

# The Principle "Authority over Subjects Is Contingent upon Public Interest" And It's Role in Agricultural Food Security Data Governance: A Jurisprudential-Analytical Engineering Study

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Received: 05<sup>th</sup> March 2025

Revised: 18<sup>th</sup> April 2025

Accepted: 25<sup>th</sup> April 2025

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**Abstract:** *This study offers a foundational and maqasid-based analysis of the Islamic legal maxim "Authority over subjects is contingent upon public interest", examining its alignment with modern data management technologies in the agricultural sector. The research aims to bridge classical Islamic jurisprudence with contemporary data systems such as Geographic Information Systems (GIS), Decision Support Systems (DSS), and Agricultural Database Management Systems (DBMS), with the goal of achieving food security.*

*The study employs classical jurisprudential sources, comparative ethics, and contemporary administrative analysis to develop an integrated theoretical framework guiding national agricultural policy toward justice and efficiency. Findings suggest that when key terms—such as "public harm," "private harm," and "interest"—are clearly defined and operationalized within smart systems, this maxim can improve agricultural resource distribution and support food production, thereby fulfilling the objective of public welfare.*

**Keywords:** *Governance based on interest, public interest, food security, Geographic Information Systems (GIS), Decision Support Systems (DSS), Agricultural Database Management Systems (DBMS), Islamic jurisprudence, Sharia objectives.*

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## INTRODUCTION

Islamic law presents a comprehensive system of rulings and principles that extend to all aspects of life, spiritual and temporal, rooted in the preservation of the five higher objectives: life, religion, lineage, property, and intellect. Among these principles is the maxim "Authority over subjects is contingent upon public interest", a foundational component of Islamic governance that legitimizes state intervention to serve public welfare, while ensuring individual rights are respected.

Given the increasing challenges facing agricultural food security exacerbated by climate change, population growth, and shifting agricultural production patterns it is crucial to revisit this maxim in a contemporary context. Modern agricultural systems increasingly depend on advanced data management tools like GIS, DSS, and DBMS, which allow for precise analysis and interpretation of agricultural data.

This study seeks to explore the relationship between this jurisprudential maxim and modern data management concepts, focusing on its application in enhancing agricultural food security, especially for newborns, who are among the most vulnerable groups affected by resource misallocation and food shortages. This necessitates a balance between individual and collective interests based on precise Islamic legal criteria.

## RESEARCH PROBLEM

Agricultural and food security policies face complex challenges due to the growing use of modern technologies in data analysis and decision-making. This has created a gap between traditional Islamic jurisprudential frameworks and contemporary data systems. The research problem can be summarized in

the following points:

- **Jurisprudential grounding:** How can the maxim “Authority over subjects is contingent upon public interest” be interpreted from traditional Sharia sources and linked to the objectives of Sharia, particularly concerning the preservation of food resources and agricultural security?
- **System integration:** To what extent can this maxim be incorporated into agricultural DSS, GIS, and DBMS frameworks, transforming it into measurable digital criteria?
- **Balancing interest and harm:** How can we methodically and ethically define the boundaries between private and public harm, ensuring fairness for both?
- **Distributive justice:** Can this maxim support equitable distribution of food resources amidst regional and agricultural disparities, without enabling political or economic exploitation?

## RESEARCH OBJECTIVES

- To ground the maxim “Authority over subjects is contingent upon public interest” linguistically and jurisprudentially from classical and maqasid-based perspectives.
- To explore the integration of this maxim with modern data management tools (GIS, DSS, DBMS) for guiding agricultural policy.
- To analyze how to balance public and private harm within Islamic ethics and administrative principles.
- To propose a methodological framework combining Islamic jurisprudence and digital technologies to prioritize agricultural support and resource distribution.
- To offer strategic policy recommendations for applying this maxim within national agricultural systems to promote food security and distributive justice.

## METHODOLOGY

The study employs a combined analytical and foundational methodology, integrating jurisprudential and technical dimensions:

### 1. Jurisprudential Foundational Method:

**Objective:** To examine classical texts supporting the maxim and analyze its terminology and derivation.

**Sources:** Qur'an, Hadith, and works like *Al-Muwafaqat* by Al-Shatibi and *Majmu' al-Fatawa* by Ibn Taymiyyah.

**Expected Outcome:** Establish a Sharia-based framework for the maxim, contextualized within major legal principles such as “Harm must be removed” and “Necessities permit prohibitions.”

### 2. Engineering-Analytical Method:

**Objective:** To assess how data management tools support food security in agriculture.

**Tools:**

- o **GIS:** For mapping agricultural production and identifying priority zones.
- o **DSS:** For algorithmic evaluation of public interest and pricing.
- o **DBMS:** For data collection and analysis on production, distribution, and inventory.

**Expected Outcome:** Propose an integrated technical model that justifies agricultural decisions using accurate Islamic and data-based criteria.

### 3. Comparative Method:

**Objective:** To compare the jurisprudential maxim with modern administrative principles concerning resource allocation and distributive justice.

**Analysis:** Similarities and differences between Sharia's "public interest" and values like equity and transparency.

**Expected Outcome:** Identify convergence points that enable balance between individual and collective agricultural interests.

#### 4. Critical Structural Method:

**Objective:** To assess risks in integrating digital data with Islamic legal frameworks.

**Key Points:**

- o Need to precisely define concepts like "harm" and "interest" in digital terms.
- o Warning against data manipulation for unjust policies.

**Expected Outcome:** Propose legal-tech oversight mechanisms to ensure proper application of the maxim in data management systems.

#### FINDINGS

The study produced several key insights:

- **Jurisprudential authenticity:** The maxim is rooted in classical Islamic jurisprudence, contributing to core objectives like the preservation of life, property, and lineage.
- **Broad conception of interest:** Islamic thought defines interest in multidimensional terms—material, spiritual, and social—making it quantifiable when integrated with decision support systems.
- **Technological compatibility:** The maxim aligns with modern tools: GIS can guide resource prioritization, DBMS can track production/distribution, and DSS can support informed policy decisions.
- **Regulatory criteria:** The maxim requires strict Sharia-based controls: public harm must be real, private harm must be manageable or compensable.
- **Framework potential:** States can develop legislative-technological models combining Sharia principles and data-driven systems to enhance food security with fairness and precision.

#### DISCUSSION

The maxim "Authority over subjects is contingent upon public interest" extends beyond traditional legal theory into the realm of intelligent resource governance. Key aspects include:

- **Integration of jurisprudence and smart governance:**
  - o GIS helps quantify public interest based on productivity, water access, and environmental risk.
  - o DSS evaluates public vs. private benefit using programmable algorithms.
  - o DBMS aggregates and analyzes agricultural data to assess actual outcomes of policy decisions.
- **Sharia-based policy mechanisms:**
  - Classical sources show that authority must prioritize public welfare while observing Sharia limits. Texts and juristic opinions confirm that overriding private rights may be permissible during food market disruptions when public benefit is paramount.
- **Digital application challenges and opportunities:**

Applying the maxim digitally requires objective criteria for "interest," demanding rigorous analytics and digital legal frameworks. However, advanced technologies enable its translation into measurable standards that enhance distributive equity and support smallholder farmers.

- **Administrative and regulatory role:**

The maxim supports proactive, ethically guided policy interventions. Agricultural pricing and subsidy mechanisms can be designed around accurate data analysis, ensuring fair and efficient resource allocation.

## CONCLUSION

This study concludes that the maxim “Authority over subjects is contingent upon public interest” is a powerful analytical tool for governing agricultural data systems in support of food security.

### The research shows that:

- The maxim has a firm Sharia and maqasid-based foundation that qualifies it for use as a decision-making standard in agriculture.
- Integrating Islamic jurisprudence with modern technologies (GIS, DSS, DBMS) offers a promising path for reforming agricultural support and pricing strategies.
- Oversight mechanisms combining Sharia and technical expertise are essential to ensure equitable implementation.
- A joint legal-technological model should be developed to enable informed, faith-aligned national decisions based on reliable data.
- The maxim bridges Islamic legal tradition and contemporary innovation, contributing to sustainable and just food policies.

## ACKNOWLEDGMENT

The authors are thankful to the Deanship of Graduate Studies and Scientific Research at Najran University for funding this work under the Growth Funding Program grant code (NU/GP/SEHRC/13/782-6)

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