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TWIN TRANSFORMATION PROJECT

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INCREASING THE GREEN AND DIGITAL COMPETENCIES OF SME OWNERS AND EMPLOYEES IN THE SHOE MANUFACTURING AND LEATHER SECTOR

TWIN TRANSFORMATION CURRENT SITUATION NATIONAL REPORT OF ITALY

OCTOBER, 2025

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PREFACE

This report was prepared to assess the impact of green and digital transformation on SMEs and tradespeople. These national reports will serve as the cornerstone of the joint report. Initially, a desk study was conducted during the preparation of the report. Following this, interviews were conducted with relevant public and private institutions and organizations. The information gathered was presented in a specific format in the report.

1. NATIONAL LEGISLATION REGARDING GREEN AND DIGITAL TRANSFORMATION

1.1. Signed International Agreements/Protocols and Their Implementation

Italy is emerging as a key player in Europe's push for industrial revival, combining advanced technology, sustainable practices, and targeted investment. The country is not only transforming its current industrial base through green initiatives, innovation, and digital upgrades, but also actively working to draw foreign investment into critical sectors of its economy. This dual focus is laying the foundation for a modern, robust industrial ecosystem that serves as a blueprint for the rest of Europe.

Italy has actively engaged in several international agreements and protocols that promote green and digital transformation, aligning with its national strategies and contributing to global sustainability and technological advancement.

1. **The Paris Agreement - December 12, 2015**

Italy is a signatory to the Paris Agreement, adopted during the 21st Conference of the Parties (COP21) under the United Nations Framework Convention on Climate Change (UNFCCC). This agreement aims to limit global warming to below 2°C, with efforts to limit it to 1.5°C. Italy has committed to reducing greenhouse gas emissions, transitioning to renewable energy, and integrating green technologies.

2. **The European Green Deal - December 11, 2019**

Italy, as a member of the European Union, signed the European Green Deal, a comprehensive framework aimed at making Europe the first climate-neutral continent by 2050. The plan focuses on decarbonizing the economy, promoting green technologies, enhancing energy efficiency, and addressing environmental challenges. It integrates the green and digital transitions through investments in clean energy, digital infrastructure, and green technologies.

3. **United Nations 2030 Agenda for Sustainable Development - September 25, 2015**

Italy is committed to the *2030 Agenda for Sustainable Development* through the United Nations, which includes 17 Sustainable Development Goals (SDGs). These SDGs address both the green and digital transitions, with goals focused on affordable clean energy (SDG 7), industry and innovation (SDG 9), and climate action (SDG 13). Italy is integrating these SDGs into national policies and collaborations with other nations

4. **EU Declaration on Green and Digital Transformation (March 2021)**

Italy, alongside 25 other EU member states, signed the Declaration on A Green and Digital Transformation of the EU. This commitment aims to leverage green digital technologies to achieve climate neutrality and accelerate transitions in sectors such as energy, agriculture, and urban development. The signatories pledged to deploy technologies like digital twins for

climate monitoring, energy-efficient AI solutions, and digital product passports to enhance circularity and sustainability.

5. **G7 Ministerial Declaration on AI for Sustainable Development (March 2024) & G7 Industry and Technology Ministers Declaration (October 2024)**

Under Italy's G7 presidency, ministers from the Group of Seven nations committed to advancing artificial intelligence for sustainable development. The declaration focused on democratizing computing power, developing open and secure data models, and enhancing capacities to utilize AI in addressing global challenges. This initiative aims to boost local AI ecosystems, particularly in developing countries, through multistakeholder partnerships. The Italian G7 Presidency, in partnership with the UN Development Programme (UNDP), will work on co designing an AI Hub for Sustainable Development, including stakeholders from the technology industry and startups. During Italy's G7 Presidency, ministers discussed the transformative impact of digital innovation on economic growth and industrial competitiveness. They announced the co-design of this "AI Hub for Sustainable Development," focusing on sectors like agriculture, health, infrastructure, education, water, and energy, in alignment with the Italian Mattei Plan.

6. **Four-Party Agreement for Digital Infrastructure Development (September 2024)**

In September 2024, Italy signed a collaborative agreement involving the Ministry of Foreign Affairs and International Cooperation, the Department for Digital Transformation (DTD), the Agency for Digital Italy (AGID), and the Italian Agency for Development Cooperation (AICS). This agreement focuses on enhancing public digital infrastructures, promoting digital identity systems, and providing technical training in countries where Italian cooperation operates, particularly in Africa. The initiative aligns with Italy's commitment to integrating digital solutions into development policies, aiming to reduce inequalities and improve access to essential services.

7. The Leather-Footwear Protocol (Protocollo Pelletteria-Calzature), a sectoral agreement in Italy, was signed by Assocalzaturifici, Assopellettieri, and trade unions with the aim of promoting environmental, social, and digital sustainability within fashion supply chains. The protocol outlines a series of voluntary commitments related to traceability, environmental certifications, technological innovation, and respect for workers' rights. It references key standards such as ISO 14001, EMAS, ICEC, GRS, LWG, and CSR Guidelines. Operational requirements include supplier audits, process digitalization, supply chain mapping, and emission reduction. While the protocol is not legally binding, it serves as a best practice for the practical implementation of international sustainability principles, fostering alignment between industrial governance and ESG objectives.

These agreements reflect Italy's commitment to integrating green and digital transformation into its international cooperation efforts, aligning with global sustainability objectives and enhancing technological innovation.

1.2. National Legal Regulations (Laws, Regulations, and Guidelines)

The Italian government has recently outlined a renewed industrial strategy that reflects this forward-looking vision. Designed to reshape the national economy and elevate Italy's role in Europe's broader reindustrialisation movement, the strategy aligns with the anticipated priorities of the upcoming European Commission and reinforces the country's commitment to EU-aligned development.

Italy is committed to revitalizing its cornerstone industries—such as fashion and automotive—while simultaneously advancing innovation and environmental sustainability in critical areas like renewable energy, microelectronics, aerospace, chemicals, and pharmaceuticals. To maintain a competitive edge in an evolving global market, the government has introduced an extensive range of fiscal incentives and tax relief programs. These measures are specifically designed to promote research and development, encourage digital transformation, support green energy initiatives, and drive innovation across the industrial spectrum.

EU Regulations Transposed into Italian Law

Regulation	Focus	Applicability
Directive (EU) 2022/2464 (CSRD)	Mandatory sustainability reporting using ESRS standards	Companies above specific size thresholds
Ecodesign for Sustainable Products Regulation (ESPR)	Environmental criteria for product design	Fashion products, accessories, leather goods
Digital Product Passport	Digital traceability and product sustainability	Mandatory implementation by 2026
CBAM – Regulation (EU) 2023/956	Carbon Border Adjustment Mechanism	Imported raw materials and components
Green Deal – Sectoral Strategy for Textiles/Fashion	Environmental and circular transition of supply chains	Priority sectors: textiles, leather, fashion

Italian Legislation and Implementation Tools

Law / Provision	Key Content	Relevance to the Sector
Environmental Code (Legislative Decree 152/2006)	Framework legislation on waste, integrated permits (AUA/AIA), discharges, and emissions	Environmental obligations for production sites
Legislative Decree 116/2020 (Circular Economy Package)	Waste traceability, Extended Producer Responsibility (EPR), by-products	Waste management and EPR compliance
Minimum Environmental Criteria for Textiles (DM 30/06/2021)	Environmental standards for public procurement of textiles	Also applies to leather goods and footwear tenders
Minimum Environmental Criteria for Footwear (in progress)	Environmental criteria for production and procurement of footwear	Expected to be adopted by 2025
Law 208/2015, Art. 1, Paragraphs 376–384	Introduction of the “Benefit Corporation” legal status	Encourages sustainable governance models in fashion businesses

1. **Sustainable Growth Fund - the decree of June 11, 2020**

The intervention of the Sustainable Growth Fund for circular economy R&D projects, launched by the decree of June 11, 2020, supports the development and testing of innovative solutions for efficient and sustainable resource use. Its goal is to promote the transformation of production activities toward a circular economy model, where the value of products, materials, and resources is preserved as long as possible and waste generation is minimized.

Additional €220 million from the Sustainable Growth Fund has been allocated to support companies in embracing circular economy practices. These resources aim to foster innovative approaches to improving resource efficiency, while encouraging production methods that reduce waste and boost the recovery and recycling of materials.

2. **IPCEI (Important Projects of Common European Interest) Fund – Decree July 2021 – Minister of Economic Development in consultation with the Minister of Economy and Finance**

Italy is actively working to attract strategic investments in sectors essential for economic stability and growth. The country has established a €3.2 billion IPCEI (Important Projects of Common European Interest) Fund, designed to foster groundbreaking innovations in key areas such as batteries, microelectronics, hydrogen, cloud computing, and healthcare. More than 30 companies have already benefited from government support to drive advancements in these critical sectors. As new IPCEI initiatives emerge at the EU level in fields like digital technology, energy, biotechnology, and advanced materials, Italy remains committed to strengthening its position as a leader in these industries.

In addition to the IPCEI Fund, Italy's strategic 'Development Contracts' program, managed by Invitalia, aims to support large-scale, innovative industrial investment projects with a combination of subsidized loans, interest contributions, and grants. While the program is open to a variety of sectors, special funding has been allocated for priority areas, including batteries, automotive, semiconductors, and clean technologies. A recent funding round has allocated €350 million for large investments (above €20 million) focused on energy efficiency and sustainable production. To date, over €6 billion has been invested in 434 major projects across the country.

3. **Industrial Transition Support Fund – 2022**

The Industrial Transition Support Fund Provides incentives covering up to 45% of investments aimed at self-production of energy from renewable sources, with additional bonuses of 20% for small enterprises and 10% for medium-sized enterprises.

4. **Legislative Decree No. 19/2024 – "Transizione 5.0"**

Approved on March 2, 2024, this decree introduces the **"Transizione 5.0" plan**, allocating €6.3 billion to support businesses in their **green and digital transition**. As a continuation of the successful "Transizione 4.0" framework, this new program aims to strengthen industrial competitiveness by encouraging the **adoption of technologies such as artificial intelligence, digital platforms, and specialized software**, alongside the **use of renewable energy for internal operations.** To ensure lasting transformation, the plan also supports upskilling, providing businesses with the qualified workforce necessary for sustainable growth in a tech-centric landscape. The **"Transizione 5.0" plan** allocates €6.3 billion to accelerate Italy's green and digital transformation. It introduces **tax credits of up to 45% for investments** that lower energy consumption and integrate renewable energy sources, excluding biomass. Covered expenses include advanced **digital and sustainable technologies**, along with employee training programs. The incentive applies automatically to all Italian businesses, regardless of size, sector, or location, eliminating the need for prior approval.

5. **2024 "New Skills Fund 2024: Support for the Ecological Transition”**

The 2024 New Skills Fund is a government initiative that provides funding to help companies train their employees in key areas such as environmental sustainability and resource management. This support allows businesses to enhance eco-friendly skills without straining their budgets and effectively address environmental challenges through training on regulations, sustainable management techniques, and green innovations.

6. **Law No. 115/2024 – Transposition of the Critical Raw Materials Act**

Entered into force on April 11, 2024, this legislation incorporates EU Regulation 2024/1252 into Italy’s national legal framework. Its primary objective is to safeguard a stable and sustainable supply of critical raw materials that are vital for advancing green and digital technologies. The law introduces mechanisms for tracking availability, diversifying sourcing strategies, and encouraging both the recycling and substitution of critical materials.

7. **Interministerial Decree of August 8, 2024 – Green and Digital Transition in Fashion**

This decree, issued under Article 11 of Law No. 206/2023 (the "Made in Italy" Law), provides €15 million to support small and medium-sized enterprises (SMEs) in the textile, fashion, and accessories sectors. The funding covers up to 50% of eligible expenses, with a maximum grant of €60,000 per enterprise. Eligible activities include employee training, implementation of enabling technologies (e.g., AI, blockchain, IoT), obtaining environmental sustainability certifications, and conducting Life Cycle Assessment (LCA) analyses. This initiative is designed to promote investments that drive the green and digital transformation of businesses operating across Italy in the textile, fashion, and accessories industries.

Managed by Invitalia and promoted by the Ministry of Enterprises and Made in Italy, the measure is part of the implementation of Article 11 of the "Made in Italy" Law (Law No. 206/2023). The program has a total budget of €15 million. The incentive targets small and medium-sized enterprises (SMEs) that, at the time of application, are duly established, registered, and active in the Business Register of the relevant Chamber of Commerce.

8. **Five new public notices – April 2025** (DL June 2025) in the Implementation of **the decree of the Ministry of Environment and Energy Security -MASE (DM no. 386 of November 17, 2023)**

The Ministry of Environment and Energy Security (MASE) has announced **five new calls/** for projects that integrate digital transformation and green transition. The funds will be used to finance research, development, and technological innovation projects within the "Green Powered Future" and "Clean Hydrogen" Missions.

With a total allocation of €200 million, these calls provide a unique opportunity for businesses interested in innovating and growing through digital and green transition initiatives. The five calls issued by MASE are part of the Mission Innovation 2.0 international cooperation initiative, which aims to speed up the decarbonization of industrial and economic sectors through projects focused on research, development, and technological innovation. The following are the 5 possible areas:

- Electrolyzers and Networks
- Biohydrogen and Biofuels
- Non-schedulable Renewable Sources
- Flexibility and Energy Storage

- Data and Network Digitalization

9. **The 2025 Budget Law**

The 2025 Budget Law further strengthens incentives by increasing the rate for the installation of high-efficiency photovoltaic panels from 45.5% to 67.5%, depending on the energy performance achieved.

Regional level – Marche

10. **PR FESR 2021/2027 – CALL "SUSTAINABLE AND DIGITAL PRODUCT INNOVATION"**

The call supports innovation and product or service diversification projects within the priority areas of the Regional Smart Specialisation Strategy 2021–2027.

It aims to promote the implementation of projects that introduce innovative product or service solutions based on the twin transition (digital and sustainable), encouraging both digital transformation and the shift of production activities toward circular economy models and sustainable development.

2. NATIONAL LEVEL APPLICATIONS/RESPONSIBLE INSTITUTIONS AND ORGANIZATIONS/ROLES REGARDING GREEN AND DIGITAL TRANSFORMATION

2.1. Public Authorities Responsible for Green and Digital Transformation/Their Duties and Responsibilities

A. **Ministry of the Environment and Energy Security (Ministero dell'Ambiente e della Sicurezza Energetica - MASE)**

- **Website**: www.mase.gov.it
- **Primary Role**: Central authority for environmental protection, energy policy, and climate change.
- **Key Responsibilities**:
    - Implementing Italy's climate and energy strategies.
    - Managing decarbonization, emissions reduction, and renewable energy programs.
    - Overseeing environmental impact assessments (EIAs).
    - Coordinating with the EU on shared objectives in the sectors.
    - Promoting the circular economy and sustainable resource use.

Within the MASE there is the ***Department for Ecological Transition and Green Investments (DiTEI).***

The Department for Ecological Transition and Green Investments (DiTEI) is responsible for key environmental and sustainability policies, including circular economy, climate change, energy efficiency, air quality, and international environmental cooperation. It also oversees environmental assessments, authorizations, and remediation projects.

DiTEI is organized into four main directorates:

- Directorate-General for the Circular Economy (ECi)
- Directorate-General for Climate, Energy, and Air (CLEA)
- Directorate-General for Sustainable Growth (CreSS)
- Directorate-General for Environmental Remediation (RiA)

B. Interministerial Committee for Ecological Transition (CITE):

Key Responsibilities:

- Coordinating body for the implementation of the European Green Deal at the national level.
- Defines strategic goals and guidelines for decarbonization and the circular economy.

C. Ministry of Enterprises and Made in Italy (MIMIT – formerly Ministry of Economic Development

- Website: https://www.mimit.gov.it
- **Primary Role:** Central authority for industrial policy, enterprise support, and promotion of the Made in Italy brand.
- **Key Responsibilities:**
    - Promoting industrial innovation and the digital transformation of SMEs.
    - Supporting the adoption of Industry 4.0 technologies and processes.
    - Managing policies related to intellectual property and technical standards.
    - Coordinating national strategies for the fashion, footwear, and leather goods sectors.
    - Enhancing the global competitiveness of Italian manufacturing and creative industries.
    - Promoting industrial innovation, SME digitalization, Industry 4.0, intellectual property, and technical standards. It also coordinates policies for the fashion, footwear, and leather goods sectors.

D. **Ministry of Agriculture, Food Sovereignty and Forests (MASAF)**

- **Website**: www.politicheagricole.it
- **Primary Role**: Promotes sustainable agriculture, rural development, and forest management.
- **Key Responsibilities**:
    - Supporting sustainable agricultural practices.
    - Implementing climate resilience in rural areas.
    - Managing agro ecological transition and soil protection programs.

E. **Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA)**

- **Website**: www.enea.it
- **Primary Role**: Technical-scientific body supporting innovation and sustainable development.

- **Key Responsibilities**:
    - Conducting research on renewable energy, energy efficiency, and environmental technologies.
    - Supporting public administration and companies in implementing green solutions.
    - Providing technical support for national and EU-funded projects.

F. **National Institute for Environmental Protection and Research (ISPRA)**

- **Website**: www.isprambiente.gov.it
- **Primary Role**: Monitors and researches environmental conditions in Italy.
- **Key Responsibilities**:
    - Collecting environmental data and producing annual environmental reports.
    - Supporting environmental policy decisions through scientific research.
    - Assessing environmental risks and sustainability indicators.

G. Unioncamere / Chamber of Commerce

- Through local Chambers of Commerce, it promotes digital tools, sustainability diagnostics, registers for benefit corporations, and information desks on CSR and innovation.

H. **Invitalia / SIMEST / SACE**

- Provide financial support tools, industrial transition services, sustainable internationalization, and production digitalization (PNRR, Transition 4.0, Green New Deal).

Public Authorities Responsible for Digital Transformation and Their Duties and Responsibilities

A. **Department for Digital Transformation (Dipartimento per la Trasformazione Digitale - DTD, under the Presidency of the Council of Ministers)**

- **Website**: www.innovazione.gov.it
- **Primary Role**: Central coordinating body for Italy's digital innovation strategy.
- **Key Responsibilities**:
    - Leading the implementation of the National Digital Strategy.
    - Overseeing projects under the National Recovery and Resilience Plan (NRRP) – Digital Mission.
    - Promoting public sector digitalization, cloud infrastructure, digital identity (SPID), and open data.
    - Coordinating with EU on Digital Europe Programme.

B. **Agency for Digital Italy (Agenzia per l'Italia Digitale - AgID)**

- **Website**: www.agid.gov.it
- **Primary Role**: Implements technical guidelines and standards for public sector digital services.
- **Key Responsibilities**:

- Standardizing and monitoring ICT systems in the public administration.
- Promoting digital skills and cybersecurity policies.
- Coordinating interoperability and accessibility of digital services.

C. **Italian Data Protection Authority (Garante per la Protezione dei Dati Personali)**

- **Website**: www.garanteprivacy.it
- **Primary Role**: Independent authority regulating data privacy and digital rights.
- **Key Responsibilities**:
  - Ensuring compliance with GDPR and national privacy laws.
  - Protecting citizens' digital identity and data in smart services.
  - Supervising the ethical use of AI and digital tools.

D. **National Cybersecurity Agency (ACN - Agenzia per la Cybersicurezza Nazionale)**

- **Website**: www.acn.gov.it
- **Primary Role**: Coordinates and strengthens Italy's cybersecurity across digital infrastructure.
- **Key Responsibilities**:
  - Implementing the National Cybersecurity Strategy.
  - Protecting critical infrastructure from cyber threats.
  - Promoting cybersecurity culture in public and private sectors.

2.2. Professional Organizations and NGOs Representing Craftsmen and SMEs, Their Duties and Responsibilities Regarding Green and Digital Transformation

1. **Confartigianato Imprese/CNA Moda/CNA Federmoda**

- **Who they represent**: Micro, small enterprises, and artisans across Italy.
- **Role in green & digital transformation**:
  - Promotes adoption of sustainable practices and digital technologies through its regional branches.
  - Offers **training, consulting, and financial support** for green investments and digitalization.
  - Partners with banks (e.g., Intesa Sanpaolo) to provide SMEs access to **green transition financing**.
- **Website**: www.confartigianato.it

2. **Confindustria**

- **Who they represent**: Industrial companies, including SMEs, across various sectors.
- **Role in green & digital transformation**:
  - Advocates policies to support industrial decarbonization and innovation.
  - Organizes national events (e.g., SME Roadshow) to raise awareness on digital tools and sustainability.

- Collaborates with public/private stakeholders to align education and innovation strategies.

- **Website**: www.confindustria.it

3. **CNA – Confederazione Nazionale dell'Artigianato e della Piccola e Media Impresa (Both National and regional)**

- **Who they represent**: Artisans and SMEs in various sectors including manufacturing, services, and trades.
- **Role in green & digital transformation**:
  - Runs **Digital Innovation Hubs (DIH)** and environmental advisory services.
  - Supports SMEs in energy efficiency, circular economy, digital upskilling, and certification.
  - Participates in EU projects promoting the twin transition.
- **Website**: www.cna.it

4. **Casartigiani - Confederazione Autonoma Sindacati Artigiani**

- Who they represent**: Craft businesses and small enterprises at national and local levels.**
- Role in green & digital transformation**:**
  - **Promotes sustainable craftsmanship and adoption of digital practices.**
  - **Engages with institutions to simplify access to funding and innovation programs.**
  - **Supports vocational training programs aligned with the green and digital economy.**
- Website**: www.casartigiani.org**

5. Symbola – Fondazione per le qualità italiane

- **Who they represent**: A network of businesses, institutions, and civil society promoting sustainability, culture, and innovation.
- **Role in green & digital transformation**:
  - Develops **research and reports** on the green economy, circular economy, and digital innovation (e.g., "GreenItaly" report).
  - Promotes the Italian model of sustainability, quality, and territorial development.
  - Encourages dialogue between traditional sectors and emerging technologies.
- **Website**: www.symbola.net

6. **Camera di Commercio delle Marche**

- **Who they represent**: Enterprises of all sizes in the Marche region.
- **Role in green & digital transformation**:
  - Provides **grants and vouchers** for digital innovation (e.g., Industry 4.0) and environmental investments.

- Offers training, mentoring, and partnerships with **Digital Innovation Hubs and research centers**.
- Publishes guides and updates on national and EU funding opportunities.

- **Website**: www.marche.camcom.it

E. Sistema Moda Italia (SMI)

A national reference point for sustainability and competitiveness in the textile and fashion supply chain. It promotes European projects on circular economy, digital product passports, and industrial symbiosis.

7. **DIGITAL SME Italy**

- **Who they represent**: National and regional associations of ICT SMEs across Italy.
- **Role in the green and digital transformation**:
  - Organizes workshops and initiatives such as **"Get Digital: Go Green & Be Resilient"** to promote the adoption of sustainable digital solutions in key sectors such as construction, transport, energy, and agriculture. *(European DIGITAL SME Alliance)*
  - Coordinates projects like **Digital4Sustainability**, co-funded by the EU, to train over 1,000 professionals in ICT and sustainability fields, addressing the needs of European SMEs. *(European DIGITAL SME Alliance)*
  - Supports the adoption of green and digital technologies through participation in the **European Green Digital Coalition (EGDC)**. *(European DIGITAL SME Alliance)*
- **Website**: https://www.digitalsme.eu/digital-sme-italy-membership/

8. **CONFAPI ANCONA – Confederation of Small and medium-sized enterprises**

- **Who they represent**: Small and medium-sized industrial enterprises in the province of Ancona.
- **Role in the green and digital transformation**:
  - Promotes technological innovation and sustainability among local SMEs.
  - Provides support in accessing calls for proposals and incentives related to the digital and green transition.
  - Organizes events and seminars to raise awareness among businesses about sustainability and technological innovation.
- **Website**: https://www.confapiancona.org/

9. **GIOMARCHE – Association of Entrepreneurs and Professionals**

- **Who they represent**: Entrepreneurs and professionals in the province of Ancona, with a particular focus on young entrepreneurs.
- **Role in the green and digital transformation**:
  - Provides training and consultancy on circular economy, new technologies, and tax incentives.
  - Facilitates networking between businesses to promote the adoption of sustainable and digital practices.

- Organizes awards and recognition for local excellence in sustainability and innovation.

2. **Website**: https://www.giomarche.it/

10. **CONFIMI Industria – Italian Confederation of Manufacturing Industry and Private Enterprises**

- **Who they represent**: Small and medium-sized industrial and manufacturing enterprises across Italy, with a strong focus on privately owned businesses in sectors such as mechanics, electronics, ICT, construction, and services.
- **Role in the green and digital transformation**:
  - Provides support to member companies in adopting sustainable production processes and reducing CO_2 emissions, helping them comply with national and EU environmental regulations.
  - Promotes the integration of Industry 4.0 technologies—such as automation, cloud computing, IoT, and AI—through training, consultancy, and collaboration with Digital Innovation Hubs and research centers.
  - Advocates for access to green and digital transformation funding, including national incentives and EU recovery plans like Italy's PNRR.
  - Encourages workforce development by supporting training programs, vocational education, and partnerships with universities to build green and digital skills.
- **Website**: www.confimi.it

Certification Bodies and Consortia

A. ICEC – Institute for Leather Certification

Environmental and quality certifications for tanneries, leather goods manufacturers, and footwear companies.

B. **Consortium for Yarn Promotion / Sustainable Fashion Consortium**

Implement blockchain traceability and transparency standards throughout the value chain.

Training and Transition Support Organizations

A) Fondimpresa / Fondartigianato / Fonarcom

Fund corporate training for ecological transition, digital models, and sustainable resource management.

B) ITS Moda / ITS Digital Factory / ITS Green

Higher Technical Institutes that train specialized profiles in process digitalization, eco-design, and traceability.

C) **Ecosystem and European Innovation Hubs (EEN, EDIH)**

Support SMEs in adopting advanced digital technologies, artificial intelligence, and green technologies.

3. ECONOMIC AND SOCIAL IMPACTS OF GREEN AND DIGITAL TRANSFORMATION ON CRAFTSMEN AND SMES—CHALLENGES ENCOUNTERED AND WORKS TO BE DONE FOR SOLUTIONS

3.1. Economic and Social Impacts of Twin Transformation

- Financial Challenges and Investment Requirement

Managing the twin transition — particularly addressing the challenges inherent in digital transformation — is recognized as a core objective of the initiatives funded by Italy's National Recovery and Resilience Plan (PNRR). Out of the €191 billion allocated to Italy by the European Union, a significant portion has been earmarked for this dual transformation: 25% of the total funding is directed toward digital advancement, while 37.5% is committed to projects aimed at combating climate change and promoting environmental sustainability across the country. The PNRR is structured around six key missions. Notably, the first three directly support the goals of the twin transition:

- Digitalization, innovation, competitiveness, and culture, with funding of €40.32 billion
- Green revolution and ecological transition, backed by €59.47 billion
- Infrastructure for sustainable mobility, which receives €25.40 billion

Together, these missions lay the groundwork for a systemic transformation of Italy's economic and social framework in line with digital and environmental priorities.

Italian SMEs are uniquely positioned to benefit from the twin transition—combining digital innovation and green transformation—thanks to a broad range of national and European incentives. These opportunities not only support business modernization but also offer tangible economic benefits such as tax reliefs, grants, and access to favorable financing.

One of the most significant tools is the Transition 5.0 program, funded through Italy's National Recovery and Resilience Plan (PNRR), which allocates over €6 billion to support digital and sustainable investments. SMEs can benefit from tax credits of up to 45% for energy-efficient and digital technologies, alongside training incentives of up to €300,000 for reskilling workers in green and digital fields. To qualify, businesses must demonstrate a measurable reduction in energy consumption, starting from a 3% threshold.

Access to finance is also expanding. The European Investment Bank (EIB), in partnership with MCC, has committed in 2023, €200 million to support green investments by SMEs, particularly in Central and Southern Italy. These funds are aimed at projects in renewable energy, sustainable mobility, and energy efficiency, with flexible loans of up to €12.5 million per business. At least 30% of the financing should help combat climate change via investment in renewable energy, energy efficiency, sustainable mobility and improving the management of natural resources and the waste cycle. The agreement main goal is to stimulate the investments of local authorities and public sector entities across Italy, aiming to accelerate the green transition with projects promoting sustainable mobility, improving energy efficiency in buildings and protecting the environment from future climate shocks.

Additionally, Italy's public financial institution Simest offers blended financing options for ecological and digital upgrades. SMEs can apply for loans of up to €1 million, with a significant portion—up to 40% for businesses in the South—provided as non-repayable grants. This initiative supports both technological innovation and sustainable business practices, such as reducing environmental impact or digitizing export processes.

Finally, the Green Transition Fund—a joint effort between the European Investment Fund and private financial institutions. The Fund is part of Mission 2, "Green Revolution and Ecological

Transition," Component 2, "Renewable Energy, Hydrogen, Grid and Sustainable Mobility," within Italy's National Recovery and Resilience Plan (NRRP). With a total budget of €250 million, the Ministry of Economic Development established the Fund, which is managed by CDP Venture Capital SGR. Its objective is to support the ecological transition of Italian industrial supply chains by promoting investments in strategic areas such as renewable energy, the circular economy, sustainable mobility, energy efficiency, waste management, energy storage, and other key sectors essential to driving the country's sustainable economic transformation.

Artisan businesses and SMEs, particularly in traditional sectors like footwear and leather goods, often face limited financial resources, making structural investments challenging.

Adopting digital tools (ERP, CRM, IoT, blockchain, environmental monitoring) and complying with voluntary (ISO 14001, EMAS, GRS) or mandatory (CSRD, ESRS) standards involves high initial costs, often unsustainable without incentives or subsidized credit. These investments also require:

• technical consultancy,

• staff training,

• infrastructure upgrades,

• and new control procedures.

Many lack solid business plans and struggle to access credit, increasing the risk of a two-speed industry—where advanced firms thrive and smaller ones risk being excluded from regulated markets.

- Opportunities and Economic Benefits for SMEs

Despite the challenges described, it is essential to emphasize that the twin transition represents a real opportunity for the competitive evolution of artisan businesses, particularly in sectors with strong territorial and manufacturing identities. Embracing green and digital strategies enables companies to improve internal efficiency, reduce process costs, differentiate their market positioning, and access new value chains.

In a global context where demand for sustainable products is rising, SMEs can benefit from:

• greater appeal to corporate clients and large retailers bound by ESG criteria;

• enhanced brand reputation through transparent production practices;

• the ability to command premium prices for certified or traceable products;

• access to public tenders and procurement opportunities that require environmental and social compliance.

The footwear sector, in particular, can evolve toward product-service models by offering maintenance, repair, regeneration, and digital customization services. These approaches help reduce the overall environmental footprint while increasing customer loyalty.

Moreover, digital transformation enables data-driven decision-making, with predictive tools for production planning, consumption management, and environmental performance monitoring. This leads to more efficient resource and supplier management, ultimately contributing to greater organizational resilience.

- Changing Consumer Behavior and Market Dynamics

In Italy, the economic and social impacts of green and digital transformation on craftsmen and SMEs are profound, particularly concerning changing consumer behavior and evolving market dynamics. These shifts present both challenges and opportunities for small and medium-sized enterprises (SMEs), which constitute over 99% of Italian businesses and employ more than 80% of the workforce. (Source: Martinelli, E.M., Tunisini, A. Digitalization in Italian SMEs: the transformation of marketing channels. Ital. J. Mark. 2024, 445–474 (2024).

Italian consumers are increasingly prioritizing sustainability and digital engagement in their purchasing decisions. This trend reflects a broader European movement towards eco-consciousness and digital connectivity. For instance, the Circular Economy Network and ENEA's 2024 report highlights Italy's leadership in sustainability, noting that SMEs are central to this transition.

Today's consumers increasingly value sustainability, social responsibility, and supply chain transparency. Driven by the climate crisis, EU regulations, and digital platforms, this shift has redefined the producer–consumer relationship. Customers now expect products that are:

- made with recycled or certified materials,
- fully traceable,
- durable and repairable,
- clearly and transparently labeled (e.g., QR codes, digital passports).

In fashion and accessories, intangible values like ethics and ESG alignment now outweigh aesthetics. SMEs that don't adapt risk losing relevance in the market.

3.2. Challenges Faced by SMEs and the Footwear Sector

- Barriers to Technology Adoption and Green Practices

Despite these advancements, SMEs face challenges in fully capitalizing on digital and green opportunities. Barriers include limited financial resources, a shortage of digital skills, and a lack of awareness about available support mechanisms . Furthermore, the complexity of implementing omnichannel strategies can overwhelm smaller enterprises (Source: "The digitalisation of small and medium-sized enterprises in Italy Models for financing digital projects: summary report"- EC).

Italian small and medium-sized enterprises (SMEs), including those in the footwear sector, face significant challenges in adopting digital technologies and sustainable practices. According to ISTAT data, barriers to Technology Adoption are:

- Limited digitalization: In 2023, only 60.7% of Italian SMEs adopted at least 4 of the 12 digital activities measured by the Digital Intensity Index, such as ERP software, CRM tools, and online sales. (Istat 2023: https://www.istat.it/comunicato-stampa/imprese-e-ict-anno-2023)

- Data sharing: Only 13.6% of SMEs electronically share data with clients and suppliers, highlighting low digital integration across the value chain.

- Lack of digital skills: 55.1% of SMEs report a lack of skills as a barrier to adopting AI-based technologies.

Barriers to Sustainable Practices

- Limited adoption of green practices: In 2022, only 59.5% of manufacturing companies took sustainability actions. (Istat 2022: https://www.istat.it/comunicato-stampa/pratiche-sostenibili-nelle-imprese/)

- Disparities between large and small enterprises: Large enterprises (250+ employees) are significantly more active in sustainable practices (86.9%) compared to small businesses (5–49 employees), which stand at 43.6%.

- Common sustainable actions: The most widespread actions include the use of renewable energy sources (22.3%) and energy efficiency measures (20.4%).

The main barrier to twin transition in small manufacturing firms is the lack of a strategic, system-wide approach. Many adopt reactive, fragmented solutions, leading to wasted resources and limited long-term impact.

Key challenges include:

- fragmented supply chains hindering traceability;
- weak IT and organizational infrastructure;
- lack of tools to measure ESG impact *(KPI ESG, LCA, carbon footprint)*;
- unclear regulations and fear of penalties;
- high certification and audit costs.

Most small firms lack in-house sustainability or compliance roles, relying on external consultants with limited coordination.

- Resistance to Change and Knowledge Gaps

Many business owners, especially in artisan and traditional manufacturing sectors, see sustainability and digitalization as trends or regulatory burdens with little immediate return.

Key gaps include:

- low awareness of funding opportunities,
- confusion over mandatory vs. voluntary rules,
- lack of impact assessment,
- and limited internal skills.

These issues create a systemic delay, reducing competitiveness—especially against more advanced Northern European firms.

For small and medium-sized enterprises (SMEs), another main barrier to transformation is the lack of adequate skills. According to data from the Politecnico di Milano's Digital Innovation Observatory for SMEs, over a third of Italian SMEs view this skill gap as the primary obstacle to their company's digitalization. Similarly, an equivalent percentage attributes their company's lack of focus on environmental sustainability goals to this same issue. This challenge is part of a broader concern. The twin transition—combining green and digital transformations—requires new skill sets, both technical and cross-disciplinary, with an increasing demand for profiles that can integrate these two types of expertise. This evolution has created a significant gap between the skills available in the labor market and those sought by companies. To exacerbate the situation, SMEs also face difficulties attracting new talent, particularly young people, and retaining existing staff—especially the younger workforce.

Thus, finding and hiring employees with the necessary skills aligned with business needs becomes particularly challenging for SMEs. According to Eurobarometer data, in 2023, 80% of small Italian enterprises and 59% of medium-sized enterprises were experiencing this issue (compared to an average of 77% for small businesses and 68% for medium-sized businesses across Europe). Companies are well aware of the importance of addressing this issue: more than

half of SMEs (58% in Italy, 54% in the European Union) identify these challenges as the primary problem they need to tackle.

According to the Politecnico di Milano's Digital Innovation Observatory for SMEs, 30% of Italian SMEs do not offer formal training, mainly due to the lack of an organized structure and time constraints. Additionally, 16% provide only legally required training, while 14% rely on informal methods like mentoring and learning by doing.

While informal training is good for transmitting tacit knowledge, it is less effective for developing the skills needed for the twin transition. SMEs need to build a shared knowledge base that all employees can access.

70% of Italian SMEs engage in both formal and informal training, but many do so without proper planning or evaluation. Training has mainly focused on hard skills (e.g., regulations, digital tools) and soft skills (e.g., teamwork, communication). Training related to the green transition is less common (39%), though it is expected to grow as companies adopt energy-efficient technologies and adapt to new regulations.

3.3. Solutions and Adaptation Strategies for SMEs and Craftsmen

- Technological Integration

Technological integration should be pursued gradually, yet guided by a strategic and holistic approach.

Businesses need support in selecting digital tools that are appropriate to their scale and operational needs, avoiding solutions that are oversized or lack interoperability. Key priorities include:

- adopting simple but scalable management systems (such as lightweight ERPs and cloud-based tools);
- digitizing environmental and technical documentation;
- implementing systems for the automated collection of environmental and production data;
- leveraging tools for environmental impact assessment and simulation (e.g., simplified LCAs, ESG dashboards in Excel or BI platforms).

Special focus should be placed on the **digitalization of supply chain traceability**, utilizing technologies such as blockchain, RFID, or QR codes to ensure full transparency and product readability at every stage of the production process.

- Sustainable Business Model Adaptations

The twin transition calls for a fundamental transformation of the business model.

Companies must shift from a linear approach to one that is circular, responsible, and future-oriented. This transformation involves:

- embedding ESG goals into the company's strategic planning;
- adopting sustainable governance models, such as becoming a Benefit Corporation;
- redefining supplier selection criteria to promote a more sustainable supply chain;

- developing new product lines based on innovative, recycled, or low-impact materials;
- offering after-sales services such as repair, maintenance, and product regeneration.

The adoption of voluntary international standards (e.g., ISO 20400, ISO 42001) provides a credible and certifiable framework to guide this process—supporting integration into advanced value chains and driving the creation of shared, long-term value.

3.4. Support and Incentive Mechanisms to Accelerate the Twin Transformation of Craftsmen and SMEs

- Governmental and EU Support Programs
- Private Sector Collaboration and Industry Partnerships

Italian craftsmen and SMEs benefit from national and EU programs aimed at promoting digitalization and sustainability. Key initiatives include the EU-funded PNRR (National Recovery and Resilience Plan), which allocates resources for green and digital transitions, and national incentives such as Transizione 5.0, offering tax credits for investments in innovation, training, and energy efficiency. These programs help SMEs adopt new technologies, reduce environmental impact, and remain competitive in global markets.

Italian Government Programs

1. Support for Ecological and Digital Transition (Decree 8 August 2024)

- **Objective**: Assist SMEs in the textile, fashion, and accessories sectors—including leather and footwear—in adopting sustainable and digital practices.
- **Budget**: €15 million.
- **Support**: Up to 50% of eligible expenses, with a maximum grant of €60,000 per company.
- **Eligible Activities**:
  - Employee training for acquiring or consolidating relevant skills.
  - Implementation of enabling technologies such as cloud computing, AI, blockchain, advanced robotics, additive manufacturing, IoT, augmented reality, and digital traceability systems.
  - Support for obtaining environmental certifications (e.g., ISO 14001, Oeko-Tex, LWG).
  - Life Cycle Assessment (LCA) analyses.
- **Official Source:** https://ssip.it/2024/11/14/il-bando-la-ssip-a-supporto-delle-imprese-per-gli-incentivi-per-la-transizione-ecologica-e-digitale-dei-settore-tessile-moda-e-accessori

2. €250 Million Fashion Sector Support (MIMIT 2025)

- **Objective**: Revitalize Italy's fashion industry, including footwear and leather sectors.
- **Total Allocation**:
  - €100 million for development contracts.

- €100 million for mini-development contracts.
- **€15 million for ecological and digital transition**.
- €30.5 million for sustainability initiatives.

- **Additional Measures**:
  - Tax breaks for micro-enterprises opening stores in vacant premises.
  - Tax deductions for purchasing sustainable fashion goods.
- **Official Source: https://www.warranthub.it/newsletter/tessile-concia-finanziamenti-mimit/**

3. Ministerial Decree for Ecological and Digital Transition: Under the "Made in Italy" law, this initiative provides grants covering up to 50% of expenses (up to €60,000) for training, implementation of advanced technologies (e.g., AI, IoT, blockchain), and obtaining environmental certifications. (Source MIMIT-2024: https://www.mimit.gov.it/it/notizie-stampa/legge-made-in-italy-transizione-green-e-tech-dellindustria-della-moda-del-tessile-e-degli-accessori-dall11-dicembre-invio-domande-per-laccesso-alle-agevolazioni

In Italy, particularly in the Marche region, private sector collaboration and targeted support mechanisms play a central role in driving the twin transformation—digital and ecological—of craftsmen and SMEs in the footwear and leather sector. The region accounts for nearly 28% of Italy's footwear companies, with major hubs in Fermo and Macerata. Recognizing this sector's strategic value, the Marche Chamber of Commerce introduced the "Fashion Green" initiative, offering financial incentives of up to €5,000 per company to foster eco-sustainable practices and circular economy models(Source the Marche Chamber of Commerce 2021).

At the national level, Assocalzaturifici has established strategic partnerships with regional institutions, notably Regione Marche, to support internationalization in the footwear sector. A milestone in this collaboration is the protocol signed in January 2025 between Regione Marche and Assocalzaturifici—the first of its kind in Italy. This two-year initiative, coordinated by the Marche Tourism and Internationalization Agency (ATIM), focuses on expanding global reach through B2B matchmaking events, specialized training programs, and participation in international trade fairs. These efforts highlight a shared commitment to innovation, sustainability, and the worldwide promotion of the Marche region's excellence in footwear and leather craftsmanship.

In parallel, industry bodies such as Assocalzaturifici and UNIC (Italian Tanneries) are actively involved in fostering responsible practices across the supply chain. Notable among these is the Verified and Certified Steps (VCS) project, a certification program designed to promote sustainability and traceability within the industry. These initiatives—supported by institutions including Unioncamere, the Excelsior information system, and local Chambers of Commerce—reflect a coordinated, systemic approach to equipping SMEs and artisans with the tools, resources, and networks necessary to thrive in a competitive, sustainable, and digitally evolving global market. (Source Marche Region: https://www.regione.marche.it/News-ed-Eventi/Post/107547/Regione-Marche-e-Assocalzaturifici-siglato-il-primo-protocollo-d-intesa-in-Italia-per-l-internazionalizzazione-del-settore-calzaturiero)

4. IMPACTS OF TWIN TRANSFORMATION ON THE LABOR MARKET (EMPLOYMENT/PROFESSIONAL EDUCATION/NEW SKILLS/NEW PROFESSIONS)

4.1. Changes in Labor Demand and Emerging Professions

- Impact of Automation and Technology-Driven Job Transformations
- New Professions Emerging from Green and Digital Technologies

The report "Medium-term Forecasts of Occupational and Professional Needs in Italy (2024-2028)" by Unioncamere, in collaboration with the Ministry of Labour and Social Policies, outlines the expected trends in employment and skills demand in Italy, with a focus on digital and green sectors.

General Employment Outlook

- Italy's labor market has shown a strong post-pandemic recovery, reaching record employment levels in 2023 despite economic challenges such as the war in Ukraine and inflation.
- Employment growth is primarily driven by investments in digitalization and green transition, supported by the National Recovery and Resilience Plan (PNRR).
- The Excelsior forecasting model predicts significant growth in technology and environmental sectors, with increased demand for highly skilled and specialized professions.

Digital Work Trends

- Digitalization is a key driver of employment growth, particularly in ICT, telecommunications, and advanced business support services.
- Required digital skills include programming, IT systems management, cybersecurity, data analysis, and advanced use of artificial intelligence (AI).
- AI will play a dual role: it may replace some routine jobs but will also complement human work, enhancing productivity especially in high-skilled occupations.
- The ability to integrate and leverage technological contributions will be a critical skill, requiring high cognitive abilities and adaptability.

Green Work Trends

- The ecological transition is another strategic sector for future employment, with growing demand in renewable energy, energy efficiency, waste management, sustainable agriculture, and sustainable mobility.
- Green skills involve knowledge of environmental technologies, sustainable process management, impact assessment and reduction, and innovation in production processes.
- The PNRR's investments in the green economy will have a significant positive impact on employment in these areas.

The energy crisis has sped up Italy's ecological transition, aligning with EU decarbonization goals. This has led to increased green investments by businesses and a rising demand for professionals with green and digital skills.

Between 2018 and 2023, except for the pandemic year, the number of companies investing in green skills grew steadily, from 49.4% in 2018 to 56.4% in 2023. This trend is expected to continue from 2024 to 2028, with a demand for **2.4 million workers** possessing at least

intermediate green skills, and **1.5 million** with high-level expertise. The green skills will span across all sectors, from technical to less specialized roles, with the largest needs in construction, mechatronics, and business services.

Simultaneously, the digital transition is progressing, with **two-thirds of companies** investing in digital technologies in 2023. By 2028, **2.2 million workers** will need digital skills, with the highest demand for specialized roles such as software developers, engineers, and IT system managers. Additionally, the need for **e-skill mixes**—workers with at least two digital competencies—will require **over 920,000 professionals.**

- High-skill roles include:
- Software analysts and developers
- Information engineers
- Network and system managers
- Application technicians
- Civil and industrial engineers
- Web technicians
- Industrial designers

4.2. Required Skills and Workforce Adaptation Strategies

- Essential Digital and Sustainability-Oriented Skills for SMEs

Key Skills for the Next Five Years

Skill Area	Specific Skills
Digital Skills	Software development, cybersecurity, data science, AI and automation, cloud infrastructure management, continuous learning and adaptability
Green Skills	Renewable energy technologies, sustainable resource and waste management, low-impact production design, environmental impact monitoring, technological innovation for sustainability
Transversal Skills	Teamwork in multidisciplinary settings, problem-solving, critical thinking, high cognitive skills to integrate technology and human work, innovation and sustainability orientation

Impact of PNRR and International Context

- The PNRR is a key factor influencing labor demand by promoting investments in digital and green sectors.
- Geopolitical and macroeconomic uncertainties, including energy crises and conflicts, will affect employment dynamics, but the push for sustainability and digitalization remains central.
- Companies' ability to retain and develop human capital will be crucial to fully exploit opportunities from technology and green transition.

Italy's labor market over the next five years will be increasingly shaped by digital transformation and green transition. Demand for digital and green skills will grow substantially,

alongside cognitive and transversal skills that enable effective integration of technology and sustainable innovation in the workplace.

The macro-trends related to sustainability and digital transformation will continue to shape labor demand in Italy. In the most favorable scenario, it is estimated that between 2024 and 2028, over 2.4 million workers (almost two-thirds of the total five-year demand) will need to possess at least intermediate-level green skills, while more than 2.2 million workers(representing 59% of the total demand) will require digital skills (Source: PREVISIONI DEI FABBISOGNI OCCUPAZIONALI E PROFESSIONALI IN ITALIA A MEDIO TERMINE (2024-2028)- Sistema Informativo Excelsior.

- Strategies for Reskilling, Upskilling, and Career Transition

4.3. Educational Programs and Training Initiatives

1. Footwear Training Entity of the Marche Region (EFC Marche)

- Created by HModa in collaboration with Valmor Footwear, EFC Marche is a training center accredited by the Marche Region, located in Civitanova Marche. (https://www.hmoda.it/progetto/ente-formativo-calzaturiero)

- Current Course: The course "Footwear Production Operator for High-End Manufacturing" includes 600 hours of training: 360 hours of theory and practice, and 240 hours of internship. Upon completion, participants receive a Level EQF3 qualification certificate.

- Objectives: To train professionals for integration into the footwear sector, with a focus on sustainability and inclusion.

2. EDIH4MARCHE – Digital Training Courses

- Description: EDIH4MARCHE offers training on digital topics such as artificial intelligence, cybersecurity, and digitalization for SMEs. (https://www.edih4marche.eu/listacorsi.php?utm)

- Relevant Course: "Ecodesign for Fashion: From Regulatory Evolution to the Digital Product Passport", focused on sustainability in the fashion sector.

- Objectives: To support companies in their digital and sustainable transformation by providing advanced skills in technology and innovation.

3. Regional Program FSE+ 2021–2027

- Description: The FSE+ 2021–2027 Regional Program funds training projects in the footwear and leather sectors, aiming to improve professional skills and foster social inclusion. (https://www.regione.marche.it/Entra-in-Regione/Artigianato/News-ed-eventi/post/102404?utm)

- Initiatives: Support for training courses, internships, and career guidance activities, with special attention to vulnerable groups.

- Objectives: To promote employment and competitiveness in the sector through the acquisition of skills aligned with labor market needs.

These initiatives demonstrate the Marche Region’s strong commitment to promoting training and employment in the footwear and leather sectors, with particular attention to ecological and digital transition.