AGROBOOST

Ethical Governance (Wisefour)

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Kick off Meeting

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Ethics by Design in AGROBOOST

AGROBOOST integrates ethics from day one, ensuring that all innovations are:

- Trustworthy
- Fair
- Transparent
- Safe
- Legally compliant
- Respectful of human rights
- Aligned with societal values

This builds long-term sustainability and adoption of AGROBOOST tools.

Why We Need Ethical Governance

AGROBOOST introduces **AI, robotics, AR, wearables and IoT into real agricultural environments.**

This means we work with **humans, machines, digital tools and sensitive data.**

Ethical governance is needed to:

- Protect workers and participants
- Ensure trustworthy and lawful AI
- Guarantee safe pilot deployment
- Build stakeholder confidence
- Align with EU regulations from day one

WISEFOUR ensures that all AGROBOOST technologies — AI, robotics, AR and sensor-based systems — are developed and deployed safely, lawfully and responsibly.

We provide the ethical governance framework, review all data and human-involvement activities, oversee GDPR and AI Act alignment and ensure that every pilot operates under strict ethical, legal and societal safeguards.

What AGROBOOST Does

AGROBOOST develops:

- Robotics for pruning, spraying, lifting
- AR tools for support & training
- AI models for optimisation, worker safety & decision-making
- Wearables and sensors for ergonomics
- Digital tools for farm efficiency

The project transforms agricultural work – ethically, safely, responsibly.

AGROBOOST conducts six full pilot campaigns across Europe to validate robotics, AI and AR technologies in real agricultural environments.

What AGROBOOST Does

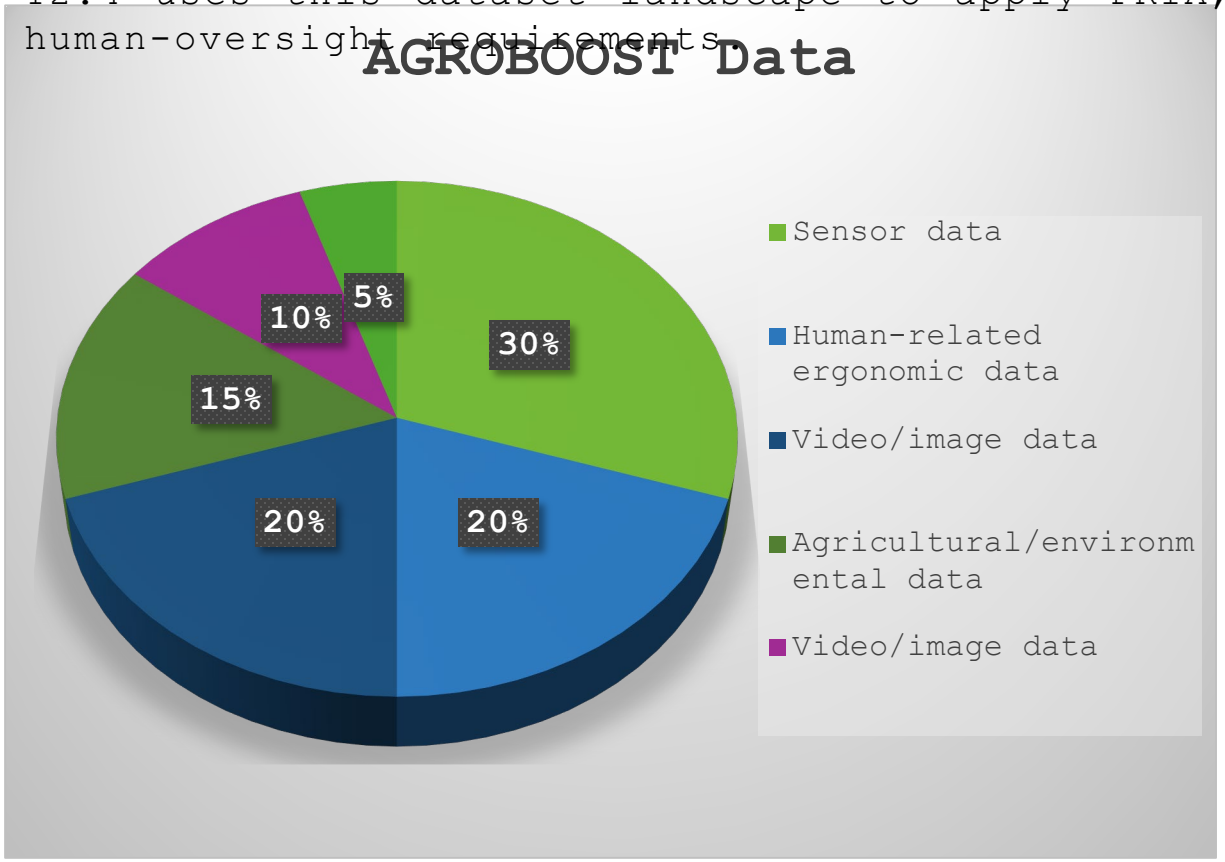
Tree Pruning & Flower Thinning (Portugal)	Selective Mushroom Harvesting (Ireland)	Automated Weeding (Greece)	Strawberry Gentle Picking (UK)	Livestock / Animal Husbandry Management (Belgium)	Steep-Slope Viticulture Monitoring (Switzerland)
• Use of semi-autonomous machinery and AR-guided pruning support. • **Data:** video, limb-movement data, ergonomic data, task annotations.	• Robotic mushroom picking with smart sensing and quality evaluation. • **Data:** visual data, crop-quality annotations, worker interaction logs.	• Smart autonomous systems for weed detection and removal. • **Data:** multispectral images, AI training data, field-mapping data.	• AI-enabled robotic systems for delicate fruit harvesting. • **Data:** object detection AI datasets, environmental sensor data.	• Digital tools and smart sensing for improved animal care. • **Data:** sensor data, movement patterns, environmental conditions.	• Robotics, drones and IoT for managing vineyards on steep slopes. • **Data:** geospatial data, drone imagery, crop-condition analytics.

Each pilot may involve:

- Human participation and observation
- Worker safety risks
- Collection of personal data (voice, body posture, identifiable video)
- AI decision-support that may impact workers or farm operations
- Environmental impacts
- Cross-border data sharing

What Data AGROBOOST Uses

AGROBOOST integrates multiple categories of data—including **human-centric, sensor-based, video, agricultural and AI-generated datasets.** Understanding these data types is essential for assessing ethical, legal and societal risks. T2.4 uses this dataset landscape to apply FRIA, ALTAI, societal readiness, fairness checks and human-oversight requirements.



Data Category	GDPR Risk	AI Risk	Ethics Sensitivity
Human data Motion capture Posture/ergonomics Interviews, surveys AR interaction logs	High	Medium	High
Video data – Video for AI detection– Camera feeds for AR/robotics	High	High	High
Sensor data – Wearables– IoT signals– Machine telemetry	Medium	Low	Medium
Agricultural data – Soil, weather, crop status– Operational conditions	Low	Low	Low
System logs	Medium	Medium	Medium
AI-generated data – Predictions, classifications– Risk scoring, alerts	Low	High	High

Ethical & Legal Requirements

EU Regulations

- GDPR – Data protection, consent, privacy
- AI Act – Documentation, transparency, human oversight
- EU Charter of Fundamental Rights
- ALTAI (Trustworthy AI)
- Fundamental Rights Impact Assessment (FRIA)
- Societal Readiness Level (SRL)
- Declaration of Human Rights and the Convention 108 for the Protection of Individuals with Regard to Automatic Processing of Personal Data
- EU HLEG Guidelines on AI

Risks in AGROBOOST

Key risk areas requiring governance:

- Privacy risks (video, biometrics, sensors)
- Bias & discrimination in AI models
- Safety risks during pilot testing
- Lack of explainability in predictions
- Incorrect data handling
- Misuse function of technologies
- Environmental or societal impact

Key actions

- Sensitive data anonymization
- Pseudonymization
- Aggregated data
- Limited access to authorized personnel only
- Controlled sharing environments
- Verified compliance of data processing operations with GDPR Articles 5, 6, and 32

AGROBOOST

T2.4 Social, Legal and Ethical Aspects of Technology Innovations for Enhanced Working Conditions (Wisefour)

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T2.4 “Social, Legal and Ethical Aspects of Technology Innovations for Enhanced Working Conditions”

T2.4 evaluates the broader societal, ethical and legal implications of AGROBOOST technologies. It ensures that the **robotics, AI and AR solutions developed in the project are acceptable, trustworthy, fair, transparent and aligned** with European values, international standards and the AI Act.

- socially acceptable
- transparent and trustworthy
- compliant with EU AI Act
- aligned with fundamental rights
- safe for workers

The goal of this task is to provide **a deeper understanding of the potential broader implications of the proposed ground-breaking technologies** and develop recommendations and mitigation measures for their responsible and ethical implementation.

Objective of T2.4 “Social, Legal and Ethical Aspects of Technology Innovations for Enhanced Working Conditions”

T2.4 aims to establish an **integrated ethical, social and legal framework** that:

- anticipates how new technologies will affect workers, safety, autonomy and fairness
- ensures all AI/robotic systems meet trustworthiness, transparency and accountability criteria
- identifies ethical, legal or social risks early
- guides partners in developing responsible, safe and inclusive solutions
- provides actionable recommendations before pilots and before market deployment

Ethical Framework for AGROBOOST

WISEFOUR will develop a comprehensive ethical framework that guides all project stakeholders and integrates responsible innovation principles, social impact considerations, fairness criteria, transparency obligations and mechanisms for safe deployment of advanced technologies in agriculture. **Ethical & Legal Requirements** specific to robotics, AI, AR and farm-oriented data

- **Responsible Innovation principles** supporting fairness, inclusion and transparency
- **Human-centric design guidelines** ensuring workers remain in control of technology
- **Social impact considerations**, especially for vulnerable groups

Fundamental Rights Impact Assessment

WISEFOUR will perform a FRIA to identify potential impacts related to privacy, discrimination, worker safety, fairness and autonomy. Mitigation strategies will be co-designed with pilots and technology developers to ensure technologies are compliant and respectful of fundamental rights.

- privacy & data protection
- worker autonomy, safety and ergonomics
- fairness & non-discrimination
- transparency & explainability
- labour conditions and professional rights

Data, Ethics & Legal Tools Provided by W4

T2.4 Tools	What It Is About
Ethics Compliance Dashboard	Monitoring system used to check ethics, consent, data protection, human involvement, ALTAI, and FRIA status.
Ethical Governance Framework	Facilitate collaboration between various stakeholders, such as the technology partners and actors within the agricultural domain
FRIA Assessment Template	Identifies risks to fundamental rights caused by AI/robotics/AR technologies.
ALTAI Trustworthiness Assessments	Use the ALTAI to evaluate transparency, accountability, robustness, privacy, fairness, and societal impact of AI systems.
Provide Pilot Readiness Audits	Ensures pilots are ethically and legally ready before field deployment.

AI Trustworthiness and AI Act Alignment

WISEFOUR will coordinate the application of the Assessment List for Trustworthy AI to evaluate the AI components and ensure alignment with the evolving AI Act. This includes risk classification, documentation, transparency, human oversight and robustness assessment across AGROBOOST technologies.

WISEFOUR implements:

- Risk identification
- Bias, unfairness & discrimination mitigation
- Transparency requirements
- Human oversight mechanisms
- Safety and robustness checks
- Aligned with the AI Act & ALTAI framework.

Ethics Advisory Board

AGROBOOST establishes an **independent Ethics Advisory Board (EAB)** to ensure that all technologies—AI, robotics and digital tools—are developed and deployed in line with European values, GDPR, the AI Act and the principles of trustworthy, human-centred innovation. The EAB supports WISEFOUR in reviewing ethical, legal and societal impacts across the entire project lifecycle.

Board Composition

- 5 external experts, and digital tools—are developed and deployed in line with European values, the GDPR, the AI Act,

Responsibilities

- Review DMP, FRIA, ALTAI & ethics procedures
- Advise on human involvement, worker safety & AI transparency
- Validate pilot readiness from an ethics perspective
- Issue recommendations & annual ethics reviews

Meeting Schedule

- Before each pilot deployment
- Annual ethics oversight meetings

Coordination

- WISEFOUR acts as EAB Secretariat
- Ensures follow-up actions and compliance integration

How T1.4 Tools Support T2.4

Tools developed under T1.4 are **the foundation** for T2.4:

- **Data Governance Tool** → Needed to evaluate risks for FRIA and AI Act.
- **AGROBOOST Data Questionnaire** → Includes ALTAI and risk sections.
- **Consent & Information Sheets** → Required before any human involvement.
- **Research Agreements** → Regulate lawful data sharing and collaboration.

T2.4 uses these tools to perform deeper analysis of societal, ethical and legal impacts.

Workflow for T2.4

- ✓ Partners submit technical descriptions & data questionnaires
- ✓ Fill in the Ethics Compliance Dashboard and FRIA
- ✓ Identify societal and ethical risks early
- ✓ WISEFOUR performs FRIA + ALTAI review
- ✓ Present mitigation strategies with W4
- ✓ Ethics Advisory Board provides feedback
- ✓ Partners adapt design and document changes
- ✓ WISEFOUR validates readiness before pilot
- ✓ Continuous ethical monitoring throughout pilots

Next Steps

- Ethics Compliance Dashboard filled in by **partners**
- Ethical & Responsible Innovation Framework by **W4**
- FRIA assessments per technology
- ALTAI trustworthiness evaluations
- Inputs to D2.1, D2.2, D2.3

How Monitoring Works

Step-by-step process:

1. Partners fills all the templates and tools
2. WISEFOUR reviews for risks, legality & GDPR compliance
3. Data Management Plan development
4. Ethics Advisory Board reviews high-risk items
5. Mitigation actions sent back to partners
6. Pilot allowed to proceed only after approval
7. Dashboard tracks compliance, documentation and ethical status

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Thank you!

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