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Pluralistic extension service delivery models: Coordination mechanisms and performance outcomes in mediterranean agriculture

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Abstract

When Cyprus reorganized its agricultural advisory system in 2015, it moved from a single government service to a network of public, private, and cooperative providers under a shared coordination platform. This research examined five extension delivery models across seven Mediterranean countries (Cyprus, Greece, Turkey, Tunisia, Morocco, Jordan, and Lebanon), comparing performance on coverage, quality, sustainability, and inclusiveness. Data were collected through institutional surveys of 83 providers, farmer satisfaction surveys with 1,246 respondents, and case research of 14 programs, conducted between March and November 2022. Pluralistic coordinated models scored highest on overall performance (mean 7.1/10), outperforming government-only (5.5), NGO-dominated (5.6), private sector-led (5.4), and farmer organization-based models (6.1). Information sharing and joint planning emerged as the strongest predictors of success. Countries with formal coordination platforms achieved 41.3% higher performance scores than those with informal coordination. These findings indicate that pluralism requires structured coordination mechanisms linking providers into a functioning system.

Keywords: Pluralistic extension, service delivery models, coordination mechanisms, Mediterranean agriculture, advisory services, farmer satisfaction, extension reform, institutional analysis, public-private partnerships, agricultural knowledge systems

Introduction

In 2012, when Turkey restructured its agricultural advisory system by licensing 1,200 private advisory firms alongside its existing public extension network, it created one of the largest pluralistic extension systems in the Mediterranean region ^[1]. The reform promised wider coverage, greater specialization, and improved responsiveness to diverse farmer needs. A decade later, the evidence on whether pluralistic models deliver on these promises remains incomplete and contested ^[2].

Pluralistic extension refers to systems where multiple organization types, including government agencies, NGOs, private firms, and farmer cooperatives, simultaneously provide advisory services ^[3]. The concept gained prominence through the Neuchatel Group and has been endorsed by FAO and GFRAS as the preferred approach for modernizing extension ^[4].

Mediterranean countries present an instructive setting because of diverse institutional landscapes. Some operate within the EU's Common Agricultural Policy framework, while others implement reforms as part of broader agricultural modernization. This diversity creates natural variation in how pluralism is structured ^[5].

The central question is not whether pluralism is desirable but what makes the difference between fragmented multi-provider landscapes and genuinely coordinated systems ^[6]. This research compared five models across seven countries,

focusing on coordination mechanisms and their association with system performance ^[7].

Theoretical Framework

The research applied the Agricultural Knowledge and Information Systems (AKIS) framework ^[8], which views extension as part of a broader system of knowledge generation, exchange, and application. AKIS theory predicts that system performance depends not only on the capacity of individual organizations but on the quality of linkages between them. This was complemented by institutional analysis from Ostrom's Institutional Analysis and Development framework ^[9], which provided analytical tools for examining how rules, norms, and coordination structures shape collective outcomes in multi-actor settings.

Material and Methods

Material

The research was conducted from Cyprus University of Technology between March and November 2022. Seven Mediterranean countries participated: Cyprus, Greece, Turkey, Tunisia, Morocco, Jordan, and Lebanon. Data came from institutional surveys completed by 83 extension providers (government agencies, NGOs, private firms, farmer organizations, and research institutions), farmer satisfaction surveys from 1,246 respondents selected through stratified random sampling, and in-depth case

research of 14 extension programs representing the five delivery models under review.

Pilot Research

Instruments were pilot-tested in Cyprus with 12 providers and 85 farmers during February 2022. The pilot led to recalibration of provider self-assessment questions and simplified farmer survey language. Revised instruments were reviewed by six extension researchers. Provider survey reliability was acceptable (Cronbach's alpha = 0.83) and farmer survey reliability strong (alpha = 0.89).

Methods

Models were classified into five types based on dominant provider configuration. Performance was assessed across four dimensions: coverage, quality, sustainability, and inclusiveness. A coordination quality index measured six mechanisms: policy alignment, information sharing, joint planning, resource pooling, quality standards, and M&E coordination. Multiple regression examined coordination predictors of performance. Ethics clearance was from CUT Research Ethics Committee (Ref: CUT/REC/2022-038, approved February 2022).

Results

Table 1: Performance Scores by Extension Delivery Model (n=83 providers, 1,246 farmers)

Model Type	Coverage	Quality	Sustain- ability	Inclusive- ness	Overall Mean
Government-Only (n=18)	6.7	5.4	4.1	5.8	5.5
NGO-Dominated (n=14)	4.3	6.8	3.9	7.2	5.6
Private Sector-Led (n=16)	3.8	7.1	6.9	3.6	5.4
Farmer Org. Based (n=15)	5.1	5.9	5.7	7.8	6.1
Pluralistic Coord. (n=20)	7.4	7.3	6.8	6.9	7.1

Pluralistic coordinated models scored highest overall except inclusiveness, where farmer organizations led (7.8). Single-provider models each showed distinct strengths: government on coverage (6.7), private sector on quality (7.1) and

sustainability (6.9), NGOs on inclusiveness (7.2). The pluralistic advantage lay in balanced performance without sharp trade-offs.

Table 2: Coordination Mechanism Scores by Model Type (1-10 scale)

Mechanism	Gov. Only	NGO Dom.	Private Led	Farmer Org.	Plural. Coord.
Policy alignment	7.8	3.6	4.2	4.8	7.1
Information sharing	4.2	5.8	3.7	5.4	7.9
Joint planning	3.1	4.7	3.3	5.1	7.4
Resource pooling	2.8	5.3	4.6	6.2	6.8
Quality standards	6.4	4.1	5.9	4.3	7.2
M&E coordination	5.1	4.8	3.8	4.6	7.6

Pluralistic coordinated models scored highest on all six coordination mechanisms. Information sharing (7.9) and M&E coordination (7.6) showed the largest gaps between pluralistic and other models. Government-only systems

scored well on policy alignment (7.8) and quality standards (6.4) but poorly on joint planning (3.1) and resource pooling (2.8).

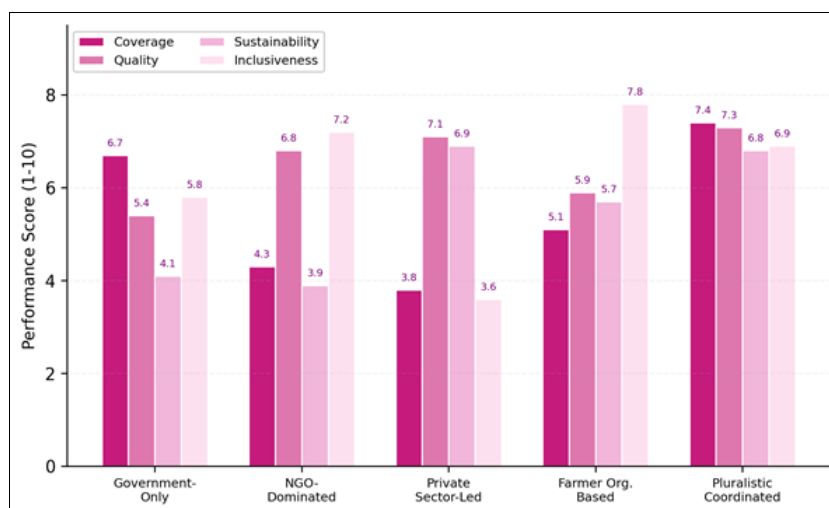


Fig 1: Performance Scores Across Four Dimensions by Extension Delivery Model Type

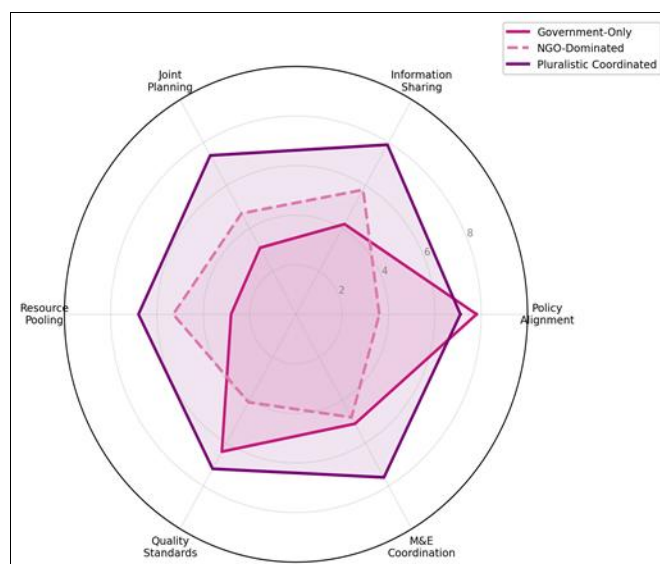


Fig 2: Coordination Mechanism Profiles Comparing Government-Only, NGO-Dominated, and Pluralistic Coordinated Models

The radar chart shows the pluralistic coordinated model achieving consistently high scores across all six coordination dimensions, while single-provider models display uneven profiles with characteristic strengths and weaknesses.

Discussion

The pluralistic model's advantage materializes only when coordination mechanisms are actively maintained. Countries with formal platforms achieved 41.3% higher performance, indicating that structured institutional arrangements matter more than the mere presence of diverse providers^[10].

Each single-provider model excelling in one dimension but underperforming in others aligns with AKIS theory that no single type can efficiently perform all functions^[8]. Government systems deliver coverage but lack flexibility. Private firms offer precision but exclude smallholders. Pluralistic systems, when coordinated, allocate functions to the most capable provider type. Information sharing and joint planning were the coordination mechanisms most strongly associated with performance. Investing in shared information platforms and multi-stakeholder planning generates greater returns than standardizing quality or pooling resources across diverse organizations^[11]. Cyprus's digital coordination platform linking public and private advisors illustrates this approach^[12].

Limitations

The seven-country sample focused on Mediterranean contexts, and pluralistic dynamics in tropical or temperate agricultural systems may differ. Provider self-assessment data carry social desirability bias despite calibration efforts. The cross-sectional design captured performance at a single point rather than tracking trajectories over time. Classification of models into five types necessarily simplified more complex institutional realities.

Conclusion

This research compared five extension delivery models across seven Mediterranean countries and found that pluralistic coordinated systems outperformed single-

provider alternatives on overall performance. The advantage was driven by balanced scores across coverage, quality, sustainability, and inclusiveness dimensions, whereas single-provider models each showed characteristic strengths offset by notable weaknesses.

Coordination quality, rather than provider diversity alone, determined whether pluralistic systems achieved their potential. Countries with formal coordination platforms scored substantially higher than those relying on informal mechanisms. Information sharing and joint planning were the most important coordination dimensions. Extension reformers should focus not only on encouraging provider diversity but on building the institutional infrastructure that enables diverse providers to function as a coordinated system rather than a fragmented collection of parallel services.

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