

“SYNTHESIS PER COUNTRY ON CROP PROTECTION STATUS AND ACTIONS” FOR ALBANIA

National Report - COST Action CA21134, TOP Agri-Network

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(I) SHORT INTRODUCTION AND METHODOLOGY

1.1. Background, Objectives and Scope

Crop protection is a key element of sustainable agricultural production in Albania, a country in which agriculture contributes about 15-16% of gross domestic product and employs a large part of the rural workforce, mostly on small, fragmented family farms averaging around 1.2 hectares. Plant protection products (PPPs) currently remain the main tool used by farmers to control pests, diseases and weeds and to secure yield, quality and food security, but their use also carries risks for farmers' health, consumer safety and the environment when not accompanied by adequate knowledge, monitoring and application.

This report reviews the status of crop protection and pesticide use in Albania and identifies the drivers, barriers and opportunities for a wider adoption of Integrated Pest Management (IPM), agroecology and other preventive approaches, in line with the objectives of the EU Farm to Fork Strategy and the transition promoted by COST Action CA21134 “Towards zero Pesticide AGRiculture” (TOP-AGRI-Network). The assessment focuses on: (a) pesticide use patterns, management and residue monitoring; (b) the institutional and legal framework and its approximation with EU legislation; (c) nationally funded programmes and projects; and (d) initiatives that engage farmers, researchers and policy makers in the transition toward more sustainable crop protection.

1.2. Methodology and Sources of Information

The report was prepared through a desk review of national legislation, official statistics, strategic and technical documents and recent peer-reviewed literature, complemented by information from institutional reports and ongoing donor-funded projects. Sources consulted include:

- Albanian legislation on plant protection and plant health, including Law No. 105/2016 “On Plant Protection” (amended), the related Decisions of the Council of Ministers (DCM), and the new Law No. 40/2025 “On Plant Health”, which partially approximates EU Regulation (EU) 2016/2031;
- The National Action Plan for the Sustainable Use of Plant Protection Products in Albania 2022-2032, prepared with FAO support;
- Official statistics from Institute of Statistics in Albania (INSTAT), the Ministry of Agriculture and Rural Development (MARD), the National Food Authority (NFA/AKU) and the Institute of Food Safety and Veterinary (IFSV/ISUV);
- Recent scientific studies on pesticide residues in fruit and vegetables, farmers’ knowledge and attitudes toward PPP use, and the smallholder farm structure of the country (FAO, 2020);
- Reports and web sources on nationally and internationally funded projects related to biological control, laboratory infrastructure and phytosanitary capacity building (FAO, GIZ, P.L.A.N.T. Foundation, EU LIFE Programme, SAICM).

(II) CURRENT SITUATION OF CROP PROTECTION AND PESTICIDE USE IN ALBANIA

2.1. Agricultural Production and Crop Protection Challenges

Albania's Mediterranean coastal climate and mild-continental interior support a diverse agricultural sector on a total utilised agricultural area of about 1.17 million hectares (52% arable land, 41% pastures and meadows, 7% permanent crops). Vegetable production is mainly tomatoes, peppers and cucumbers grown in greenhouses in the Myzeqe plain (Lushnjë, Fier, Berat), together with olive groves, vineyards and intensive fruit orchards (mainly apple), represent the country's highest-value and most input-intensive crop-protection systems. Greenhouse vegetable area alone grew from about 1,244 ha in 2015 to over 1,800 ha in 2020, reflecting a gradual shift toward market-oriented, protected cultivation. Pesticides are primarily applied to control the main pests and diseases affecting these cropping systems (Table 1).

Table 1. Main pests and diseases by key production system

Production system	Main insect pests	Main plant diseases
Greenhouse vegetables	Tomato leafminer (<i>Tuta absoluta</i>); aphids	Late blight (<i>Phytophthora infestans</i>); root/crown rot (<i>Pythium</i> , <i>Fusarium</i> spp.)
Fruit orchards (apple)	Codling moth (<i>Cydia pomonella</i>); aphids	Apple scab (<i>Venturia inaequalis</i>); powdery mildew (<i>Podosphaera leucotricha</i>)
Vineyards	European grapevine moth (<i>Lobesia botrana</i>)	Downy mildew (<i>Plasmopara viticola</i>); powdery mildew (<i>Erysiphe necator</i>)
Olive groves	Olive fruit fly (<i>Bactrocera oleae</i>)	Olive peacock spot (<i>Spilocaea oleagina</i>)

Source: Adapted from FAOSTAT, 2025 and national sources.

Emerging challenges include the spread of invasive pests such as *Tuta absoluta* and the Asian chestnut gall wasp (*Dryocosmus kuriphilus*) threatening chestnut forests in the Tropojë region, climate change has increased pest pressure and prolonged humid microclimates in poorly ventilated greenhouses that favour fungal pathogens on crops. Current plant-health surveillance relies mainly on the National Food Authority's regional directorates and, since 2025, on the newly designated phytosanitary authorities under Law No. 40/2025, but systematic pest-forecasting and early-warning tools remain limited.

2.2. Pesticide Use, Management and Risks

Albania uses considerably less pesticide per hectare than the EU average, with FAOSTAT reporting roughly 300 tonnes of active ingredient applied nationally in 2023. Unlike the EU pattern, where herbicides and fungicides dominate, fungicides account for the largest share of PPPs used in Albania (about 35-67% depending on the source and year), reflecting the strong fungal disease pressure in greenhouses and orchards, followed by insecticides (15-24%) and herbicides (only 7-15%). PPP imports vary from about 730 tonnes in 2018 to over 1.1 million kilograms in 2020, with fungicides consistently the largest category.

About 320 PPPs are currently registered for the Albanian market (all pre-registered in an EU country), and their use, storage, transport and disposal are regulated in detail. Since 2022, professional users are required to keep an on-farm “Register of PPP Use” recording the product, dose, treatment dates, pre-harvest interval and equipment used, which is central to traceability. Distribution of this register accelerated sharply between 2023 and 2024 (from about 1,450 to 3,381 registers issued, with a matching increase in farmer training), indicating growing institutional uptake, although independent field surveys still find gaps in practice.

A performed survey of 92 farmers in the Semani river catchment (Thana-Karavasta) found that only 16% had a high level of knowledge of correct PPP application, while 57% had medium and 27% low knowledge; 34% of farmers showed low awareness of health risks and 25% of the environmental impact of PPPs. Farmers' education combined with years of farming experience was the only statistically significant predictor of a more adequate attitude toward PPP use, underlining the importance of targeted training.

Pesticide residue monitoring is conducted both on the market and, since 2022, directly at farm level. A survey of 62 vegetable samples from 11 crop types, analysed by GC-MS/MS and LC-MS/MS for 417 pesticide analytes, detected 42 compounds. MRL exceedances occurred in 42.3% of leafy vegetable samples (lettuce, spinach and parsley) and 18.8% of pepper samples, but not in root or bulb vegetables. Greenhouse-grown vegetables showed significantly more frequent multi-residue contamination than open-field crops. Eleven detected substances, including chlorfenapyr, DDT, fipronil, imidacloprid and linuron, are not currently authorised as plant protection products in the EU, suggesting illegal use or environmental persistence. Another farm-level survey in 2023 (178 samples) detected 12 unregistered active substances, particularly chlorfenapyr and chlorpyrifos, also reported through the EU Rapid Alert System for Food and Feed (RASFF). These findings highlight the need for continued monitoring of acute consumer risks.

Environmental risks remain significant, due to extensive historical use of organochlorines such as DDT and metabolites are still detected in vegetables. The absence of systematic national monitoring of pesticide residues in soil, surface water and groundwater remain an important gap identified in the National Action Plan.

2.3. Sustainable Crop Protection and Institutional Framework

IPM adoption in Albania remains at an early stage outside donor-funded pilot projects. The legal principles of IPM are embedded in DCM No. 317/2019 (amended by DCM No. 226/2022), but systematic application at farm level is still limited by low farmer awareness, fragmented land holdings (average 1.2 ha, often split into three or more parcels) and limited access to advisory services. Biological control has however been successfully introduced in greenhouse vegetable production (see Section iv), showing that a shift away from calendar-based chemical spraying is technically feasible. Based on the new Law No. 40/2025, plant protection and plant health responsibilities are shared between the Ministry of Agriculture and Rural Development (MARD), the National Food Authority (NFA), the Institute of Food Safety and Veterinary (IFSV), the National Veterinary and Plant Protection Authority. Albanian legislation is progressively aligned with the EU acquis, notably Regulation (EC) No. 1107/2009 (placing of PPPs on the market), Regulation (EC) No. 396/2005 (maximum residue limits), Directive 2009/128/EC (sustainable use of pesticides) and, most recently, Regulation (EU) 2016/2031 on protective measures against plant pests, transposed through Law No. 40/2025. Key remaining gaps include the absence of a licensed vocational-training system for professional PPP users (still not operational despite the 2019 legal basis), incomplete data-sharing between INSTAT and MARD on pesticide trade and use statistics, and persistent delays in laboratory testing of PPP quality and residues.

(III) DRIVERS, ENABLERS AND BARRIERS TO ADOPTION OF AGROECOLOGY, IPM AND PREVENTIVE APPROACHES

3.1. Drivers and Enabling Factors

The main drivers and enabling factors for Albania are as follow:

- Albania's EU accession process is driving the progressive transposition of the EU pesticide and plant-health acquis (Regulations (EC) No. 1107/2009 and 396/2005, Directive 2009/128/EC, Regulation (EU) 2016/2031), creating a legal and institutional pull toward IPM and reduced-risk crop protection.
- Growing consumer and export-market demand for compliant, low-residue produce, reinforced by RASFF notifications and repeated EU findings that Albania, Greece and Serbia are among the Balkan countries most frequently flagged for pesticide residues in exported food.
- Climate-change adaptation objectives and the increasing frequency of new or invasive pests (e.g., *Tuta absoluta*, chestnut gall wasp) are prompting interest in biological and preventive alternatives to broad-spectrum chemical control.
- Positive early experience with donor-funded biological control programmes in greenhouse vegetables and forest protection, which have demonstrated technical feasibility and reduced insecticide dependence.
- New fiscal incentives, including 0% VAT on imported biological control organisms and direct subsidies of up to 50-70% of biocontrol input costs under the National Agricultural Support Scheme are lowering the cost barrier to non-chemical alternatives.

3.2. Barriers and Constraints

The key barriers and constraints in Albania include:

- Limited farmer knowledge and technical capacity.
- Small, fragmented farm structure that limits investment capacity, mechanisation and the economic viability of some non-chemical alternatives.
- Continued dependence on conventional, calendar-based pesticide use, particularly fungicides, driven by strong disease pressure in greenhouses and orchards and by the relatively low cost of generic synthetic products compared with biological agents.
- Institutional and monitoring gaps: no fully operational mandatory training/certification system for professional PPP users; delays and pending analyses in testing PPP quality and pesticide residues; absence of a systematic national programme monitoring pesticides in soil and water.
- Logistical constraints specific to biological control and continuing informal trade and unauthorised sale of pesticides at local level, which undermines enforcement even where exported produce meets EU standards.

3.3. Opportunities and Priorities for Wider Adoption

Despite above barriers and constraints, several opportunities and priorities exist to promote the wider adoption of IPM in Albania, including:

- Scale up the biological control model already piloted in greenhouse vegetables (parasitoid wasps, predatory mites, pheromone traps combined with *Bacillus thuringiensis*) to more of the roughly 1,800 ha of protected cultivation and to additional crops and regions.
- Operationalise the mandatory training and certification system for PPP sales staff, advisers and professional users foreseen in the National Action Plan, with clear targets for 2025-2032.
- Establish demonstration farms and farmer field training, building on the experience of the Agricultural University of Tirana and international projects, to accelerate peer-to-peer learning on IPM and reduced pesticide use.
- Expand digital tools for pest forecasting, traceability and reporting of residue monitoring results to farmers and the public.

- Continue and broaden economic incentives (VAT exemptions, direct subsidies, organic-conversion payments) to make biological and preventive solutions cost-competitive with conventional pesticides for smallholders.

(IV) NATIONALLY FUNDED PROJECTS AND PROGRAMS IN CROP PROTECTION

4.1. Government Programs and Support Measures

The Government of Albania supports crop protection and sustainable agriculture through several complementary instruments:

- The National Action Plan for the Sustainable Use of Plant Protection Products 2022-2032, which sets targets for training, pesticide sales control, data collection, equipment inspection, protection of pollinators and water bodies, and IPM adoption, coordinated by MARD.
- The 2026 National Agricultural Support Scheme (VKM No. 205/2026), which, under “Measure 5”, co-finances up to 70% of the cost of biological control materials (beneficial insects) for greenhouse tomato, pepper and cucumber production and strawberries under tunnels; “Measure 6” provides graduated support for farms converting to organic production.
- A 0% VAT exemption on imported beneficial organisms used for biological pest control, reducing the cost disadvantage of biological inputs relative to synthetic pesticides.
- The Pesticide Safety and Laboratory Infrastructure Enhancement programme (2026-ongoing, approximately €2.4 million, MARD-funded), upgrading the Institute of Food Safety and Veterinary's capacity for sensitive pesticide and heavy-metal residue analysis in crops.

4.2. Research, Monitoring and Capacity-Building Initiatives

The main research, monitoring and capacity-building initiatives are:

- On-farm PPP-use monitoring campaigns (2022-2025) combining register inspection with sampling of growing (unharvested) plant material in tomato, pepper, cucumber, cherry, lettuce, spinach, grape, carrot and other crops, coordinated by MARD, NFA and IFSV, with a dedicated annual action plan and inter-institutional “Task Force” established in 2025 (Minister's Order No. 64/2025) to coordinate residue and enforcement follow-up.
- Adoption of EU-harmonised risk indicators (Minister's Order No. 1003/2024, transposing Commission Implementing Directive (EU) 2019/782) to track national trends in pesticide-related risk over time.
- The P.L.A.N.T. Foundation Food Safety and Traceability Laboratory initiative (2026-ongoing), a public-private partnership developing Albania's first internationally accredited pesticide-testing facility to support EU-compliant export data.
- The GIZ-supported Biological Control in Greenhouse Vegetable Production programme (2021-ongoing), covering roughly 3,000 farms and 2,500 hectares of greenhouse vegetables in the Myzeqe plain, introducing parasitoid wasps (*Encarsia formosa*, *Eretmocerus mundus*, *Aphidius colemani*), predatory mites (*Phytoseiulus persimilis*) and pheromone-based control of *Tuta absoluta*.
- The FAO Chestnut and Forest Ecosystem Protection Initiative (2026-ongoing), which introduced the parasitoid wasp *Torymus sinensis* and established a regional insect-breeding facility in Bajram Curri to control the Asian chestnut gall wasp without chemical spraying in the Tropojë region.
- The completed BalkanDetox LIFE project (EU LIFE Programme), which delivered Albania's National Anti-Poisoning Road Map addressing illegal use of pesticides as wildlife poison baits, now integrated into domestic policy.

- The completed SAICM Pesticide Management Training Project, which developed training curricula on safe handling, application thresholds and storage for pesticide dealers, farmers and school teachers.

(V) NATIONAL INITIATIVES INVOLVING FARMERS, STAKEHOLDERS AND POLICY MAKERS

5.1. Farmer and Stakeholder Initiatives

Farmer and stakeholder engagement in sustainable crop protection is still largely project-driven rather than institutionalised. Regional Agricultural Extension Agencies (AREB) support farmers in completing the on-farm PPP-use register and provide field-level advice, while the Agricultural University of Tirana has collaborated with individual farms, mainly through doctoral research and specialist studies, to pilot IPM practices. International donors (GIZ, FAO, the P.L.A.N.T. Foundation and the EU LIFE Programme) have been the main drivers of concrete, multi-actor initiatives for example, the greenhouse biological-control programme, which required close cooperation between input suppliers, extension advisers and farmers.

5.2. Policy Engagement, Lessons Learned and Future Priorities

Farmers and stakeholders participate in policy development mainly through consultation during the drafting of secondary legislation (e.g., DCM No. 226/2022 amending the sustainable-use regulation) and through the multi-institutional “Task Force” created in 2025 to coordinate enforcement and monitoring across MARD, NFA and IFSV. Key lessons from existing initiatives include: (i) targeted subsidies and VAT relief can rapidly increase uptake of biological control when combined with technical support, as shown by the growth in registered biocontrol beneficiaries; (ii) traceability tools such as the on-farm PPP-use register are most effective when paired with active training; and (iii) enforcement gains recorded in official pesticide-trade inspections need to be matched by faster laboratory turnaround to be fully effective.

(VI) MAIN FINDINGS AND RECOMMENDATIONS

Albania has made measurable progress in aligning its plant-protection and plant-health legislation with the EU acquis, most recently through Law No. 40/2025 “On Plant Health”, and in building the institutional tools as the on-farm PPP-use register, harmonised risk indicators, and an inter-institutional Task Force, needed to monitor and reduce pesticide-related risk. Biological control pilots in greenhouse vegetables and forest protection demonstrate that non-chemical alternatives are technically viable at scale when supported by appropriate incentives. Farmer knowledge, PPE use and formal IPM adoption remain moderate to low, and small farm size continues to constrain investment in alternatives.

Based on these findings, the following actions can be recommended:

- Complete and operationalise the mandatory training and certification system for professional PPP users, advisers and trade staff.
- Scale up biological control and IPM demonstration programmes beyond current donor-funded pilots, extending coverage to more greenhouse area, orchards and vineyards, supported by continued VAT exemptions and co-financing.
- Strengthen laboratory capacity and reduce processing times for PPP quality and residue testing at IFSV, building on the ongoing infrastructure investment, and establish a systematic national programme for monitoring pesticide residues in soil and water.
- Institutionalise farmer and stakeholder participation through farmer field training, cooperative platforms and regular publication of monitoring results, ensuring that lessons from pilot projects

are mainstreamed into national policy and budget cycles ahead of further EU accession-related obligations.

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