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Missione 4
Istruzione e
Ricerca

ECOWHEATALY

Evaluation of policies for enhancing
sustainable wheat production in Italy

PRIN MUR 2022

AGRICULTURAL POLICIES FOR
WHEAT AND ECOSCHEMES

Zappitelli Ilaria - CNR

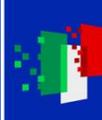


AGRICULTURAL POLICIES FOR WHEAT: TOOLS AND OPPORTUNITIES FOR SUSTAINABLE PRODUCTION

Wheat is a strategic crop for global food security and for the Italian agricultural economy. However, production is under pressure due to climate change, sustainability requirements and market dynamics.

Agricultural policies play a crucial role in supporting farmers and promoting innovative and sustainable practices.





WHY ARE AGRICULTURAL POLICIES BENEFICIAL?

Economic security:

- Guaranteed income through direct payments.
- Access to funds for innovative projects.

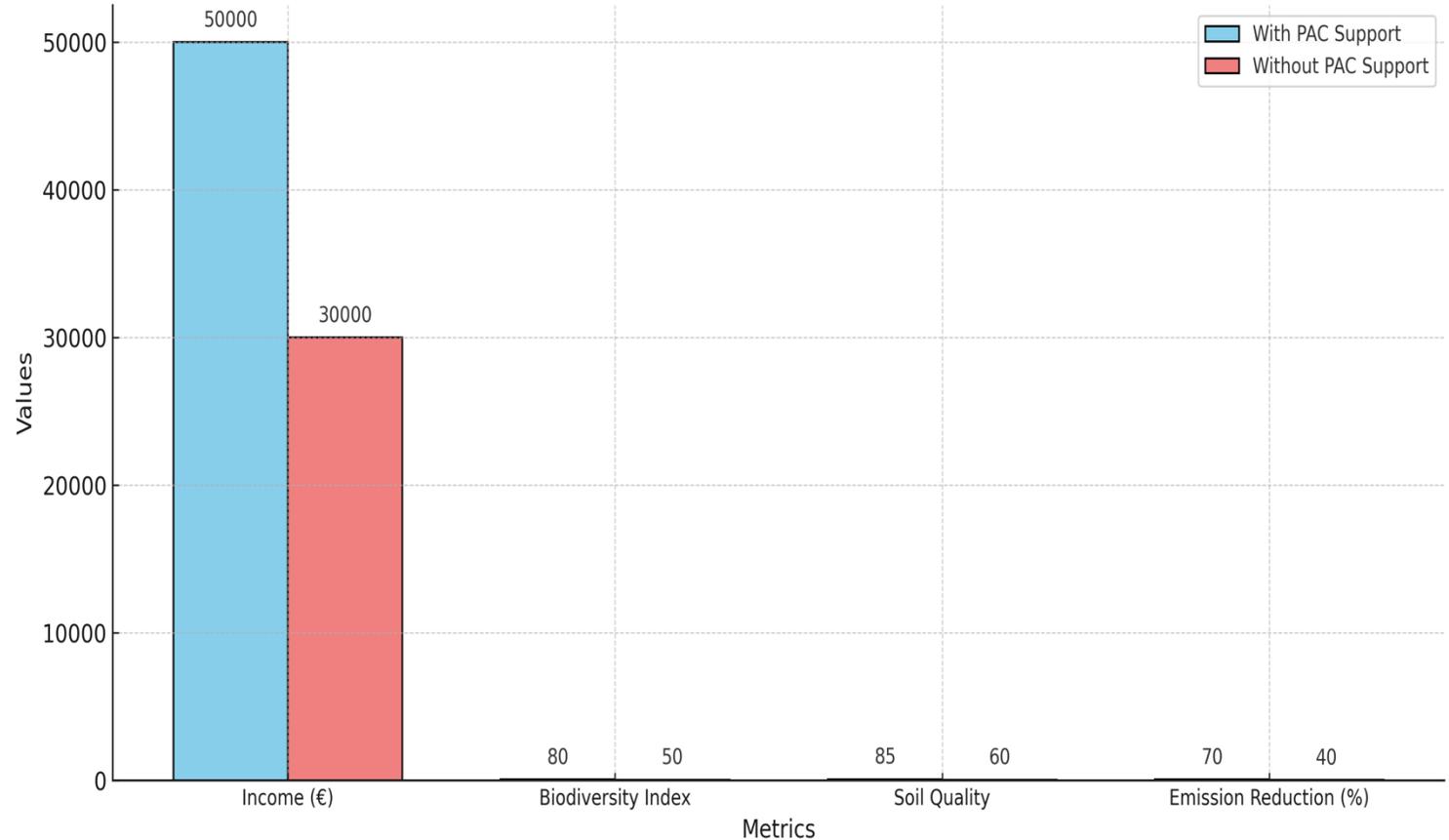
Competitiveness:

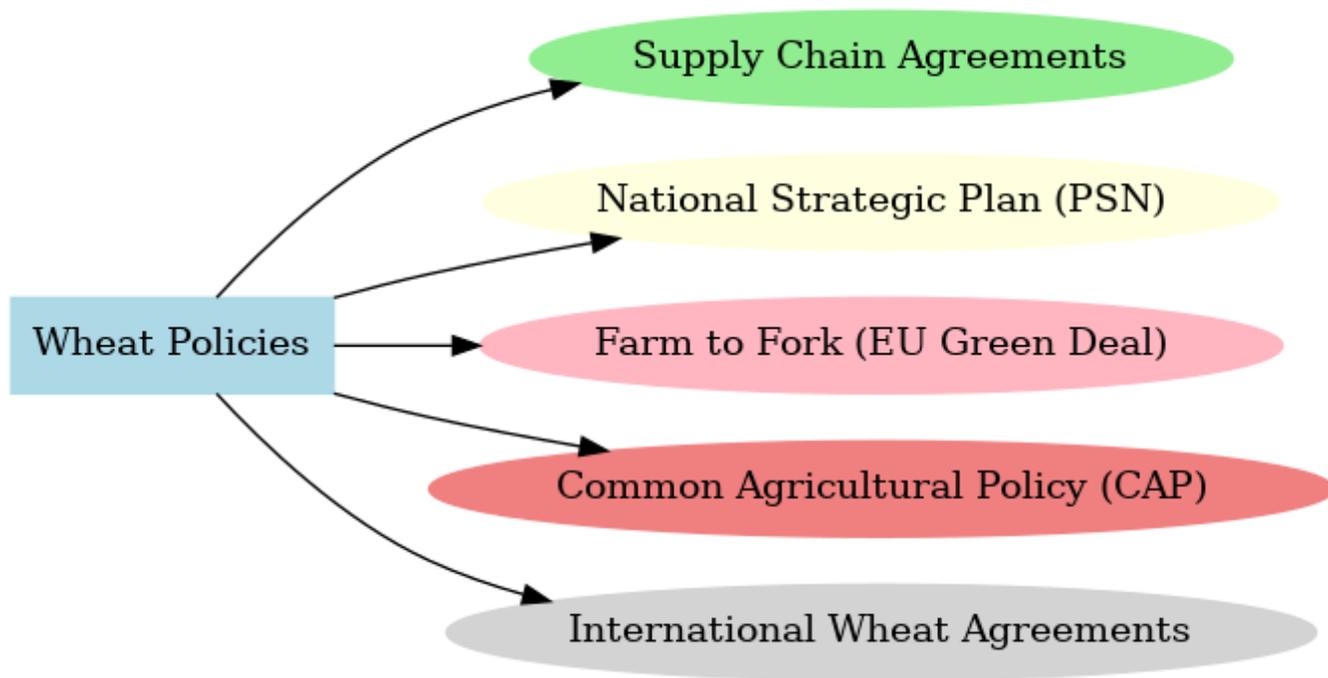
- Improving grain quality through incentives and training.

Environmental sustainability:

- Adoption of environmentally friendly practices to reduce environmental impact.

Comparison of Farms with and without PAC Support









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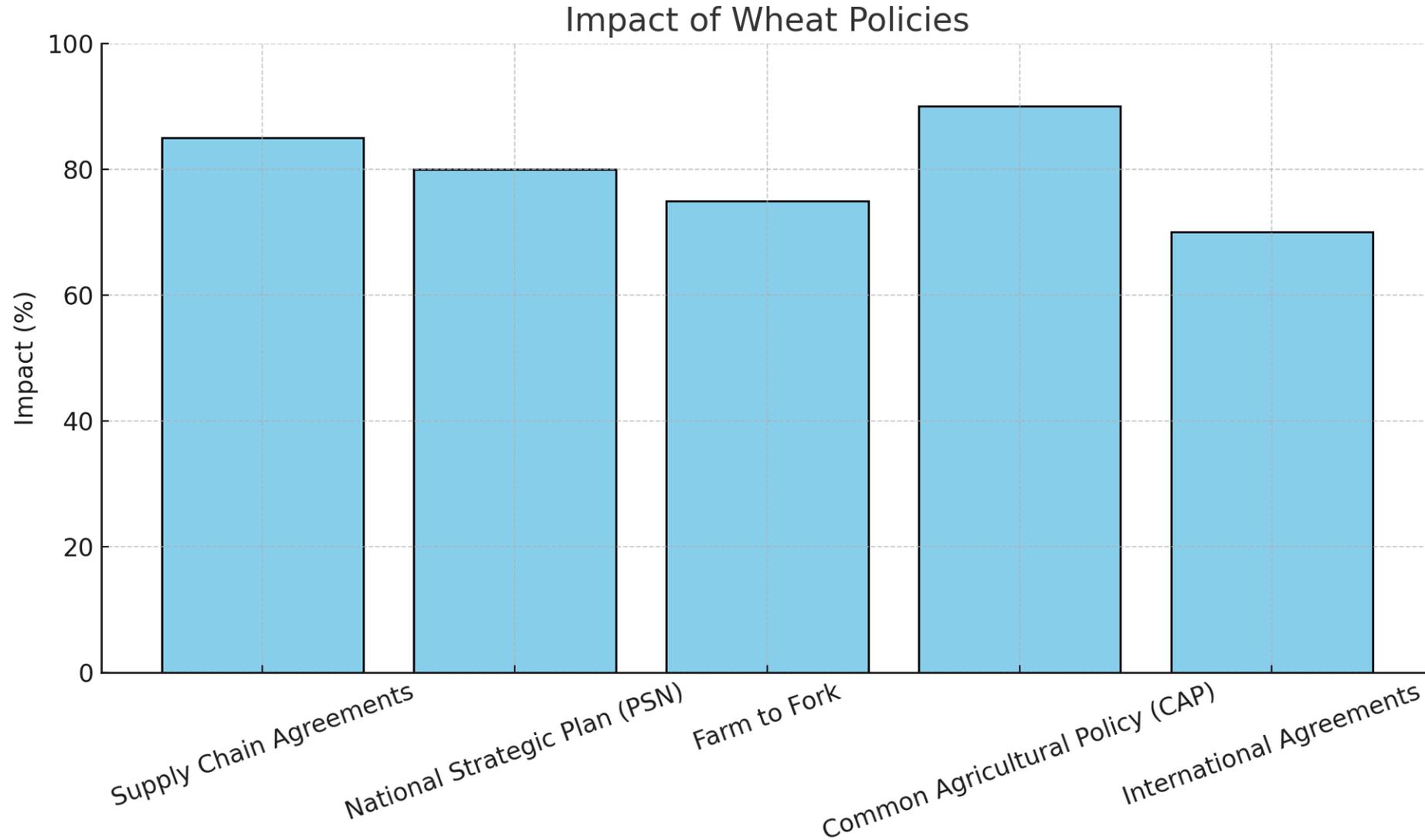
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SUMMARY OF WHEAT POLICIES WITH A DISTINCTION BETWEEN EUROPEAN AND ITALIAN POLICIES

Policy	Scope	Level
Contracts and Supply Chain Agreements	Internal	Italian
National Strategic Plan (PSN)	Internal	Italian
Farm to Fork (EU Green Deal)	Environment	European
Common Agricultural Policy (CAP)	Support	European
International Wheat Agreements	Trade	European/Global
National Strategy for Organic Agriculture	Internal	Italian
Regional Policies	Internal	Italian
International Trade Policies	Trade	European







FARM TO FORK (GREEN DEAL)

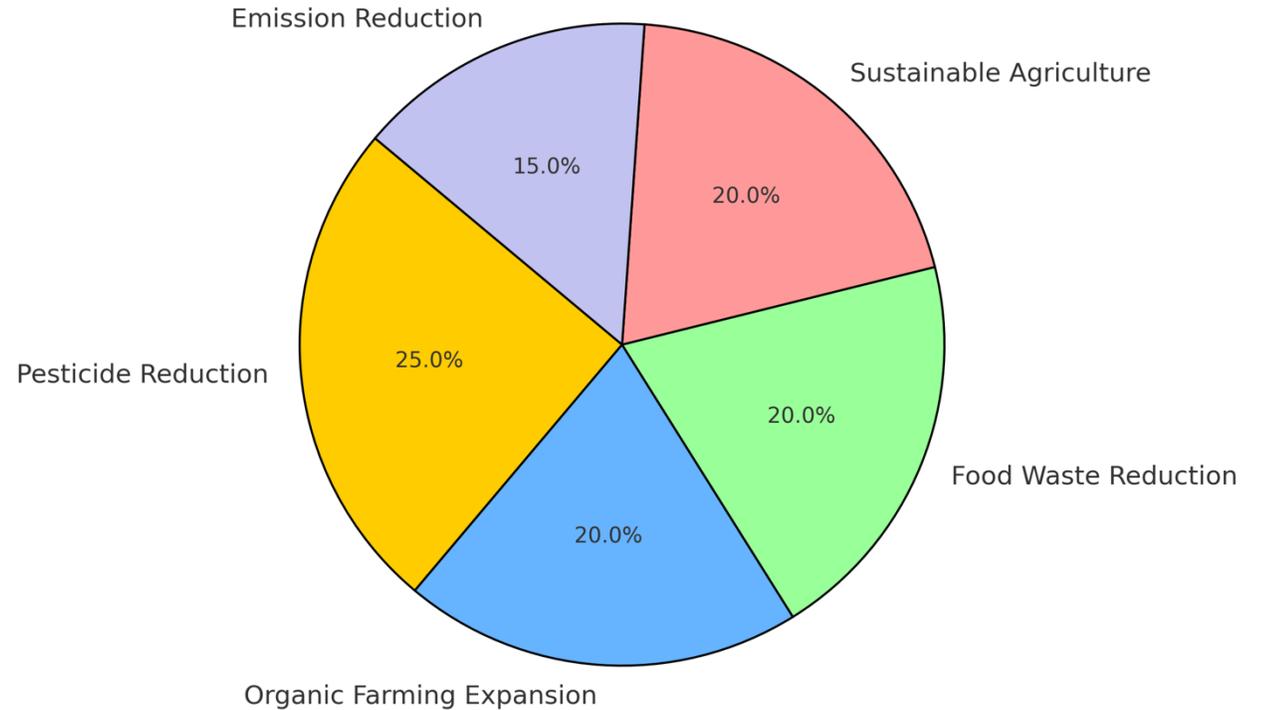
The Farm to Fork strategy is the European Commission's plan to ensure that the European food system:

- 1. Is fair, healthy and environmentally friendly.**
- 2. Achieves climate neutrality by 2050.**
- 3. Protects biodiversity and natural resources.**

Key targets (to be achieved by 2030):

- **Reduce pesticide use and associated risk by 50%.**
- **Reduce antimicrobial use in animals and aquaculture by 50%.**
- **Decrease fertilizer use by 20%.**
- **Convert at least 25 percent of the EU's agricultural area to organic farming.**
- **Improve access to sustainable foods and reduce food waste.**

Farm to Fork Strategy: Key Focus Areas





FARM TO FORK (GREEN DEAL)

Application of Farm to Fork to wheat

1. Sustainable farming practices.

The strategy encourages wheat farmers to:

- Reduce pesticides
- Limit chemical fertilizers
- Increase biodiversity

2. Promote organic farming

3. Reducing emissions

4. Climate resilience

5. Short and sustainable supply chain



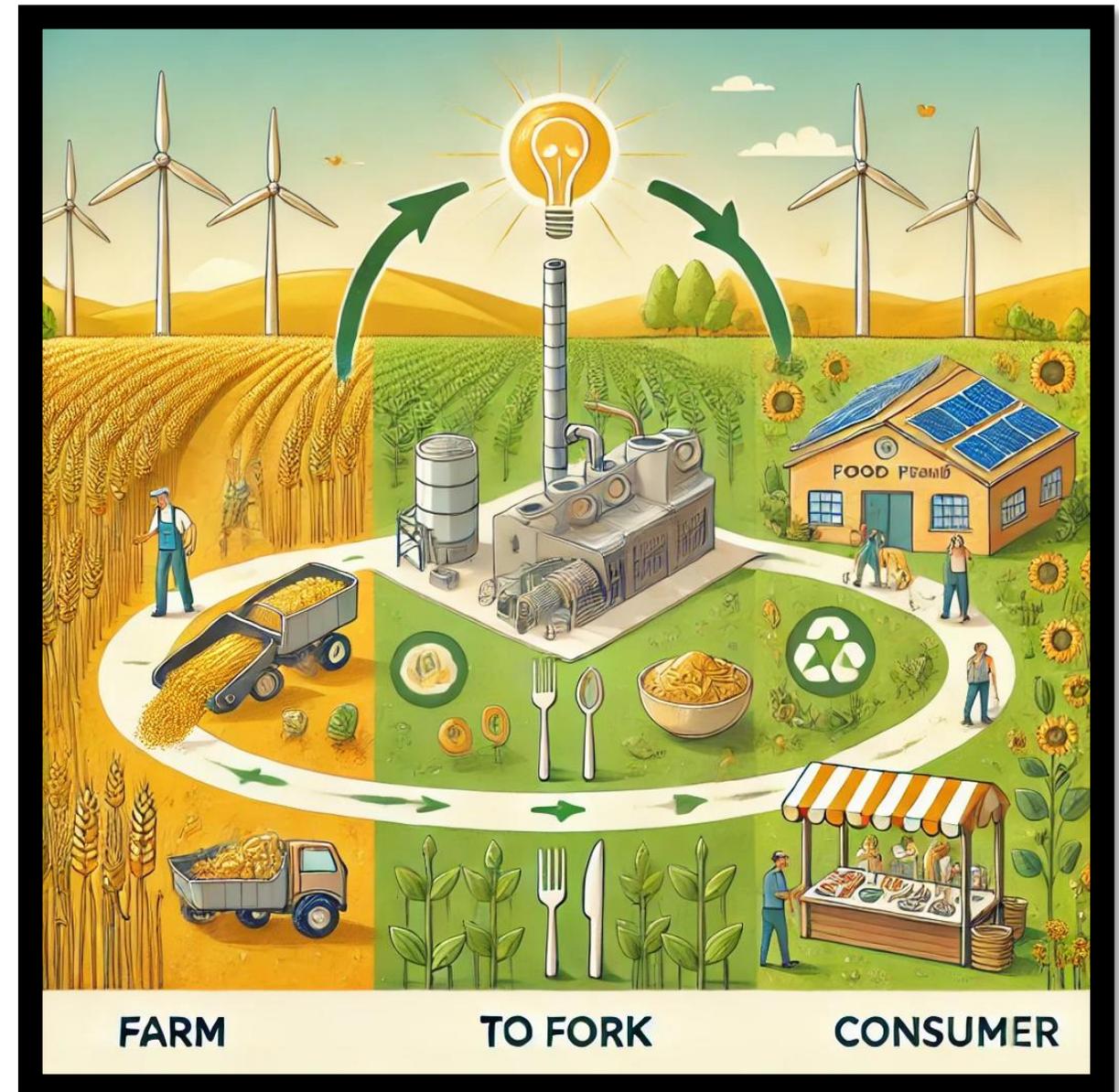


FARM TO FORK (GREEN DEAL)

Support tools for wheat in the Farm to Fork.

To achieve the objectives, the strategy makes use of:

1. Grants and funding
2. Research and innovation
3. Transparent labeling
4. Training and outreach





FARM TO FORK (GREEN DEAL)

CHALLENGES

of Farm to Fork for wheat

1. **High upfront costs**
2. **Large-scale adoption**
3. **International competitiveness**
4. **Monitoring and control**

OPPORTUNITIES

of Farm to Fork for wheat

1. **Premium markets**
2. **Long-term resilience**
3. **Economic incentives**

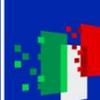


SUPPLY CHAIN AGREEMENTS OR PACTS

MAIN OBJECTIVES

- **Enhance Italian agricultural production:**
Promote Italian wheat, particularly durum wheat for pasta, ensuring quality, traceability and sustainability.
- **Stabilize the market:**
Ensure fair prices and stable contractual conditions between farmers and processors.
- **Promote investments in the supply chain:**
Support technological innovations, improvements in infrastructure production and sustainable processing.
- **Reduce import dependence:**
Encourage the cultivation of Italian wheat to partially replace imports, especially durum wheat.

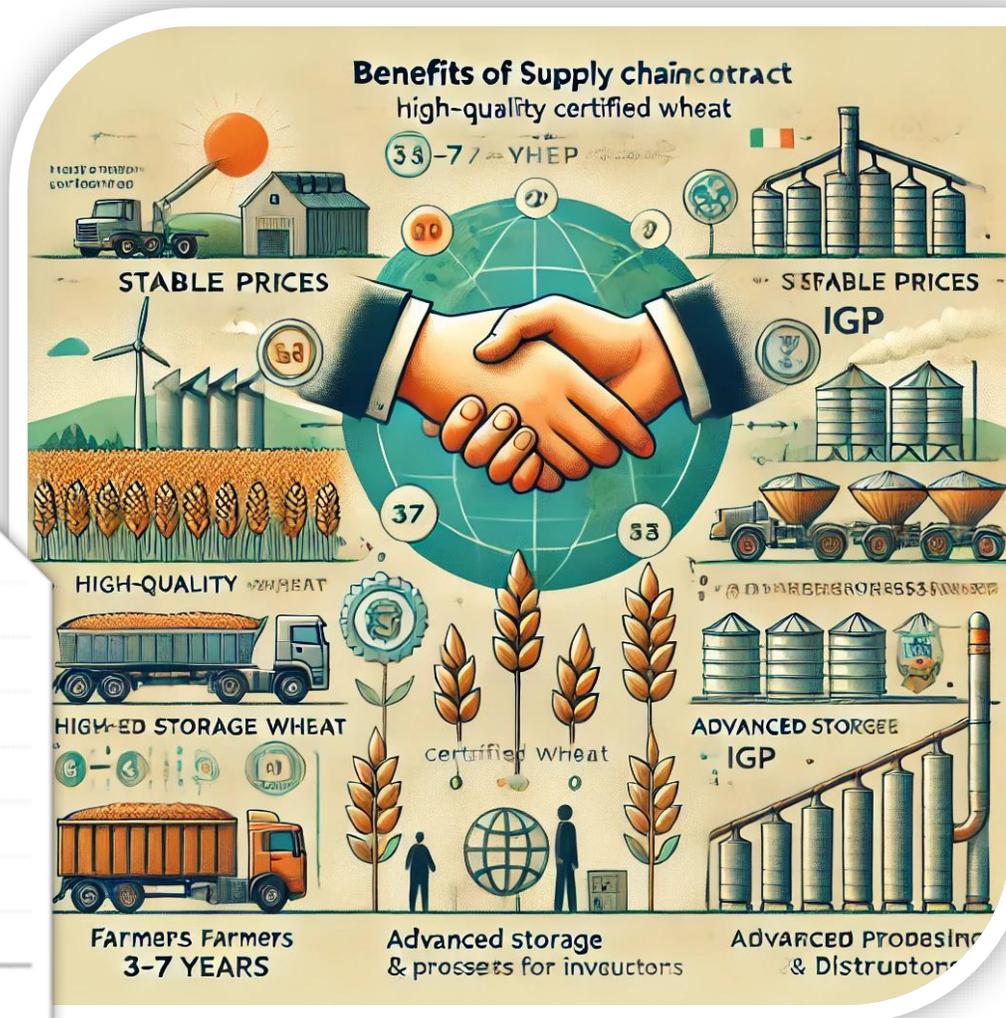
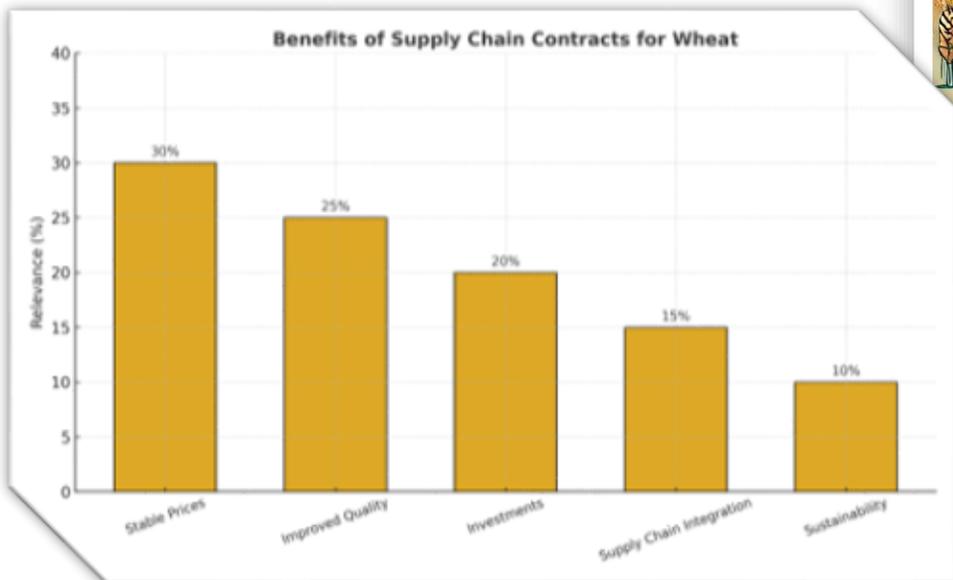




SUPPLY CHAIN AGREEMENTS OR PACTS

Benefits for the wheat sector:

1. Stable prices
2. Improved quality
3. Investments
4. Supply chain integration
5. Sustainability



Duration and areas of intervention

Agreements have a duration of 3-7 years and cover areas such as:

1. Agricultural production.
2. Processing and marketing.
3. Technological innovation and sustainability.

Monitoring:

the Ministry oversees the progress of the contract and compliance with the commitments made by all parties.



SUPPLY CHAIN AGREEMENTS OR PACTS

Here are some significant examples:

National Recovery and Resilience Plan (NRP):

Supply chain contracts have been included among the initiatives funded by the NRP, with a dedicated allocation for the agribusiness sector.

“High Quality Durum Wheat” Supply Chain Contract in Emilia-Romagna:

Participants: Barilla Group, Seed Producers Company, and main grain producer organizations in the region, including Op Grandi Colture Italiane, Op Cereali, Consorzio Agrario Terrepadane, Consorzi Agrari d'Italia and Consorzio Agrario di Parma.

Objectives: Annual supply of more than 120,000 tons of high-quality durum wheat grown on more than 20,000 hectares, about one-third of regional production. The agreement promotes the use of specific seed varieties with superior quality characteristics, providing farmers with a secure market outlet and agreed prices with quality premiums.

Supply Chain Contracts promoted by Consorzi Agrari d'Italia (CAI):

Participants: CAI and several Italian processing industries.

Objectives: To enhance Italian wheat production, with a focus on durum and soft wheat. CAI manages about 400,000 tons of wheat, 25 percent of which falls under supply chain agreements. These agreements aim to stabilize prices and protect farmers from market fluctuations.

Supply Chain Contracts supported by the Ministry of Agriculture:

Initiatives: The Ministry of Agriculture has initiated strategies to implement supply chain contracts, with the goal of reaching 50 percent of domestic produce under supply chain contracts. These strategies include allocating funds and resources to support such agreements, promoting food sovereignty and sustainability of the sector.

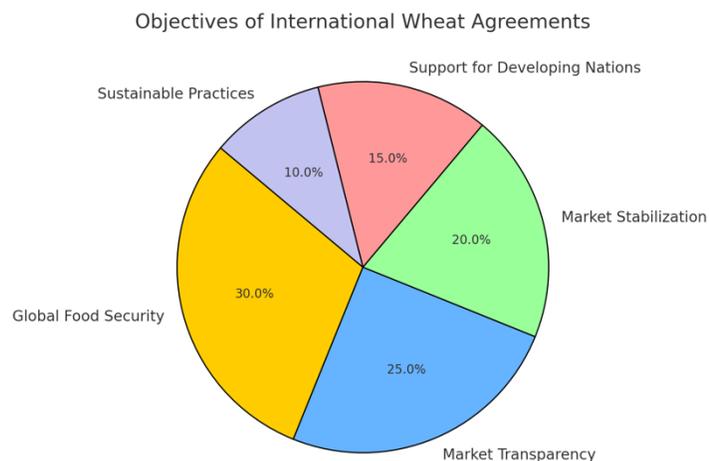
In addition, to incentivize participation in supply chain contracts, economic aid is provided: “De minimis” aid for durum wheat: For the 2024 marketing year, an aid of 100 euros is granted for each hectare planted with durum wheat covered by a supply chain contract for at least three years, using certified seed. This support aims to enhance the value of supply chain contracts and improve the quality of durum wheat through the use of certified seed.



INTERNATIONAL WHEAT AGREEMENTS

The main objectives are:

1. Ensure global food security
2. Promote transparency in wheat trade
3. Stabilize international markets
4. Support developing countries
5. Encourage sustainable agricultural practices





INTERNATIONAL WHEAT AGREEMENTS

The International Wheat Agreement of 2023

- Climate Change
- Geopolitical conflicts
- Growing demand

Key points of the 2023 agreement:

- Market transparency
 - Supply assurance
- Support for vulnerable countries
- Promotion of sustainability



Italy's Role in International Wheat Agreements:

- Strategic Imports
- Promotion of quality wheat
- Sustainability

Main Organizations Involved:

- International Grains Council (IGC)
- World Trade Organization (WTO)
 - FAO (Food and Agriculture Organization of the United Nations)



INTERNATIONAL WHEAT AGREEMENTS

CHALLENGES

for International Grain Agreements:

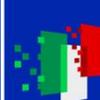
- **Geopolitical Conflicts**
 - Price volatility
 - Climate Change
- **Global competitiveness**

OPPORTUNITIES

for Italian Wheat:

- **Expansion into premium markets**
- **Promotion of organic**
- **International collaboration**





NATIONAL STRATEGIC PLAN

Objectives of the National Strategic Plan (PSN):

- Environmental sustainability
- Competitiveness and innovation
- Development of rural areas
- Conservation of natural resources
- Contribution to climate objectives



Specific Measures of the National Rural Development Plan (NRDP):

1. Risk management
2. Sustainable irrigation
3. Soil conservation
4. Biodiversity
5. Innovation and research



NATIONAL STRATEGIC PLAN

Applications of the NSP to Wheat

Wheat is a key crop for Italian agriculture, and the NSP includes specific measures to support its production in a sustainable way.

1. Promotion of quality durum wheat
2. Support for marginal areas
3. Reduction of environmental impact





NATIONAL STRATEGIC PLAN

PSN **CHALLENGES** for wheat:

1. **International competitiveness**
2. **Large-scale adoption**
3. **Monitoring and control**

OPPORTUNITIES
provided by the PSN:

1. **Increased sustainability**
2. **Economic support**
3. **Premium markets**



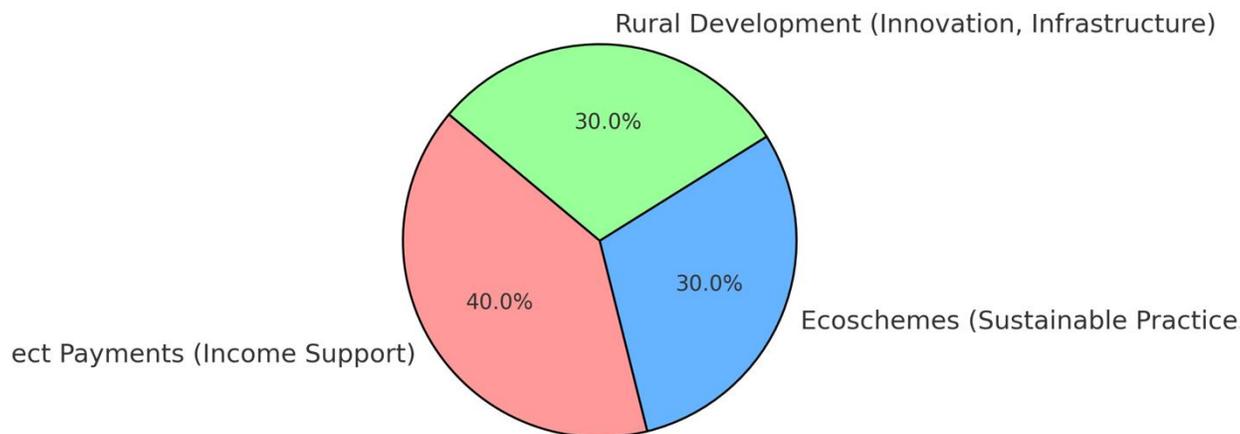
COMMON AGRICULTURAL POLICY (PAC)

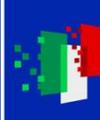
Main goals of the PAC:

1. Ensure a fair income for farmers.
2. Promote environmental sustainability.
3. Strengthen rural communities.

- **Income support for farmers:** Wheat farmers receive direct funding, partly linked to the area under cultivation and compliance with sustainable farming practices (greening).
- **Market management:** The CAP provides measures to stabilize wheat prices, such as public intervention, private storage and export aid in crisis situations.
- **Promotion of sustainability:** The EU encourages farming practices that reduce pesticide use, improve biodiversity and preserve soil quality.
- **Crop rotation:** Regulations promote rotation to avoid soil depletion and improve crop resilience.

CAP Budget Allocation





COMMON AGRICULTURAL POLICY (PAC)

First Pillar of the CAP 2023-2027:

1. DIRECT PAYMENTS
2. INCOME-COUPLED AID
3. MARKET MEASURES
4. ECOSCHEMES

Tools for wheat:

- Public intervention
 - Private storage
- Promotion and access to international markets

Benefits for wheat Production:

- Economic stability
- Competitiveness
- Sustainability

Role of Market Measures in the wheat Sector:

- Price Stability
- Support for Quality
- Global Competitiveness

Challenges of Market Measures:

- Timeliness
- Global Competition
- Social Acceptance

Goals of coupled aid for durum wheat:

- Support farmers' income
- Maintain production in areas at risk of abandonment
- Promote environmental sustainability

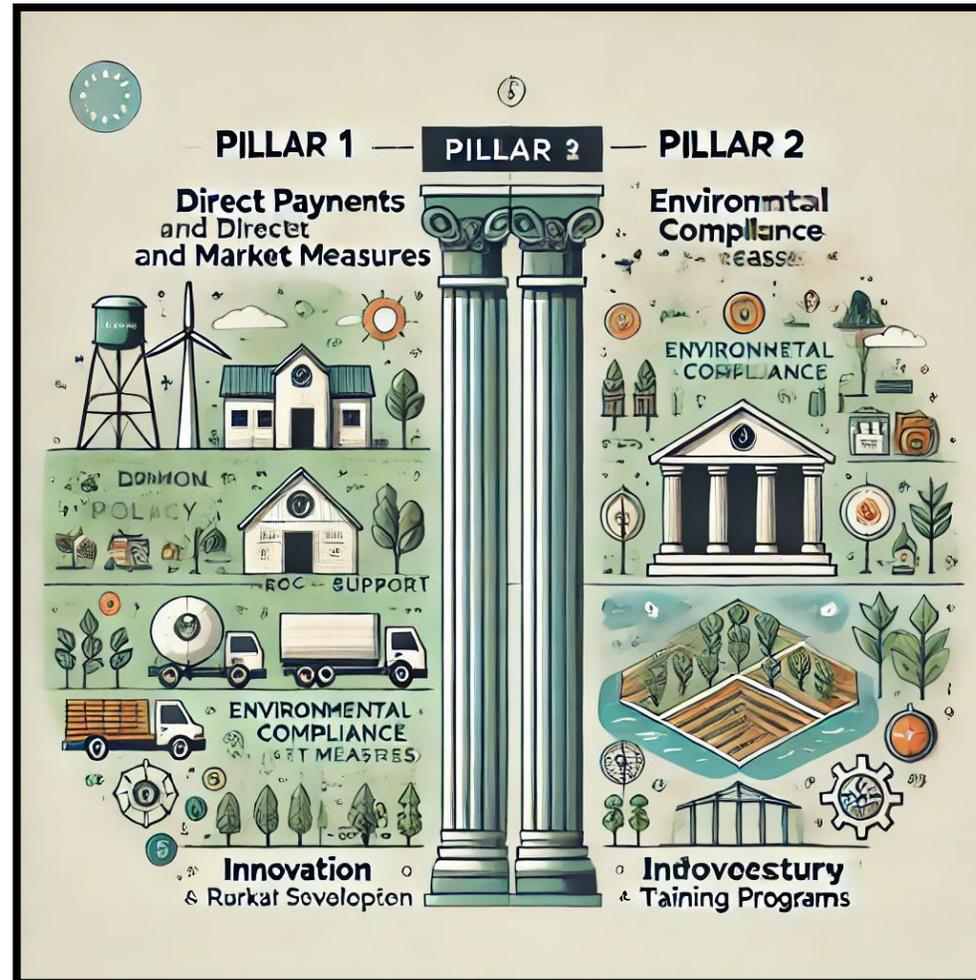


COMMON AGRICULTURAL POLICY (PAC)

Second Pillar of the CAP 2023-2027: RURAL DEVELOPMENT

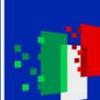
Main goals:

1. Support rural communities
2. Promote environmental sustainability
3. Foster agricultural competitiveness
4. Economic diversification



Key measures:

- Agro-climatic-environmental payments
- Support for disadvantaged areas
 - On-farm investments
 - Innovation and training
 - Rural infrastructure development
 - Biodiversity support

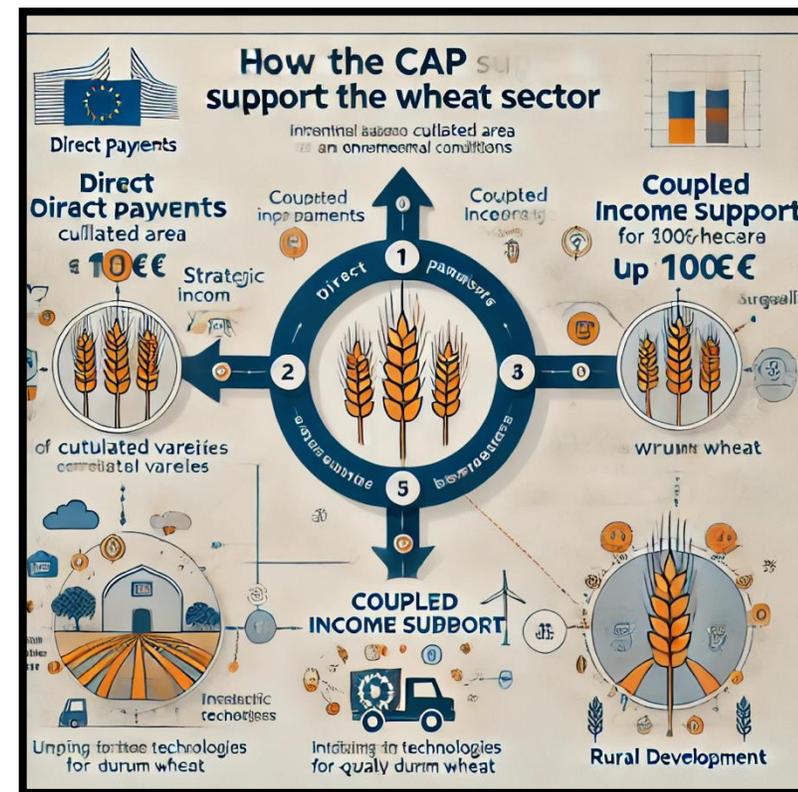


COMMON AGRICULTURAL POLICY (PAC)

How does the CAP Support the Wheat Sector?

Key tools for wheat include:

1. Direct payments
2. Income-coupled aid
3. Rural development



CAP Support for Wheat Sector

Direct Payments
(Financial Support)

Coupled Income Support
(Strategic Incentives)

Rural Development
(Innovation & Training)

Support per Cultivated Area

Environmental Conditions

Incentives for High-Quality Wheat

Funding for Technologies

Training for Sustainability



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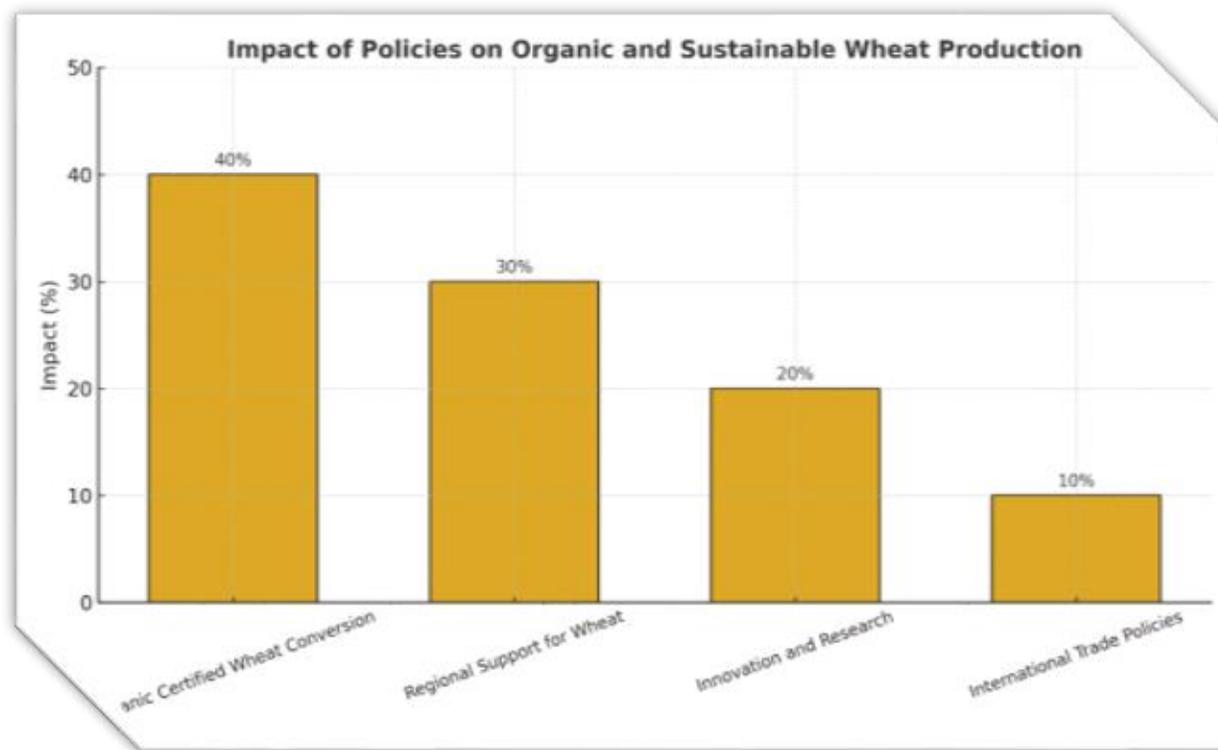
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OTHER RELEVANT POLICIES

1. National Strategy for Organic Agriculture (Italy)
2. Regional Policies (Italy)
3. Innovation and Research Policies (EU and Italy)
4. International Trade Policies (EU)





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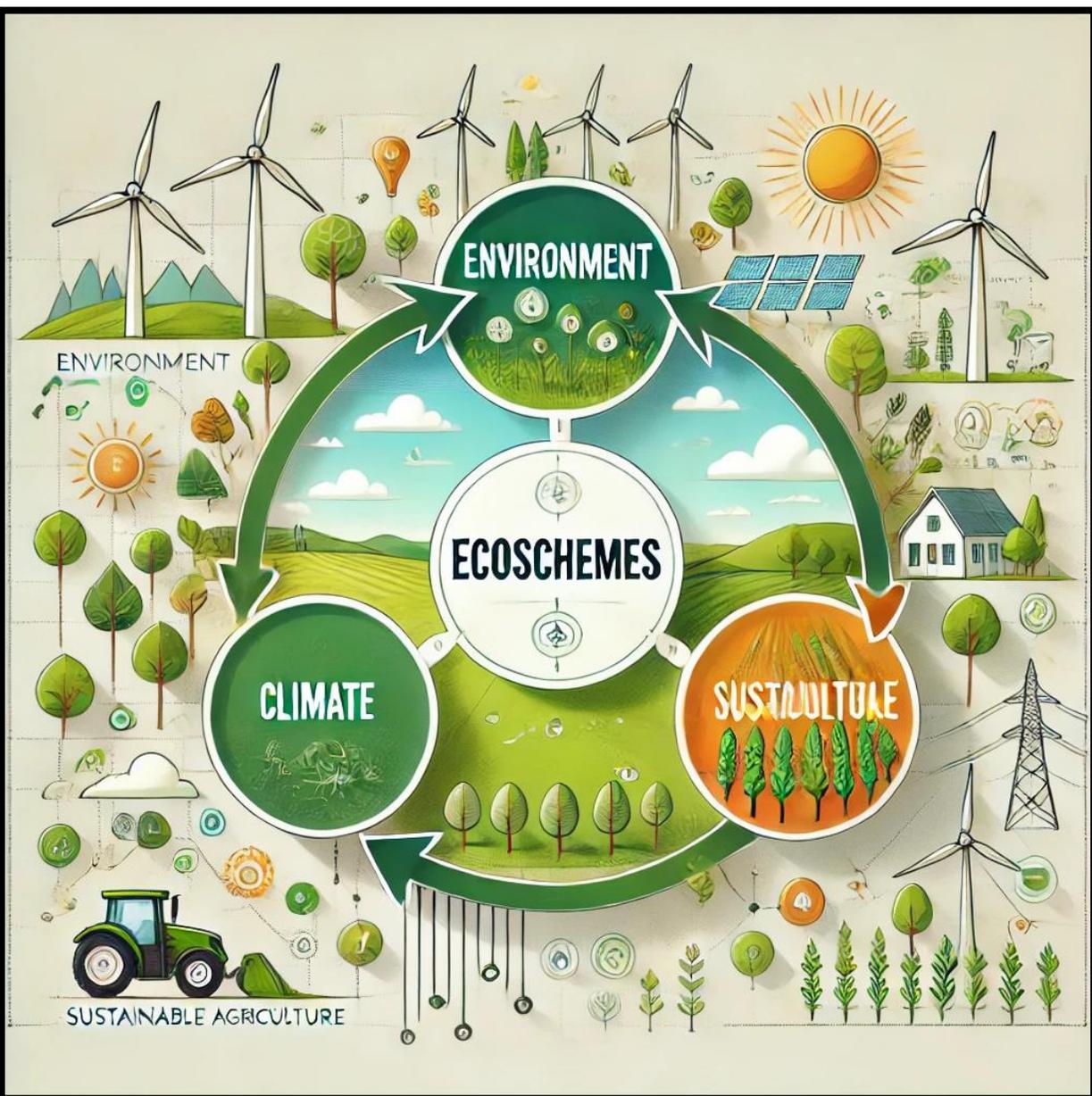
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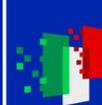
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ECOSCHEMES IN THE PAC

Key Goals of Ecoschemes:

1. Reduce the environmental impact of agriculture.
2. Protect biodiversity through ecological practices.
3. Improve soil and water quality.
4. Contribute to climate goals by reducing greenhouse gas emissions.



ECOSCHEMES IN THE PAC

- Ecoscheme 1:** payment for animal welfare and antibiotic reduction; is related to animal husbandry and targets animal welfare and reduction of drug use on farms. Plafond: 370.23 million annually.
- Ecoscheme 2:** tree crop grassing, dedicated to all areas occupied by permanent crops (agricultural woody crops) and other fast-rotating permanent tree species. Plafond: 153.03 million annually.
- Ecoscheme 3:** safeguarding olive trees of special landscape value, for all olive grove areas of special landscape and historical value, including in association with other crops. Plafond: 147.8 million euros annually.
- Ecoscheme 4:** extensive forage systems, introduction of leguminous forage crops, as well as from renewal in rotation, with a commitment to residue management with a view to carbon sequestration. Plafond: 160.26 million euros annually.
- Ecoscheme 5:** specific measures for pollinators, affecting arable land and land occupied by permanent tree crops. Plafond: 42.7 million euros annually.

I 5 ECOSCHEMI del Piano Strategico Pac

ECO 1	ECO 2	ECO 3	ECO 4	ECO 5
ZOOTECNICO	COLTURE ARBOREE	OLIVETI ALTO VALORE PAESAGGISTICO	SISTEMI FORAGGERI ESTENSIVI	MISURE SPECIALI PER GLI IMPOLLINATORI
376,4 Milioni di €	155,3 Milioni di €	150,0 Milioni di €	162,6 Milioni di €	43,3 Milioni di €
42,4%	17,5%	16,9%	18,3%	4,9%
Livello 1 Tra 24€ (suini) e 66€ (bovini da latte)	Stima 120 €/ha	Stima 220 €/ha	Stima 40 - 110 €/ha	Arboree 250€/ha (plafond 10 mio euro) Seminativi 500 €/ha (plafond 33,4 mio euro)
Livello 2 SQNBA (fino 300€)	Superfici occupate da colture permanenti (legnose agrarie) e altre specie arboree permanenti a rotazione rapida	Superfici di particolare valore paesaggistico (min 60 piante/ha; max 300 piante/ha elevabili dalla Regione a 400 piante/ha)	Avvicendamento almeno biennale con esclusione o riduzione dell'uso di fitofarmaci e di diserbanti di sintesi	Copertura dedicata a piante di interesse apistico (nettariere e pollinifere) spontanee o seminate

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Eco-schema 2: Inerbimento delle colture arboree

Impegni	Descrizione
IM01	Assicurare la presenza di copertura vegetale erbacea spontanea o seminata (nel rispetto dell'impegno IM03) nell'interfila o, per le colture non in filare, all'esterno della proiezione verticale della chioma, tra il 15 settembre e il 15 maggio dell'anno successivo. La copertura vegetale deve essere assicurata sul 70% della superficie oggetto d'impegno, calcolata come "rapporto tra la SAU ammissibile inerbita della coltura permanente e la SAU totale ammissibile della coltura permanente, come misurata nel SIPA.
IM02	Non effettuare il diserbo chimico sull'interfilare.
IM03	Non effettuare lavorazioni del terreno durante tutto l'anno sull'interfilare. È consentito qualsiasi metodo di semina che non implichi la lavorazione del suolo
IM04	Durante tutto l'anno, gestire la copertura vegetale erbacea esclusivamente mediante operazioni meccaniche di sfalcio, trinciatura-sfibratura della vegetazione erbacea.

Sono fatte salve diverse disposizioni previste dai Servizi fitosanitari in relazione a piani di azione finalizzati al contenimento o eradicazione di fitopatie o di parassiti (ad esempio Xylella fastidiosa).

Angelo Frascarelli, PAC 2023-2027

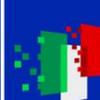
Eco-schema 4: Sistemi foraggeri estensivi con avvicendamento Classificazione colture

Classificazione		Colture
Colture leguminose e foraggere, o colture da rinnovo	Leguminose	Leguminose da granella Leguminose foraggere
	Foraggere	<i>favino, lenticchia, pisello, ecc.</i> <i>erba medica, trifoglio, vecia ecc.</i>
Altre colture	Colture da rinnovo	<i>loietto, festuca, erba mazzolina ecc.</i> <i>Mais, Soia, Girasole, Pomodoro, Patata, Sorgo da granella, Carciofo, Barbabietola da zucchero, Melone, Colza, Tabacco, Cipolla, Cocomero, Aglio, Canapa, Lino, Arachide, Ravizzone, Carota, Peperone, Melanzana</i>
	Cereali a paglia	<i>grano tenero, grano duro, orzo, avena, miglio, segale, farro ecc..</i>
	Ortive	<i>Cocomero, Finocchio, Lattuga, Spinacio, Zucca, Zucchini ecc.</i>
	Altre colture..	

Impegni	Descrizione
IM01:	Assicurare l' avvicendamento almeno biennale (inserito nel piano di coltivazione) sulla medesima superficie con leguminose e foraggere , o colture da rinnovo , inserendo nel ciclo di rotazione, almeno una coltura miglioratrice proteica o oleaginosa, o almeno una coltura da rinnovo.
IM02:	colture leguminose e foraggere: non è consentito l'uso di diserbanti chimici e di altri prodotti fitosanitari nel corso dell'anno. colture da rinnovo: è consentito esclusivamente l'uso della tecnica della difesa integrata (volontaria) o della produzione biologica (solo con riferimento alle tecniche di difesa fitosanitaria).
IM03:	Interramento dei residui di tutte le colture in avvicendamento (es. le stoppie). Fatta eccezione per le aziende zootecniche ovvero con capi in BDN (bovini e bufalini, ovi-caprini, suini, equidi e/o avicoli). Le aziende che adottano tecniche di agricoltura conservativa (Semina su sodo / No tillage (NT), la Minima Lavorazione / Minimum tillage (MT) o la lavorazione a bande / strip tillage) raggiungono <i>ipso facto</i> i medesimi obiettivi.

Angelo Frascarelli, PAC 2023-2027

SEMINATIVI	DESCRIZIONE
IM01:	Nei seminativi, mantenimento nell'anno di impegno di una copertura dedicata con piante di interesse apistico (nettariere e pollinifere) spontanee o seminate su una superficie minima di almeno 0,25 ettari contigui, con una larghezza minima di 20 metri, e una distanza da 3 a 5 metri da colture limitrofe (fascia di rispetto) non soggette a limitazione dell'uso di prodotti fitosanitari. Il mantenimento viene assicurato tramite la possibilità di effettuare la semina delle suddette piante.
IMPEGNO	IM02: Non eseguire operazioni di sfalcio, trinciatura o sfibratura delle piante di interesse apistico sulla superficie oggetto di impegno, per tutto il periodo dalla germinazione al completamento della fioritura. IM03: Fino al completamento della fioritura non utilizzare i diserbanti chimici e gli altri prodotti fitosanitari sulla superficie oggetto di impegno ed eseguire il controllo esclusivamente meccanico o manuale di piante infestanti non di interesse apistico sulla superficie oggetto di impegno.
SPECIFICHE	Dopo il completamento della fioritura sulla superficie oggetto di impegno è possibile effettuare la semina di una coltura principale.
PAGAMENTO	500 €/ha (plafond 33,4 milioni di euro)



ECOSCHEMES IN THE PAC

Ecoschemes Applicable to Wheat: (Sustainable Practices for Wheat Cultivation).

1. Crop Rotations
2. Conservation Agriculture
3. Weeding and Cover Crops
4. Precision Technologies
5. Green Infrastructure

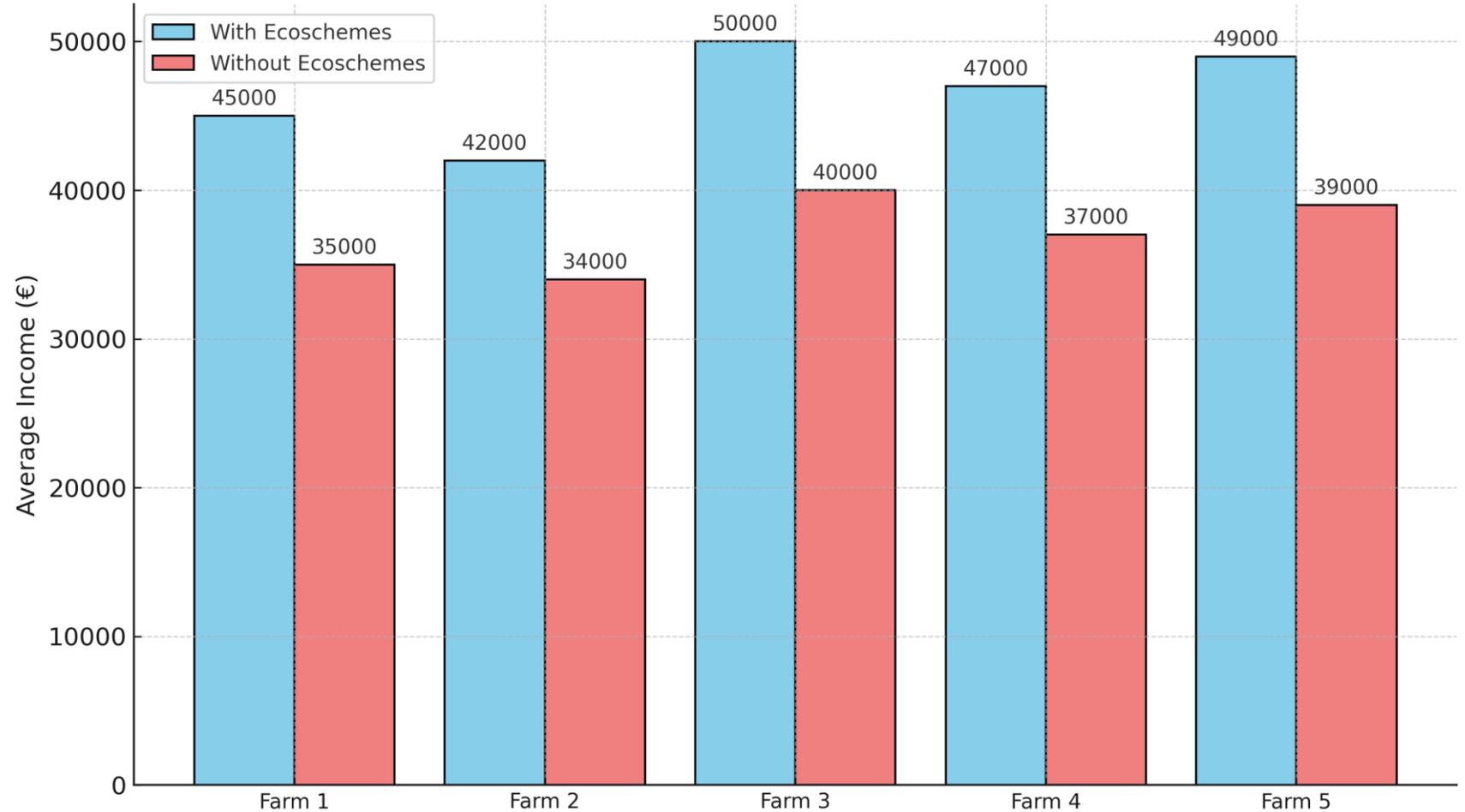


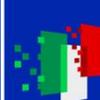
ECOSCHEMES IN THE PAC

Benefits of Ecoschemes: What Does the Farmer Get?

1. Additional Payments
2. Improved Resilience
3. Reduction in Long-Term Costs

Comparison of Average Income With and Without Ecoschemes



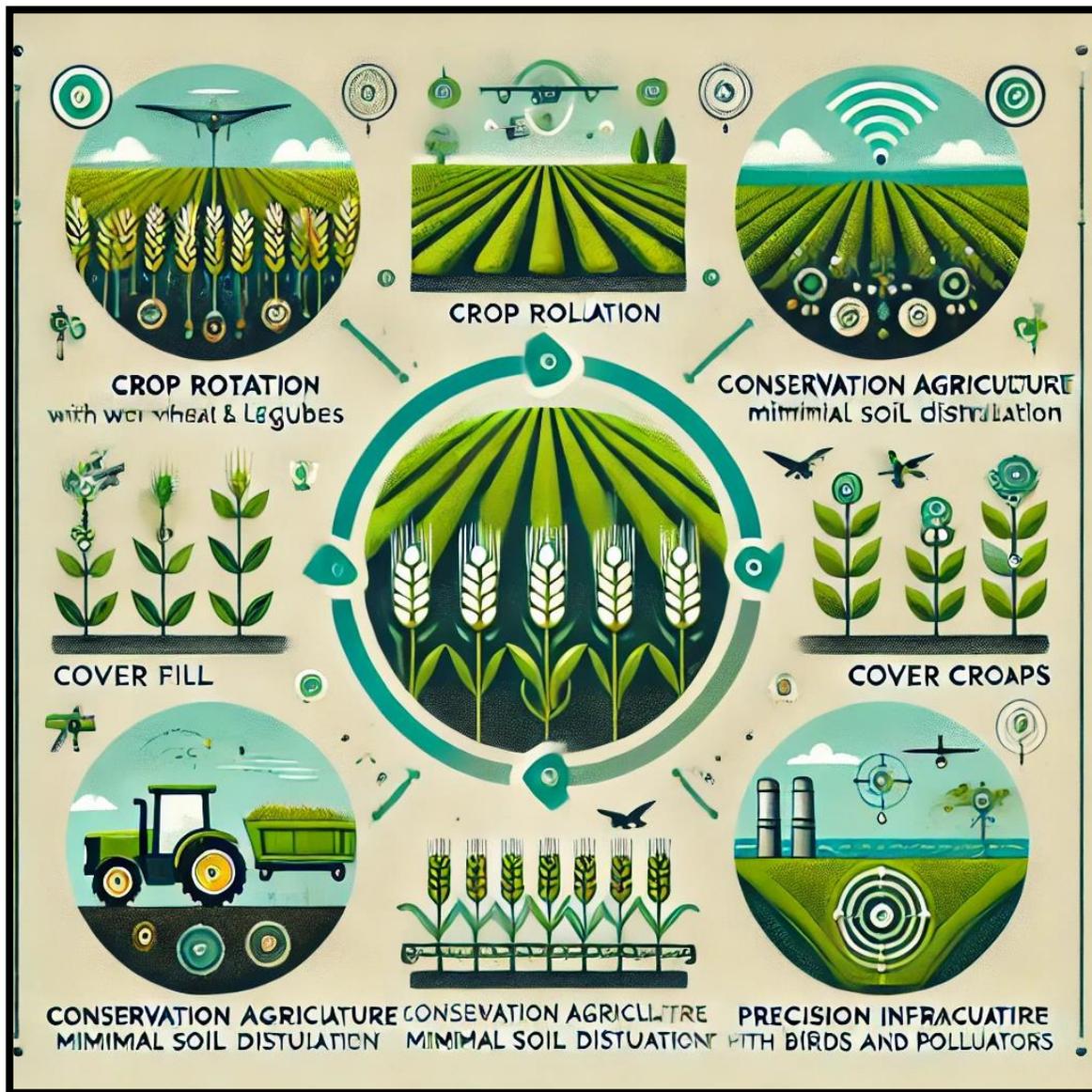
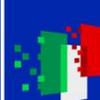


CHALLENGES	SOLUTIONS
High Initial Costs	Access to innovation funds and tax incentives
Resilience to Change	Training and awareness campaigns for farmers
Monitoring Practices	Use of satellite technologies, drones, and tracking systems
Bureaucratic Complexity	Simplification of administrative procedures
Adaptation to Local Conditions	Pilot projects and regional adaptation of guidelines

What will be the future of Sustainability in Agriculture?

ECOSCHEMES IN THE PAC

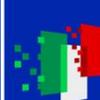




ECOSCHEMES IN THE PAC

Examples of applications of Ecoschemes:

- **Italy**: the Eco-scheme 4 (Extensive forage systems with rotation) - Practical case of the farm in Emilia-Romagna.
- **France**: implemented ecoschemes that encourage crop diversification and soil cover during winter.
- **Germany**: ecoschemes promote the use of precision farming techniques for wheat crops.



ECOSCHEMES IN THE PAC

The Italian Case: Focus on Durum Wheat.
National policies complement the PAC with:

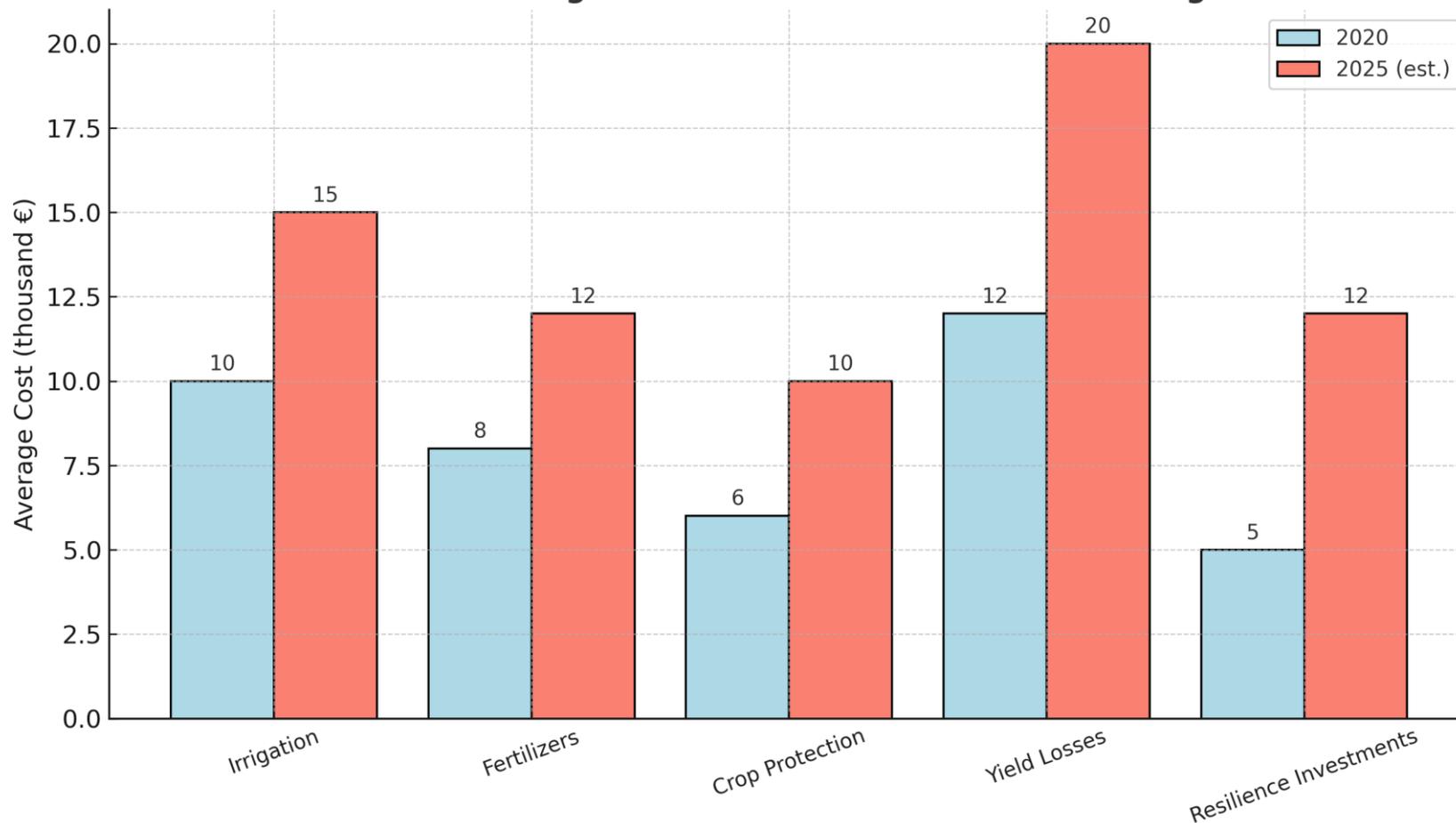
1. Promotion of quality wheat
2. Supply chain pacts
3. Agro-climatic measures





ECOSCHEMES IN THE PAC

Increase in Agricultural Costs Due to Climate Change



What are the Challenges to Face

1. Climate Change
2. International competitiveness
3. Adoption of sustainable practices



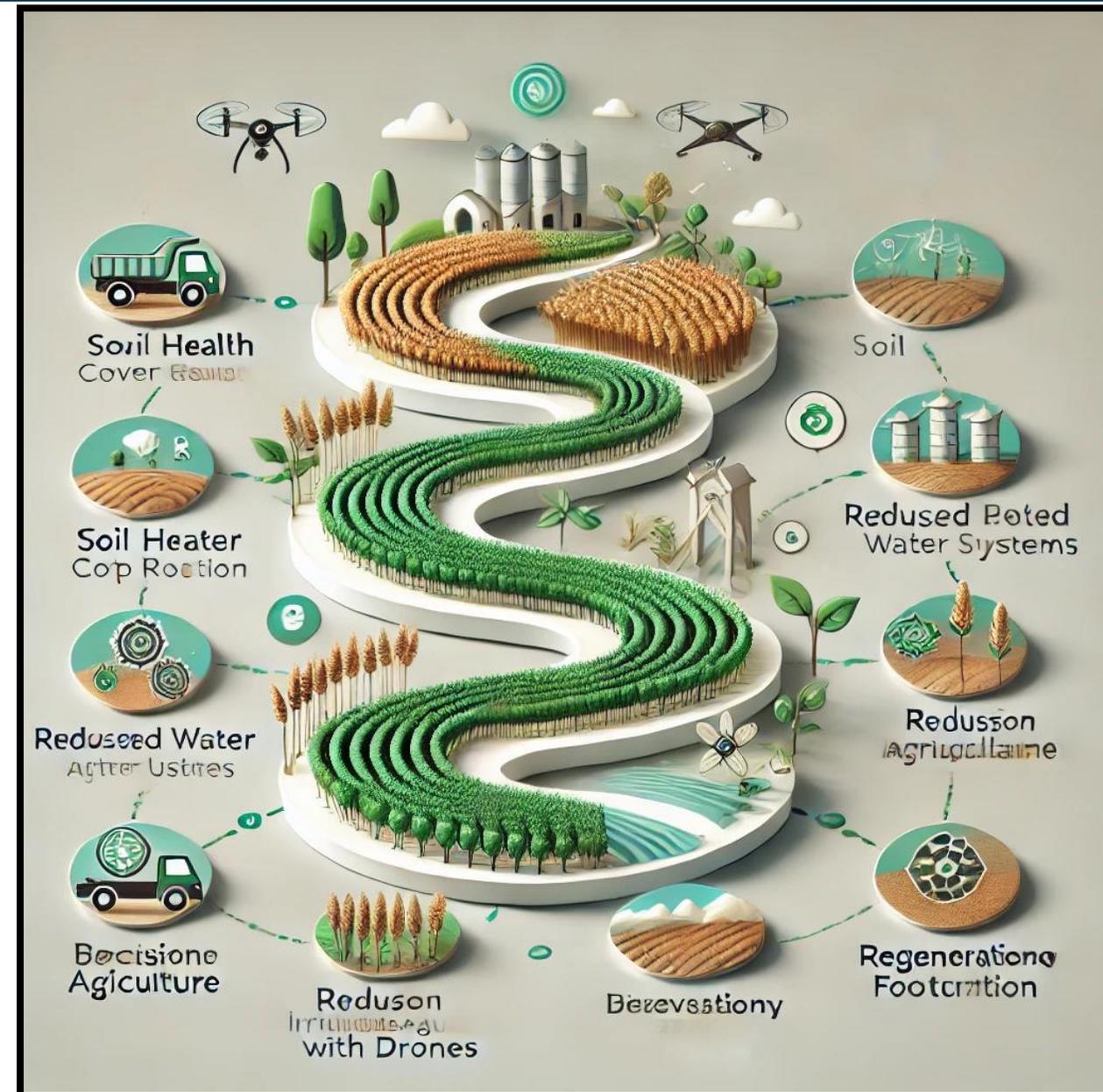


ECOSCHEMES IN THE PAC

The Future of Wheat Production in Italy.

Key actions:

1. Invest in technological innovation.
2. Strengthen cooperation between farmers and stakeholders.
3. Promote training for ecoschemes adoption.





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