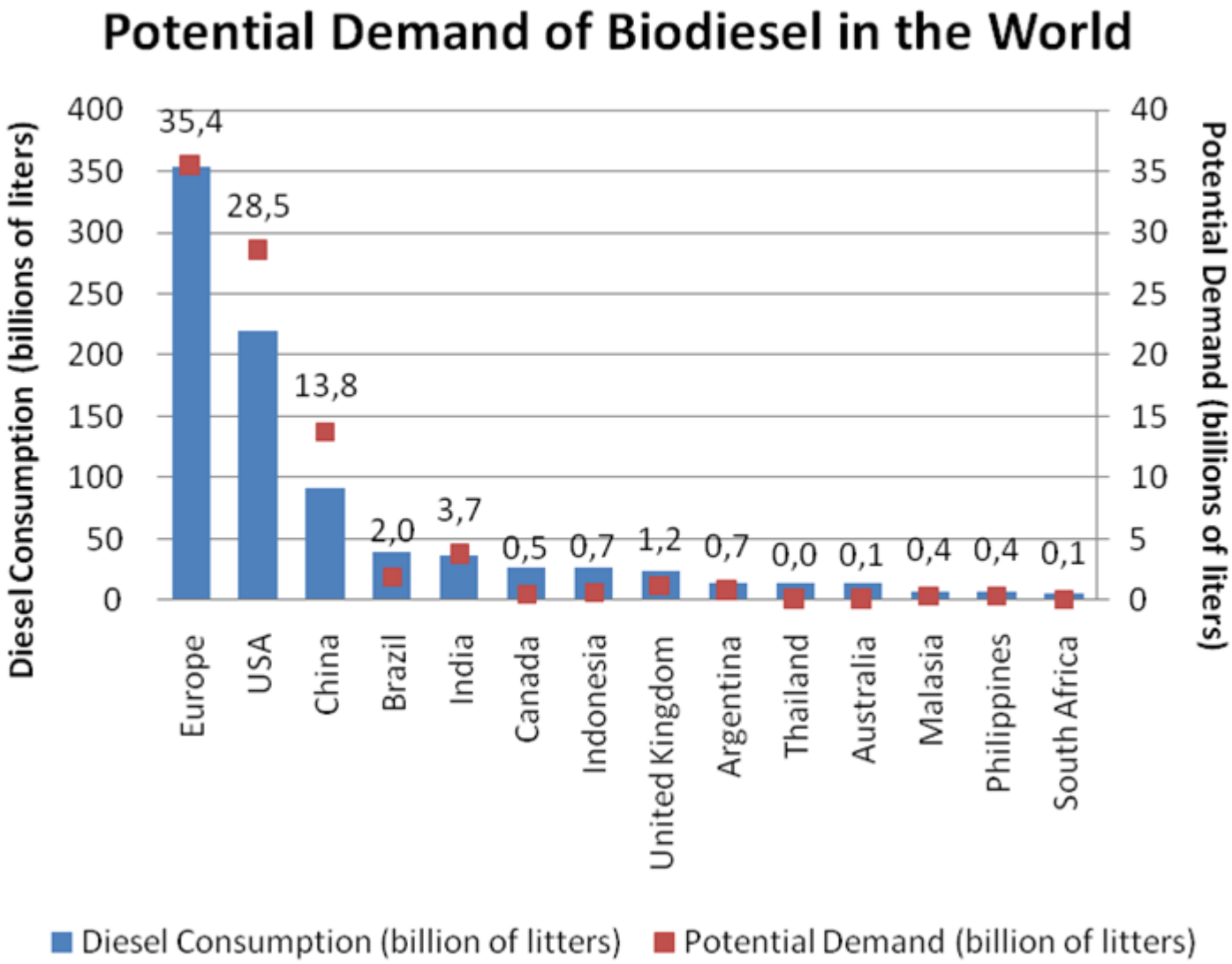

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Emissions Reduction	B5	B20	B100
CO2	7%	9%	46%
Non-burned Hydrocarbon	7%	9%	46%
Sulfur	17%	25%	100%
Particles material	13%	23%	68%
Source: Revista Biodiesel (2008)			

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- The biodiesel comes as a new source of income for the cotton crop
- The objective of the cotton plantation is to obtain the fiber, and the cottonseed is a by-product that is being used for oil production
- compared to other crops, the cottonseed has a low yield in oil (15.2%), but the high productivity per hectare offset this limitation

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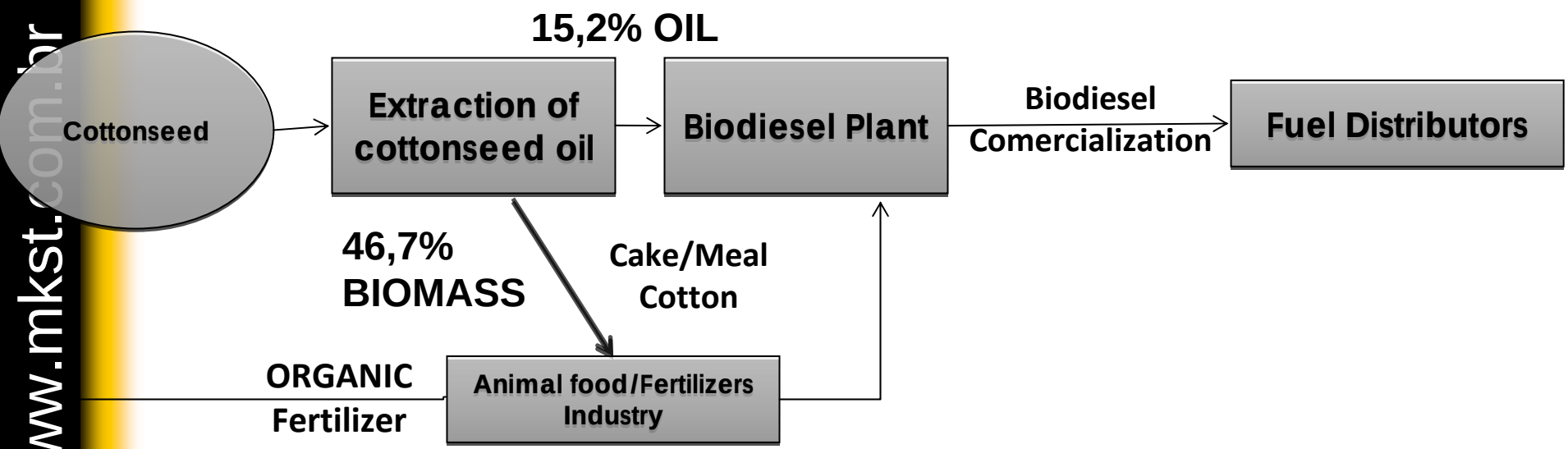
Production of Biodiesel in the region



REGION:

Source: Markestrat

720 thousand tons of cottonseed = **115 million** liters of biodiesel

Biodiesel Yield → 160 liters/ton of raw material (stone)
Source: Petrobras; Parente, Expedito José de de Sá-Tecbio, Fortaleza, 2003.

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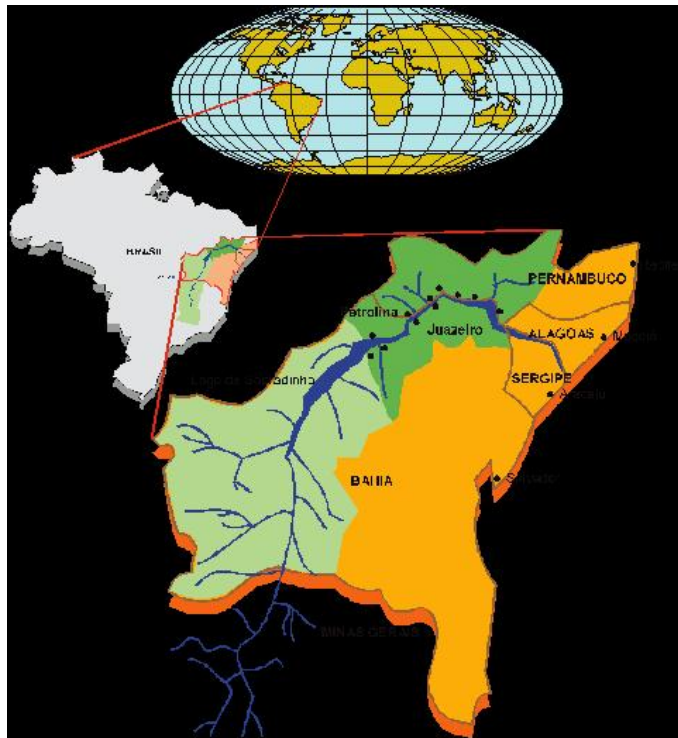
- Questions:
  - Is it feasible to produce biofuel from cottonseed in the Valley of the Sao Francisco River?
  - Is there capacity to integrate family farmers?
  - Could the environmental impacts be minimized?



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- The Method

In tegrated	Sustainable	Business	Project
• Interorganizational • Chain and Network Perspective • Technological Transfer and requested specificities • Cooperatives • Associations • Government Participation • Coordinated System • Public Banks participation	• Environmental Friendly • Fair trade • Organic • Job Creation • Social Development • Regional Development • Work Conditions	• It is made for profit attainment • Cost control • Innovation • Continuous Search for Competitiveness • Quality Refinement	• Rigorous Analysis • Rigorous Marketing Analysis • Organization, Scheduling, Implementation

Source: Neves and Castro (2007)

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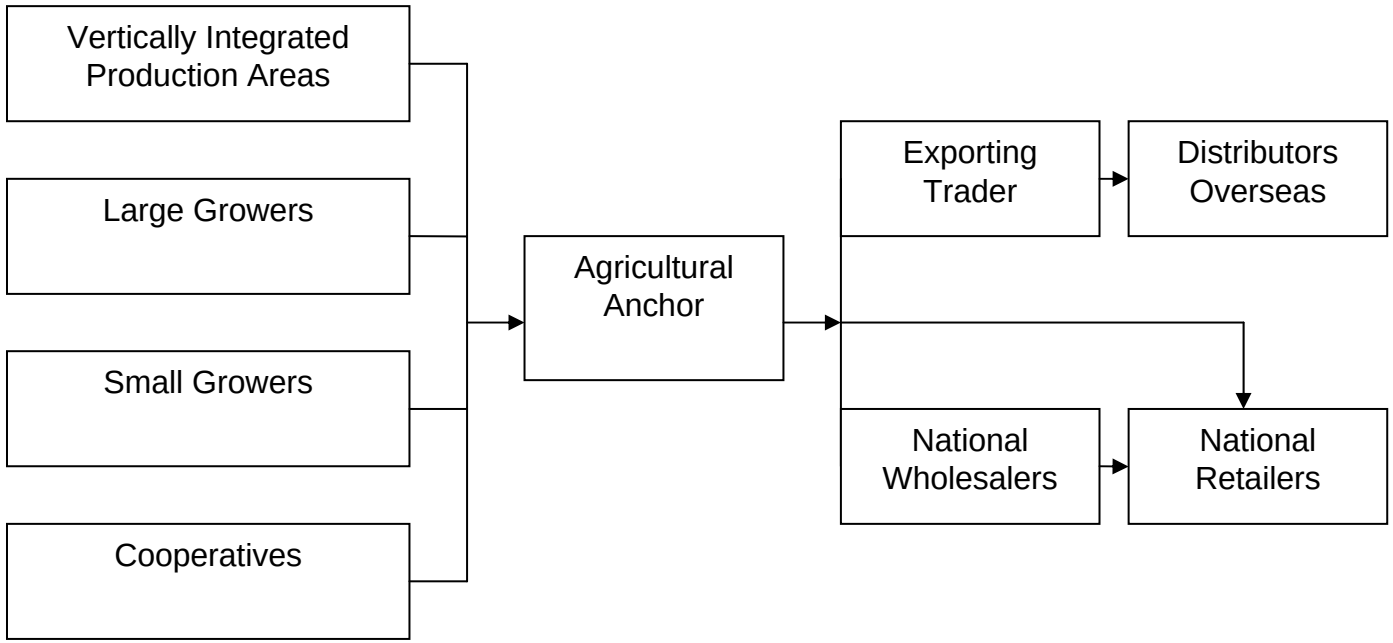
- Method for Integrated and Sustainable Agribusiness Projects



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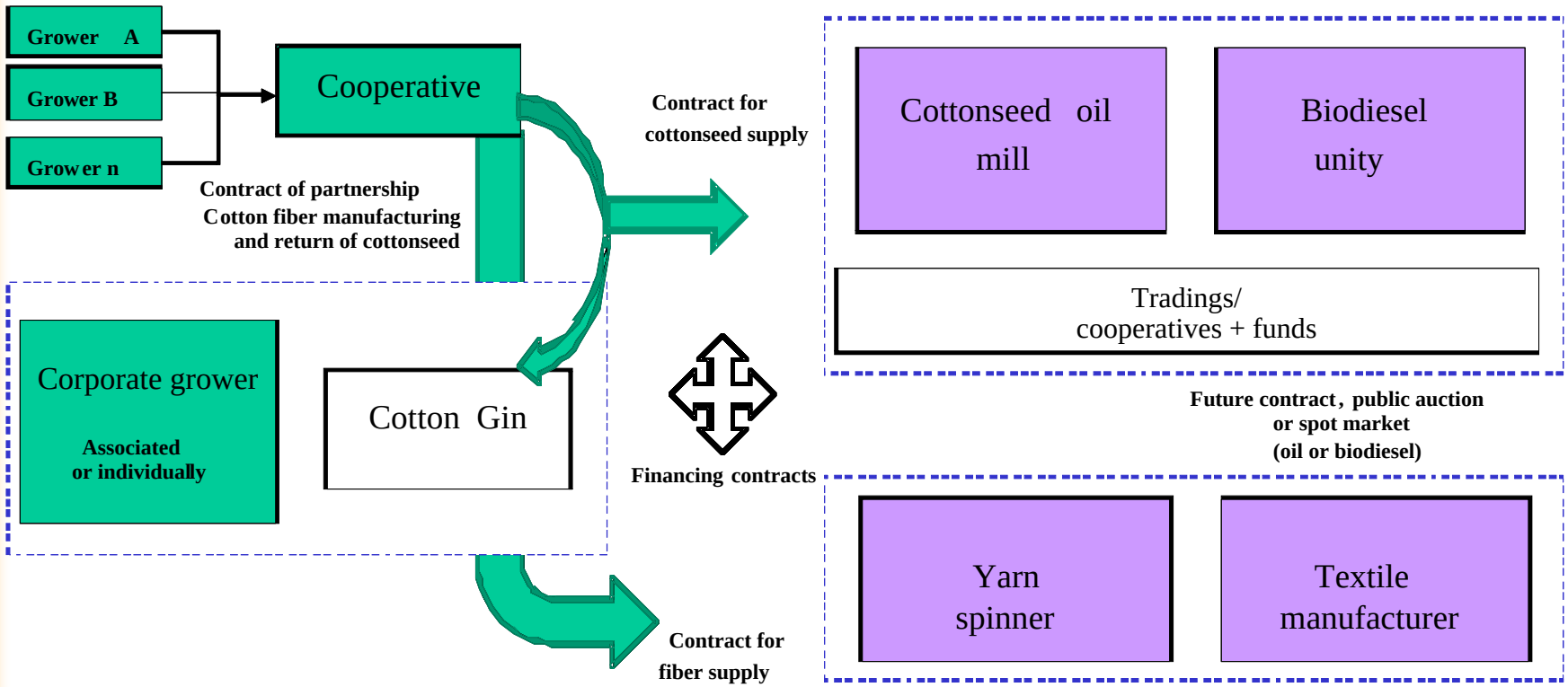
- Results
  - Business Model



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- Results
  - *Simulation of the viability of the agricultural production and manufacturing of cotton*

	Agricultural Business		Ginner Business	Integrated Business
Agents	Small	Large	Large	Large
Participation	25%	75%	100%	100%
Investment	R$ 164,904.50	R$ 57,290,449.54	R$ 5,350,000.00	R$ 62,640,449.54
IRR	14%	13.6%	13%	10.5%
NPV - Own Capital	R$ 18,346.70	R$ 4,999,284.94	R$ 1,543,545.58	R$ 6,492,431.06

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- Results
  - *Simulation of the viability of oil extraction and production of biodiesel*

	Cotton Oil Mill Business		Biodiesel Plant Business		Integrated Business	
Agents	Cooperatives \ Tradings	Investment Fund	Cooperatives \ Tradings	Investment Funds	Cooperatives \ Tradings	Investment Funds
Participation	51%	49%	51%	49%	51%	49%
Investment	R$ 3,410,421.00	R$ 3,276,679.00	R$ 2,638,716.63	R$ 1,267,618.77	R$ 2,638,716.63	R$ 2,535,237.55
IRR	36.9%	36.9%	28.9%	28.9%	26.4%	26.4%
NPV – Own Capital	R$ 8,100,049.09	R$ 7,782,400.11	R$ 4,152,625.68	R$ 3,989,777.62	R$ 7,876,178.20	R$ 7,567,308.46

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THANK YOU!

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