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# Agribusiness systems analysis: origin, evolution and research perspectives

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## Abstract

The present essay revisits the concept of agribusiness systems, discusses its evolution based in the institutional perspective highlighting the property rights and contractual approaches. It concludes with suggested research topics in the field of economics of organizations applied to agriculture.



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## Introduction

The production of food, fiber, and bio-energy connects with contemporaneous problems of food safety, global warming, consumer's preferences, consolidation of global corporations, environmental impacts, mega-trade agreements, and persistent

problems of food access. In order to find answers to the problems that affect governments, agro corporations, farmers and consumers around the world, the issue of “coordination of specialized agents engaged in agriculture production” is a central one. The present essay aims to present a partial view of the evolution of thought on business management and economics of organizations applied to agriculture and identifies perspectives for empirical studies. The paper contains four topics. Following this introduction, the second part revisits the concept of agribusiness systems, the third part presents the institutional/property rights perspective and contractual approach, and part four suggests research issues in the field of economics of organizations and concludes.

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## Agribusiness – a concept yet to be unfolded

Up to the beginning of the sixties, economists approached agriculture production, mostly through the lenses of markets and prices taking the agricultural sector as an independent unit. Market prices were sufficient to promote costless coordination of production and distribution. Traditional intervention remedies fixed market imperfections and consequent price distortions. The research did not focus on private strategies in agriculture and related sectors. Public policies of market intervention were the dominant topic. The contribution of [Davis and Goldberg \(1957\)](#) at the Graduate School of Business Administration at Harvard University opened new perspectives to the analysis of food systems that proved to be useful for public policy design and architecture of private strategies. The authors proposed the definition of the concept of agribusiness as:

*“The sum of all operations involved in manufacture and distribution of farm supplies, production operations on the farm, and the storage, processing, and distribution of farm commodities”.*

This concept evolved giving origin to “Agribusiness Systems Analysis” rooted in two elements: First, agriculture treated as an isolated sector, became part of specialized interdependent system of agents that operate in interconnected industries. The second relevant aspect proposed by Goldberg is that the value added at the farm level tends to decline through time as a share of the total value of production, with serious strategic consequences. He was the first to stress the fact that margins are larger as the product approaches the final market destiny. Goldberg built the Agribusiness Systems Model based in sector analysis and highlighted the inter-sectorial connections. Implicit in his studies is the assumption of costless operation of markets and frictionless interactions among sectors, institutions being absent.

The work by [Davis and Goldberg \(1957\)](#) served as the basis for the evolution of the Agribusiness System perspective as seen in [Goldberg \(1968\)](#). Developed in Harvard offered a new breath to the study of agro-based food systems breaking with the traditional way to look to agriculture as an independent sector moving toward strategic issues. The concept of agribusiness supported the Harvard Agribusiness Program supported the production of case studies of agribusiness firms and the debate of private strategies as well as public policies. The concept of “agribusiness” at the origin did not have the meaning distorted toward the eventual conflict between large corporations and small family farmers as is seen in Brazil. The concept considers only that agriculture is part of the business sphere of phenomena. A small farmer is part of the agribusiness system as well as a large corporate farm.

The domain of agriculture economists in most of the research centers prevailed and did not place efforts to study real world business practices, focusing public policies instead. Meanwhile real world problems faced by agriculture-based production were waiting for answers. In the 80s and 90s to the convergence of interests between economics and management has intensified. As the theory of economics of organizations evolved, the issue

of governance and coordination of agribusiness systems became a vigorous applied field of empirical research. Questions of mechanisms of governance based in vertical integration, complex contracts and the role of institutions added to Goldberg’s approach. Studies of agribusiness economics and management based in the property rights perspective, transaction costs analysis, knowledge, resources based views and new institutional economics gained strength.

## Property rights, institutions and contracts

The perspective adopted by Goldberg moved the debate toward the direction of real world business problems. The adoption of chains and systems as a conceptual construct did show its usefulness to study the coordination of a flow of products toward the final markets. Chain and systems converge in one point: actors need to cooperate in order to produce value and govern complex mechanisms of production and trade. However, the concept of chain and systems as approached by Goldberg has shown to be less than sufficient to offer a frame to explain the complexity of transactions actually carried out by business players.

In the 1990s the science of economics of organizations introduced new elements, namely: the property rights foundations to study organizations ([Barzel, 1997](#)), the New Institutional Economics with the macro-institutional perspective as developed by [North \(1990\)](#) and at the micro perspective as treated by [Coase \(1937\)](#) and [Williamson \(1985\)](#).

Based on the assumption of zero transaction costs, the original Agribusiness Systems perspective took the price mechanism as sufficient to promote coordination. However, the real world is one of positive transaction costs ([Coase, 1937](#)). In such cases, it is mandatory to consider the role of institutions and coordination mechanisms other than prices, mostly of contractual nature. The dominant view of economic analysis when Goldberg introduced the Agribusiness System concept ignored the role of institutions. The global production and trade of food, fiber and bio-energy products depends on technology choice, presence of global players, existence of vested interests, lobby mechanisms and existence of cultural ties among different countries. Transactions carried on through agribusiness systems carry asymmetric information about product and process characteristics, opening room for opportunism and strategies to capture property rights. In such cases, prices are not sufficient to promote efficient coordination; instead, considering positive costs of transaction, need institutional rules to provide incentives for economic players engage in complex contracts in addition to the price mechanism. The evolution of agribusiness analysis based in the institutional perspective considered that institutions matter in agribusiness studies.

New Institutional Economics opened room for developments of the study of Agribusiness Systems as explored by [Zylbersztajn \(1996, 2005\)](#), [Zylbersztajn and Farina \(1999\)](#), [Cook and Chaddad \(2000\)](#), and [Menard and Klein \(2004\)](#) showing the relevance and the wide range of the theory. Basically the Agribusiness System concept as proposed by Goldberg was enlarged with the introduction of transaction costs, contracts,

property rights, knowledge and resources considerations and the relevance of the institutional frame. The work of Zylbersztajn and Farina (1999) approached the agribusiness system as an expanded Coasian firm, with complex contractual structure. Transactions cost approach opened the possibility to study the institutional frame that affect the mechanisms of governance enriching the debate and dialog between legal analysis, business management and economics and its application to agriculture. The focus on markets and prices enlarged with the economic analysis of contracts performed through the system, resulted in a more realistic approach to the existing literature of agricultural markets. Prices are relevant as well as other mechanisms of governance. Empirical tests of transaction economics based hypothesis were abundant in the literature in addition to narratives and descriptive case studies.

### Research perspectives

The research approaches of agribusiness systems have shown a pattern of evolution from individual markets toward chains, networks<sup>1</sup> and systems perspectives and the introduction of institutions. Different theories explain parts of the complex coordination mechanisms, ranging from price theory, to new institutional and property rights, evolutionist and resources views. The new institutional approach considers that institutions matter and are susceptible of analysis. It is not hostile to orthodoxy, and opens room for an interdisciplinary combination of law, economics, and organization. The adoption of this perspective in agribusiness studies programs in business schools is just one of the positive outcomes.

However many unsolved issues are yet present and need to be addressed. The level of analytical aggregation adopted differs among studies. Coordination mechanisms in agribusiness systems eventually converge showing a pattern, however not always a clear pattern is identifiable. The transaction costs economics alignment hypothesis received considerable support from research but at the same time diversity of governance and coordination mechanisms observed in the real world, reveals the need to explain that the complexity related to the strategic choice of mechanisms. One can observe different governance standards governing the same agribusiness system. Coexistence of many standards is more common than an eventual unique efficient solution. Different concepts emerged to explore this tension as; strange forms, complex contractual forms, hybrid forms, plural forms (Saes, Silva, Souza and Schnaider, 2011), with different meanings.

Agricultural contracts gained support from international organizations as FAO to promote the contractual connection between farmers and processing industries (UNIDROIT, FAO, & IFAD, 2013). The initiative has good intentions, namely to insert small farmers in organized systems, however it runs the risk to

propose unique solutions to different players. The diversity of forms is visible in contracts since a single farmer or processing industry can hold different contracts simultaneously.

Why do different contract forms coexist? Why the governance of similar agro-based systems differs under the same institutional and technological frame? This observation suggests that efforts are necessary to dig deeper in the institutional complexity considering; business-historical patterns, development of trust, knowledge based explanations, reputational mechanisms to safeguard for property rights appropriations. Incentives for convergent solutions face incentives of divergent solutions, both based in efficiency criteria. The observed result represents the net effect of distinct forces.

Meanwhile theoretical evolution takes place empirical problems are abundant and waiting for answers. Most of the solutions reside in the interface between economics, business and legal perspectives. Examples of relevant research topics are: Mega trade agreements and institutional harmonization, pricing and contracts of technology at the farm level, market power issues related to mega-consolidation of companies, new farming technologies, emergence of agro-corporations, institutional rules of access to land, property rights regimes and its consequences, private enforcement of property rights, studies of farmers' collective actions, and territorial reconversion. The relevance of problems and the potential research agenda suggests that young scholars have a lot of work to do in coming years, both in the theoretical and applied aspects of agribusiness systems analysis.

### Conflicts of interest

The author declares no conflict of interest.

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<sup>1</sup> The limits between agro-systems and networks is yet to be further developed. They rely on the same issue of dispersed mechanisms of governance and authority. Network analysis perspective have shown to be a necessary ingredient to move the studies of agribusiness systems.

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