



**XXXII CONGRESSO NAZIONALE  
DI SCIENZE MERCEOLOGICHE**  
Resilienza e sostenibilità nel cambiamento globale

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# Conference Proceedings

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## Prefazione

Il XXXII Congresso Nazionale di Scienze Merceologiche, “*Resilienza e sostenibilità nel cambiamento globale*”, si inserisce in un momento storico particolarmente delicato e significativo. Le crisi ambientali, sanitarie, energetiche e geopolitiche degli ultimi anni hanno messo in evidenza in modo inequivocabile le debolezze strutturali dell’attuale scenario economico, sociale e ambientale. Tali fragilità sollecitano una riflessione approfondita e non più rimandabile sui modelli organizzativi e di sviluppo che caratterizzano la società contemporanea.

Questi modelli sono profondamente intrecciati con le scelte dei consumatori, i processi produttivi delle imprese e delle organizzazioni, nonché con il funzionamento dei sistemi socio-politici su scala nazionale e internazionale. Diventa quindi evidente la necessità di un cambiamento paradigmatico: una trasformazione che veda la sostenibilità non come un’opzione, ma come fondamento imprescindibile dello sviluppo economico e sociale.

In questo processo, risulta auspicabile che la crescita futura si fondi sull’integrazione sistematica e consapevole di criteri di sostenibilità, innovazione e qualità. Ciò non deve riguardare esclusivamente la fase produttiva, ma estendersi all’intero ciclo di vita del bene: dalla progettazione all’utilizzo, dalla distribuzione fino alla dismissione e al riutilizzo, secondo i principi dell’economia circolare. In questo senso, è fondamentale valorizzare la diffusione di tecnologie digitali e sostenibili, e stimolare un’innovazione continua di prodotti, servizi e processi.

Uno dei fronti più strategici riguarda il miglioramento degli standard qualitativi dei prodotti, che implica non solo un incremento delle prestazioni funzionali, ma anche una maggiore attenzione agli impatti ambientali e sociali lungo tutto il ciclo di vita. Questo include l’utilizzo di materie prime seconde, la riduzione dei consumi energetici e l’adozione di criteri ecodesign, tutti elementi che incidono direttamente sul valore d’uso e sulla durabilità dei beni.

Con particolare riferimento ai processi trasformativi in atto e al progressivo passaggio da modelli di business tradizionali a modelli di business circolari, assumono un ruolo sempre più strategico anche i servizi business to business e business to consumer. Anche in questo ambito la capacità di avere una visione integrata tra qualità innovazione e sostenibilità dei servizi contribuisce al processo di cambiamento in atto verso il conseguimento degli obiettivi della Agenda 2030.

Parallelamente, l’introduzione di tecnologie sostenibili e digitali – come l’intelligenza artificiale, l’Internet of Things, la blockchain per la tracciabilità e la gestione dei materiali – consente non solo una gestione più efficiente delle risorse, ma anche una maggiore trasparenza, responsabilizzazione e partecipazione lungo le filiere produttive. La digitalizzazione può facilitare la misurazione degli impatti, la certificazione ambientale, la progettazione modulare e riparabile, e aprire la strada a modelli di consumo più consapevoli, condivisi e orientati al valore d’uso piuttosto che al possesso.

Tutto ciò rappresenta una sfida complessa, che richiede un approccio integrato e collaborativo, basato su scambi costanti di conoscenze e pratiche interdisciplinari.

In questo contesto, le scienze merceologiche assumono un ruolo cruciale, superando il classico approccio multidisciplinare per abbracciare una prospettiva realmente transdisciplinare e sistemica. La merceologia, infatti, si propone da sempre come un campo di sintesi che integra conoscenze tecnico-scientifiche, economiche e ambientali con l’obiettivo di comprendere, valutare e migliorare i beni materiali, energetici e alimentari.

Le sue attività comprendono lo studio delle risorse naturali e dei processi di trasformazione, la valutazione della qualità totale e del valore d’uso dei beni, la gestione degli impatti sull’ambiente e l’analisi critica dei sistemi di certificazione e gestione ambientale. Oggi più che mai, la merceologia si connette ai grandi temi dell’innovazione sostenibile, dell’economia circolare, della transizione ecologica, della simbiosi industriale e dell’efficienza energetica, contribuendo in modo rilevante allo sviluppo di modelli economici più resilienti e responsabili.

Tali obiettivi, però, non possono essere raggiunti senza un approccio olistico e sistemico, in grado di integrare aspetti normativi, metriche scientifiche rigorose, modelli empirici, e visioni strategiche di lungo periodo. È essenziale il coinvolgimento attivo e consapevole di tutti gli attori lungo la catena del valore: dai progettisti ai tecnologi, dai produttori ai rivenditori, dai decisori politici ai cittadini. Solo attraverso una partecipazione diffusa e informata sarà possibile promuovere una cultura della sostenibilità basata su dati scientificamente fondati, in grado di distinguere chiaramente tra opinioni e fatti, e di supportare decisioni pubbliche e private realmente efficaci.

In questo scenario complesso ma ricco di opportunità, il XXXII Congresso Nazionale di Scienze Merceologiche si propone come un'importante occasione di confronto e aggiornamento, un luogo di dialogo aperto e costruttivo tra il mondo della ricerca accademica, il sistema produttivo, le istituzioni e la società civile. Il Congresso rappresenta non solo una vetrina delle più recenti ricerche nel campo merceologico, ma anche una piattaforma fondamentale per rafforzare reti di collaborazione e stimolare nuove progettualità in grado di rispondere in modo proattivo alle sfide del cambiamento globale.

Prof.ssa Maria Francesca Renzi  
Prof. Alessandro Ruggieri

## Preface

The 32nd National Congress of Commodity Sciences, titled *"Resilience and Sustainability in Global Change"*, takes place at a particularly delicate and significant historical moment. The environmental, health, energy and geopolitical crises of recent years have unequivocally exposed the structural weaknesses of the current economic, social and environmental landscape. These vulnerabilities demand a profound and urgent reflection on the organizational and developmental models that characterize contemporary society.

These models are deeply intertwined with consumer choices, the production processes of businesses and organizations, and the functioning of socio-political systems at both national and international levels. It is thus evident that a paradigmatic shift is necessary—a transformation in which sustainability is not seen as an option, but as an essential foundation of economic and social development.

Looking forward, it is desirable that future growth be based on the systematic and conscious integration of sustainability, innovation and quality criteria. This integration must not be limited to the production phase but should encompass the entire life cycle of a product—from design to use, distribution to disposal and reuse—following the principles of the circular economy. In this regard, the promotion of sustainable and digital technologies, as well as the stimulation of the continuous innovation in products, services and processes, is of fundamental importance.

One of the most strategic areas of focus is the enhancement of product quality standards, which involves not only improved functional performance but also greater attention to environmental and social impacts throughout the entire product life cycle. This includes the use of secondary raw materials, the reduction of energy consumption and the adoption of eco-design criteria—all elements that directly influence a product's value in use and its durability.

With particular reference to the ongoing transformative processes and the gradual shift from traditional business models to circular business models, business-to-business (B2B) and business-to-consumer (B2C) services are also assuming an increasingly strategic role. In this context as well, the ability to adopt an integrated vision encompassing service quality, innovation, and sustainability contributes to the ongoing transition toward the achievement of the objectives set out in the 2030 Agenda.

Simultaneously, the introduction of sustainable and digital technologies—such as artificial intelligence, the Internet of Things and blockchain for material traceability and management—enables not only more efficient resource management, but also greater transparency, accountability and stakeholder engagement along production chains. Digitalization can facilitate the measurement of impacts, environmental certification and modular and repairable design, and pave the way for more conscious, shared, and value in use-oriented consumption models, as opposed to ownership-based ones.

This constitutes a complex challenge that requires an integrated and collaborative approach, grounded in constant exchanges of interdisciplinary knowledge and practices. Within this context, commodity sciences play a crucial role—transcending the traditional multidisciplinary approach—to embrace a truly transdisciplinary and systemic perspective. Commodity science has long served as a field of synthesis, integrating technical-scientific, economic and environmental knowledge to understand, evaluate and improve material, energy and food goods.

Its activities include the study of natural resources and transformation processes, the assessment of total quality and value in use of goods, the management of environmental impacts and the critical analysis of environmental certification and management systems. Today more than ever, commodity sciences intersect with key themes such as sustainable innovation, circular economy, ecological transition, industrial symbiosis and energy efficiency—making a significant contribution to the development of more resilient and responsible economic models.

These objectives, however, cannot be achieved without a holistic and systemic approach—one capable of integrating regulatory aspects, rigorous scientific metrics, empirical models and long-term strategic visions.

The active and informed involvement of all actors along the value chain is essential: from designers to technologists, from producers to retailers, from policymakers to citizens. Only through widespread and informed participation will it be possible to foster a culture of sustainability grounded in scientifically validated data, capable of clearly distinguishing between opinions and facts, and of supporting truly effective public and private decision-making.

In this complex yet opportunity-rich scenario, the 32nd National Congress of Commodity Sciences aims to serve as a valuable occasion for dialogue and professional development, a forum for open and constructive exchange among academic researchers, the production system, institutions and civil society. The Congress represents not only a showcase for the latest research in the field of commodity sciences but also a vital platform for strengthening collaborative networks and fostering new projects capable of proactively addressing the challenges of global change.

Prof. Maria Francesca Renzi  
Prof. Alessandro Ruggieri

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## Sustainable circularity: tracing Taurasi's historical small town resilience

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**Abstract:** Historical Small Towns, often overlooked in discussions of sustainability and resilience, serve as reservoirs of historical knowledge and repositories of cultural practices. This paper delves into the case study of Taurasi, a small town nestled in the hills of southern Italy, to unravel the intricate relationship between historical narratives, resilience, and circularity. By employing a circularity framework, this study aims to explore how historical practices in Taurasi can inform present-day efforts towards sustainable development. Furthermore, resilience emerges as a central theme in understanding Taurasi's historical trajectory.

**Keywords:** Historical Small Towns; Resilience; Circularity; Sustainability; Urban Metabolism; Taurasi.

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