PROJECT TITLE

IMPLEMENTATION OF GREEN DEVELOPMENT IN AGRIFOOD SUPPLY CHAINS

Proposal Summary, December 2012

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Description of Workpackages

Workpackage 1 (WP.1): Mapping of selected chains

Workpackage 1 includes the following four tasks:

- Identification of specific supply chains
- Analysis of main parts and activities of selected supply chains
- Value chain analysis
- Identification of the main environmental impacts on the selected supply chains in the Greek agrifood sector

This work package begins with the identification and selection of specific supply chains to be studied, within the wider agrifood sector. Three or four supply chains from the Greek Agrifood Sector will be selected for in depth analysis, recommendations and future implementation of the tools that will be developed in this project; the selection of the supply chains will be based on multiple factors, such as:

- labour intensity and yield productivity,
- requirements for logistics infrastructures and operational intensity
- input requirements (seeds, agrochemicals, etc)
- regional, domestic and international economic significance
- implementation of labelling schemes such as the EU Protected Food Name Scheme, the Protected Designation of Origin (PDO) and Geographical Indication (PGI)
- supply chain complexity
- innovation and knowledge intensity
- organic vs conventional production

The detailed list of factors for the selection of the supply chains will be finalized after thorough review of the related literature. The suggested technique for the selection of the supply chains is the Analytic Hierarchy Process (AHP). The analytic hierarchy process (AHP) is one of the extensively used multi-criteria decision-making methods. One of the main advantages of this method is the relative ease with which it handles multiple criteria. In addition to this, AHP is easier to understand and it can effectively handle both qualitative and quantitative data. The use of AHP does not involve cumbersome mathematics. AHP involves the principles of decomposition, pairwise comparisons, and priority vector generation and synthesis (Wang et al., 2004). As an outcome of elaboration between research team members and a preliminary review of literature (mainly reports from the Hellenic Ministry of Rural Development and Food), it was decided that the supply chains from the Greek Agrifood Industry that will be assessed in this phase, using AHP, are:

- Fresh produce (fruits and vegetables) supply chains
- Dairy products (including milk) supply chains
- Fresh and processed meat and poultry supply chains
- Olive oil supply chain
- Fish and seafood supply chains (fresh and processed)
- Beverage supply chains (including fruit juices)
- Canned fruits and vegetables supply chains
- Wine supply chain
- Arable crops supply chains

Then, an in depth analysis of the selected agrifood supply chains will be conducted. The analysis will be based on literature and statistical review and empirical survey, and aims to illustrate the sequence of stages in the supply

chain, to identify the variety of linkages between the stages, and to establish the flow of materials and resources. This task will identify the different types of strategies of companies producing similar products, e.g. producing the same product but engaged in different voluntary standards (e.g. local produce/organic/high environmental value Agriculture / Integrated Pest Management / etc). Moreover, a value chain analysis taking into consideration economic, technological and environmental criteria will be helpful for grouping different activities and sub-activities of the selected supply chains. Value chain analysis will allow the researchers to identify sources of waste in the selected supply chains. A suggested technique to be implemented in this phase is the Value-Stream Mapping. Value-Stream Mapping (VSM) is a widely deployed management technique for determining waste, particularly across organisational boundaries. This technique can be applied by companies initially within the factory operation itself, but also extend it to the supply chain. Special attention will be granted to environmental sustainability issues. An in depth literature review of environmental sustainability issues will be conducted, focusing upon the selected supply chains; the project will assess the current status of the selected agrifood supply chains, in the context of environmental sustainability (green) practices implemented in retailing, distribution, processing and primary production, focusing on SMEs, identify current methodologies and practices and evaluate the internal and external factors (physical and policy based working and marketing environments) that affect them. This stage of research is expected to improve significantly the understanding of the examined supply chains, support the researcher to identify areas of potential improvement and establish a data collection methodology for current sustainability status assessment. It is also expected to be a useful tool in generating new ideas and hypotheses.
The expected deliverable in this phase of the research is a report on the current environmental and lean performance status of the Greek Agrifood Sector, focused on specific supply chains.

Workpackage 2 (WP.2): Environmental impact analysis and optimization of the primary sector

Workpackage 2 includes the following three tasks:

- Analysis of the main environmental impacts in the primary agrifood sector
- Development of an analytical methodological framework for decision supporting
- Development of different scenarios for minimizing the environmental impacts in the primary agrifood sector.

The currently followed bio-production management practices will be assessed in terms of GHG emissions, agro-chemical use, and their impact on nature recourses (e.g., soil as a growth medium). Environmental-friendly farming systems (e.g. controlled traffic farming, reduced tillage systems) and optimised operational and logistics approaches supported by the state-of-the-art ICT and automation technologies dedicated to bio-production systems, will specifically considered.
Lifecycle Assessment (LCA) will be implemented as an approach based on dedicated impact assessment methodologies that use the principles of marginal technology and system expansion. Sustainability indexes will be developed including, use of energy, GHG emissions, etc. LCA is a methodology used for analysing and assessing the environmental loads and potential

environmental impacts of a material, product or service throughout its entire life cycle, from raw materials extraction and processing, through manufacturing, transport, use and final disposal (ISO 14040, ISO 14041, ISO 14042, ISO 14043). LCA is also a decision-making tool assistant because it contributes to the analysis of environmental impacts of products and services throughout their life cycle. It enables decision-makers to find alternatives so that their products are more respectful of the environment. The system boundaries for the implementation of LCA in this work package were defined to include all life cycle steps of primary production and post harvest treatment until processor gate.

The research process will end with the design and development of an analytical methodological framework for the decision supporting regarding the primary sector, while the development of different scenarios will help in the direction of minimizing of the environmental impacts. The findings from WP1 and from the first task of WP2 will be integrated into an analytical methodological framework that will enable decision support in each of the examined agrifood sub-sectors. For the development of the framework, well established methodologies to measure and assess environmental impact and progress towards sustainable development will be taken into account. In more detail, the framework will be developed following the steps given below:

- Defining the system to be analyzed in terms of sectoral structures and elements, and relations between them
- Identifying the most important criteria and indicators to be used for the environmental impact assessment for the primary sector, in the selected supply chains. This will include mainly environmental but also economic criteria. The environmental criteria will cover multiple environmental impact categories (GHG emissions, water use, land use, etc.), while the economic criteria will focus on the additional costs and benefits of environmental measures.
- Identifying and tailoring the most appropriate analytical tools to evaluate the environmental sustainability in the primary sector; this will include simplified versions of a partial life cycle assessment and other tools such as, for instance, multi-criteria analysis, substance flow analysis, input-output analysis and cost effectiveness analysis. The framework aims to be consistent with, and integrate the supply chain analyses of WP3 and WP4.
- Combining these analytical tools in a decision support system that can be used to evaluate the environmental sustainability of primary production in selected agrifood supply chains.

Workpackage 3 (WP.3): Environmental impact analysis and optimization of agrifood manufacturing processes

Workpackage 3 includes the following three tasks:

- Analysis of the main environmental impacts in the agrifood manufacturing processes
- Development of a methodological framework for performance measurement
- Development of a "Green" performance measurement system

For the analysis of the main environmental impacts in the agrifood manufacturing processes, an LCA based methodology is also suggested. Apart from the primary sector, LCA is also carried out in areas of food processing activity such as milk, bread, beer and tomato ketchup (Hayashi et al. 2005;

Andersson and Ohlsson 1999) and indicates which phases of processing and production generate the most impacts on the environment and stimulate research seeking optimal solutions (Roy et al. 2009). The system boundaries for the implementation of LCA in this work package were defined to include all life cycle steps from processor gate to retail shelf. The second task in this work package is the development of a framework for performance measurement of environmental sustainability; the researchers will select the appropriate criteria for measuring the progress towards an objective that will lead to the selection of the final set of monitoring indicators. The indicators will be roughly divided in generic and specific, both in an intra and inter (sub)sectoral context; the generic indicators will apply to all stages in a supply chain and in all different selected (sub)sectors, in order to enable comparison of environmental sustainability performance between the stages of a supply chain and between different food products; the specific indicators will measure sustainability performance in individual aspects and operations of each stage and each sub-sector, considering their particular features and needs in continuous improvement, taking into account factors that will be identified in previous tasks (e.g. sustainability policy regulations for specific sub-sectors as identified in WP1, operational practices followed in specific stages of the supply chains etc). The final deliverable of this task will be the framework for developing the green performance monitoring tool, that will be applicable both in a stage and supply chain level. The next step is the development of the "Green" performance measurement system based on the methodological framework from the previous Tasks, and assessed through primary research and raw data gathering; data will be collected from business stakeholders and public authorities (e.g. Hellenic Ministry of Rural Development and Food). In the first phase, for the evaluation of the monitoring tool performance indicators, the researchers will follow performance rescaling methods; indicators will be weighted reflecting their environmental sustainability benefit. Moreover, in order to analyse and compare the data for various stages in the supply chain and between two products, the indicators will be normalized. A proposed method for assessing the indicators is the Analytic Hierarchy Process (AHP). This method allows for a set of complex issues, factors and relationships, which have an impact on an overall objective, to be compared with the importance of each issue relative to its impact on the solution of the problem, using a decision-making framework that assumes a unidirectional hierarchical relationship among decision levels (Heo et al. 2010; Liu et al., 2008). In the second phase, the system will be circulated among policy makers, industry and social stakeholders for them to apply their expertise and provide with feedback. Based on the feedback the researchers will rationalize the system in a manner that will be easily applicable from the industry stakeholders, mainly agrifood SMEs.

The main key intermediate goals of WP.3 are the following:

- Report on the main environmental impacts in the agrifood manufacturing processes
- Report on the "Green" performance measurement system

Workpackage 4 (WP.4) Environmental impact analysis and optimization of forward and reverse logistics operations

Workpackage 4 includes the following three tasks:

- Development of qualitative and quantitative models for the optimum design of the selected supply chains

- Quality assurance for the applicability of the proposed models
- Assessment of the environmental and economic impacts of the proposed strategy

The main objective of this workpackage is the optimization of logistics operations in all levels of the selected agrifood supply chains. Logistics comprises the operational aspects of the supply chain – including packaging, materials handling, storage, transport and distribution activities from farm to consumer. This workpackage deals mainly with the necessary processes, that are needed in order agrifood products to be transported from the primary sector to the manufacturing processors and then to retailers and finally to end users-consumers. In every phase of the supply chain different issues regarding transportation will be addressed and solutions will be found with the help of IT technologies e.g. automatic product identification with barcodes, RFID tags, etc.

Moreover, during the research project, specific waste management issues will be addressed as part of reverse logistics operations. According to Rogers and Tibben-Lembke (1999) "reverse logistics is the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods, and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal". Reverse logistics constitute a rapidly evolving research field. Financial, environmental factors and regulative interventions have provided the incentives for companies to redesign their forward supply chain networks to further incorporate and optimize the relevant recovery and waste management processes (Thierry et al., 1995; de Brito, 2004).

The optimization processes will be based on qualitative and quantitative methodologies that take into consideration economical, technological and environmental criteria. Specifically, activities of WP.4 will focus on the following research areas:

- Development of quantitative optimization models that will support decision-making of agricultural products transportation processes. The goal is the development of Multiple Objective Mathematical Programming models that will help the weighted optimization of different objectives (e.g. maximization of profits, minimization of environmental impacts etc).
- Development of integrated methodological framework and mathematical programming models for the optimal management of organic wastes that are produced in the primary sector and during the manufacturing processes
- Development of integrated methodological framework for packaging and standardization processes of agricultural products.

The next step will be the design and development of indicative case studies, in order to control and check the applicability of the proposed mathematical models and to obtain managerial insights for the optimal solutions of the problems under study.

The main key intermediate goals of WP.4 are the following:

- Report on the main environmental impacts of the logistics operations
- Implementation report of the proposed models
- Report on environmental and economic impacts of the proposed strategy

Workpackage 5 (WP.5): Project management

Workpackage 5 includes the following three tasks:

- Development of guidelines for the research project
- Design and monitoring the research project
- Development of progress reports and final report

The main objective of WP.5 is to manage the overall research project during the 36 months, in order to ensure the smooth and efficient running of the project towards its goals. The coordinator will be responsible for monitoring the entire research project, while the coordination of the various work packages will be undertaken by the involved researchers. The first step will be the preparation of the project management manual. The project management manual will specify in great detail, the purpose and objectives of the project, the work packages and the role of involved researchers. Another important issue is the design and monitoring of the project and its results. For this reason, a quality assurance report along with progress reports and final report will be prepared. The main objective of the report will be the evaluation and quality assurance of the project by measuring results against given success numbers and targets. Milestones and deliverables will be audited in quality, time plan, completeness, and accuracy during the whole project's life cycle (36 months). The partnership has also considered the risks to the project. Potential risks include: (1) low productivity or poor performance against time-line in one or more work packages (2) low quality of any of the deliverables/outputs (3) lack of access or lack of response during the primary research and data collection stages of the project, and (4) limited availability of project coordinator and / or work package leaders due to potentially increased administrative tasks during the project period (as senior members of staff in their institutes). These risks will be minimized and managed by using established and standardized methodologies and robust project management for better planning and control:

(1) Low productivity: a project management board will be established by the leading organisation (ATEI) to monitor the progress of various parts of the project and standard project management approaches will be deployed.

(2) Low quality: all research teams have extensive experience in carrying our similar work and therefore we are confident that any slippages can be managed within short space of time as part of the on-going project monitoring. Such methodologies are standard practice in the professional work of the proposers and have been extensively applied in similar projects. Moreover, the project work packages are not necessarily interdependent and work can initiate in separate work packages independently - if required.

(3) Lack of access: lack of access will be managed by drawing upon the partnership extensive links within the Greek agrifood sector including large number of existing research partners.

(4) Limited availability: a coordinating team will be set up to support the work and decision making processes of the coordinator in case of his limited availability, while a deputy work package leader for each work package will be appointed in case the leaders are not available.

The main key intermediate goals of WP.5 are the following:

- Project management manual
- Quality assurance report
- Project evaluation reports

Workpackage 6 (WP.6): Dissemination of results

Workpackage 6 includes the following four tasks:

- Communication and co-operation with enterprises and organizations
- Publications in peer-reviewed journals and international conferences
- Organisation of dissemination seminar and participation in international conferences
- Design and development of a web-portal

During Workpackage 6, a number of activities will take place in order to disseminate and promote project results and the generated knowledge. The main purpose will be the wide dissemination of project results to relevant scientific, technological and business communities. The project will render the researchers to a visible knowledge 'light house' in the region of Central Macedonia, a strong node of collaboration with regional stakeholders of the Agrifood sector. The collaboration of the research team and enterprises, organizations has positive effects for both parts. Regarding the enterprises and organization it is assumed that this will allow the restructuring of the production processes of the Agrifood Industry by exploiting green logistics practices and innovation; reduce the production and distribution costs and thus contributing to the regional economic and social development. On the other hand, the project will add value to team's research potential by including green logistics and supply chain management in the research agenda, thus improving efficiency and achieve a more integrated approach to the research challenges of the specific sector. Moreover, it is estimated that during the project, at minimum four publications in peer reviewed scientific journals will be produced and the involved researchers will participate in six international conferences in order to present their work. Another task will be the organization of a dissemination seminar, where the involved researchers will present the results and outcomes of the project. At the end of the seminar, the knowledge produced by the project will be condensed in a Final Report in a way that a broader audience can understand the objectives and assess the outcomes of the project. The final step will be the design and development of a web-portal. It is believed that the web-portal will create the necessary virtual knowledge exchange environment providing information on data collection and analysis, for researchers, advisory organizations, policy institutions and policy makers at regional, national and European level. The web-portal will be used also for publication of project material, presentations and workshops. Relevant non-confidential interim reports will also be available on the web-portal in order to guarantee that data collected during the project are available for interested parties not only at the end of the project. Moreover, the web-portal will allow all members of the project to fill the data base, exchange information, download and upload documents. In such a way the data base will be continuously updated with relevant information.

The main key intermediate goals of WP.6 are the following:

- Four publications in peer-reviewed journals
- Six publications in international conferences
- Organization of a dissemination seminar
- Development of a web-portal

According to the above analysis of the methodology the project is divided into 6 work packages; four (4) development-related and two (2) supporting for dissemination and project management as presented in the following Table (Table 1).

Table 1. Work Packages, Tasks, Deliverables and Duration

WP	Title	Tasks	Reports	Duration
WP.1	Mapping of selected chains	Identification of specific supply chains	Report on the current environmental and economic performance status of the Greek Agrifood Sector, focused on specific supply chains	PM 1-3
		Analysis of main parts and activities of selected supply chains		PM 4-6
		Value chain analysis		PM 4-6
		Identification of the main environmental impacts on the selected supply chains in the Greek agrifood sector		PM 7-9
WP.2	Environmental impact analysis and optimization of the primary sector	Analysis of the main environmental impacts in the primary agrifood sector	Report on the main environmental impacts in the primary agrifood sector Report on implementing scenarios for minimizing the environmental impacts in the primary agrifood sector	PM 10-24
		Development of an analytical methodological framework for decision supporting		PM 22-30
		Development of different scenarios for minimizing the environmental impacts in the primary agrifood sector		PM 25-36
WP.3	Environmental impact analysis and optimization of agrifood manufacturing processes	Analysis of the main environmental impacts in the agrifood manufacturing processes	Report on the main environmental impacts in the agrifood manufacturing processes Report on the "Green" performance measurement system	PM 10-24
		Development of a methodological framework for performance measurement		PM 22-30
		Development of a "Green" performance measurement system		PM 25-36
WP.4	Environmental impact analysis and optimization of forward and reverse logistics operations	Development of qualitative and quantitative models for the optimum design of the selected supply chains	Report on the main environmental impacts of the logistics operations Implementation report of the proposed models Report on environmental and economic impacts of the proposed	PM 10-24
		Quality assurance for the applicability of the proposed models		PM 19-27
		Assessment of the environmental and economic impacts of the proposed strategy		PM 25-36

			strategy	
WP.5	Project management	Development of guidelines for the research project	Project management manual Quality assurance report Project evaluation reports	PM 1-6
		Design and monitoring the research project		PM 1-36
		Development of progress reports and final report		PM 12, 24, 36
WP.6	Dissemination of results	Communication and co-operation with enterprises and organizations		PM 16-36
		Publications in peer-reviewed journals and international conferences	Four publications in peer-reviewed journals Six publications in international conferences Development of a web-portal	PM 16-36
		Organisation of dissemination seminar and participation in international conferences		PM 16-36
		Design and development of a web-portal		PM 16-36

Table 2. List of WPs and allocated WP leaders and deputy leaders

Work Package	Work Package Leader	Deputy Work Package Leader
WP1 Mapping of selected chains	Assistant Professor, G. Malindretos	Professor, I Pollalis
WP2 Environmental impact analysis and optimization of the primary sector	Senior Researcher, Ch. Tsantilas	Researcher, D. Demogiannis
WP3 Environmental impact analysis and optimization of agrifood manufacturing processes	Professor, V. Samathrakis	Assistant Professor, O. Notta
WP4 Environmental impact analysis and optimization of forward and reverse logistics operations	Professor, D. Triantaffylou	Associate Professor A. Kelemis
WP5 Project management	Professor, P. Karakoltsidis	Assistant Professor, D. Folinas
WP6 Dissemination of results	Professor, P. Karakoltsidis	Assistant Professor, D. Folinas

Gantt Chart

WP	Tasks	Duration	Year		
			Year 1	Year 2	Year 3
WP.1	Task 1.1	PM 1-3			
	Task 1.2	PM 4-6			
	Task 1.3	PM 4-6			
	Task 1.4	PM 7-9			
WP.2	Task 2.1	PM 10-24			
	Task 2.2	PM 22-30			
	Task 2.3	PM 25-36			
WP.3	Task 3.1	PM 10-24			
	Task 3.2	PM 22-30			
	Task 3.3	PM 25-36			

	Task 4.1	PM 10-24
WP.4	Task 4.2	PM 19-27
	Task 4.3	PM 25-36
	Task 5.1	PM 1-6
WP.5	Task 5.2	PM 1-36
	Task 5.3	PM 12, 24, 36
	Task 6.1	PM 16-36
WP.6	Task 6.2	PM 16-36
	Task 6.3	PM 16-36
	Task 6.4	PM 16-36

Personnel

TEAM 1	
Name	Coordinator
Main Research Group	**Professor P. Karakoltsidis,** President of ATEI Thessaloniki **Assistant Professor D. Folinas**, Department of Logistics **Lecturer D. Aidonis,** Department of Logistics

TEAM 2	
Name	Standardization and Transportation of Products (Logistics)
Main Research Group	**Professor D. Triantafyllou,** Professor, Head of Department of Logistics **Assistant Professor A. Kelemis,** Department of Logistics **Assistant Professor N. Voulgarakis,** Department of Logistics
External Collaborators	**Adjunct Lecturer, A. Xanthopoulos,** Department of Logistics **Adjunct Lecturer, A. Toka**, Department of Logistics

TEAM 3	
Name	Supply Chain Management
Main Research Group	**Assistant Professor, G. Malindretos,** Department of Home Economics and Ecology, Harokopio University, **Professor, I. Pollalis,** School of Economics, University of Pireas **Assistant Professor, S. Binioris,** Department of Business Management, ATEI Athens
External Collaborators	**PhD Candidate, M. Malindretos,** Department of Public Administration, Panteion University. **PhD Candidate, A. Kremmida,** ATEI Athens
Invited	**Professor, M. Bourlakis,** Head of Marketing Group, Business School University of Kent, UK

TEAM 4	
Name	Management of Agrifood Primary Sector
Main Research Group	**Senior Researcher, Ch. Tsantilas,** National Agricultural Research Foundation **Researcher, D. Demogiannis,** National Agricultural Research Foundation
External Collaborators	**Adjunct Research, E. Evaggelou,** National Agricultural Research Foundation
Invited	**Assistant Professor, D. Bocthis,** Dept. of Agricultural Engineering / Faculty of Agricultural Sciences, University of Aarhus,

TEAM 5	
Name	Management of Agrifood Manufacturing Processes
Main Research Group	**Professor, V. Samathrakis,** Department of Farm Management **Assistant Professor, O. Notta,** Department of Farm Management
Invited	**Lecturer, Ioannis Manikas,** Business School, University of Greenwich **Post doc researcher, P. Karagiannakidis**

Budget Justification

Table 1: Total Budget

COST CATEGORIES	Year 1	Year 2	Year 3	TOTAL
1. Main Research Group	35875	52500	48125	**136500**
2. Invited Researchers	21000	29500	30875	**81375**
3. External Collaborators	19000	25250	25250	**69500**
4. Travel and Subsistence	15500	18700	25800	**60000**
5. Equipment/Hardware/Software	10000	60000		**70000**
6. Consumables	4000	5500	5500	**15000**
7. Office consumables	500	1000	3500	**5000**
8. Publicity	2000	5000	8000	**15000**
9. Other				
TOTAL	**107875**	**197450**	**147050**	**452375**

The total budget requested for the project is 452.375€. The total personnel cost will be 287.375 €. Fourteen researchers (main research group) will participate in the project for 54,5 man/months with a total cost of 136.500€. Four invited researchers will work for 40,5 man/months with a total cost of 81.375€. Four external collaborators will participate for 42,5 man/months with a total cost of 69.500€. The total travel and subsistence costs will be 60.000€, including costs for meetings, travel, conference fees etc. It is estimated that 74 domestic movements will take place during the project with a total cost of 48.000€. Each movement will cost approximately 650€ including the daily allowance. Also, researchers will participate in 6 International Conferences, with an estimated total cost of 1000€/person/event, (500€ for travel costs, 200€ for accommodation and 300€ for conference fees). Two persons will participate in each event, leading to a total cost of 12.000 €. The equipment that is scheduled to be purchased has a total cost of 70.000€ and includes software applications ADONIS, ADOscore, ADOlog and SIMA Pro. The total cost for consumables and stationery will be 20.000€, including the supply of the

necessary consumables that will be used in the primary research phase and the supply of DVDs, external drivers etc that will be used for data storage. The cost for the dissemination material (USB sticks, folders, posters, short reports, Project Final Report etc) is also included. The total publicity costs will be 15.000€. A Web-portal will be developed, providing with the necessary virtual knowledge exchange environment, with a cost of 8.000€, including the development of database, modules and interface, Web hosting, Debugging, Content management and Web-Portal administration. Also, a dissemination seminar will be organized with a total cost of 7.000€, including the hire of premises, catering services and audiovisual support, as well as the hosting invited experts.

Table 2: Budget per workpackage

	Cost Categories							
WP Name	**Personnel**	**Travel and Subsistence**	**Equipment**	**Consumables**	**Office consumables**	**Publicity**	**Other**	**TOTAL**
WP1 *Mapping of selected chains*	43725	8000	15000	3000	750	2000		**72475**
WP2 Environmental impact analysis and optimization of the primary sector	66350	10000	15000	3000	750	2000		**97100**
WP3 *Environmental impact analysis and optimization of agrifood manufacturing processes*	64750	10000	20000	3000	750	2000		**100500**
WP4 *Environmental impact analysis and optimization of logistics operations*	76550	10000	20000	3000	750	2000		**112300**
WP5 *Project management*	19250	10000		500	250			**30000**
WP6 *Dissemination of results*	16750	12000		2500	1750	7000		**40000**
TOTAL	**287375**	**60000**	**70000**	**15000**	**5000**	**15000**		**452375**