On Behalf Of
Municipality of Ilida
Project Partner

A S.W.O.T. ANALYSIS
(Strengths, Weaknesses, Opportunities, Threats)

EXECUTIVE SUMMARY

In Agricultural Plastic Waste Management Problem

In Ilida Territory & beyond

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A.W.A.R.D.
Agricultural Waste valorization for a competitive and sustainable Regional Development

Work Package 3 - Activity 3.1.
Deliverable 3.2.3.
Executive summary

Heliospho was appointed as a strategic subcontractor in an award program undertaken by Municipality of Ilida (M.O.I), about agro plastic waste (APW) recycling and management in the framework of AWARD Greece – Italy Interregional program. Heliospho aims at a SWOT analysis of the problem, as well as a strategy and action plan, on how the Ilia territory will face its current and future challenges and use it as a development tool to enhance its agro sector and attract direct investments.

To help facilitate the development of an effective strategy, this report presents information on:

- The current situation (size and structure of the agricultural industry, types and quantities of waste, and current practices).
- Steps for change (the proposed legal controls and other measures / steps).
- APW waste management options and hindrances.

It is noteworthy, that the municipalities are not responsible for not urban municipality waste. Therefore industrial waste, as well as APW, is not their responsibility. The FoDSAs (Management Bodies of solid waste), are the authorized bodies for the specification and implementation of the objectives and activities of the Regional Solid Waste Management Plans, particularly for temporary storage, transshipment, recovery and disposal of waste. However, neither a particular APW management plan by FodSA exists, nor an authorized one by EOAN (National Organization for Recycling). The farmers are legally responsible for managing the waste they produce, but there are no specific procedures on how this should be done.

Current APW Management in Ilia

The agricultural industry in Ilia produces a wide range of APW, coming from packaging, plastic films, silage, pesticide bottles, fertilizer bags, plastic products for livestock, etc. The total quantity of APW is estimated to be approximately 8,000 tons per year, mainly PP and PE type. However, it should be pinpointed that there is still limited reliable data available, regarding many waste streams, and the quantity of waste currently stockpiled on farms is unknown.
Current situation can be summarized as:

1. Absence of any official organized system of control and management, especially for APW.

2. The collected APW for recycling / regeneration by private collectors is around 20-25% of the total volume. The collection includes mostly plastics from greenhouses that are of heavy duty type and relatively clean.

3. The remaining APW is burned, buried, or discarded uncontrollably.

4. The PEST Analysis carried out by P6 (Innopolis) with the support of P5 (Heliospho) revealed that the situation in the eligible area needs immediate attention, as the problem has intensified considerably. Farmers need immediate guidance and awareness on the environmental hazards the above practice provokes and Public Health risks, too.

A strategy and an action plan based on the analysis of weaknesses and strengths that threaten the sector (SWOT Analysis) in order to promote the performance of the sector is examined, so as an implementation may meet the challenges and attract domestic and foreign investments. The aim until 2020 is reaching a rate of recycling of plastics up to 60%.

General targets:
A. Zero APW thrown in landfills.
B. Zero APW buried in the fields
C. Zero uncontrolled combustion.
D. Zero uncontrolled discharge.
E. 100% of the plastic waste should be reused, recycled / regenerated or used for energy recovery through incineration.

A solution to the APW problem requires a schema that will involve:

a. A clear and explicit will for the formation of a reliable APW management.
b. Proper legislation enforcement.
c. Control measures to impose collection and management.
d. Financial resources for a management system to function smoothly and without obstructions.
### SWOT TABLE ANALYSIS

<table>
<thead>
<tr>
<th>Involved Parties</th>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
<th>OPPORTUNITY</th>
<th>THREATS</th>
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</table>
| **Farmers**      | • Large number at the area’s population.  
                   • Vast market for agro products.  
                   • Cheap labour.  
                   • Water and electricity availability.  
                   • Increasing agro production.  
                   • Very general waste legislation.  
                   • No specifications on how APW should be handled.  
                   • Lack of good practises.  
                   • No farmers’ incentive and reward plans.  
                   • Lack of awareness.  
                   • Weak economic situation. | • Avoidance of further soil, air contamination—better food/products safety  
                   • Expansion of potential market (local and external). | • Additional costs at the production. |
| **Collectors**   | • No serious competition.  
                   • Almost charge free APW to be collected.  
                   • Cheap labour.  
                   • Ability to select only the cleaner APW.  
                   • Vast amounts of APW.  
                   • Increasing flow of APW.  
                   • Inefficient marketing and communications’ scheme.  
                   • Lack of technology and equipment.  
                   • Difficulties to license collection stations. | | • Unlicensed collectors.  
                   • Funding difficulties. |
| **Recyclers / regenerators** | • No serious competition.  
                   • Almost all regenerated production is sold.  
                   • Cheap labour.  
                   • Ability to select only the cleaner APW.  
                   • Vast amounts of APW.  
                   • Increasing flow of APW.  
                   • No pollutant techniques.  
                   • No hazardous or toxic sub products.  
                   • Lack of transportation infrastructure (poor quality of roads, lack of train and commercial port, etc.)  
                   • Difficulties to license a recycling factory. | | • Water needs.  
                   • Energy costs.  
                   • Unstable or low oil prices.  
                   • Funding difficulties. |
| Municipality/Inhabitants | • A bio Waste Factory is to be constructed.  
• Landfills already in place.  
• Cheap labour.  
• A national highway is under construction.  
• A small and easily accessible population to be informed.  
• PPP schemes are promoted by the state.  
• GIS can be easily applied.  
• Geographical position.  
• Waste management is a EU priority. | • No APW management schema.  
• No control mechanisms.  
• Complex legislative.  
• Authorities’ miscommunication, information exchange, disorganisation.  
• The need for planning a strategy and action plan.  
• Lack of infrastructure.  
• Awareness of the population | • APW raw material resource  
• Energy resource  
• Increase labour and businesses at the area.  
• Environmental preservation.  
• Landfills’ volume capacity space preservation.  
• Avoiding penalties for waste mismanagement / landfilling.  
• Safer food.  
• Environmental preservation of Olympia’s territory | • Indifference.  
• Incineration plants. costs.  
• Authority’s communication, information exchange, disorganisation.  
• Funding difficulties. |
APW management is not only a top priority issue for the Environment and Public Health, but it can also be beneficial for all the parties involved. In times of economic hardships, APW collection and recycling can offer employment and development opportunities, locally and nationally, for both the public and the private sector. Funds for waste management, biodiversity, ecological revival, environment conservation and of course food safety, can and should be granted and utilized. Regulations’ implementation is imperative, along with an update of more explicit and detailed laws. It is of utmost importance that the public and the farmers should be thoroughly informed on the agro plastic waste value and simultaneously contribute to public health. Lastly, all the parties involved should agree in a close cooperation, concerning feasible agro plastic waste plans, so as to be put into practice, as soon as possible.