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# KOSOVO NEW OPPORTUNITIES FOR AGRICULTURE PROGRAM

TECHNICAL ASSISTANCE FOR THE ANALYSIS OF  
PROFITABILITY OF SELECTED FARM ACTIVITIES

FINAL REPORT: TECHNICAL ASSISTANCE  
ASSIGNMENT I

AUGUST 2012

This publication was produced for review by the United States Agency for International Development. It was prepared by Tetra Tech ARD.

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Prepared for the United States Agency for International Development, USAID Contract Number EDH-I-00-05-00006-00, TO AID-167-TO-11-0000, Kosovo New Opportunities for Agriculture Program, under the Rural and Agricultural Incomes with a Sustainable Environment (RAISE Plus) Indefinite Quantity Contract (IQC).

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## **DISCLAIMER**

The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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# ACRONYMS AND ABBREVIATIONS

ARDP	Agriculture and Rural Development Program 2007–2014
CAP	Common Agricultural Policy
EAU	Economic Analysis Unit
EC	European Commission
EU	European Union
EUROSTAT	European Union Trade Statistics Database
FADN	Farm Accountancy Data Network
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO Trade Statistical Database
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
IEP	Information Exchange Protocol
KPEP	Kosovo Private Enterprise Program
Ha	Hectare
HPK	Horticultural Promotion in Kosovo project
M&E	Monitoring and Evaluation
MAFRD	Ministry of Agricultural, Forestry and Rural Development
MDC	Municipal Development Center
MFI	Microfinance Institutions
MIS	Market Information System
MOU	Memorandum of Understanding
NGO	Nongovernmental Organization
NOA	New Opportunities for Agriculture Program
SO	Standard Output
SWR	Standard Work Requirement
TA	Technical Assistance
TOR	Terms of Reference
UP	University of Prishtina

USAID United States Agency for International Development  
USD US Dollar

# EXECUTIVE SUMMARY

Within the framework of the gradual expansion of Ministry of Agricultural, Forestry and Rural Development (MAFRD) activities and services, the Economic Analysis Unit (EAU) was established in January 2012, with the mission to perform agriculture related economic research. A capacity building program for the Unit was designed in January 2012, including short term technical assistance (STTA) inputs. One of the STTA inputs, financed by the United States Agency for International Development (USAID), consists of two short term technical assistance missions to build up the capacity of the EAU in production cost analysis and analysis of profitability of selected farm activities, starting with winter wheat, maize, alfalfa, apples, grapes, and milk production (bovine and ovine). These activities were selected by MAFRD because of their importance in Kosovo agriculture and because they are included (except alfalfa) in MAFRD support programs. The first mission was performed in May, 2012.

The decision to give priority to building up the capacity of the EAU to prepare production costs and profitability analyses comes from the assessment that *production costs and profitability analysis are a key tool to enhance several MAFRD functions and activities*, namely *policy-making* (knowing more to make better decisions), *extension* (knowing average performance to assess clients' starting situation and provide advice for improvement) and *management of support programs* by Payment Unit (measuring impact of support). Building EAU capacity will also *help the work of partners in sector development* (development projects, nongovernmental organizations [NGOs], organizations, and enterprises dealing with investments in agriculture) by providing benchmarks and baseline information to evaluate and prepare business and investment plans.

The main **findings** of the mission can be summarized as follows:

1. *Quality of already available data necessary to calculate production costs and profitability were generally better than expected and access to information was good.* Production cost models were developed in the past, mostly by development projects. Quantities in these models (inputs, yields) are still valid or slightly changed, while data on prices are obsolete. Some information on present prices is collected by MAFRD Statistical Office through the Market Information System (MIS). Development projects continue to calculate investment costs for different crops, thus contributing to data updates. Finally, some work on investment and production cost has been done by MAFRD research institutes.
2. *The information was generally relatively easy to access, but very few officers and sector operators (enterprises, consultants, NGOs, etc.) had a clear knowledge of what information can be sourced from where and there is a certain skepticism regarding quality of data, which is only partially justified.* The role of the EAU and Statistical office as “information brokers”, i.e., knowing if some information is already available and where, can, in the short term, increase their credit and appreciation within MAFRD and with other stakeholders.
3. *It is necessary to increase awareness of decision-makers and MAFRD technical services regarding the need for information and to improve capacity to determine and specify what kind of information is needed.* To improve this situation, internal informative seminars should be periodically organized to streamline the circulation of information within the MAFRD and to create the know-how necessary to pose the right questions to the offices that are in charge of producing the information.
4. *It is possible to gather basic, but key, information with relatively few efforts, improving cooperation between different officers and stakeholders and making best use of the information that is already available. However, beyond basic information, there is a steep gap in terms of skills, resources and cooperation that could prevent the production of more complex information without sizeable investments in terms of time, human resources and training.*

5. *The existing cost production models are made to plan new investments and/or to optimize production systems, they do not provide a picture of the situation as it is, but as it will (or should) be after investments and technical assistance are provided. This is half of the information needed for policy-making, the other half being the situation before investments. The EAU can play a key role in filling this information gap.*
6. *The standardization of parameters to calculate production costs, investment plans and profitability analyses is a priority to facilitate exchange and quality of information. With existing skills and resources, the EAU is well suited to provide reliable and up-to-date basic data that can be used by other stakeholders to produce more complex information. This would be already an important achievement, as presently most stakeholders are often looking for the same information and getting it in different ways, with the results being that baseline information (such as use of inputs, prices of inputs and products) is often quite inhomogeneous. EAU will gradually build up its capacity to autonomously produce complex information, but now it must gain the trust of counterparts by providing few, but reliable and timely data.*

During the first mission, the following **results** were achieved:

1. *A clear definition and consensus regarding production cost configuration has been achieved. The selected cost configuration is the one of “prevalent production cost,” i.e., the one reflecting the most common production structure of a commercial or semi-commercial farm in Kosovo.*
2. *The data collection, processing and validation process was defined and production cost models drafted. In the next weeks the models will be refined and the data collection process completed, finalizing by the end of September the cost and profitability analyses for the foreseen seven agricultural products.*
3. *EAU is well advanced in acquiring the capacity to manage the work of data collection in full autonomy for the seven agricultural productions which are the object of the mission. EAU can now replicate and adapt the data collection and processing activities carried out so far and, up to a certain level, replicate the some process regarding other productions. Full ownership and sustainability of the process should be achieved by the end of the second mission. This will ensure the sustainability of the process and EAU ownership of the process itself.*
4. *The EAU has been networked with other MAFRD departments and offices, with informants from the private sector and with other key stakeholders. As mentioned, knowing what information can be obtained where and communicating information to partners is probably the most important immediate objective of EAU.*

The **recommendations** emerging from the mission findings and outcomes can be summarized as follows:

1. *Improving communication and exchange of information inside MAFRD and between MAFRD and other stakeholders is as important as producing additional information. Seminars and awareness-building activities should be organized to improve capacity to understand information needs pertaining to each subject and to improve capacity to seek the right information from the right subject. At the present stage, learning to pose the right questions is as important as building up capacity to provide the right answers.*
2. *Make further effort to standardize reference data and formats of business and investment plans. Several entities, from the private and public sectors are working on analysis of investment proposals and there is interest in building up local capacity for evaluation of investment proposals coming from farmers and other agribusiness entrepreneurs (first of all, from banks and other financial organization). Each organization has its own needs and requirements; EAU can contribute significantly by providing standards and reference data to facilitate and speed up the work of others.*



# 1.0 INTRODUCTION

Rural development and development of agricultural and food production play a key role for the development of Kosovo as a whole. The contribution of agriculture to national Gross Domestic Product (GDP) is relatively modest (around 12 percent); however, activities related to the agrifood sector represent a major source of employment (about 35 percent of the active population) and a large share of the resident population obtains, from agriculture and livestock breeding activities, some contribution to their livelihood. Approximately 90 percent of the population owns some land and over 50 percent of the population has some livestock.

The Ministry of Agriculture, Forestry and Rural Development (MAFRD), established in 2008 as a national ministry but active since 2002, has the responsibility to regulate and support agrifood sector development and rural development. The MAFRD strategy is formulated within the Agriculture and Rural Development Plan 2007–2013 (as revised in 2009) and in the Action Plan of the Economic Vision of Kosovo 2011–2014.

Within the framework of the gradual expansion of MAFRD activities and services, the Economic Analysis Unit (EAU) was established in January 2012, with the mission to perform agriculture related economic research. This activity is performed in most transition and EU pre-accession countries and in EU member states by independent agencies or is included in the mission of research or national statistics institutes. In Kosovo, the EAU has been established as a staff unit, reporting directly to the Permanent Secretary. The unit is composed of three specialists with agriculture economics, economics and accounting background and is presently hiring a manager.

In addition to the establishment of EAU, another major initiative started in the first quarter of 2012 to widen the range and quality of services provided by MAFRD is the establishment of a Ministry extension service, to scale up, improve and coordinate extension activities provided, to date, at the communal level. Part of the extension officers now working under the communes and municipalities will be transferred to MAFRD (still working at field level) and a unit at central level will be gradually built. One of the activities of EAU will be to inter-act with the newly established extension services to provide the economic and financial data and information required for extension activities.

At present, the EAU core mission consists of producing analyses and studies on the following topics:

1. Production costs and agrifood investments;
2. Market and trade analyses, surveys, outlooks, and scenarios; and
3. Farm management and farm accounting.

EAU is expected to operate in close co-operation with the other MAFRD offices, such as the statistical office, technical departments, the MAFRD extension services, the MAFRD research institutes and the payment unit (i.e., the unit in charge of administering MAFRD economic support programs), and with external organizations, such as the University of Prishtina, foreign donors' financed projects and NGOs dealing with rural and agriculture development.

A GIZ and United States Agency for International Development (USAID) -funded technical assistance mission was deployed in January 2012 to draft a capacity building program to improve EAU staff skills and build work experience. The program identified as a priority the building up of EAU capacity to analyze the profitability of enterprises, including production cost analysis, gross margin analysis and prevalent cost analysis. For this purpose, the resources for two short term technical assistance missions, financed by USAID, were provided, to be performed between May and September, 2012. An international consultant was hired to lead the EAU team effort to build production cost models for seven agriculture products, gathering and processing the relevant data. The outcomes of the four-week first mission are presented in this report.

# 2.0 OBJECTIVES OF THE ASSIGNMENT

The objective of the assignment, to be accomplished within the time span of the two missions combined, is to provide short term technical assistance to EAU to build its capacity and jointly develop appropriate and sustainable models for production cost and gross margin calculation and analysis of the profitability of seven products produced in Kosovo at commercial and semi-commercial levels, namely: 1) winter wheat; 2) maize (grain production and silage production); 3) alfalfa; 4) grapes for wine and table grapes; 5) apples; 6) milk production and; 7) sheep breeding. These productions were chosen because they are eligible for direct support programs, financed by MAFRD.

The relevant analyses are intended to be used for the following purposes: 1) policy-making, including design and adaptation of economic support programs; 2) assessment of policy implementation measures; 3) tools for extension services.

The technical assistance mission was required to perform a comprehensive support activity including the following:

1. Capacity building of EAU staff;
2. Design the models, with relevant assumptions and data collection and validation procedures;
3. Define and agree with decision-makers and stakeholders on the assumptions on which the models are based;
4. Provide support in planning and implementing actual data collection;
5. Review and process the data collected to perform the cost analysis of representative enterprises in the seven above mentioned relevant sectors;
6. Provide support in the establishment of data collection and validation networks;
7. Provide support in establishing and consolidating exchange of information practices and protocols with other MAFRD offices and external organizations,
8. Agree with decision-makers and stakeholders on the short term development path and relevant work plan for fulfilling the EAU tasks for production costs analyses, considering the skills available and acquired, the available sources and quality of data and information, the level of integration reached and achievable in the short term with MAFRD other offices and external organizations;
9. Help to define the needs of the agricultural extension services regarding the farm management program, presently in phase of development.

The inputs of the first mission accounted for 50 percent of total allocated inputs. The relevant outcomes and findings are described in Sections 3.0 and 4.0 below.

# 3.0 ORGANIZATION OF ACTIVITIES

The first mission was performed during the period from May 2 to May 30, 2012. The activities were organized in accordance with the following logical steps:

- Assessment of situation and data sources;
- Assessment of information flows;
- Design a process for a gradual development of EAU skills, tools and outreach;
- Design user-friendly and affordable cost production models;
- Build procedures and tools for data collection; and
- Integrate with the team to ensure ownership of model and process.

The planned and actual mission schedule are provided in **Diagram 3.1** below. As can be seen in the diagram, the organization of actual activities differs from initial planning.

**Diagram 3.1: Planned and Actual Activities**

	1 <sup>st</sup> week	2 <sup>nd</sup> week	3 <sup>rd</sup> week	4 <sup>th</sup> week	5 <sup>th</sup> week
Main briefings, meet.	Planned			Planned	
	Actual		Actual	Actual	Actual
1 <sup>st</sup> round primary data	Planned	Planned	Planned		
	Actual	Actual	Actual		
2 <sup>nd</sup> round primary data			Planned	Planned	
Secondary data collection	Planned	Planned	Planned	Planned	Planned
	Actual	Actual	Actual	Actual	
Preparation of documents, questionnaires, reporting	Planned		Planned	Planned	Planned
		Actual	Actual	Actual	Actual
Milestones	B	W	B C	F C	W D B
	Actual			Actual	Actual

Legend:

- Planned activities
- Actual activities

B: Briefing with team and EAU; P: Panel/focus group meeting; BC: Presentation of basic cost tables; FC: Presentation of final cost tables; W: Workshop; DB: Debriefing with team and EAU

The changes introduced and the relevant reasons can be summarized as follows:

1. *Main briefings were concentrated at the beginning of the mission.* The mission was well prepared prior to execution, and it was possible to meet most of the main stakeholders in the first four days of mission. Further meetings with important stakeholders (University of Prishtina, Payment unit, development projects) were organized in the following weeks, but most of the activity was completed within the first half of the second week.
2. *The first round of primary data was concentrated on a relatively small number of farms, as much information was collected from secondary sources and from key informants in the focus group meetings.* The original TOR assumed that a more intensive field data collection process would be required. Based on the assessment of quantity and quality of data already available (better and more detailed than expected), it was decided to limit the field work mostly to an activity of data validation and to accelerate the whole process of data collection and analysis.

Different production costs models had been developed by stakeholders (development projects, research institutes etc.), which allowed us to focus during the field visits mostly on validation of production models and data obtained from other sources. This approach (to rely more on secondary data and focus groups than on individual meetings with farmers) was based on the following considerations: i) the opportunity to use an information base from secondary sources wider and better than expected; ii) the practical impossibility (in terms of cost and time) to build up and perform full-fledged research based on a stratified sample of farmers, as the cost/opportunity of getting additional information through an extensive field research was considered not sufficiently effective.

In practice, it was decided to focus the effort on building capacity of EAU regarding the data collection and validation processes (how to get data, agree about system of data controls and feedback, how to obtain economies of scale etc.) rather than on focusing on getting exact data on a few items (which would be the only possible alternative, given the time and the resources available). In general, two representative farms for each key crop were interviewed, mostly with the purpose of validating the data previously acquired.

3. *The second round of field data collection was cancelled.* Rather, it was decided that this would be performed in June and July by EAU team members. The team preferred to use the time to build up the capacity of EAU team in autonomously collecting data and acquiring experience in comparing data from different sources to identify inconsistencies. Also, we collectively decided to create some tools that will facilitate any future data collection exercise (i.e., the reference tables and the check lists: see chapter 4 below). However, this choice creates an actual delay vs. the objective of finalizing the cost configuration values to be included in the models within the mission timespan.
4. *Secondary data collection was faster than expected and quality of data better than expected; analysis took more time than expected, as the number and degree of detail of figures analyzed was larger than expected.* Actually, quantity and quality of secondary data was good enough to allow building up more detailed and articulated models than initially expected. However, this required more data validation. As compared with planning, the sharing of time between primary and secondary data collection was differently distributed, with some days totally devoted to secondary information and others to primary information, while a more piecemeal process was expected. Actually, the main sources of secondary data had been already identified and some data collected before the beginning of the mission. The preparatory work made by EAU was quite accurate, so that not much time was necessary before obtaining all the main secondary sources available (mostly models developed by different subjects either in the last two years or more than five years ago). Some very useful secondary information was also collected during field visits to research institutes of Peja (field crops) and Rahovec (wine and viticulture). Some information on production costs, that could have been useful and had been the object of an EC financed project (in 2008) proved impossible to recover. The person who materially produced the data base was interviewed, but meanwhile the database had been materially lost and nobody in MAFRD (to

which the database had been handed over) had a copy of it. Finally, data available in the statistical department proved useful too, even if for different purposes than initially expected (see **Annex 2** below).

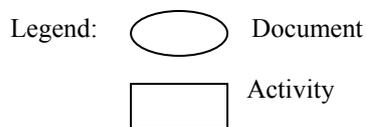
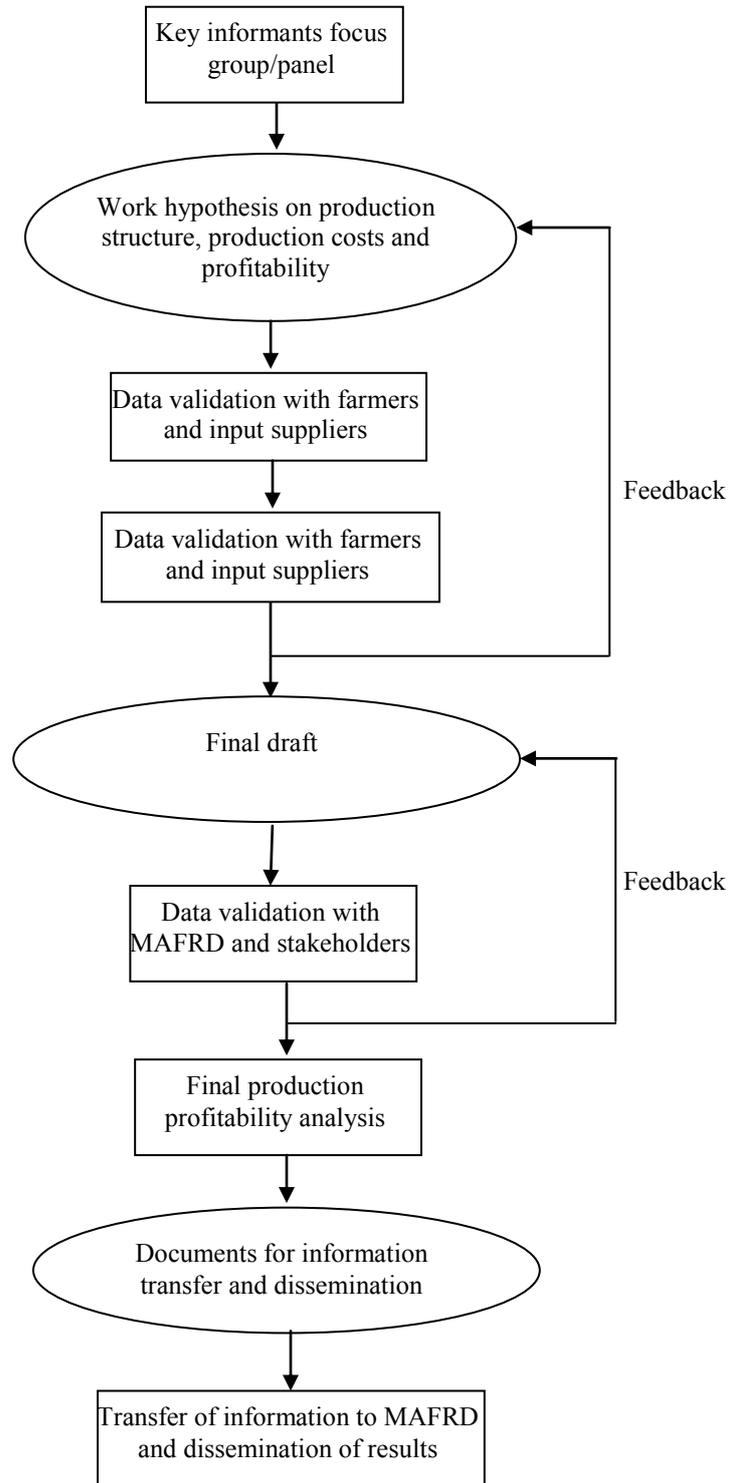
5. *Preparation of documents, questionnaires and reporting.* Preparation of documents was the main activity performed during the mission. Check lists have been developed for each product (to be used in focus groups and interviews) and the capacity to produce and use such tools were acquired by EAU, thus ensuring sustainability of this segment of the process. Models have been prepared, for each product, based on available data and considering the structure of models with which national consultants are more conversant. By the end of the mission, most stakeholders received the mission outcomes through the debriefings handouts. However, *there were considerable delays in formalizing the ultimate structure of the models and in formal reporting*, initially delivered in June. Delay in formalizing the models was due to the priority given to the sustainability of the process of modeling, i.e., to ensure that EAU staff has acquired the capacity to master the content (formulas, calculation procedures, assumptions of different costs configuration) of each model and to ensure that the presentation of the models is, as much as possible, custom-oriented, i.e., easy to understand and manage both for EAU staff and possible users. The initial draft report was delivered to MAFRD on June 24, 2012.
6. *Milestones.* There were some modifications in milestones as well. The following changes were introduced:
  - a. *The first workshop was cancelled.* This workshop was intended to ensure that all main stakeholders have a shared view of what kind of cost configuration (among the many possible ones) will be developed by EAU and that limits and potential of such configuration are well understood. By the time the workshop was planned to be conducted, the same result had already been achieved through individual and repeated meetings with all the main stakeholders and most of MAFRD potential users of EAU work.
  - b. *Two debriefing workshops were performed*, instead of the one planned. The first was internal to MAFRD decision makers and, attended by the minister, was focused on the assessment of the capacity of MAFRD different offices (first of all EAU) to generate information and to make use of it. The second was attended by development project and donors representatives and was more technically oriented, to make the point about the kind of information that, by the end of the mission, can be provided by EAU and to facilitate the exchange of information through a more specific understanding of quality and type of information available to the projects and to/within MAFRD.
  - c. *The final presentation of the models was cancelled*, since, as previously mentioned, the consultant preferred to focus on the sustainability of the process of acquiring and processing data into a model than on transferring an already-made model, without also transferring the capacity to adapt it. However, a proposal for the final structure of the models is annexed to the present report (see **Annex 3** below)

# 4.0 OUTCOMES OF THE MISSION

By the end of the mission the results described below were accomplished.

1. *A clear definition and consensus on production cost configuration has been achieved.* The selected cost configuration is the one of “prevalent production cost,” i.e., the one reflecting the most common production structure of a commercial or semi-commercial farm found in the country. At this stage, no regional differences have been taken into consideration, even if some differences have been found for some cereal crops. Also, differences between commercial and semi-commercial farms have been not taken into consideration. However, in the case of milk, the production system of commercial farms (defined as those with 10 dairy cattle in production or more) is so different from that of semi-commercial farm (5- 10 dairy cattle in production), that different structures have been analyzed. In the case of perennial crops (apple and grapes) the cost is referred to a full production year.
2. *The data collection, processing and validation process and the information feedback system have been defined and tested and the relevant basic tools produced and defined.* Taking into consideration the available resources (human, financial, technical) for data collection and processing and the need to ensure the sustainability of the cost analysis system within the existing framework of responsibilities and functions, we decided to adopt a system based on data collection through a Delphi panel (established as a focus group of key informants created and summoned for the purpose and different for each product) and two steps of data validation, the first through a very limited number of field visits and interviews to farmers and input suppliers and the second submitting for comments the draft model to MAFRD potential users and other stakeholders. In case of major discrepancies between the outcomes of each step (working hypothesis obtained through the panel first and then draft document submitted to stakeholders) the panel is consulted again to reach a consensus on the data. The process of formulation of the analysis of profitability is depicted in **Diagram 4.2** below. A more detailed analysis of the methodology adopted for the analysis of profitability is provided in **Annex 3** below.
3. *The draft cost configurations have been prepared for seven agricultural activities included in MAFRD support programs, namely winter wheat, maize in grain and maize for silage, grape growing, apple growing, milk production and sheep breeding.*

**Diagram 4.1: Analysis of Profitability Process Flow Chart**



4. *The EAU ownership of the process was achieved; the sustainability of the whole process of cost analysis and analysis of profitability (i.e., regardless of the crop) was partially achieved.* The mechanism of data collection through panels and validation through interviews has been tested and the responsibility to prepare the check lists for the collection of information (through panel and interviews) and conduct the interviews gradually transferred to EAU team members. The EAU is now able to replicate the process of data collection, including the formulation of questionnaires/check lists and to compare data obtained from the panel with data sourced from field interviews. The autonomous capacity of EAU to test the working models (obtained from panel) and to assess critical points, i.e., the most critical and irremediable differences between data sourced from panel and data obtained from interviews (data validation process) still needs improvement.
5. *The ownership of the model (i.e., capacity to update, modify and adapt the model) was partially achieved.* The structure of the models has been extensively discussed with the EAU teams as well as the rationale on which formulas are based. At least in one case, an error in formulas has been identified by a team member. Notes have been added to the models to explain some of the formulas.
6. *The EAU capacity for replication of the process partially achieved: This achievement will be verified in the next few months.* The EAU should be now able to perform the first steps leading at least to the formulation of a first draft cost analysis, preparing the check lists for panel meeting and data validation interviews, summoning and conducting a panel meeting and interviews, collecting and keeping up-to date the price of the most common agricultural inputs (reference tables) and adapting the existing models for open field crops, perennial crops and animal breeding activities. The skill acquired will be tested during preparation of the analysis of profitability of seven more crops, foreseen by September 2012.
7. *The EAU has been networked with other MAFRD department and offices, with informants from the private sector and with other key stakeholders.* As part of the process of identification and assessment of data sources, EAU has now established direct relations with potential suppliers of information. Quality and type of information available in MAFRD (technical departments, statistical office, extension service, payment unit) have been assessed and officers suitable for being part of panels have been identified. The consultant estimates that by the end of the mission the EAU team will know what type of primary data can be sourced from whom inside the Ministry (and also what data are produced through data processing and what type of data processing is used).  
  
Direct links have been also established with input suppliers, service providers and agribusiness entrepreneurs. The already existing links with development projects and with University of Prishtina have been maintained and potential roles specified (i.e., who can provide what information).
8. *The steps for improving the quality of data in the models and finalizing the research have been detailed and the sources of relevant information identified.* Relevant indications are detailed in **Annex 4** (activities of EAU) and in **Annex 5** (ToR for a joint research activity with UP).

All activities were performed in the form of teamwork with EAU staff and with another short term consultant on production cost estimates, Dr. Alexandra Martinovska. The joint activities with the EAU team members were performed giving emphasis to the sustainability of achievements and EAU ownership of the process, thus focusing on developing information tools simple to use and as much standardized as possible and applying a “learn by doing” approach to ensure that EAU staff members are conversant and convinced about the decisions made in choosing among different possible cost actors calculation option.

The key methodology choices made in the formulation of the models (use of panels instead of questionnaires collected from a stratified sample of farmers, use of prevalent costs rather than best

practice costs etc.) have been agreed upon with MAFRD and discussed with the short term consultant on production cost estimates.

As part of the creation of the profitability analysis models, other standard information tools were introduced, namely: 1) *check lists* for data collection; 2) *reference tables* for cost of inputs and calculation of amortizations and; 3) *standard work requirements* (SWR) by crop, providing information on the average number of hours of work necessary to cultivate 1 ha of a certain crop or to perform a breeding activity of given size. This last tool has been only conceptually introduced, as the calculation of standard work requirements calls for a great deal of research work. In the short term, it may be possible to use the tables adopted in some regions of EU Mediterranean member states with comparable climatic and land tenure structures, e.g., Region Campania, in Italy.

# 5.0 RECOMMENDATIONS AND CONCLUSIONS

## 5.1 USE OF PROFITABILITY ANALYSES AND PRODUCTION COSTS

### 5.1.1 Use of Profitability Analyses and Production Costs in Other EAU Activities

Building up the capacity of EAU in producing profitability analyses and production costs will enable the unit to provide one of its core services, but will also contribute to developing other services, such as the tools for farm management and farm accounting and sector analyses. The capacity building of EAU in producing the cost analyses should proceed in parallel with users' capacity to use information to provide other services and information.

In the field of *farm accounting and farm management*, the development of some components of the profitability analyses and production costs are particularly important, as they will contribute to the preparation of standard work requirements by crop, which are a key tool to calculate employment in agriculture (including family work) and to measure performance and competitiveness.

As for *sector analyses*, profitability analyses and production costs are necessary components of margin analyses, i.e., the analysis of the distribution of costs and margins along the supply chain, from production to retail. The margin analysis is an important tool of analysis and policy-making.

### 5.1.2 Use of Profitability Analyses and Production Costs in Exchange of Information and Joint Activities with other MAFRD Departments and External Public and Private Organizations

The analysis of profitability of agriculture productions, the production cost analysis and the analysis of gross margin and returns on investments and family labor, which are part of it, are one of the main tools necessary to inform decisions for agricultural policy-making on the basis of facts and information, and to measure the impact of previously made decisions and policies.

Building up production costs tools and procedures has a direct impact on several functions and departments of MAFRD and on external subjects, as listed below.

1. *Policy making and policy implementation.* The availability of data and information on profitability, structure of costs and capacity to generate employment is very useful both for short term and long term decision-making.

In the *short term*, this information allows a better formulation of development policies, including the design of support measures and programs and the assessment of their impact. The analysis of structure of costs also gives information on the costs of services in agribusiness (access to inputs and credit, technical services, marketing etc.) and hints about the areas for improvement. Development of services are generally not much considered (except marketing) in agriculture development programs and scarce knowledge is usually available on this topic, but they are a key issue for competitiveness. The analysis of costs provides benchmark data to improve services to agribusinesses.

In the *longer term*, the analysis of profitability and cost structures helps in designing scenarios for policy-making (which is also a capacity that EAU must develop) and in identifying market gaps (through the analysis of profitability, as high margins in a certain stage of the production cycle show opportunities and loss-making activities points to a need for restructuring the business model) and service gaps, through the comparison between the cost of hired services and the cost of in-house ones, e.g., comparing the cost of hiring an agronomic service (e.g., spraying plant protection products) with the cost of providing the same service using one's own equipment<sup>1</sup>.

2. *Extension services* can make extensive use of production cost and profitability analyses. The analysis of production systems and the analysis of costs in representative farms<sup>2</sup> provides the extension officer with the following tools: 1) a benchmark for the assessment of the performance of his/her clients, providing advice for improvement; 2) baseline information to guide applied research<sup>3</sup>, showing the most critical aspects to be improved; 3) a first tool for the introduction of farm management and farm planning advice in the portfolio of extension services; 4) data, information for farm investment analysis and hints for development of innovative business models; 5) a risk assessment and management indicator, through sensitivity analysis and comparison of different cost structures, cash flows and profits when relying on purchased inputs and services or self-produced inputs (e.g., in milk production) and in-house services.

A more detailed analysis of the use of production costs and analyses of profitability in extension services is provided in **Annex 4**.

3. The *Payment Unit* can also make great use of production costs and profitability analysis and its components (first of all the reference tables), when assessing applications and business plans and when measuring the impact of support programs, comparing the performance of supported farms vs. average or those not supported. Specifically adapted cost configurations can be also easily developed for monitoring and evaluation functions of the Payment Unit (e.g., focusing only on farms that *do not* receive support).
4. The inter-action between EAU and *Statistics department* is a key factor for the effectiveness of both offices. Even in the present configuration, data from FADN can be used to define the structure of the average or most representative farm in each crop and data supplied by the Market Information Service (MIS) are very useful to update the EAU reference tables. In turn, the cost analyses provided by EAU can be used to improve the quality of data included in FADN, which are partially obtained from primary sources and partially calculated (e.g., total costs) on the base of parameters that need to be continually updated.
5. EAU is establishing a network of direct relations and exchanging information with *agriculture sector development partners*. In this category fall other public organizations dealing with information in agriculture and agribusiness such as the Kosovo Statistical Office, Universities, NGOs, development projects financed by international cooperation organizations, and private service providers, including financial service providers (banks, microfinance institutions [MFI], etc.). The profitability and production cost analyses and its components (first of all the reference tables) produced by EAU will facilitate the work of these stakeholders through the adoption of standardized tools and will accelerate their activities in preparing investment proposals, feasibility and sector studies (e.g., investment analyses). This also is a key factor to focus activity of EAU on producing the most necessary information and to enhance the work of development partners.

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<sup>1</sup> In this case it is also necessary to compare the cost/opportunity and access to credit, as the use of hired services implies a cash cost, where in-house services are based on family work and already owned equipment.

<sup>2</sup> In this case, choosing a cost configuration based “most common” production practices rather than on “best practices” is inevitable

<sup>3</sup> The present proposals for the organization of extension services in Kosovo envisage that applied research will be part of the service.

## 5.2 RECOMMENDED EAU ACTIVITIES RELATED TO PROFITABILITY ANALYSES AND PRODUCTION COSTS

### 5.2.1 Profitability Analyses and Production Costs

Based on the assessment of existing EAU skills and information and on the outcomes of the capacity building activity performed, it is possible to set targets for the EAU in the field of profitability analyses and production costs for the remaining part of 2012 and to propose an action plan for 2013, which will unfold in parallel with the transition from the capacity building phase to routine service provision. The following targets are proposed:

#### **2012 Targets**

1. *Complete analysis of 14 crops and animal products*, including: six open field crops (three vegetable products, two cereal products and one forage crop), a standard protected crop scheme (greenhouses) with two variants, two perennial crops (apples and grapes) and five animal products (milk production, sheep and goat breeding, broilers factories and egg commercial production).
2. *Update the analysis of cereal crops with 2012 campaign data.*
3. *Extend and complete the reference table* and circulate them to partners.
4. *Start a joint research with University of Prishtina* on the field of competitiveness of products or on provision of services to agriculture.
5. *Build up capacity for assessing investment plans.*

#### **2013 Targets**

1. *Update profitability analyses and production costs of the 14 crops and animal products analyzed in 2012.*
2. *Extend analysis to 10 more products.*
3. *Produce profitability analyses of post-harvest services for fruit and vegetables.*
4. *Build up capacity for performing investment analysis .*
5. Consolidate network of cooperation with other departments and organizations and formalize modes, contents and procedures to acquire data, process and disseminate information (Information Exchange Protocols [IEP]). In this respect, one of the first issues to be addressed is to formalize the procedure for dissemination of information produced by EAU: who gives the final endorsement to the documents, where and how they can be published, to whom and with which procedure they can be disseminated, the rights (or denial) to third parties to access and use the original data used to produce information, etc.
6. Refine the cost analysis models, increase the number of cost configurations (e.g., with and without irrigation, in lowland and hilly areas, etc.) and the range of information provided (sensitivity to variations in price of inputs or in yields etc.) for each product.
7. Introduce Standard Work Requirements (SWR) by agriculture activity, i.e., the average number of working hours required to cultivate one hectare or to manage a breeding farm with a given number of animals.

#### **Farm Management and Farm Accounting**

In relation to profitability analyses and production costs activities, the following targets are proposed:

- *Cooperation with Extension services and with NOA in introducing farm accounting practices* compatible with production cost analysis structure and, in parallel, adaptation and improvement of

the models to the type and quality information that can be retrieved from farms where farm accounting has been introduced. The introduction of farm accounting will improve the work of data validation and will eventually pave the way for the introduction of a more sophisticated system of data collection, based on farm clusters.

- *Build capacity of EAU to train extension service staff (ToT) in using reference costs for extension purposes.* Reference production costs will be helpful in extension services as a benchmark to spot inefficiency of their clients and suggest actions for improvement. Considering the importance of this activity, accelerating the acquisition of full EAU ownership of the cost models is particularly important. EAU team training and presentation skills should be also tested and, if necessary, improved.

A relevant schedule should be defined in accordance with an overall EAU work plan update.

### ***Sector Analysis and Market Surveys***

In relation to profitability analyses and production costs activities, the following targets are proposed:

- *Build EAU team skills in margin analysis* and test the feasibility of performing margin analyses on two or three vegetable crops or animal products. It is advised to choose one fruit crop (e.g., apples), one highly seasonal vegetable crop (e.g., tomatoes) and one animal product (e.g., eggs).
- Prepare a SOW and a proposal, in cooperation with the University of Prishtina for a *comparative competitiveness study of a few key products* (three or four) at regional level (e.g., in Kosovo, Albania and Republic of Macedonia) and seek for financing. A first draft is provided in **Annex 6** below.

Also, in this case, a relevant schedule should be defined in accordance with an overall EAU work plan update. In the case of the joint research with the University of Prishtina, should it prove impossible to find the financial resources in all the countries where the research is planned, alternative options will be pursued, such as a joint research on services to agriculture.

### ***Expanding Outreach and Cooperation Network***

Within 2012, EAU should establish a more regular exchange of information with other MAFRD departments and with external subjects, possibly outlining also the relevant protocols (who interacts with whom and what kind of information flows are planned to be regularly exchanged, in addition to occasional needs). The cooperation daily practice should eventually evolve and be formalized in information exchange protocols (IEP)<sup>4</sup>, particularly useful to regulate the exchange and flow of information with the new donor-funded development projects that will start in 2012 and in the next years, as coordination with institutions and exchange of data and information is a long-lasting issue in international development projects management.

The cooperation with University of Prishtina (UP), already informally active, should be translated into more concrete contents; it is advised to focus on the following issues:

- Analysis of the average grape growing farm endowment and use of equipment. One of the researchers of the UP is already dealing with the analysis of grape growing activities (in the field of optimization of use of inputs) and should have enough data for an in-depth research on the above indicated topic. The analysis of endowment and use of equipment in grape growing will eventually pave the way for a better comparison between total costs and cash costs in the options of: 1) hiring all services or 2) using farmer's own equipment.
- Joint analysis of comparative regional competitiveness of some key agricultural products, as indicated in the previous section.

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<sup>4</sup> The IEP are the rules and procedures regulating the access, exchange and dissemination of data and information. IEP usually are internal documents of the Ministry specifying, for example, who has the right to collect information and through which procedures, to whom the outcomes should be reported or how should be endorsed, published and disseminated by MAFRD.

Two other important areas where the EAU network of relations and outreach should be expanded are the relations with financial service providers (banks and MFI) and with the producers' organizations.

- Interaction with financial service providers is expected to provide sizeable mutual benefits, as the information provided by EAU (production costs, reference tables, SWR) will help the work of loan officers in appraising loan applications and investment proposals. On the other hand, EAU itself should be enabled to get first hand feedback on the quality of cost analyses and specific primary data. This is an important, but delicate issue, as privacy rights in data exchange should be always guaranteed (i.e., no flow of data to EAU without agreement of the loan applicant) and segregation of duties between loan officers and public servants should be ensured (i.e., excluding the use of extension services officers or other MAFRD staff in sourcing or verifying data provided by loan applicants).
- Interaction of EAU with producers' and food processors' associations is also important. Sooner or later, seasonal contractual agreements between farmers and processors will become more common in Kosovo. At that stage, reliable margin analyses and cost analysis produced by a public body will become particularly important in negotiations on the minimal seasonal price for a certain crop.<sup>5</sup>

Finally, links between EAU and Kosovo Statistical Office (KSO) should be established, even if it is advisable to keep the MAFRD statistical office as the main official link between EAU and CSO.

### 5.3 CONCLUSIONS

The main findings of the mission about the present situation of data and information on agriculture productions profitability analyses can be summarized as follows:

1. The quantity and quality of available information is better than initially expected, but access to data and information is not organized and capacity in information needs assessment is also limited.
2. At a technical level, the main shortcomings in information supply have been identified in the scarce capacity of technical offices and even the Statistical office to process available data into structured information that can be used by third parties (in the case of technical offices it is not their duty, too); at the same time, the capacity to make use of available information (or the trust in the quality of such information) is limited, leading most subjects in need of information to try to establish their own network of data sources and their own analysis models .
3. Different cost analysis tools have been autonomously developed by various subjects (mostly by external, donor-funded development projects) and are still being developed. These cost analysis tools are relatively similar and provide useful information (prices change quickly, but production structures do not). However, the scope and definition of such analysis tools are generally insufficiently detailed and poorly understood by potential users (for example, most investment plans and profitability analyses are based on "best practice" costs, rather than on average production costs), with the result that most existing information and tools are scarcely used, because users do not recognize what part of the information is suitable for their needs.

Based on the above, it is possible to conclude that the knowledge base (quantity and quality of available data, human resources) on which the activity of EAU should be based is relatively good, while the main gaps consist of the following:

1. Scarce exchange of information between offices and organization (and frequent scarce interest in improving such exchanges);

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<sup>5</sup> Production contracts are usually stipulated between individual farmers and food processing enterprises on the base of a framework contract yearly agreed between producers' associations and food processors' associations, to minimize the variation of conditions between contracts and define a range of minimum and maximum prices. The parts stipulating a production contract are free to agree conditions different from those ones indicated in the framework agreement, which anyhow works as a benchmark.

2. Inadequate capacity to assess the quality of available information;
3. Scarce knowledge of what information can be obtained from where and, most importantly; and
4. How to make appropriate use of available data and information.

Therefore, establishing a functional information flow and feedback system is the most critical aspect of the entire data-information system. Data collection and processing activities should be assessed, organized and revised, when necessary, with reference to the required outputs, giving clear roles to the different offices (who collects the data from where and who process them for which purpose) and preventing duplication of activities, but at the same time leaving enough flexibility to keep the system functioning when, for any reason, the flow of data is interrupted. A good example of the need for improving the information flow and feedback system is given by agriculture statistics. In the past, MAFRD statistical offices were collecting and processing the data, somehow duplicating some of the activities of the Kosovo Statistical Office. Responsibility for data collection was centralized at the Kosovo Statistical Office, but the office does not collect the data with the degree of detail required by MAFRD Statistical Office. As a result, after 2009 there is no detailed data on agriculture production, agroindustry or other issues related to agriculture. Waiting to solve this issue (i.e., having the Kosovo Statistical Office collecting the data which are needed), no alternative formal data collecting system is foreseen, except the one established for FADN (where only a minimal part of data are actually recorded) but the questionnaire for FADN is made in a way to respond to FADN requirements, without addressing the issue of providing alternative sources for the data that the Statistical Office does not collect any more and that are not yet supplied by the Kosovo Statistical Office. In this case, a functional information feedback system (from MAFRD decision-makers) would have reacted to the lack of basic data on national production requiring that the FADN questionnaire be adapted as a stop-gap solution, while the overall issue of data collection from Kosovo Statistical Office and transfer to MAFRD was being addressed. In fact, there was a reaction, but informal, with technical offices starting to gather informally more data from farms and other agriculture operators with whom they have direct relations.

Enhancing information flows between subjects (internal and external to MAFRD) who can collect data (or which are anyhow doing this), offices that process data into information and users of information should be considered a priority as important as building EAU capacity to produce new information.

In particular, there is a need to increase awareness of decision-makers and MAFRD technical services on their need for information and to improve their capacity to specify what kind of information they need. Internal informative seminars should be periodically organized to streamline the circulation of information within MAFRD and to create the know-how necessary to pose the right questions to the offices in charge of producing the information.

Another issue is the propensity of information users (including international development projects) to establish direct data and information collection networks, rather than build upon an existing information and knowledge base; for example, MAFRD technical officers rely on informal networks of farmers and other agrifood operators to get the information they need, rather than sourcing such information from the statistical office. This redundancy of data sourcing systems is not necessarily bad as it facilitates data validation, but data and information should be exchanged between offices and organizations.

Based on the above, it is possible to draw two conclusions:

1. **Taking short term policy decisions based on data and information is possible given an improved capacity to assemble already available data.** Most basic data are already available or relatively easy to get. At the same time the information for taking longer term decisions (development scenarios, evaluation of policies) are almost completely missing and also the necessary skills are scarce.

2. **Improving the practice of information exchange among MAFRD offices and improving know how on use of information is a high priority**, having the same importance of improving EAU capacity to collect and process data. Practices of data and information exchange between technical officers, statistic office, EAU and extension services should be encouraged and experimented with. The formalization of the best practices emerging from these experiences should be formalized into Information Exchange Protocols (IEP). As an example, the primary data from FADN (which are a subset of available data) could be processed and used by EAU to accelerate the definition of “average” or “most common” farming system, by crop. Also, the informal networks of MAFRD technical offices’ informants could be used for the process of data validation, as these informants are considered valuable and reliable sources of information by the most experienced MAFRD officers. Among other things, the IEP will define who has a formal role in data collection, who analyze the data and what is the procedure to have the produced information endorsed and officially released by MAFRD.

With the existing human and financial resources and the available data sources it is possible to gather the data required for establishing a basic agricultural information system. The focus of next actions should be training (both in producing and using information), in consolidating the data collection and processing processes and in communication. In the short term, the following actions are recommended in addition to the already planned activities for EAU capacity building:

- To organize internal MAFRD seminars to ensure that EAU is considered by other offices as a resource and not as a burden and to develop a common understanding about the type of information that EAU will produce and what use can be made of such information. Awareness on importance of information for decision making and know-how about use of information should be substantially increased.
- The models used for analysis of profitability and cost production must be developed as flexible tools, whose complexity will grow in parallel with the capacity of EAU to produce information and capacity of users to utilize it. At any moment, the system which produces the information used in the models must ensure *ownership* (by EAU and users), *sustainability*, *consensus*, and *resilience* to possible changes or shortcoming in data supply. The development of models and their use should be considered as an iterative process. In addition, it is recommended to organize occasions to discuss with potential users all the aspects of the models: definition of data, methods of data processing, presentations (i.e., customized degree of detail of data required) and feedback system.

As a final remark, the above considerations show that building the capacity of potential users to raise the right questions is as important as building the capacity of the EAU to answer such questions; the added value of EAU work will eventually depend, to a great extent, on the quality of questions they receive, on the capacity of the team to interact with other subjects and on the effectiveness and completeness of the data collection network.

# ANNEX 1: TERMS OF REFERENCE

## Background

In January 2012, the Ministry of Agriculture, Forestry and Rural Development (MAFRD) established an Economic Analysis Unit (EAU) to improve the quality of decision-making and planning in support of the Ministry's agricultural support programs of direct payments, grants and investments. Three analysts have been hired (two with master's degrees in agricultural economics and one with a master degree in economics and accounting). A manager for the unit is being recruited.

MAFRD has budgeted over € 6 mln (\$8.5 mln) for the 2012 for economic support programs, as follows:

## Technical Measures and Planned Direct Support Programs in Livestock and Crop Activities for 2012

Measure	Target Activity	MAFRD Investment 2012
1	Direct payments for dairy cows, sheep and goats	2,900,000 €
2	Direct payments for spring planting / corn	1,000,000 €
3	Milk - producing economies	600,000 €
4	Fruits sector (apple, strawberries, raspberry, blackberry)	600,000 €
5	Vegetables sector	450,000 €
6	Productive agricultural economies of eggs	200,000 €
7	Vineyard sector	200,000 €
8	Direct payments for autumn planting / seed wheat	200,000 €

The EAU needs to prepare an analysis of the profitability and costs of production of the highest priority crops (those for which MAFRD has budgeted grant and support payments) to support planning and budgeting for the 2013 support programs. This analysis needs to be completed by Sept. 30, 2012 to be of use in the planning of support programs for 2013. The results of this analysis will also serve as a baseline against which MAFRD can measure changes in productivity and profitability over time.

MAFRD is also in the process of creating a new agricultural extension service to support farmers. That service will develop and implement a farm management program to improve the economic decision making skills of farmers. The cost of production and profitability data developed by the EAU will be used by the extension program as part of this farm management program and the extension agents who implement it.

MAFRD does not have the data needed to carry out such an analysis, nor does the current EAU team have all of the experience to do this on their own. MAFRD intends to work with the Department of Agricultural Economics of Pristina University to design and carry out a data collection exercise, using students and faculty. The EAU team needs expert assistance in designing the overall analysis and in completing the work required.

## Proposal

MAFRD seeks short-term technical assistance from an expert in the calculation of costs of production of agricultural enterprises to assist MAFRD in developing a plan for the required analyses; designing the cost of production models required for the analysis; designing a data collection program to gather the necessary data needed to complete the analysis; assisting in the data analysis itself; and training the EAU staff in these measures.

## **Scope of Work**

For this assignment, the consultant will work as a team with the three staff members of the EAU, with the consultant acting as team leader for planning and directing the work of the team.

1. The consultant's assignment will focus on the following target enterprises:
  - 1.1. Corn
  - 1.2. Winter wheat
  - 1.3. Apples
  - 1.4. Wine grapes
  - 1.5. Dairy cattle
  - 1.6. Sheep
2. The consultant will work with the EAU staff to:
  - 2.1. Develop a research design and an action plan (with timetable and milestones) for the analysis;
  - 2.2. Assess the current availability and suitability of data already available for this analysis;
  - 2.3. Meet with the staff of the agricultural extension service to determine their needs regarding the farm management program in development
  - 2.4. Prepare a draft TOR and timetable for a data collection project in cooperation with the Dept. of Agriculture Economics of the University of Pristina to gather and process the needed production and cost data.
  - 2.5. Review and prepare the data collected and complete the final analysis of the target enterprises;
  - 2.6. Prepare a final report on the results for internal MAFRD use;
3. The consultant will work with EAU staff to prepare a work plan for 2013 to update the 2012 analysis for the enterprises studied in 2012 and to complete similar analyses during 2013 to cover new farm enterprises, including:
  - 3.1. Poultry - broilers and layers
  - 3.2. Goats
  - 3.3. Sweet peppers (field crop)
  - 3.4. Tomatoes (field crop)
  - 3.5. Gherkins (field crop)
  - 3.6. Table grapes
  - 3.7. Fresh berries (raspberry, strawberry and blueberries)
  - 3.8. Greenhouse production (mixed vegetables)

## **Level of Effort (LOE) and Place of Assignment**

This assignment will take place principally in Kosovo and will require two trips of 4 weeks each (20 working days per trip, based on 5 working days per calendar week) in Kosovo, plus an additional 10 days of time for preparation, planning, and analysis and reporting in the consultant's home office for each trip, for a total of 60 days total level of effort.

### **Activity Level of Effort Required Location**

Trip 1 Preparation and post-trip reporting 10 working days Home Office

Trip 1 in country (4 calendar weeks) 20 working days Kosovo

Trip 2 Preparation and post-trip reporting 10 working days Home Office

Trip 2 in country (4 calendar weeks) 20 working days Kosovo

Total LOE 60 working days

### **Target Dates**

Trip 1 -May 2012 - to coincide with planting of summer crops, 4 weeks in-country

Trip 2 - September 2012 - to coincide with harvest of summer crops, 4 weeks in-country

### **Deliverables**

1. One week prior to the first trip, a written work plan for the first mission.
2. Prior to completion of the first trip, a briefing for senior MAFRD management on the results of the first mission.
3. Within one week after the end of Trip 1, a written report including:
  - a. A research design for the analysis to be completed;
  - b. An action plan with timetable and milestones for the analysis; and
  - c. A draft Terms of Reference and timetable for the data collection project
4. One week prior to the second trip, a written work plan for the second mission
5. Prior to completion of the second trip:
  - a. An internal briefing for MAFRD management on the results of the second mission and proposal for 2013 work; and
  - b. A briefing for selected donors on the results of the 2012 work and proposal for 2013.
6. Within fifteen days following the end of Trip 2:
  - a. A final report covering the full assignment; and
  - b. A research design and action plan for 2013 for updating the 2012 analysis and for completing similar analyses for the additional farm enterprises

### **Reporting**

The Consultants shall report Greg Vaut, Senior Technical Adviser, Cabinet of the Minister, MAFRD and to Kapllan Halimi, Permanent Secretary, MAFRD.

# ANNEX 2: ASSESSMENT OF CURRENT AVAILABILITY AND SUITABILITY OF DATA AND DATA SOURCES

<b>Data source:</b>	MAFRD Statistical Office (Policy Development and Statistical Department)
<b>Assessment:</b>	<p>The outreach and the effectiveness of the Statistical Office (SO) has been severely affected by the centralization of the data collection and processing activity, which is now performed by the Kosovo Statistical Office for all sectors, included agriculture. The SO has therefore no more access to primary sources and since the Kosovo Statistical Office is collecting only general data on agriculture, there is no more a formalized system for collection of detailed data on agriculture. Technical offices are sourcing data from their own informal network of informants. In other words, the SO has lost upstream and downstream connections for general agriculture statistics.</p> <p>However, SO has still tools and know-how which are unique in MAFRD and still manage precious information. In particular:</p> <ul style="list-style-type: none"> <li>• SO has the software and the hardware to <i>produce thematic maps</i>, so that can be used for visual presentations of information, based on maps, if data are produced by other organizations.</li> <li>• SO has also an <i>institutional link with the Kosovo Statistical Office</i> and a defined IEP with it, so that it can (and should) be used as intermediary to get information from Central Statistical Office.</li> <li>• SO is sourcing data and processing them for FADN. The type of information provided by FADN has been recently changed: before it was providing a production cost by crop, using a basic configuration, while now is required to provide data on standard output, so that there is not a breakdown of costs by product. Primary data are collected from a representative sample of farms. However, only a part of the data included in the database used for FADN are actually primary data, while the other, including costs, are calculated. <i>The most reliable information from the database is relevant to the size of cultivated land, by crop. This can be used to extract the average size of the “typical” farm, by crop, which is an important information and can be used also as part of amortization calculations.</i></li> </ul>
<b>Conclusions:</b>	The SO should be a key partner of EAU. The staff is presently not much motivated, but with their help some reliable information for cost calculation and sector studies can be anyhow obtained and presented in a visual way. The willingness to cooperate is good.

<b>Data source:</b>	MAFRD Technical Offices (Plant Production and Protection Department and Livestock Department)
<b>Assessment:</b>	<p>The technical specialists working in the MAFRD technical offices are in many cases the most experienced public officers in the relevant sectors. Most of these officers have a network of personal contacts with farmers established and consolidated in the years. The information they have about production at national level and on production costs basically comes from such networks. However, not all the officers have access or capacity to provide the same quality of information. Individual assessment should be done. Among those ones involved in the panels, the office dealing with grapes and wine production was able to provide a wide range of information, while others were able to provide less specific data.</p> <p>Apart from the individual involvement of some of these officers into the panels, the most useful resource that can be provided by the technical officers are the access to their network of trusted</p>

	farmers, which can be quite useful for data validation. The quality of data on production and productivity that can be obtained from technical offices is limited.
<b>Conclusions:</b>	Technical offices will be mostly users of EAU information and data. However, some officers can be included in panels and their consolidated connections with trusted farms is an important resource for data validation. The willingness to cooperate of technical officers is generally good, with some exceptions.

<b>Data source:</b>	MAFRD Payment Unit
<b>Assessment:</b>	The Payment Unit manages the MAFRD direct support programs. The information it manages are limited to the farms applying for such programs. The payment unit is a potential user of EAU data and information (to be used for assessment of application and as M&E tool), rather than a source of data. However, the payment unit also has a vast database of information concerning the farms in the supported sectors, especially in terms of cultivated surface by crop. These data can be used in alternative or in addition to those ones from FADN to calculate the size of the average or typical farm, by crop and the relevant land use, an information useful to calculate amortization and for defining the profile of the representative farm, by crop.
<b>Conclusions:</b>	Inter-action between EAU and Payment Unit will see this last as an important user of EAU data and information. The range of data it can provide is limited. The willingness to cooperate is good.

<b>Data source:</b>	MAFRD Extension services
<b>Assessment:</b>	The newly established extension services will provide technical assistance to farmers on agronomic, but also on farm management issues. Extension services will be both a major user of EAU-produced information and an important source of information. As it was already verified, several extension officers can be included as panel members during the process of cost analysis and also can suggest reliable farmers for data validation. Actually, to get information on cereal crops, extension officers and farmers known to them were used to collect and validate data and information.
<b>Conclusions:</b>	Inter-action between EAU and Extension Services will see a bilateral flow of information. Links between EAU and extension service will be quite important, as each unit badly needs the skills and knowledge of the other. The willingness to cooperate so far is good.

<b>Data source:</b>	MAFRD Agriculture Research Institute in Peja
<b>Assessment:</b>	The research institute is implementing applied researches, especially in the sector of seeds and cereals. The impact of the activities of the Institute on Kosovo agriculture is presently limited, mostly because of the inadequate connections between the farms and the Institute. In practice, there is not a mechanism to funnel demand for services from the farms to the Institute and also no practical means of transferring the outcomes of researches to a sufficiently wide number of farms. Finally, no feedback system is in place. The institute has produced some detailed production costs analyses, but they are based on "best practice" cost configuration, rather than on "representative farm" cost configuration, with the result that often inputs and yields are higher than those ones recorded in most farms.
<b>Conclusions:</b>	The Institute has the capacity, if properly steered, to perform applied researches in technical and agronomic issues and to design productivity improvement schemes, at least in terms of physical outputs. However, should the researches be properly designed, the Institute could also investigate the optimization in the use of inputs with a given cash expenditure limit or with any other fixed parameter, as the analytical tools used for physical and financial optimization are basically the same. The Institute can be a good partner for EAU, as the cost analyses will spot the most critical points in a given production and the Institute could after work to overcome the identified shortcomings.

<b>Data source:</b>	MAFRD Viticulture and Wine Institute in Rahovec
<b>Assessment:</b>	The research institute is implementing applied researches in the field of grapes and oenology. The institute keeps a closer relation with farmers as compared with the one in Peja, also helped by the fact that viticulture in Kosovo is concentrated in a relatively small area and the Institute is located in that area. However, also in this case, the connection between demand and supply of research services is limited, so that the impact of the institute activity is also limited. The institute has produced an extremely detailed grape investment and production costs analysis (so far the most detailed one among those ones found in Kosovo and in Macedonia),

	but it is based on “best practice” cost configuration, rather than on “representative farm” cost configuration, with the result that investment costs, inputs and yields are higher than those ones recorded in most farms.
<b>Conclusions:</b>	Inter-action between the EAU and the Viticulture and Wine Institute will be limited to grape and Wine production. The institute can provide the most in-depth information on investments in viticulture and the farmers who are linked with it can be a key source of information for data collection and validation. When considering also the economic researches made on the topic of viticulture by the University of Prishtina, it is possible to conclude that the calculation of SWR for grape growing and a precise estimate of amortization of farmers own equipment as part of grape production cost (one of the most difficult issues in production cost analysis) are within reach.
<b>Data source:</b>	MAFRD Library
<b>Assessment:</b>	The MAFRD library is a potentially important source of information. Most technical documents of projects performed since 2002 are available there and even if the quality of project reports is heterogeneous, the quantity of technical reports that can be retrieved there has few parallel in other transition countries. However, the library is deeply disorganized and documents are not properly and completely recorded (not all documents are recorded and there is not a classification of documents by keywords). The library is also the place where EAU is based. A gradual build up of a database of technical documents could provide an important help in building up capacity of EAU and facilitating its access to technical information.
<b>Conclusions:</b>	Nobody expects much from the MAFRD library. However it is a major repository of technical documents in almost all aspects of agriculture and rural development Updating and improving the classification of library documents would be a first step to make good use of all the information available there, which is now practically inaccessible.
<b>Data source:</b>	University of Prishtina (UP), Faculty of Agriculture Economics.
<b>Assessment:</b>	The faculty of Agriculture Economics of the UP is the natural partner of EAU. However, it needs itself capacity building. The researches have the know how to perform cost analyses, but few or no practical experience in this field. One of the objectives of PO researchers in relation with EAU is the provision of technical assistance to EAU staff, but this objective seems not realistic, due to budget constraints and type of skills that EAU is in need to develop, for which there is not much practical experience in PO either. The only presently ongoing research on production costs is focused on the optimization in the use of inputs in grape growing, which also require some cost analysis. The baseline data collected for this research could facilitate the calculation of grape production costs, especially in providing information on the assets and equipment owned by the average grape grower.
<b>Conclusions:</b>	The UP can be involved in performing field researches functional to both PO and EAU. These researches can consist either in master students’ researches or in final researches of students in completing their bachelor degree. Also, the PO can be involved in cross-border and international researches functional to EAU needs, once the topic is clearly defined
<b>Data source:</b>	USAID New Opportunities for Agriculture Program (NOA)
<b>Assessment:</b>	At present, NOA is the largest ongoing project focused on agriculture and agribusiness. The technical staff of the project include some of the best specialists in the country. The project is dealing with two issues which are directly related to the analysis of profitability: i) Development of opportunities for agribusiness, which implies the development of investment plans and ii) introduction of farm accounting in farms, which will facilitate much the work of EAU and of any other research in agricultural economics, provided that the farms record data in a way that make them usable by researches. Contribute in striking a sustainable balance between the complexity and detail of the data that it can be requested to farmers to keep record of (minimal) and the detail of data needed by researchers (extreme) is an urgent task for EAU, as the farm accounting system that is being introduced is still in the test system (thus, leaving room for adjustments), but cannot be substantially changed.
<b>Conclusions:</b>	NOA is a major resource for sourcing and validation of data, especially when complex perennial crops investment are considered; also, it is recommended to include, when possible, NOA technical staff in the panels. However, the differences in the cost structures of NOA investment plans (based on best practices or innovations) and EAU cost analyses (based on prevalent cost structure) should be always taken into consideration, so that, for the purposes of EAU it is usually better to inter-act with NOA officers rather than using their documents.

<b>Data source:</b>	USAID Kosovo Private Enterprise Program (KPEP)
<b>Assessment:</b>	KPEP is a large project dealing with SME and entrepreneurship development, including agrifood SME. The project has supported many activities in agriculture, but will end in August 2012; NOA project will take over all activities in agribusiness..
<b>Conclusions:</b>	Since KPEP will be completed in August 2012, it is important to acquire to MAFRD library and/or to EAU all the technical documentation that can be of use. The technical staff of KPEP and the clients portfolio are a resource that should be not lost, for data collection and validation. Technical staff of HPK should be involved in the panels and list of clients, if possible, acquired.
<b>Data source:</b>	Swiss Cooperation, HELVETAS InterCooperation, Horticultural Promotion in Kosovo (HPK)
<b>Assessment:</b>	HPK is active since 2001 in fruit and vegetable production; as such, the project is an important source of secondary data. The 2010 investment plans provide the most detailed information found so far in apple production and also the method of showing how the calculations are made is quite well-thought, as it makes easier to adapt the cost configuration in function of needs. Part of the technical staff of HPK is now working with NOA. This will facilitate the networking activity of EAU, reducing the number of partners.
<b>Conclusions:</b>	A more thorough screening of Helvetas past activities and future planning is necessary. As a first step, it would be appropriate to establish more regular contacts with HPK to verify what information and professional skills are available of vegetable production, since this will be object of EAU activities in the next future. The opportunity to include Technical staff of HPK in the panels for the second batch of products to be analyzed should be appraised.

# ANNEX 3: PROPOSED COST ANALYSIS MODELS

## A3.1 PROPOSED METHODOLOGY FOR PRIMARY DATA COLLECTION AND VALIDATION

### A3.1.1 Assumptions and Characteristics of the Models

The models developed for analysis of profitability of farms and costs analysis find an overall theoretical background in the Policy Analysis Matrix methodology; more specifically, the models are based on the following assumptions:

1. ***The cost collected are the actual costs of representative commercial and/or semi-commercial farms.*** The choice to use actual costs rather than best practice costs is coherent with the purpose of the analyses, which is to facilitate decision-making in shaping agricultural policies, designing of support programs and providing benchmark information for extension services and development partners.
2. ***A single model was developed for commercial and semi-commercial farms, with the exception of milk production.*** The definition of “commercial” and “semi-commercial” will be itself a result of profitability analysis. As a first step, calculations have been based on cost per ha (i.e., without a global budget of the commercial or semi-commercial farm) for field and perennial crops. As for sheep, it has been decided to analyze production of 50 sheep and 100 sheep flocks.

In these cases no difference have been made between semi-commercial and commercial farms, as apparently there are is not a clearly different production model depending on the size, at least considering the most common farm management systems.

On the contrary, based on results of field visits, it was decided to produce different production costs analyses for semi-commercial and commercial milk production, where the differences detected between production systems in farms with 10 cows and less are quite different from those ones recorded in farms having 20 animals and more. As a working hypothesis to be verified, it was assumed that milk production farms with 15 dairy cows apply the production patterns of commercial farms.

3. ***Use of hired equipment or owned equipment was the only criterion requiring the design of different cost configurations.*** The definition of “representative farm” has been an issue, as it was necessary to decide whether developing one or more cost configurations for each crop and production in function of criteria other than farm size, such as regional differences, altimetry etc. . For each cost configuration, the profile (size, endowment of equipment, workforce etc.) of a representative farm must be defined, too. As a first step, it was decided not to take into consideration regional differences; the cost/effectiveness of developing regional models has been considered not worthy, in a country like Kosovo, where crops and animal production of a certain type are either concentrated in one region or present relatively similar conditions. Also, it was considered not appropriate to produce different cost configuration based on altimetry profile (i.e., lowlands, hill and mountain farms).

The use of hired services and labor or own equipment and workforce was chosen as a criterion to develop different cost configurations. Since the most common profile is a mixed one, with some

services hired and other performed using own equipment a third profile, labeled as “most common” was developed, too.

**Table A3.1** below shows the criteria screened for the preparation of the models and the relevant choices adopted.

**Table A3.1 Criteria Analyzed and Adopted for the Design of Production Cost Models**

Criterion	Adoption of criterion
Commercial/semi-commercial	Only for dairy cattle
Regional	No
Altimetry	No
Endowment of machinery	Yes

### A3.1.2 Cost Configurations and Model Structures

The models were designed to satisfy the following requisites:

- **Ownership** of EAU and users. The models will not assume immediately their ultimate configuration; the configuration will be gradually improved and expanded, in parallel with the capacity of EAU of maintain and update the model and capacity of users to make full use of the information contained.
- **Sustainability.** Apart from technical sustainability (use of commercial software – MS Excel, autonomous capacity of EAU team to maintain the model, capacity of the sheet to be a self-standing tool), sustainability has also been considered with reference to the capacity of EAU team (know how, availability of means, quality of partnerships and informant network, speed of process) to maintain the tool from the very beginning without or with minimal technical assistance. The choice of using panels of key informants rather than relying on stratified samples of farms in preparing the basic cost configurations is part of the measures taken to ensure the sustainability of the models
- **Consensus.** Consensus must be reached with other MAFRD offices and departments and with external partners about the type and quality of information that the models can provide, and their limits. The process of data collection must be also based on a shared willingness to participate. Two seminars have been organized for this purpose with MAFRD officers and with external partners. In addition, several individual meetings have been done with MAFRD senior officers, representative (decision makers and technical staff) of external development partners and potential users of the models. Each interview with information provider has been introduced by an explanation of the purpose of the cost production analysis exercise.
- **Resilience.** The cost analysis system must be resilient enough to remain in function even if part of the information network becomes no more available, if part of the EAU staff is changed, if part of the data and information kept in the library and in its computers are lost and if the models are transferred to users without the relevant working tools (e.g., the reference tables). These characteristics have been ensured, identifying redundant (and alternative) data sources, ensuring that all members of the EAU team has at least the basic skills to run every section of the model and, last but not less important, that the excel files used for each model have no external links to other excel files, to prevent errors in the calculation caused by the fact that the external link, for any reason cannot be updated.

The models are designed in accordance to a different structure, depending on the type of production:

- **Annual crops in open field** have the simplest structure: there is a sheet with the calculation of investments cost depreciation, a sheet with production cost calculation in the three options of using all hired equipment, all owned equipment and most common mix. This sheet has also a summary of costs and profitability and can be used as a presentation for technician. Finally, there

is a sheet showing only key figures, to be printed for the needs of decision-makers, who require few and clear figures. In the first version, it was decided to embed in the model also the reference tables (i.e., the tables providing unit prices of inputs and equipment and amortization period), so that it is easier for the user to check where data included in formulas come from; this decision is being reconsidered, as the updating of reference tables will in many cases require the introduction or the cancellation of rows, with possible unintended impact on formulas. Probably the best option is to provide separately the models and the reference tables to the users, keeping in the model only the values taken from the reference tables. This aspect is still to be decided.

- **Perennial crops** (at present, grapes and apples) production cost models are more complex.

A first sheet includes the investment costs, which are defined as the costs sustained in the period going from the preparation of the site for the new plantation to the moment when cash flow turn positive, i.e., when revenues start to exceed costs and amortizations are accounted for. To balance for the fact that in the first years (as long as cash flow is negative) no amortizations are calculated, all amortizations are referred to the investment period when cash flow is positive (which is shorter than the total investment period). In both the analyzed cases (apple and grapes) cash flow turn positive only from the fifth year from the beginning of investment, so in both cases the sheet takes into consideration the first four years, but for other crops it could be different.

A second sheet shows the investment plan, i.e., the structure of costs and revenues along the whole life of the investment, calculated at constant prices. Values are not discounted, as in this stage the data in the models are not stable enough to make meaningful such calculation, which will be later added.

A third sheet shows the structure of costs and revenues of a typical full production year. This is the reference production cost that will be most commonly required and circulated among users. At this stage, no sensitivity analysis was embedded in this sheet.

A fourth sheet summarize data from other sheet into a presentation addressed to technicians, which is detailed enough to receive feedback and comments, but not so detailed to confound the reader who can, however, verify parameters and assumptions in the previous sheets.

A fifth sheet show only key figures and is thought for decision-makers.

Considering the experience of field crops, in this models it was decided not to embed the reference tables into the model, but this decision could be easily reversed, should it eventually considered appropriate

- **Animal production** models are also complex, as they include also models for the self-production of animal feed. In the case of commercial and semi-commercial milk production, different models have been developed for commercial and semi-commercial farms, as the production system is different, with semi-commercial farms using pastures and commercial farms using almost exclusively animal feed.

A first sheet is devoted to the investment costs and relevant amortization. The highest cost is represented by the barn. An issue that emerged during calculations is that the use of amortization periods foreseen by the accounting norms in Kosovo would make milk production not viable. In fact, all farmers interviewed are using their assets for a longer period than foreseen in fiscal norms. This is also due to the fact that farm equipment is often under-used, as compared with its potential.

Two sheets have been devoted to the cost production analysis of animal feed: one for silage and one for alfalfa. The figurative revenue of these products has been put at market prices, in order to facilitate the analysis of margins within the production system. Should the figurative revenue be put at production cost, all margins would have been attributed to milk production.

A fourth sheet is devoted to animal feed and animal health, taking data from the previous sheets on feed production and adding data on purchased feed and expenses for animal health care and reproduction (i.e., artificial insemination).

The fifth and sixth sheet summarize data from other sheet into presentation addressed to technicians and decision makers, respectively, as it was done for the other models

As mentioned, each model is designed to have two sheet of presentation of different complexity, always ready for printing (and obviously linked to the other sheet), in order to respond to the different need of decision makers (who can need immediate, easy-to read tables, showing only key figures) and technicians (who need more detailed information, but also a summary of such information).

### **A3.1.3 Calculations Related to the Use of Farmer-Owned Resources**

One of the most complex issues is related to the calculation of use (and amortization cost) of equipment owned by the farmer and use of family work.

Investment plans developed by development projects in most cases do not take into consideration this aspect, as they account for all inputs at market prices, which for an investment plan is correct; also, the quantity of variables and assumption to be considered in calculating the amortization of farmers' own equipment is such that this is one of the most complex tasks in cost analysis. However, developing the right figures requires a number of analyses that are much necessary for the activity of EAU as a whole, so that such analyses should be anyhow developed, even if the models, to made them simpler, would consider all inputs at market prices. Such analyses are listed below.

- A first analysis is the *calculation of how many days (or hours) each piece of equipment is used for one ha of a certain crop*. This analysis requires to detail any single agronomic operation (e.g., a tractor can be used for different operations) and is also necessary to calculate the amortization cost of equipment and farm machinery owned by the farm. Actually, the total amortization cost of owned equipment and farm machinery is the cost of one ha of a given crop, for the number of hectares of the different crops in a typical farm specialized in a certain crop)
- A second analysis partially linked to the first one, is the *structure of the representative farm* specialized in a specific crop or breeding activity. A typical question would be: "What is the total surface of the typical commercial wheat growing farm and what is the surface devoted to wheat?" This has a direct impact on the use of machinery (amortization is quite different if the yearly amortization cost of a certain farm machine must be divided by five or ten ha and also different depending on what kind of other cultivations are carried out in the farms), but is also a key information for policy making. For example, when planning for support to wheat farms are we providing support to one ha or fifty ha farms? Is it necessary (or advisable) to put a cap on the maximum surface that can be supported in each farm?

The analysis of structure of farms specialized in a certain crop is a pre-requisite for calculation of amortization of own equipment, and is quite complex, too, but is in itself a much valuable product of the EAU activity.

This analysis eventually leads to detail how many days in the year each piece of equipment is used, which is necessary for a correct calculation of amortization.

Apart from production cost calculation, this analysis is also necessary to assess the average endowment of equipment and machinery of farms dealing with a certain crop, an information which is much useful to develop policies on farm mechanization and services to agriculture (the most farms are mechanized, the smaller is the market for service providers).

- A third analysis is relevant to the work requirements of a certain crop or animal production (standard work requirement – SWR) and provides information on total work and on family work in the most common production structure. This figure is usually calculated in working hours. This analysis is also related to the typical structure of a farm specialized in a certain crop, since, up to a

certain level, there are major economies of scale: for example, two persons are enough to take care of four or seven dairy cows, but the time consumed is almost the same. Calculation of family work is also related to the endowment of equipment, as the family member will spend a number of hours operating such equipment which depends on the availability of equipment.

Also the calculation of SWR is a much valuable output in itself (and is a tool produced in all EU member states regions), as it allows to shape policies in rural employment and to calculate the level of self-employment in farming activities.

### A3.1.4 Development of Working Tools

The preparation of profitability analysis and production cost models requires the development of working tools that will provide considerable economies of scale in preparing the models for other crops; some of them will be themselves useful tools to standardize and speed up the calculations of profitability and the preparation of investment plans by other subjects.

During the mission, the preparation of models and the findings of contents for three types of tools was initiated.

- **Check lists** were developed for annual crops, perennial crops and animal production. These check list substitute questionnaire when panels and key informants are used. With minimal adaptations, these check lists can be used for any crop or animal production, except protected crops. The assessment of the consultant is that EAU is now acquired autonomous capacity to use the check lists almost totally autonomously (i.e., to conduct the interviews and collect the data) and to develop new check lists for other products.
- **Reference tables.** This are tables where are provided information on the cost of inputs, consumables, animal feed, equipment, legal amortization period by equipment and other data useful to facilitate and standardize production costs. Since the cost of some inputs changes by month, when appropriate the cost of the input in the month in which it was used for a certain crop is indicated, too (e.g., if calculating the production cost of winter wheat at the time of harvest, it would be wrong to use the last cost of seeds; it will be necessary to use the cost of seed in previous October, when the seed was purchased. Then, at the end of the production cycle, the costs will be updated in consequence.

Reference tables are a much useful tool for researchers and consultants, as, for example, they provide most of the information required to adapt to the country a standard investment plan.

Some countries, e.g., Slovenia, regularly publish a more structured version of reference tables as a separate publication, which also provide additional information about the use and source of input and other cost items

- **Standard Work Requirements – SWR.** This tool has not been developed during the mission, but provisional calculations (estimates) have been included in the models and the EAU team is aware of the need for developing such tool. So far, as examples, different SWR tables from EU member states Mediterranean regions are compared and used.

### A3.1.5 Data Collection, Validation and Feedback Cycle

The process of data collection, validation and feedback was structured taking into consideration the following aspects: i) available resources for data collection, ii) the need for adopting a sustainable method, iii) the kind of reliable information that can be sourced from secondary data (and in particular those which can or cannot be obtained from FADN), iv) the time required for regular updating the information, considering the available resources, v) the degree of exactness and detail required by potential users and vi) the relatively small size of Kosovo and the homogeneity of conditions for commercial producers of a certain crop.

Based on the above, it was taken the unorthodox decision to collect basic information through panels rather than through stratified samples of farms and then validate the figures through a limited number of field visits and/or a network of trusted agribusiness operators (farms, input suppliers etc.) who will validate or question the figures sourced through the panel. A second step of data validation with experts assessment is foreseen, too.

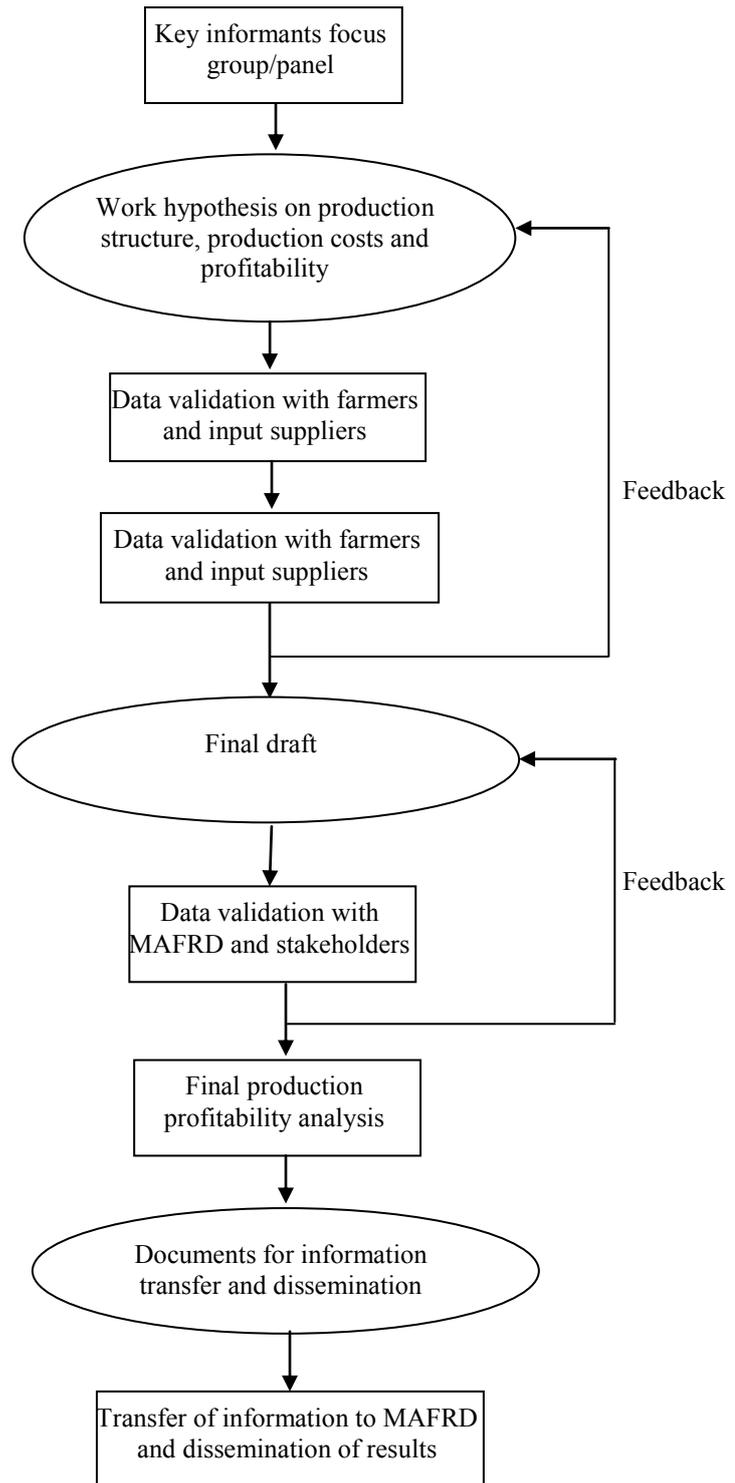
The steps of the process are therefore structured as depicted in **Diagram A3.1** below.

The sequence of activities and outputs is also described below.

**Table A3.2: Process Steps**

Step	Activity	Output
1	Selection and summoning of the panel	Invitation and check list to panel members
2	Assessment of production structure and production costs (quantity and prices) and revenues through panel	Production model in the form of work hypothesis, highlighting unsolved issues and doubtful data
3	Selection of farms for data validation	Adaptation of check lists in function of critical aspects in working hypothesis
4	Data validation through field visits and/or interviews	Comparison of data from work hypothesis and from field visits
5	2 <sup>nd</sup> panel consulting (if necessary) to clear out discrepancies in data	Consolidated and final draft
6	Circulation of consolidated draft to panel members and other selected partners	Identification of further critical points
7	3 <sup>rd</sup> panel consulting (if necessary) to clear out comments and discrepancies	Final production cost
8	Dissemination of the model to users	

**Diagram A3.1: Analysis of Profitability Process Flow Chart**



Legend: ○ Document  
□ Activity

The whole process is designed as an iterative model with large rooms for feedback and amendments. This relatively long process is appropriate for a testing and introductory phase of the analysis of profitability and cost. With the consolidation of the models (which after need to be updated every year with unit prices and verified every three-four years for quantities) and of the links with informants, reference farms and users, the process will be gradually shortened.

## **A3.2 PRODUCTION COST MODELS**

In the following pages only an overall glance of the production model and a summary sheet for each production area targeted is presented. Fully detailed production cost models for each production area are available upon request.

### A3.2.1 Wheat

### Winter Wheat Glance Sheet

KULTURA: Gruri dimeror /  
CROP : Winter wheat

EAU - Year 2012

#### FERME PA UJITJE - PERMBLEDHJA / NOT IRRIGATED FARMING – SUMMARY

		Gjendja aktuale/ Most common	
		per ha	per ton
Te ardhurat/ne vlere	Revenues/value	1,100.00	275.00
Kostot variabile	Variable costs	650.60	162.65
Marzha e kontributit	Contribution Margin	449.40	112.35
Puna e familjen ne ferme	Farm family work	48.75	12.19
Marzha para zhvleresimit	Margin before depreciation	400.65	100.16
Zhvleresimi	Depreciation	111.06	27.76
Te ardhurat neto	Net margin	289.59	72.40

Kosoja variabile / Variable costs breakdown		
Inputi	Inputs	381.90
Puna	Works	268.70
Totali	Total	650.60

#### Prodhimi / Output

Produkti/ Korja	Product/ Harvest	Njesia/ Unit	Rendimenti / Yeild	Çimi i fermes / Farmgate price per unit	Vlera / Value
Gruri	Wheat	Kg/ha	4,000	0.26	1,040.00
Kashta	Straw	Kg/ha	120	0.50	60.00
Totali	Total				1,100.00

Sezona e kultures / Crop season	Jan	Feb	Mar	Apr	May	Jun
		Pleherimi/ Fertilizing			Pleherimi/ Fertilizing	
	Jul	Aug	Sep	Oct	Nov	Dec
	Korrja/Harvesting			Mbjellja, pleh./ Sowing, fertil.		

### Winter Wheat Summary Sheet

KULTURA: Gruri dimereor/  
CROP : Winter wheat

FERME PA UJITJE / NOT IRRIGATED FARMING							
			Unit / Njesia	Quantity / Saia	Çmimi per njesi / Price/Unit	Vlera / Value	%
<b>1</b>	<b>TE ARDHURAT</b>	<b>REVENUE</b>					
1.1	Gruri	Wheat	kg/ha	4,000.00	0.26	1,040.00	
1.2	Kashta	Straw	Kg/ha	120.00	0.50	<u>60.00</u>	
	<b>Totali i te hyrave</b>	<b>Total income</b>				<b>1,100.00</b>	<b>100%</b>
<b>2</b>	<b>KOSTOJA VARIABLE</b>	<b>VARIABLE COST</b>					
<b>2.1</b>	<b>Inputet</b>	<b>Inputs</b>					
	Fara	Seeds	kg/ha	300.00	0.37	111.00	
	NPK	NPK	kg/ha	350.00	0.39	136.50	
	Urea	Urea	kg/ha	-	0.42	0.00	
	NAG	NAG	kg/ha	350.00	0.29	101.50	
	Monosan	Monosan	l/ha	2.00	4.00	8.00	
	Sekator	Sekator	ml/ha	150.00	0.10	14.50	
	Thase	Bags	Pieces	80.00	0.13	10.40	
	<b>Totali i inputeve</b>	<b>Total inputs</b>				<b>381.90</b>	
<b>2.2</b>	<b>Puna</b>	<b>Works</b>					
	Lavrimi	Ploughing	l/diesel	20.00	1.35	27.00	
	Lesimi	Harrowing/trimming	l/diesel	10.00	1.35	13.50	
	Mbjellja	Sowing/planting	l/diesel	8.00	1.35	10.80	
	Pleherimi	Fertilizing	l/diesel	8.00	1.35	10.80	
	Sperkatja	Spraying	l/diesel	8.00	1.35	10.80	
	Korrja	Harvesting	Operation	1.00	110.00	110.00	
	Transporti ne shtalle	Transport to barn	l/diesel	8.00	1.35	10.80	
	Mirembajtja	Maintenance	Lump sum			<u>75.00</u>	
	<b>Totali i punes</b>	<b>Total work</b>				<b>268.70</b>	
	<b>Totali i kostos variable</b>	<b>Total variable costs</b>				<b>650.60</b>	<b>59.15%</b>

FERME PA UJITJE / NOT IRRIGATED FARMING							
			Unit / Njesia	Quantity / Saia	Çmimi per njesi / Price/Unit	Vlera / Value	%
3	<b>MARXHA E KONTIBUTIT</b>	<b>CONTRIBUTION MARGIN</b>				<b>449.40</b>	
4	<b>PUNA E FAMIJLES</b>	<b>FAMILY WORK</b>					
	Pregatitja e tokes	Land prepration	p/d	1.00	15.00	15.00	
	Mbjellja	Sowing/planting	p/d	0.50	15.00	7.50	
	Plehrimi	Fertilizing	p/d	0.75	15.00	11.25	
	Sperkatja	Spraying	p/d	0.50	15.00	7.50	
	Korrja	Harvesting	p/d	incl. in service	0.00	0.00	
	Transporti ne shtalle	Transport to barn	p/d	0.50	15.00	7.50	
	<b>Totali i punes</b>	<b>Total labour</b>				<b>48.75</b>	<b>4.43%</b>
5	<b>BRUTO MARZHA PARA ZHVLERESIMIT</b>	<b>GROSS MARGIN BEFORE DEPRECIATION</b>				<b>400.65</b>	
	Zhvleresimi	Depreciation				111.06	10.10%
6	<b>TE ARDHURAT NETO</b>	<b>NET MARGIN</b>				<b>289.59</b>	<b>26.33%</b>

### A3.2.2 Maize

#### Maize file "Glance- Maize in grains" sheet

KULTURA : Miser kokerr/  
CROP : Maize- maize in grains

EAU - Year 2012

#### FERMA - PERMBLEDHJE / FARMING - SUMMARY

		Jo e ujitur / Not irrigated		E ujitur / Irrigated	
		per ha	per 00 kg	per ha	per 00 kg
Te ardhurat/ne vlere	Revenues/value	1,226.25	272.50	2,043.75	272.50
Kostot variabile	Variable costs	511.40	113.64	701.20	93.49
Marzha e kontributit	Contribution Margin	714.85	158.86	1,342.55	179.01
Puna e familjen ne ferme	Farm family work	60.00	13.33	240.00	32.00
Marzha para zhvleresimit	Margin before depreciation	654.85	145.52	1,102.55	147.01
Zhvleresimi	Depreciation	98.19	21.82	106.19	14.16
Te ardhurat neto	Net margin	556.66	123.70	996.36	132.85

Kostoja variabile/ Variable costs breakdown		Jo e ujitur/ Not irrigated	E ujitur/ Irrigated
Inputi	Inputs	279.25	379.25
Puna	Works	232.15	321.95
<b>Totali</b>	<b>Total variable cost</b>	<b>511.40</b>	<b>701.20</b>

Prodhimi/ Output		Jo e ujitur/ Not irrigated				E ujitur/ Irrigated		
Produkti/ Korrja	Product/ Harvest	Njesia/ Unit	Rendimenti/ Yeild	Çimi i fermes/ Farmgate price per unit	Vlera/ Value	Rendimenti/ Yeild	Çimi i fermes/ Farmgate price per unit	Vlera/ Value
	Corn in cobs	Kg/ha	4,500	0.27	1,226.25	7,500	0.27	2,043.75
	<b>Total</b>				<b>1,226.25</b>			<b>2,043.75</b>

Sezona e kulture / Crop season	Jan	Feb	Mar	Apr	May	Jun
				From 15th Sowing, fertil./ Nga data 15 mbjellja, pleh.	Up to 10th Sowing, fertil./ Pas dates 10 mbjellja, pleh.	
	Jul	Aug	Sep	Oct	Nov	Dec
	Ujitja/ Irrigating	Ujitja/ Irrigating	Korrja/ Harvesting	Korrja/ Harvesting		

### Maize file “Summary Grains” sheet

KULTURA: Miser - miser koerr / CROP: Maize - maize in grains

			FERME PA UJITJE/ NOT IRRIGATED FARMING					FERME ME UJITJE/ IRRIGATED FARMING				
			Njesia/ Unit	Sasia/ Quantity	Çmimi/ Price/Unit	Vlera/ Value	%	Sasia/ Quantity	Çmimi/ Price/Unit	Vlera/ Value	%	
<b>1</b>	<b>TE ARDHURAT</b>	<b>REVENUE</b>										
1.1	Misiri	Maize	Kg/ha	4,500	0.27	1,226.25		7,500.0	0.27	2,043.75		
	<b>Totali i te hyrave</b>	<b>Total income</b>				<b>1,226.25</b>	<b>100%</b>			<b>2,043.75</b>	<b>100%</b>	
<b>2</b>	<b>KOSTO VARIABILE</b>	<b>VARIABLE COST</b>										
<b>2.1</b>	<b>Inputet</b>	<b>Inputs</b>										
	Fara	Seeds	bags	1.6	17.50	28.70		1.6	17.50	28.70		
	NPK	NPK	kg/ha	325.0	0.39	126.75		325.0	0.39	126.75		
	Urea	Urea	kg/ha	100.0	0.42	42.00		100.0	0.42	42.00		
	KAN	NAG	kg/ha	200.0	0.29	58.00		200.0	0.29	58.00		
	Herbicide	Herbicide(Agrosan)	l/ha	1.0	23.80	23.80		1.0	23.8	23.80		

			FERME PA UJITJE/ NOT IRRIGATED FARMING				FERME ME UJITJE/ IRRIGATED FARMING				
			Njesia/ Unit	Sasia/ Quantity	Çmimi/ Price/Unit	Vlera/ Value	%	Sasia/ Quantity	Çmimi/ Price/Unit	Vlera/ Value	%
	Ujitja	Water	Lump sum							100.00	
	<b>Totali i inputeve</b>	<b>Total inputs</b>				<b>279.25</b>				<b>379.25</b>	
<b>2.2</b>	<b>Puna</b>	<b>Works</b>									
	Lavrimi	Ploughing	l/diesel	20.0	1.35	27.00		20.0	1.35	27.00	
	Lesimi	Harrowing/trimming	l/diesel	10.0	1.35	13.50		10	1.35	13.50	
	Mbjellja	Sowing/planting	l/diesel	8.0	1.35	10.80		8	1.35	10.80	
	Plehrimi	Fertilizing	Operation	8.0	1.35	10.80		8	1.35	10.80	
	Sperkatja	Spraying	Operation	8.0	1.35	10.80		8	1.35	10.80	
	Ujitja	Irrigation	Lump sum					48	1.35	64.80	
	Korrja	Harvesting	Operation	1.0	130.00	130.00		1	130	130.00	
	Transporti ne shtalle	Transport to barn	Operation	8.0	1.35	10.80		8	1.35	10.80	
	Mirmbajtja	Maintenance				18.45				43.45	
	<b>Totali i punes</b>	<b>Total work</b>				<b>232.15</b>				<b>321.95</b>	
	<b>Totali i koston variable</b>	<b>Total variable costs</b>				<b>511.40</b>	<b>41.70%</b>			<b>701.20</b>	<b>34.31%</b>
<b>3</b>	<b>MARZHA E KONTRIBUTIT</b>	<b>CONTRIBUTION MARGIN</b>				<b>714.85</b>				<b>1,342.55</b>	
<b>4</b>	<b>PUNA E FAMILJES</b>	<b>FAMILY WORK</b>									
	Pregatitja e tokes	Land prepration	p/d	1.0	15.00	15.00		1.0	15.00	15.00	
	Mbjellja	Sowing/planting	p/d	0.5	15.00	7.50		0.5	15	7.50	
	Plehrimi	Fertilizing	p/d	0.5	15.00	7.50		0.5	15	7.50	
	Sperkatja	Spraying	p/d	0.5	15.00	7.50		0.5	15	7.50	
	Ujitja	Irrigation	p/d					12.0	15	180.00	
	Korrja	Harvesting			incl. in service 0.00	0.00			incl. in service		
	Transporti ne shtalle	Transport to barn	p/d	0.5	15.00	7.50		0.5	15	7.50	
	Tharja	Drying	p/d	1.0	15.00	15.00		1.0	15	15.00	
	<b>Totali i punes</b>	<b>Total labour</b>		<b>4.0</b>	<b>0.00</b>	<b>60.00</b>	<b>4.89%</b>	<b>16.0</b>		<b>240.00</b>	<b>11.74%</b>
<b>5</b>	<b>BRUTO MARZHA PARA ZHVLERESIMIT</b>	<b>GROSS MARGIN BEFORE DEPRECIATION</b>				<b>654.85</b>				<b>1,102.55</b>	
	Zhvleresimi	Depreciation				98.19	8.01%			106.19	5.20%
<b>6</b>	<b>TE ARDHURAT NETO</b>	<b>NET MARGIN</b>				<b>556.66</b>	<b>45.39%</b>			<b>996.36</b>	<b>48.75%</b>

## Maize file “Glance- Maize for silage” sheet

**KULTURA: Misri per silazhe /**  
**CROP : Maize- maize for silage**

**EAU - Year 2012**

### FERME E UJITUR - PERMBLEDHJE/ IRRIGATED FARMING – SUMMARY

		Jo e ujitur/ Not irrigated		E ujitur/ Irrigated	
		per ha	per 00 kg	per ha	per 00 kg
Te ardhurat/ne vliere	Revenues/value	1,750.00	50.00	2,000.00	5.00
Kostot variabile	Variable costs	576.55	16.47	766.02	1.92
Marzha e kontributit	Contribution Margin	1,173.45	33.53	1,233.98	3.08
Puna e familjen ne ferme	Farm family work	60.00	13.33	232.50	0.58
Marzha para zhvleresimit	Margin before depreciation	1,120.95	32.03	1,001.48	2.50
Zhvleresimi	Depreciation	143.19	4.09	151.19	0.38
Te ardhurat neto	Net margin (returns to family labour)	977.76	27.94	850.29	2.13

Kostoja variabile/ Variable costs breakdown		Jo e ujitur/ Not irrigated	E ujitur/ Irrigated
Inputi	Inputs	326.20	426.20
Puna	Works	250.35	339.82
<b>Totali</b>	<b>Total variable cost</b>	<b>576.55</b>	<b>766.02</b>

Prodhim/ Output		Jo e ujitur/ Not irrigated				E ujitur/ Irrigated		
Produkti/ Korrja	Product/ Harvest	Njesia/ Unit	Rendimenti/ Yeild	Çimi i fermes/ Farmgate price per unit	Vlera/ Value	Rendimenti/ Yeild	Çimi i fermes/ Farmgate price per unit	Vlera/ Value
Silazhi	Sillage	Kg/ha	35,000	0.05	1,750.00	40,000	0.05	2,000.00
<b>Totali</b>	<b>Total</b>				<b>1,750.00</b>			<b>2,000.00</b>

Sezona e kultures/ Crop season	Jan	Feb	Mar	Apr	May	Jun
				From 15th Sowing, fertil./ Nga data 15 mbjellja, pleh.	Up to 10th Sowing, fertil./ Pas dates 10 mbjellja, pleh.	
	Jul	Aug	Sep	Oct	Nov	Dec
	Ujitja / Irrigating	Ujitja / Irrigating	Korrja / Harvesting	Korrja / Harvesting		

### Maize file “Summary Silage” sheet

KULTURA: Miser - miser per silazhe/  
CROP: Maize - maize for silage

			FERME PA UJITJE/ NOT IRRIGATED FARMING					FERME ME UJITJE/ IRRIGATED FARMING			
			Njesia/ Unit	Sasia/ Quantity	Çmimi/ Price/Unit	Vlera/ Value	%	Sasia/ Quantity	Çmimi/ Price/Unit	Vlera/ Value	%
<b>1</b>	<b>TE ARDHURAT</b>	<b>REVENUE</b>									
1.1	Misiri	Maize	Kg/ha	35,000.00	0.05	<u>1,750.00</u>		40,000.00	0.05	<u>2,000.00</u>	
	<b>Totali i te hyrave</b>	<b>Total income</b>				<b>1,750.00</b>	<b>100%</b>			<b>2,000.00</b>	<b>100%</b>
<b>2</b>	<b>KOSTO VARIABILE</b>	<b>VARIABLE COST</b>									
<b>2.1</b>	<b>Inputet</b>	<b>Inputs</b>									
	Fara	Seeds	bags	2.50	17.50	43.75		2.50	17.50	43.75	
	NPK	NPK	kg/ha	325.00	0.39	126.75		325.00	0.39	126.75	
	Urea	Urea	kg/ha	100.00	0.42	42.00		100.00	0.42	42.00	
	KAN	NAG	kg/ha	200.00	0.29	58.00		200.00	0.29	58.00	
	Herbicide	Herbicide	l/ha	1.50	23.80	35.70		1.50	23.80	35.70	
	Folie plastike	Plastic folie	Lump sum			<u>20.00</u>		Lump sum		20.00	
	Ujitja	Water	Lump sum			-		Lump sum		<u>100.00</u>	
	<b>Totali i inpuveve</b>	<b>Total inputs</b>				<b>326.20</b>				<b>426.20</b>	
<b>2.2</b>	<b>Puna</b>	<b>Works</b>									
	Lavrimi	Ploughing	l/diesel	20.00	1.35	27.00		20.00	1.35	27.00	
	Lesimi	Harrowing/trimming	l/diesel	10.00	1.35	13.50		10.00	1.35	13.50	
	Mbjellja	Sowing/planting	l/diesel	8.00	1.35	10.80		8.00	1.35	10.80	
	Plehrimi	Fertilizing	Operation	8.00	1.35	10.80		8.00	1.35	10.80	
	Sperkatja	Spraying	Operation	8.00	1.35	10.80		8.00	1.35	10.80	
	Ujitja	Irrigation	l/diesel					48.00	1.35	64.80	

			FERME PA UJITJE/ NOT IRRIGATED FARMING				FERME ME UJITJE/ IRRIGATED FARMING				
			Njesia/ Unit	Sasia/ Quantity	Çmimi/ Price/Unit	Vlera/ Value	%	Sasia/ Quantity	Çmimi/ Price/Unit	Vlera/ Value	%
	Korrja	Harvesting	Operation	1.00	120.00	120.00		1.00	120.00	120.00	
	Transporti ne shtalle	Transport to barn	Operation	1.00	40.00	40.00		1.00	40.00	40.00	
	Mirmbajtja	Maintenance	Lump sum			17.45		Lump sum		42.12	
	<b>Totali i punes</b>	<b>Total work</b>				<b>250.35</b>				<b>339.82</b>	
	<b>Totali i kostos variabile</b>	<b>Total variable costs</b>				<b>576.55</b>	<b>32.95%</b>			<b>766.02</b>	<b>38.30%</b>
<b>3</b>	<b>MARZHA E KONTRIBUTIT</b>	<b>CONTRIBUTION MARGIN</b>				<b>1,173.45</b>				<b>1,233.98</b>	
<b>4</b>	<b>PUNA E FAMILJES</b>	<b>FAMILY WORK</b>									
	Pregatitja e tokes	Land prepration	m/d	0.50	15.00	7.50		0.50	15.00	7.50	
	Mbjellja	Sowing/planting	m/d	0.25	15.00	3.75		0.25	15.00	3.75	
	Plehrimi	Fertilizing	m/d	0.50	15.00	7.50		0.50	15.00	7.50	
	Sperkatja	Spraying	m/d	0.25	15.00	3.75		0.25	15.00	3.75	
	Ujitja	Irrigation						12.00	15.00	180.00	
	Korrja	Harvesting		incl. in service				incl. in service			
	Transporti ne shtalle	Transport to barn		incl. in service				incl. in service			
	Tharja	Preparation of silage	m/d	2.00	15.00	30.00		2.00	15.00	30.00	
	<b>Totali i punes</b>	<b>Total labour</b>		-	<b>0.00</b>	<b>52.50</b>	<b>3.00%</b>			<b>232.50</b>	<b>11.63%</b>
<b>5</b>	<b>BRUTO MARZHA PARA ZHVLERESIMIT</b>	<b>MARGIN BEFORE DEPRECIATION</b>				<b>1,120.95</b>				<b>1,001.48</b>	
	Zhvleresimi	Depreciation				143.19	8.18%			151.19	7.56%
<b>6</b>	<b>TE ARDHURAT NETO</b>	<b>NET MARGIN</b>				<b>977.76</b>	<b>55.87%</b>			<b>850.29</b>	<b>42.51%</b>

### A3.2.3 Alfalfa

### Alfalfa Glance Sheet

KULTURA : Jonxha/  
CROP : Alfalfa

EAU - Viti 2012/  
Year 2012

Alfalfa		VITI NË PRODHIM TË PLOTË/ YEAR OF FULL PRODUCTION				MESATARJA PER 5 VITE/ AVERAGE OF 5 YEARS	
		Pa ujitje/ Not Irrigated		Me ujitje/ Irrigated		Pa ujitje/ Not Irrigated	Me ujitje/ Irrigated
		për ha/ per ha	për dujë/ per bale	për ha/ per ha	për dujë/ per bale	për ha/ per ha	për dujë/ per bale
Të ardhurat/ Në vlerë	Revenues/value	1,300.00	2.00	1,600.00	2.00	1,027.00	1,408.00
Kostot variabile	Variable costs	225.00	0.35	397.90	0.50	225.00	397.90
Kontributi marginal	Contribution Margin	1,075.00	1.65	1,202.10	1.50	802.00	1,010.10
Puna e familjes në fermë	Farm family work	60.00	0.09	101.25	0.13	60.00	101.25
Margjina para zhvlerësimit	Margin before depreciation	1,015.00	1.56	1,100.85	1.38	742.00	908.85
Zhvlerësimi	Depreciation	432.25	66.50	361.92	45.24	432.25	361.92
Margjina neto	Net margin	582.75	0.90	738.93	0.92	309.75	546.93

Kostot variabile	Variable costs breakdown	Pa ujitje/ Not Irrigated	Me ujitje/ Irrigated
Inputet	Inputs	117.00	217.00
Punët	Works	108.00	180.90
<b>Kosto variabile totale</b>	<b>Total variable cost</b>	<b>225.00</b>	<b>397.90</b>

Prodhimi		Pa ujitje/ Not Irrigated			Me ujitje/ Irrigated			
Produkti/ Korrja	Product/ harvest	Njësia/ Unit	Nr. i njësive/ N. of units	Çmimi i fermës ër njësi/ Farmgate price per unit	Vlera/ Value	Nr i njësive/ N. of units	Çmimi i fermës për njësi/ Farmgate price per unit	Vlera/ Value
Korrja e 1-rë	1st harvest	Dujë/Bale	300.00	2	600.00	300.00	2.00	600.00
Korrja e 2-të	2nd harvest	Dujë/Bale	200.00	2	400.00	250.00	2.00	500.00
Korrja e 3-të	3rd harvest	Dujë/Bale	150.00	2	300.00	150.00	2.00	300.00
Korrja e 4-të	4th harvest	Dujë/Bale				100.00	2.00	200.00
<b>Totali</b>	<b>Total</b>		<b>650.00</b>		<b>1956.00</b>	<b>800.00</b>	<b>2.00</b>	<b>1600.00</b>

## Alfalfa Summary sheet

KULTURA : Jonxha/  
CROP: Alfalfa

			Unit	NOT IRRIGATED FARMING				IRRIGATED FARMING			
				Quantity	Price/ Unit	Value	%	Quantity	Price /Unit	Value	%
<b>1</b>	<b>TË ARDHURAT</b>	<b>REVENUE</b>									
1.1	Jonxha-Korrja e parë	Alfalfa 1st harvest	Bale/ha	300.00	2.00	600.00		300.00	2.00	600.00	
1.2	Jonxha-Korrja e dytë	Alfalfa 2st harvest	Bale/ha	200.00	2.00	400.00		250.00	2.00	500.00	
1.3	Jonxha-Korrja e tretë	Alfalfa 3rd harvest	Bale/ha	150.00	2.00	300.00		150.00	2.00	300.00	
1.4	Jonxha-Korrja e katërt	Alfalfa 4th harvest	Bale/ha					100.00	2.00	200.00	
	<b>Totali i të ardhurave</b>	<b>Total income</b>	Bale/ha	<b>650.00</b>		<b>1,300.00</b>	<b>100%</b>	<b>800.00</b>		<b>1,600.00</b>	<b>100%</b>
<b>2</b>	<b>KOSTO VARIABLE</b>	<b>VARIABLE COST</b>									
<b>2.1</b>	<b>Inputet</b>	<b>Inputs</b>									
	NPK	NPK	kg/ha	300.00	0.39	117.00		300.00	0.39	117.00	
	Uji	Water								100.00	
	<b>Inputet totale</b>	<b>Total inputs</b>				<b>117.00</b>				<b>217.00</b>	
<b>2.2</b>	<b>Puna e makinerisë</b>	<b>Works</b>									
	<b>Ujitja</b>	Irrigation						<b>30.00</b>	<b>1.35</b>	<b>40.50</b>	
	Plehërimi	Fertilizing	l/diesel	8.00	1.35	10.80		8.00	1.35	10.80	
	Korrja	Harvesting	l/diesel	24.00	1.35	32.40		32.00	1.35	43.20	
	Lidhja	Baling/pressing	l/diesel	24.00	1.35	32.40		32.00	1.35	43.20	
	Transporti	Transport to barn	l/diesel	24.00	1.35	32.40		32.00	1.35	43.20	
	Mirëmbajtja	Maintenance	Lump sum			0.00				0.00	
	<b>Puna totale</b>	<b>Total work</b>				<b>108.00</b>				<b>180.90</b>	
	<b>Kosto variabile totale</b>	<b>Total variable costs</b>				<b>225.00</b>	<b>17.31%</b>			<b>397.90</b>	<b>24.87%</b>
<b>3</b>	<b>KONTRIBUTI MARGJINAL</b>	<b>CONTRIBUTION MARGIN</b>									
						<b>1,075.00</b>				<b>1,202.10</b>	
<b>4</b>	<b>PUNA E FAMILJES</b>	<b>FAMILY WORK</b>									
	<b>Ujitja</b>	Irrigation	p/d					<b>1.50</b>	<b>15.00</b>	<b>22.50</b>	
	Transporti	Transport to barn	p/d	2.25	15.00	33.75		3.00	15.00	45.00	
	Korrja, Lidhja	Harvesting, baling, pressing	p/d	1.50	15.00	22.50		2.00	15.00	30.00	
	Plehërimi	Fertilizing	p/d	0.25	15.00	3.75		0.25	15.00	3.75	
	<b>Puna totale</b>	<b>Total labour</b>		<b>4.00</b>		<b>60.00</b>	<b>4.62%</b>	<b>6.75</b>		<b>101.25</b>	<b>6.33%</b>
<b>5</b>	<b>MARGJINA PARA ZHVLERËSIMIT</b>	<b>GROSS MARGIN BEFORE DEPRECIATION</b>									
	Zhvlerësimi	Depreciation				<u>432.25</u>	33.25%			<u>361.92</u>	22.62%
<b>6</b>	<b>MARGJINA NETO</b>	<b>NET MARGIN</b>				<b>582.75</b>	<b>44.83%</b>			<b>738.93</b>	<b>46.18%</b>

### A3.2.4 Grapes

### Grapes Glance

KULTURA: Rrush tryeze/  
CROP : Grapes for wine

EAU - Year 2012

#### FEREME JO E UJITUR - PERMBLEDHJE/ NOT IRRIGATED FARMING – SUMMARY

		Gjendja aktuale/Most common	
		per ha	per 00 kg
Kostot variabile	Variable costs	3,353.28	0.34
Te ardhurat/ne vlere	Revenues/value	3,000.00	0.30
Marzha e kontributit	<b>Gross Margin</b>	<b>(353.28)</b>	<b>(0.04)</b>
Puna e familjen ne ferme	Farm family work	765.00	0.08
Marzha para zhvleresimit	<b>Margin before depreciation</b>	<b>(1,118.28)</b>	<b>(0.11)</b>
Zhvleresimi	Depreciation	-	-
Te ardhurat neto	<b>Net margin</b>	<b>(1,118.28)</b>	<b>(0.11)</b>

Kosja variabile / Variable costs breakdown		
Inputi	Inputs	848.28
Puna	Works	1,620.00
<b>Totali</b>	<b>Total</b>	<b>2,468.28</b>

#### Prodhimi / Output

Produkti/korrja	Product/harvest	Unit	N. of units	Farmgate price per unit	Value
Rush	Grapes	Kg/ha	10,000	0.35	3,500
<b>Totali</b>	<b>Total</b>				<b>3,500</b>

Sezona e kultures / Crop season	Jan	Feb	Mar	Apr	May	Jun
	Jul	Aug	Sep	Oct	Nov	Dec
			Korrja/Harvesting			

## Grapes Summary

KULTURA: Rrushi / CROP: Grapes for wine

		Njesia/ Unit	Sasia - ha/ Quantity - ha	Çmimi per njesi/ Price Unit	Kostoja totale/ Total cost Euro/ha	%
<b>TE ARDHURAT</b>	<b>REVENUES</b>					
Rrushi	Grapes	kg/ha	10,000	0.30	3000	
<b>Totali i te hyrave</b>	<b>Total income</b>				<b>3000</b>	100%
<b>KOSTOJA VARIABLE</b>	<b>VARIABLE COST</b>					
<b>Inputet</b>	<b>Inputs</b>					
Penjtë	Strings	kg/ha	6.5	6.15	40.0	
NPK 5:20:30	NPK	kg/ha	500	0.39	195.0	
KAN	NAG	kg/ha	200	0.29	58.0	
Pleh foliar	Leaf fertilizer	kg/ha	2	12.00	24.0	
PPP	PPP	kg/ha	25.3	21.00	531.3	
Shpenzime te tjera	Other consumables	Lump sum			20.0	
<b>Totali i inputeve</b>	<b>Total inputs</b>				<b>868.28</b>	
<b>Shërbimet e makinës</b>	<b>Works</b>					
Plugimi pranveror	Spring plowing	service/day	1	110.00	110.00	
Plugimi vjeshtor	Autum plowing	service/day	1	150.00	150.00	
Kultivimet 3 herë	Cultivation 3 times	ha	3	80.00	240.00	
Plehërimi NPK	Fertilization NPK	ha	1	40.00	40.00	
Plehërimi suplimentar KAN	Additional fertilization NAG	ha	1	30.00	30.00	
Spekatja 6 herë	Spraying 6 times	ha	6	25.00	150.00	
Punimet tjera	Other works	ha	15	60.00	900.00	
<b>Totali i punes</b>	<b>Total work</b>				<b>1,620.00</b>	
<b>Kostoja e marketingut</b>	<b>Marketing costs</b>					
Bartja e rrushit	Transport	Operations	4	15.00	60.00	
<b>Marketingu total</b>	<b>Total marketing</b>				<b>60.00</b>	
<b>Totali i kostos variable</b>	<b>Total variable costs</b>				<b>2548.28</b>	<b>85%</b>
<b>MARXHA E KONTIBUTIT</b>	<b>CONTRIBUTION MARGIN</b>				451.73	
<b>Fuqia punëtore</b>	<b>Labour</b>					
Krasitja	Pruning	p/d	8	15.00	120.00	
Pastrimi i hardhive	Cleaning vines	p/d	3	15.00	45.00	
Mirëmbajtja e sistemit	Maintenance	p/d	1	15.00	15.00	
Lidhja e hardhisë	Binding vines	p/d	6	15.00	90.00	
Mihja dhe prashitja (2)	Digging, cleaning soil	p/d	8	15.00	120.00	
Harrja (2)	Removing weeds	p/d	6	15.00	90.00	
Përthurja (2)	Binding branches	p/d	4	15.00	60.00	
Sperkatja	Spraying	p/d	1	15.00	15.00	
Vjelja	Harvesting	p/d	22	15.00	330.00	

		Njesia/ Unit	Sasia - ha/ Quantity - ha	Çmimi per njesi/ Price Unit	Kostoja totale/ Total cost Euro/ha	%
Gjithsej fuqia punëtore	Total labour		59.00		885.00	29.50%
TE ARDHURAT NETO	NET MARGIN				-433.28	-14.44%

### A3.2.5 Apples

#### Apples Glance

KULTURA : Molla

CROP : Apples

EAU - Viti 2012 /  
Year 2012

FERMË PA UJITJE - PËRMBLEDHJE

NOT IRRIGATED FARMING – SUMMARY

		Gjendja aktuale Most common	
		për ha per ha	për 00 kg per 00 kg
Të ardhurat / në vlerë	Revenues/value	11,520.00	0.36
Kostot variabile	Variable costs	6,177.50	0.19
<b>Kontributi margjinal</b>	<b>Gross Margin</b>	<b>5,342.50</b>	<b>0.17</b>
Puna e familjes në fermë	Farm family work	1,740.00	0.05
<b>Margjina para zhvlerësimit</b>	<b>Margin before depreciation</b>	<b>3,602.50</b>	<b>-0.11</b>
Zhvlerësimi	Depreciation	-	0.00
<b>Margjina neto</b>	<b>Net margin</b>	<b>3,602.50</b>	<b>-0.11</b>

Kostot variabile

Variable costs breakdown

Inputet	Inputs	1,767.50
Puna e makinerisë	Works	370.00
Fuqia punëtore	Labor	3,340.00
Marketingu	Marketing	700.00
<b>Gjithsej kostot variabile</b>	<b>Total</b>	<b>6,177.50</b>

Prodhimi

Output

Produkti i korrur	Product/harvest	Njësia Unit	N. i njësive N. of units	Çmimi i fermës Farmgate price	Vlera Value
Molla	Apples	Kg/ha	32,000	0.36	11,520
<b>Totali</b>	<b>Total</b>				<b>11,520</b>

Crop season	Jan	Feb	Mar	Apr	May	Jun
	Jul	Aug	Sep	Oct	Nov	Dec
				Harvesting		

## Apples Summary

KULTURA: Mollë/

CROP: Apples

		Njësia/ Unit	Sasia/ Quantity/ ha	Çmimi për njësi Unit price Euro	Kosto totale Total cost Euro/ha	%
<b>TE ARDHURAT</b>	<b>REVENUES</b>					
Molla	Apples	kg/ha	32,000	0.36	11520	
<b>Totali i te hyrave</b>	<b>Total income</b>				<b>11520</b>	<b>100%</b>
<b>KOSTOJA VARIABLE</b>	<b>VARIABLE COST</b>					
<b>Inputet</b>	<b>Inputs</b>					
Pleh organik	Manure	Mt/ha	60	5.00	300.0	
Pleh	Fertilizer	kg/ha	825	0.70	577.5	
Pesticidi	PPP	kg/ha	14	60.00	840.0	
Shpenzime të tjera	Other consumables	Lump sum			50.0	
<b>Totali i inpleteve</b>	<b>Total inputs</b>				<b>1,767.50</b>	
<b>Shërbimet e makinës</b>	<b>Works</b>					
Kultivimet	Cultivation between rows	service/day	3	30.00	90	
Mbrojtja 6 herë	Spraying (6 times)	service/day	6	30.00	180	
Punimet tjera	Other works	Lump sum			100	
<b>Puna totale</b>	<b>Total works</b>				<b>370.00</b>	
<b>Kostoja e marketingut</b>	<b>Marketing costs</b>					
Kutitë	Boxes	Copë/Pieces	4,000	0	0.00	
Transporti	Transport	Operations	14	50	700.00	
<b>Marketingu total</b>	<b>Total marketing</b>				<b>700.00</b>	
<b>Totali i kostos variable</b>	<b>Total variable costs</b>				<b>2,837.50</b>	<b>25%</b>
<b>MARXHA E KONTIBUTIT</b>	<b>CONTRIBUTION MARGIN</b>				<b>8,682.50</b>	
<b>Fuqia punëtore</b>	<b>Labour</b>					
Krasitja	Pruning	Çmimi për pemë/ Price per tree	1,600	1.00	1,600.00	
Plehërimi organik	Manuring	p/d	8	15.00	120.00	
Plehërimi	Fertilizing	p/d	2	15.00	30.00	
Ujitja	Irrigating	p/d	2	15.00	30.00	
Spërkatja	Spraying	p/d	14	15.00	210.00	
Herrja	Fruit thinning	p/d	8	15.00	120.00	

		Njësia/ Unit	Sasia/ Quantity/ ha	Çmimi për njësi Unit price Euro	Kosto totale Total cost Euro/ha	%
Vjelja	Harvesting	p/d	80	15.00	1,200.00	
Punët tjera	Other labor	p/d	2	15.00	30.00	
<b>Gjithsej fuqia punëtore</b>	<b>Total labour</b>		<b>128.00</b>		<b>3,340.00</b>	<b>29%</b>
<b>TE ARDHURAT NETO</b>	<b>NET MARGIN</b>				<b>5,342.50</b>	<b>46%</b>

### A3.3.6 Sheep

## Sheep Glance

ACTIVITY: Dairy Cattle Breeding  
SEMI-COMMERCIAL SHEEP BREEDING – SUMMARY

EAU - Year 2012

	50 ewes + replacement and rams			100 ewes + replacement and rams			200 ewes + replacement and rams		
	Total	Per head	Per ewe	Total	Per head	Per ewe	Total	Per head	Per ewe
<i>Variable cash costs</i>	4,283.33	68.53	85.67	8,227.66	65.82	82.28	16,115.32	64.46	80.58
<i>Revenues/value</i>	7,336.50	117.38	146.73	16,050.00	128.40	160.50	33,477.00	133.91	167.39
<b>Contribution Margin</b>	<b>3,053.17</b>	<b>48.85</b>	<b>61.06</b>	<b>7,822.34</b>	<b>62.58</b>	<b>78.22</b>	<b>17,361.68</b>	<b>69.45</b>	<b>86.81</b>
<i>Family work</i>	858.93	13.74	17.18	1,546.43	12.37	15.46	2,921.43	11.69	14.61
<i>Fallow land</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Products for self-consumption</i>	1,377.00	22.03	27.54	1,377.00	11.02	13.77	1,377.00	5.51	6.89
<b>Margin before depreciation</b>	<b>3,571.24</b>	<b>57.14</b>	<b>71.42</b>	<b>7,652.91</b>	<b>61.22</b>	<b>76.53</b>	<b>15,817.25</b>	<b>63.27</b>	<b>79.09</b>
<i>Depreciation</i>	1,449.43	23.19	28.99	2,339.86	18.72	23.40	2,339.86	9.36	11.70
<b>Net margin</b>	<b>2,121.81</b>	<b>33.95</b>	<b>42.44</b>	<b>5,313.05</b>	<b>42.50</b>	<b>53.13</b>	<b>13,477.40</b>	<b>53.91</b>	<b>67.39</b>

Variable costs breakdown	Total 50 ewes	Total 100 ewes	Total 200 ewes
Animal feed	2,229.25	4,458.49	8,916.99
Animal Health and reproduction	187.00	375.00	750.00
Hired Labor	1,287.50	2,275.00	4,250.00
Other costs	572.08	1,104.17	2,168.33
<b>Total</b>	<b>4,275.83</b>	<b>8,212.66</b>	<b>16,085.32</b>

### Output

Total output	Unit	N. of units per head	50 ewes	100 ewes	200 ewes	Farmgate price per unit Euro
Milk	Liter	90.00	4,500.00	9,000.00	18,000.00	
Lambs	Head	1.08	54.00	108.00	216.00	69.00
End-of-life dairy mutttons/ewes	Head	0.20	10.00	20.00	40.00	90.00
Wool	Kg	1.20	60.00	120.00	240.00	0.50

<b>Self consumption</b>	<b>Quantity</b>	<b>Value</b>
Cheese	30	135
Lambs	18	1,242
<b>Total</b>		<b>1,377</b>

*It is estimated that self consumption for family needs remains the same regardless of the flock size*

<b>Marketed output</b>	<b>50 ewes</b>		<b>100 ewes</b>		<b>200 ewes</b>	
	<b>Quantity</b>	<b>Value</b>	<b>Quantity</b>	<b>Value</b>	<b>Quantity</b>	<b>Value</b>
Cheese	870.00	3,915.00	1,770.00	7,965.00	3,570.00	16,065.00
Lambs	36.00	2,484.00	90.00	6,210.00	198.00	13,662.00
End-of-life dairy mutttons/ewes	10.00	900.00	20.00	1,800.00	40.00	3,600.00
Wool	75.00	37.50	150.00	75.00	300.00	150.00

*Most semi-commercial breeders process all the milk into cheese. In some cases are selling the milk and processing only for themselves*

<b>Production cycle</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>
Husbandry	Stable	Stable	Stable/fallow	Fallow	Pasture	Pasture
Production					Lactation	Lactation
	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
Husbandry	Pasture	Pasture	Pasture	Pasture	Fallow	Stable
Production	Lactation	Lactation				

## Sheep Wider Presentation

**ACTIVITY: Commercial Dairy Cattle Breeding**

**EAU - Year 2012**

### SEMI-COMMERCIAL SHEEP BREEDING – SUMMARY

	<b>50 ewes + replacement and rams</b>			<b>100 ewes + replacement and rams</b>			<b>200 ewes + replacement and rams</b>		
	<b>Total</b>	<b>Per head</b>	<b>Per ewe</b>	<b>Total</b>	<b>Per head</b>	<b>Per ewe</b>	<b>Total</b>	<b>Per head</b>	<b>Per ewe</b>
<i>Variable cash costs</i>	4,283.33	68.53	85.67	8,227.66	65.82	82.28	16,115.32	64.46	80.58
<i>Revenues/value</i>	7,336.50	117.38	146.73	16,050.00	128.40	160.50	33,477.00	133.91	167.39
<b>Contribution Margin</b>	<b>3,053.17</b>	<b>48.85</b>	<b>61.06</b>	<b>7,822.34</b>	<b>62.58</b>	<b>78.22</b>	<b>17,361.68</b>	<b>69.45</b>	<b>86.81</b>
<b>Family work</b>	<b>858.93</b>	<b>13.74</b>	<b>17.18</b>	<b>1,546.43</b>	<b>12.37</b>	<b>15.46</b>	<b>2,921.43</b>	<b>11.69</b>	<b>14.61</b>
<b>Fallow land</b>									
<b>Products for self-consumption</b>	1,377.00	22.03	27.54	1,377.00	11.02	13.77	1,377.00	5.51	6.89
<b>Margin before depreciation</b>	<b>3,571.24</b>	<b>57.14</b>	<b>71.42</b>	<b>7,652.91</b>	<b>61.22</b>	<b>76.53</b>	<b>15,817.25</b>	<b>63.27</b>	<b>79.09</b>
<b>Depreciation</b>	1,449.43	23.19	28.99	2,339.86	18.72	23.40	2,339.86	9.36	11.70
<b>Net margin</b>	<b>2,121.81</b>	<b>33.95</b>	<b>42.44</b>	<b>5,313.05</b>	<b>42.50</b>	<b>53.13</b>	<b>13,477.40</b>	<b>53.91</b>	<b>67.39</b>

Production cycle	Jan	Feb	Mar	Apr	May	Jun
Husbandry	Stable	Stable	Stable/fallow	Fallow	Pasture	Pasture
Production					Lactation	Lactation
	Jul	Aug	Sep	Oct	Nov	Dec
Husbandry	Pasture	Pasture	Pasture	Pasture	Fallow	Stable
Production	Lactation	Lactation				

#### DETAIL OF VARIABLE COSTS

Animal feed	Unit	Quantity per head/year	Cost 50 ewes + non producing	Cost 100 ewes + non producing	Cost 200 ewes + non producing
<b>Cash costs</b>					
Pasture	Ha/head/season	0.2	0.00	0.00	0.00
Hay	Kg/head/year	100	750.00	1,500.00	3,000.00
Corn grains/flour	Kg/head/year	56	1,183.88	2,367.75	4,735.50
Bran	Kg/head/year	20	150.00	300.00	600.00
Straw	Kg/head/year	50	144.23	288.46	576.92
Other feed complements (salt)	Kg/head/year	0.0001	1.14	2.28	4.56
<b>Total Cash costs</b>			<b>2,229.25</b>	<b>4,458.49</b>	<b>8,916.99</b>
<b>Inputed costs</b>					
Fallow land	Ha/head/season	0.2	0.00	0.00	0.00
<b>Total inputed costs</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total animal feed</b>			<b>2,229.25</b>	<b>4,458.49</b>	<b>8,916.99</b>

Animal health and reproduction	Unit	Cost per head	Cost 50 ewes + non producing	Cost 100 ewes + non producing	Cost 200 ewes + non producing
<b>Cash costs</b>					
Veterinary treatments	Lump sum	2.00	125.00	250.00	500.00
Nail cutting	Cost per head	1.00	62.00	125.00	250.00
<b>Total Cash costs</b>			<b>187.0</b>	<b>375.0</b>	<b>750.0</b>

Cheese production	Unit	Cost per head	Cost 50 ewes + non producing	Cost 100 ewes + non producing	Cost 200 ewes + non producing
<b>Cash costs</b>					
Fuel					
Electricity					

<b>Cheese production</b>	<b>Unit</b>	<b>Cost per head</b>	<b>Cost 50 ewes + non producing</b>	<b>Cost 100 ewes + non producing</b>	<b>Cost 200 ewes + non producing</b>
Water					
Packaging					
<b>Total cash costs</b>			<b>7.5</b>	<b>15.0</b>	<b>30.0</b>

<b>Labor</b>	<b>Unit</b>	<b>Unit value</b>	<b>Cost 50 ewes + non producing</b>	<b>Cost 100 ewes + non producing</b>	<b>Cost 200 ewes + non producing</b>
<b>Animal breeding</b>					
<i>Cash costs/hired labor</i>	m/m	275.00	687.50	1,375.00	2,750.00
<i>Family work</i>	m/m	275.00	687.50	1,375.00	2,750.00
<b>Total Animal breeding</b>			<b>1,375.00</b>	<b>2,750.00</b>	<b>5,500.00</b>
<b>Cheese making</b>					
<i>Cash costs/hired labor</i>	m/m	300.00	600.00	900.00	1,500.00
<i>Family work</i>	m/m	300.00	171.43	171.43	171.43
<b>Total cheese making</b>			<b>771.43</b>	<b>1,071.43</b>	<b>1,671.43</b>
<b>Total labor</b>			<b>2146.4</b>	<b>3821.4</b>	<b>7171.4</b>

<b>Other cash costs</b>	<b>Unit</b>	<b>Cost per unit</b>	<b>Cost 50 ewes + non producing</b>	<b>Cost 100 ewes + non producing</b>	<b>Cost 200 ewes + non producing</b>
<b>Milk production</b>					
Maintenance of premises	Euro/m2	1.50	93.75	187.50	375.00
Transport cost (animal feed, straw, manure)	Lump sum		50.00	100.00	200.00
<b>Consumables &amp; utilities</b>					
Electricity	Lump sum		60.00	80.00	120.00
Water	Lump sum		50.00	100.00	200.00
Detergents	liter	3.00	60.00	120.00	240.00
Straw	Lump sum		208.33	416.67	833.33
Other consumables and small tools	Lump sum		50.00	100.00	200.00
<b>Total consumables &amp; utilities</b>			<b>428.33</b>	<b>816.67</b>	<b>1,593.33</b>
<b>Total milk production</b>			<b>572.08</b>	<b>1,104.17</b>	<b>2,168.33</b>
<b>Cheese production</b>					
Processing costs			-	-	-
Packaging			-	-	-
<b>Total cheese production</b>			<b>-</b>	<b>-</b>	<b>-</b>
<b>Total other costs</b>			<b>572.08</b>	<b>1,104.17</b>	<b>2,168.33</b>

## OUTPUT

Product	50 ewes	100 ewes	200 ewes
<b>Milk</b>			
Marketed	0.00	0.00	0.00
Self-consumption	0.00	0.00	0.00
<b>Total milk</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Cheese</b>			
Marketed	3,915.00	7,965.00	16,065.00
Self-consumption	135.00	135.00	135.00
<b>Total cheese</b>	<b>4,050.00</b>	<b>8,100.00</b>	<b>16,200.00</b>
<b>Lambs</b>			
Marketed	2,484.00	6,210.00	13,662.00
Self-consumption	1,242.00	1,242.00	1,242.00
<b>Total Lambs</b>	<b>3,726.00</b>	<b>7,452.00</b>	<b>14,904.00</b>
<b>End-of-life muttons/ewes</b>			
Marketed	900.00	1,800.00	3,600.00
Self-consumption	0.00	0.00	0.00
<b>Total end-of-life muttons/ewes</b>	<b>900.00</b>	<b>1,800.00</b>	<b>3,600.00</b>
<b>Wool</b>			
Marketed	37.50	75.00	150.00
Self-consumption	0.00	0.00	0.00
<b>Total wool</b>	<b>37.50</b>	<b>75.00</b>	<b>150.00</b>
<b>Total</b>	<b>8,713.50</b>	<b>17,427.00</b>	<b>34,854.00</b>

### A3.3.7 Dairy

#### Dairy Commercial Presentation Contribution Margin

##### Dairy Commercial presentation contribution margin

###### OUTPUT

	Product	Unit	N. of units per head	Farmgate price per unit	Total 10 heads	Total 15 heads	Total 20 heads
Gjithsej	Milk	Liter	4,880	0.35	17,080.00	25,620.00	34,160.00
	Calves	Head		280.00	2,800.00	4,200.00	5,600.00
	Abortions, calves losses, unfertile	Incidence	10%	280.00	-280.00	-420.00	-560.00
	Calves kept for replacement	Incidence	14%	280.00	-400.00	-600.00	-800.00
	End-of-life dairy cows	Incidence	14.3%	600.00	857.14	1,285.71	1,714.29
	Losses of adult animals	Incidence	1.5%	1,800.00	-270.00	-405.00	-540.00
	<b>Total</b>				<b>19,787.14</b>	<b>29,680.71</b>	<b>39,574.29</b>

Milk for sale

#### Dairy Commercial Presentation Production Cost

##### Diary Commerical presentation production costs

###### OUTPUT

	Product	Unit	N. of units per head	Farmgate price per unit	Total 10 heads	Total 15 heads	Total 20 heads	
Gjithsej	Milk	Liter	4,880	0.35	17,080.00	25,620.00	34,160.00	
	Calves	Head		300.00	3,000.00	4,500.00	6,000.00	
	Abortions, calves losses, unfertile	Incidence	10%	300.00	-300.00	-450.00	-600.00	
	Calves kept for replacement	Incidence	17%	300.00	-500.00	-750.00	-1,000.00	
	End-of-life dairy cows	Incidence	16.7%	600.00	1,000.00	1,500.00	2,000.00	
	Losses of adult animals	Incidence	1.5%	1,800.00	-270.00	-405.00	-540.00	
	<b>Total</b>			<b>0</b>		<b>20,010.00</b>	<b>30,015.00</b>	<b>40,020.00</b>

Milk for sale

## Dairy Commercial Presentation Market Price

**ACTIVITY: Commercial Dairy Cattle Breeding - Presentation Market Prices**

**EAU - Year  
2012**

*Note: critical costs are fuel (too much), difference of price in self-producing and buying silage (too large), family labor (to check)*

### COMMERCIAL DAIRY CATTLE – SUMMARY

	10 heads			15 heads			20 heads		
	Total	Per head	Per l. of milk	Total	Per head	Per l. of milk	Total	Per head	Per l. of milk
Revenues/value	20,367.14	2,036.71	0.35	30,550.71	2,036.71	0.35	40,734.29	2,036.71	0.35
Variable costs	20,079.20	2,007.92	3.44	29,101.70	1,940.11	0.33	38,521.40	1,926.07	0.33
<b>Contribution Margin</b>	<b>287.94</b>	<b>28.79</b>	<b>-3.09</b>	<b>1,449.01</b>	<b>96.60</b>	<b>0.02</b>	<b>2,212.89</b>	110.64	<b>0.02</b>
Farm family work	4,800.00	480.00	0.09	5,850.00	390.00	0.08	6,600.00	330.00	0.07
<b>Margin before depreciation</b>	<b>-4,512.06</b>	<b>-451.21</b>	<b>-0.09</b>	<b>-4,400.99</b>	<b>-293.40</b>	<b>-0.06</b>	<b>-4,387.11</b>	-219.36	<b>-0.04</b>
Depreciation	5,210.29	521.03	0.11	6,427.43	428.50	0.09	8,444.57	422.23	0.09
<b>Net margin</b>	<b>-9,722.34</b>	<b>-972.23</b>	<b>-0.20</b>	<b>-10,828.41</b>	<b>-721.89</b>	<b>-0.15</b>	<b>-12,831.69</b>	-641.58	<b>-0.13</b>

	Production cycle	Jan	Feb	Mar	Apr	May	Jun
	Husbandry	Stable	Stable	Stable	Stable	Stable	Stable
		Jul	Aug	Sep	Oct	Nov	Dec
	Husbandry	Stable	Stable	Stable	Stable	Stable	Stable



	Other costs	Unit	Cost per unit	Total 10 heads	Total 15 heads	Total 20 heads
	<b>Maintenance</b>					
	Equipment	Lump sum		400.00	500.00	600.00
	Premises	1% of constr.cost		254.00	0.00	0.00
	<b>Total maintenance</b>			<b>654.00</b>	<b>500.00</b>	<b>600.00</b>
	<b>Transports and fuel</b>					
	Transports out (manure)	Lt fuel	1.35	97.20	97.20	140.40
	Fuel all other operations	Lump sum	1.35	830.00	1,032.50	1,235.00
	<b>Total transport and fuel</b>			<b>927.20</b>	<b>1,129.70</b>	<b>1,375.40</b>
	<b>Consumables &amp; utilities</b>					
	Electricity	Lump sum		240.00	300.00	420.00
	Water	Cubic meter	1.5	300.00	450.00	600.00
	Detergents (incl. Milk station)	Liter	3.00	510.00	555.00	600.00
Kashta - Shtroja	Straw	Lump sum		70.00	100.00	150.00
	Other consumables	Lump sum	120.00	50.00	75.00	120.00
<b>Gjithsej</b>	<b>Total consumables &amp; utilities</b>			<b>1,170.00</b>	<b>1,480.00</b>	<b>1,890.00</b>
	<b>Total other costs</b>			<b>2,751.20</b>	<b>3,109.70</b>	<b>3,865.40</b>

including transport unloading

#### OUTPUT

	Product	Unit	N. of units per head	Farmgate price per unit	Total 10 heads	Total 15 heads	Total 20 heads
	Milk	Liter	4,880	0.35	17,080.00	25,620.00	34,160.00
	Calves	Head		300.00	3,000.00	4,500.00	6,000.00
	Abortions, calves losses, unfertile	Incidence	10%	300.00	-300.00	-450.00	-600.00
	Calves kept for replacement	Incidence	0%	300.00	0.00	0.00	0.00
	End-of-life dairy cows	Incidence	14%	600.00	857.14	1,285.71	1,714.29
	Losses of adult animals	Incidence	1.5%	1,800.00	-270.00	-405.00	-540.00
<b>Gjithsej</b>	<b>Total</b>		<b>0</b>		<b>20,367.14</b>	<b>30,550.71</b>	<b>40,734.29</b>

Milk for sale 4500  
2 months old calves 6710

## Dairy Semi-Commercial Glance

ACTIVITY: Dairy Cattle Breeding

EAU - Year 2012

### SEMI-COMMERCIAL DAIRY CATTLE – SUMMARY

	5 heads + replacement			10 heads + replacement		
	Total	Per head	Per l. of milk	Total	Per head	Per l. of milk
<i>Variable costs</i>	7,211.03	1,442.21	0.36	13,636.78	1,363.68	0.22
<i>Revenues/value</i>	6,841.07	1,368.21	0.35	15,897.50	1,589.75	0.35
<b>Gross Margin</b>	-369.96	-73.99	-0.01	2,260.72	226.07	0.13
<i>Farm family work</i>	-3,600.00	-720.00	-0.04	-4,800.00	-480.00	-0.01
<b>Products for self-consumption</b>	2,050.00	410.00		2,050.00	205.00	
<b>Margin before depreciation</b>	-1,919.96	-383.99	-0.02	-489.28	-48.93	0.00
<i>Depreciation</i>	-1,182.65	-236.53	-0.01	-2,320.31	-232.03	-0.01
<b>Net margin</b>	-3,102.62	-620.52	-0.04	-2,809.59	-280.96	-0.01

Variable costs breakdown	Total 5 heads	Total 10 heads
Animal feed	6,060.28	11,417.18
Animal Health and reproduction	466.35	1,110.20
Hired Labor	0.00	0.00
Other costs	684.40	1,109.40
<b>Total</b>	<b>7,211.03</b>	<b>13,636.78</b>

### Output

Product	Unit	N. of units per head	Farmgate price per unit	Total 5 heads	Total 10 heads
Milk	Liter	5,200.00	0.30	15,600.00	23,400.00
Calves	Head		280.00	2,800.00	4,200.00
End-of-life dairy cows	Head		500.00	500.00	1,000.00
<b>Total</b>		<b>0.00</b>		<b>18,900.00</b>	<b>28,600.00</b>

Production cycle	Jan	Feb	Mar	Apr	May	Jun
Husbandry regime	Stable	Stable	Stable	Pasture	Pasture	Pasture
	Jul	Aug	Sep	Oct	Nov	Dec
Husbandry regime	Pasture	Pasture	Pasture	Pasture	Stable	Stable

## Dairy Semi-Commercial Wider Presentation

ACTIVITY: Commercial Dairy Cattle Breeding

EAU - Year 2012

### SEMI-COMMERCIAL DAIRY CATTLE – SUMMARY

	5 heads + replacement			10 heads + replacement		
	Total	Per head	Per l. of milk	Total	Per head	Per l. of milk
Variable costs	7,211.03	1,442.21	0.36	13,636.78	1,363.68	0.22
Revenues/value	6,841.07	1,368.21	0.35	15,897.50	1,589.75	0.35
<b>Gross Margin</b>	<b>-369.96</b>	<b>-73.99</b>	<b>-0.01</b>	<b>2,260.72</b>	226.07	<b>0.13</b>
Farm family work	-3,600.00	-720.00	-0.04	-4,800.00	-480.00	-0.01
Products for self-consumption	2,050.00	410.00		2,050.00	205.00	
<b>Margin before depreciation</b>	<b>-1,919.96</b>	<b>-383.99</b>	<b>-0.02</b>	<b>-489.28</b>	-48.93	<b>0.00</b>
Depreciation	-1,182.65	-236.53	-0.01	-2,320.31	-232.03	-0.01
<b>Net margin</b>	<b>-3,102.62</b>	<b>-620.52</b>	<b>-0.04</b>	<b>-2,809.59</b>	<b>-280.96</b>	<b>-0.01</b>

Production cycle	Jan	Feb	Mar	Apr	May	Jun
Husbandry regime	Stable	Stable	Stable	Pasture	Pasture	Pasture
	Jul	Aug	Sep	Oct	Nov	Dec
Husbandry regime	Pasture	Pasture	Pasture	Pasture	Stable	Stable

### DETAIL OF VARIABLE COSTS

	Animal feed	Unit	N. of units	Cost per Unit	Total 5 heads + replacement	10 heads + replacement
	<b>Imputed costs</b>					
	Pasture	Head/season	1.00		0.00	0.00
	<b>Total imputed costs</b>				<b>0.00</b>	<b>0.00</b>
	<b>Cash costs</b>					
	Alfalfa	Kg/head/year	43	0.14	229.59	459.18
	Hay/other dried grass	Kg/head/year	285	0.09	1,727.41	3,255.43
	Bran	Kg/head/year	54	0.18	289.29	578.57
	Concentrate	Kg/head/year	616	0.35	3,804.00	7,104.00
	Other feed complements	Lump sum		1.00	10.00	20.00
	<b>Total Cash costs</b>				<b>6,060.28</b>	<b>11,417.18</b>
<b>Gjithsej</b>	<b>Total animal feed</b>				<b>6,060.28</b>	<b>11,417.18</b>

	<b>Animal health and reproduction</b>	<b>Unit</b>	<b>Cost per head</b>	<b>Treatments/ trials/units</b>	<b>Total 5 heads + replacement</b>	<b>10 heads + replacement</b>
	Artificial insemination	Trial	15.50	1.1	77.50	232.50
	Health treatments	Lump sum			140.00	380.00
	Vaccinations quarantine diseases	Service	Paid by State	3.0	-	-
	Losses calves	Head	300.00	10.0%	150.00	300.00
	Losses adult animals	Head	1,025.12	1.5%	98.85	197.70
	<b>Total animal health and repr.</b>				<b>466.35</b>	<b>1,110.20</b>

	<b>Other costs</b>	<b>Unit</b>	<b>Cost per unit</b>	<b>Total 5 heads + replacement</b>	<b>10 heads + replacement</b>
	<b>Maintenance</b>				
	Equipment	Lump sum		50.00	100.00
	Premises	Euro/sq.m	5.00	200.00	400.00
	<b>Total maintenance</b>			<b>250.00</b>	<b>500.00</b>
	<b>Consumables &amp; utilities</b>				
	Electricity	Lump sum		60.00	80.00
	Water	Lump sum		50.00	75.00
	Detergents	liter	3.00	60.00	120.00
	Straw	Lump sum		20.00	40.00
	Other consumables and small tools	Lump sum	0	50	100
<b>Gjithsej</b>	<b>Total consumables &amp; utilities</b>			<b>240.00</b>	<b>415.00</b>
	<b>Hired Labor</b>	W/month	300.00	<b>0.00</b>	<b>0.00</b>
	<b>Transport cost</b>			<b>194.40</b>	<b>194.40</b>
	<b>Total other costs</b>			<b>684.40</b>	<b>1,109.40</b>

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**OUTPUT**

	<b>Product</b>	<b>5 heads</b>	<b>10 heads</b>
	<b>Milk</b>		
	Marketed	4,200.00	10,150.00
	Self-consumption	1,750.00	1,750.00
	<b>Total milk</b>	<b>5,950.00</b>	<b>11,900.00</b>
	<b>Calves</b>		
	Marketed	2,212.50	5,033.21
	Self-consumption	300.00	300.00
	<b>Total Calves</b>	<b>2,512.50</b>	<b>5,333.21</b>
	<b>End-of-life dairy cows</b>		
	Marketed	428.57	714.29
	Self-consumption	0.000	0.00
	<b>Total end-of-life dairy cows</b>	<b>428.57</b>	<b>714.29</b>
<b>Gjithsej</b>	<b>Total</b>	<b>8,891.07</b>	<b>17,947.50</b>

# ANNEX 4: PROPOSED INTER-ACTION OF EAU WITH OTHER MAFRD DEPARTMENTS AND OFFICES AND WITH OTHER SECTOR DEVELOPMENT ORGANIZATIONS

The EAU staff should establish regular relations with a other MAFRD offices and with external subjects, such as PO, development projects etc. In many cases the contents of these contacts will be defined on the base of a specific need. In other cases, it will be necessary to formalize the exchange of information through Information Exchange Protocols (IEP), specifying what information to ask or send to whom (i.e., who is the interface of EAU in each organization). In the short term, EAU will need to inter-act with several other subjects for the completion of cost analyses, as detailed in **Annex 5**.

## **A4.1 INTER-ACTION BETWEEN EAU AND EXTENSION SERVICES**

The inter-action between EAU and extension services will work as a bilateral relation: EAU will provide information (e.g., the production cost information) and training (how to use the information contained in the models for extension activities on farm management) to extension officers, while extension officers will help in validating the data contained in the models and amend/update data in the reference tables.

With reference to the use that extension officers can make of the information provided by EAU, the analysis of the organization of production (i.e., what inputs are used for production and when, what is the farm equipment endowment) and the analysis of costs in representative farms<sup>6</sup> provide a benchmark to the extension service officers to evaluate the situation of his/her clients, measuring performance and showing the production system and relevant costs of an average farm. In a further degree of development, it will be also possible to develop a more articulated tool, showing the performance and the structure of costs of different clusters of farms (e.g., most profitable, average and less profitable) dealing with a specific product.

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<sup>6</sup> In this case, choosing a cost configuration based “most common” production practices rather than on “best practices” is inevitable

The availability of a benchmark and the comparison with the same information (i.e., organization of production, production costs, and analysis of profitability) calculated in accordance to “best practice” method will also contribute to define the contents of the most useful extension activities, once that the reasons for not applying the best practices are clear (could be insufficient or obsolete know how, but also difficult access to capital and preference for using own resources rather than having cash costs, even at expenses of total profitability). A detailed knowledge of the most common production system and costs also facilitates the introduction of innovative business models.

The availability of production costs is also the first step to gradually introduce farm management and planning in the portfolio of services provided by the extension services.

Finally, the availability of information on production costs and production systems give a tool to measure impact and performance of extension services, if the performance of an assisted farm is measured over the time and if the performance of farms receiving technical assistance is compared with the national average.

## **A4.2 INTER-ACTION BETWEEN EAU AND DEVELOPMENT PROJECTS**

At the present stage, the reputation and the skills of EAU are still to be built. In inter-acting with senior consultants from projects, the most appropriate approach for EAU team should be therefore to get information for cost analysis and reconstitute some simple, but useful information that will speed up the work of long term and short term consultants, such as the reference tables and, when developed, the Standard Work Requirements. These information would be of much use in preparing/updating investment plans, which are part of the core business of projects, while they are less interested in most common production costs models.

Actually, the needs and outputs of EAU and NOA in the field of cost analysis are not overlapping, as EAU can produce investment plans showing cost configuration and expected profit *in present conditions* (so, it is at best a benchmark for NOA) while, by definition, NOA is introducing new practices or spreading best practices, which are reflected in their cost configuration

## **A4.3 INTER-ACTION BETWEEN EAU AND UNIVERSITY OF PRISHTINA, FACULTY OF AGRICULTURE ECONOMICS**

The University of Prishtina can perform specific and complex researches having a duration and a scale that are out of reach for EAU, also using analytical tools (i.e., know-how) that EAU team members have not yet acquired.

Two types of cooperation between EAU and UP can be envisaged:

1. ***Field researches using students involved in their final work or master students.*** These are researches requiring a broad information base (i.e., many questionnaires collected from to a representative sample of farmers or other agribusiness operators or consumers) and/or very detailed or precise data that are difficult to get. A typical example of these researches would be the endowment and use of farm machinery in a representative sample of semi-commercial grape growers, or the identification of the minimum size of commercial milk production farms, under which the production system changes and becomes similar to that one of semi-commercial milk production farms. This kind of researches would require much limited financial inputs and would give to students a tangible objective for their research.
2. ***Specific researches to be developed in the framework of national, regional or cross-border programs.*** This kind of researches would be functional to the needs of EAU, but would be typically implemented in a regional cooperation framework by UP and other subjects. For example, an issue that was considered attractive by UP was the preparation of a proposal for a

*comparative competitiveness study of a few key products* (three or four) at regional level (e.g., in Kosovo, Albania in Kosovo, Albania and Republic of Macedonia).

Based on the outcome of the meetings with the Dean of the Faculty of Agriculture Economics, priority is apparently given to the last option for cooperation, as compared with the first one, which is more focused on EAU needs and interests.

# ANNEX 5: COMPLETION OF THE COST ANALYSIS AND RELEVANT ACTION PLAN

By the end of the first mission (end of May 2012), the working hypothesis of the seven production cost models had been prepared (stage 3 of the analysis process flow), the data validation phase had been almost completed (stage 4 of the analysis process flow) and the stage 5 (feed back from panel and key informants) was being organized. The implementation steps to complete the analyses are detailed below.

Detailed activity	Source of information	Timeline
<b>Completion of step 4: Data validation through field visits and/or interviews</b>		
Validate grapes production investment costs with NOA expert	NOA panel member	End of June
Validate apples production investment costs with interviewed apple growers	Already interviewed farmers	End of June
Collect data on costs of agronomic services	Field visit and interviews, possibly in two places, with service providers	End of June
Get data on subsidies, by crop (see specific note below)	Payment unit	End of June
Validate dairy investments costs with KPEP	KPEP technical officers	1 <sup>st</sup> week July
Confirm cost of pastures	Forestry Department MAFRD	1 <sup>st</sup> week July
Extract subset from FADN of specialized farms, by crop (see specific note below)	Statistical Office, in cooperation with PO	Mid-July
<b>Step 5: 2<sup>nd</sup> panel consulting to clear out discrepancies in data</b>		
Renovate/complete the panel for wheat, and apples	MAFRD, NOA	End of June
Agree with consultant critical data	EAU	1 <sup>st</sup> week July
Consult the panel members	Panel meeting, complemented by interviews if necessary (absent members)	Mid-July
Adapt data in model and communicate to consultant	EAU	Mid-July
<b>Step 6: Circulation of consolidated draft to panel members and other selected partners</b>		
Circulate the models to PO, MAFRD technical offices, NOA, KPEP	EAU	3 <sup>rd</sup> week July
First awareness meeting with extension service officers to present the models and ask for feedback	EAU, MAFRD extension service	3 <sup>rd</sup> week July
Get feedback and identify critical data	PO, MAFRD technical offices, NOA, KPEP	End of July
Adapt data according to remarks	EAU	End of July
<b>Step 7: 3<sup>rd</sup> panel consulting</b>		
Consult the panel members	Panel meeting, complemented by interviews if necessary (absent members)	1 <sup>st</sup> week August
Adapt data in model and communicate to consultant	EAU	1 <sup>st</sup> week August
<b>Step 8: Dissemination of models to users</b>		
Prepare and disseminate final version of models and working tools	EAU	3 <sup>rd</sup> week of August

**Note:** The only primary data in FADN database are those ones relevant to the planned cultivated surface, by crop. These data can be processed to get information on the structure of a representative farm for a given crop. For example, in the case of wheat, the following steps could be followed:

1. Creating a new column in the database, where all cultivated surface will be indicated (if not yet present).
2. Filter the database, creating a subset where only the farms which are using more than 50 percent of cultivated surface for wheat are included (for maize a different procedure should be followed, as in this case the filter should also include the animal breeding activity, to avoid that a farm specialized in cattle breeding appears as a farm specialized in maize growing) and excluding all farms having more than 5 cows. In this way, there should be a subset of wheat commercial and semi-commercial farms.
3. Analyze the structure of production of the subset (how many wheat ha in average, which other activities are performed, also in average, etc.) This will provide in a first approximation the information on the structure of a representative wheat farm.
4. Knowing what a representative wheat farm is producing and also the relevant surfaces is already a valuable information. A use for further data processing will be to calculate the use of farm machinery in a representative farm (we have the use per ha and the number of ha) and, eventually, the amortization.

# ANNEX 6: PROPOSED TOR AND ACTION PLAN FOR A DATA COLLECTION INITIATIVE TO BE JOINT IMPLEMENTED BY EAU AND UNIVERSITY OF PRISHTINA

## **THE COMPETITIVENESS OF APPLE, TOMATOES AND MILK AND DAIRY SUPPLY CHAINS IN KOSOVO, ALBANIA AND REPUBLIC OF MACEDONIA: A REGIONAL ANALYSIS**

### **TERMS OF REFERENCE**

#### **Background**

In January 2012, the Ministry of Agriculture, Forestry and Rural Development (MAFRD) established an Economic Analysis Unit (EAU) to improve the quality of decision-making and planning in support of the Ministry's agricultural support programs of direct payments, grants and investments. Three analysts have been hired (two with master's degrees in agricultural economics and one with a master degree in economics and accounting). A manager for the unit is being recruited.

The EAU needs to prepare an analysis of the profitability and costs of production of the highest priority crops to support planning and budgeting for the 2013 support programs. This analyses will be used for policy-making and for measuring changes in productivity and profitability over time. The cost of production and profitability data developed by the EAU will be used by the newly established MAFRD extension services to enhance farm management.

The EAU team is building up its capacity to perform the production cost and profitability analyses. In doing so, it is developing a network-based know how, developing synergy with other MAFRD department, with external public bodies, development projects, NGOs and private entrepreneurs. As part of this approach, MAFRD wants to foster the establishment of regular, result-oriented relations between EAU and the University of Prishtina, in particular with the Department of Agriculture Economics. Within this framework, MAFRD intends to work with the Department of Agricultural Economics of Prishtina University to implement a research on the competitiveness of some key agrifood products (milk, tomatoes and table apples) at regional level, comparing competitiveness of

products from Kosovo with products from Albania and Republic of Macedonia, within the framework of national, regional or cross-border development programs.

A concept note has been produced to define contents and methodology of the research. The availability of necessary financial resources for the implementation of the research will be probed at national level, taking into consideration the resources available in national , regional and cross-border development programs.

## **Objectives, purpose and expected results**

### ***Overall objective***

Analyze competitiveness and efficiency of agriculture crops and animal productions in Kosovo.

### ***Purpose of the research***

Compare competitiveness and profitability of apples for fresh consumption, tomatoes for fresh consumption and milk and dairy products supply chains in Kosovo, Albania and republic of Macedonia.

### ***Expected Results***

1. Supply chain analysis of apples for fresh consumption in Kosovo, Albania and Republic of Macedonia and comparative profitability and competitiveness in national and regional markets
2. Supply chain analysis of tomatoes for fresh consumption and processing in Kosovo, Albania and Republic of Macedonia and comparative profitability and competitiveness in national and regional markets
3. Supply chain analysis of milk and dairy products in Kosovo, Albania and Republic of Macedonia and comparative profitability and competitiveness in national and regional markets

## **Scope of Work**

### ***Specific activities***

1. Analyze structure of production and supply balance, including seasonal variation and evolution over time.
2. Analyze the international trade flows of the selected products, explaining reasons for seasonal variations, evolution over time (last ten years) and identifying future trends.
3. Analyze the structure of the relevant supply chains from producers to retail system, providing indication on the structure and number of operators at each stage of the supply chain and of the flows along the supply chain (supply chain map), taking into consideration losses and international trade flows.
4. Analyze costs and margins in each step of the supply chain, from production costs to retail price (margin analysis), and define contribution of each stage to the final cost. In particular, analyze production cost and profitability of the three products object of the analysis. Profitability will be analyzed on the base of farmgate price, including all post-harvesting or post-collection treatments required by law or by practice to make the product marketable (e.g., sorting at field level, pre-cooling when applied, milk cooling at producer level etc.). When such activities are purchased as a service e.g., milk collection points), relevant costs will be shown separately, but as part of production cost.
5. Detail the economic profile, business model and characteristics of main operators at each stage of the supply chain, providing also relevant case studies.
6. Analyze the business environment: system of services, Government policies, support measures, regulatory environment and compliance with EU standards.

7. Perform a SWOT analysis and provide conclusions on comparative competitiveness, giving suggestions for improving production and trades at regional level.

### *Management*

A Memorandum of Understanding (MoU), will be stipulated between the University of Prishtina, Department of Agriculture Economics, University of Tirana, Faculty of Agriculture Economics, and University of Skopje, showing their willingness to carry out the research in parallel in the three countries, namely Kosovo, Albania and Republic of Macedonia, following a common timeline and methodology.

Based on the MoU MAFRD will start the activities to seek for and to secure its share of financial resources for the implementation of the analysis. Parallel activities will be performed in the other two countries, to secure the necessary resources in each country.

Based on written financing pledges covering the whole cost of the study, the MoU will be activated

The research will be performed in three countries according to a common methodology and under the supervision and coordination of a single team leader. A working team composed by one agro-economist, one agronomist and one zootechnician will be established in each country.

The steering and supervision of the research will be ensured at national level in each country. The team leader will report monthly on the progress of the study to the supervisors in each country. In Kosovo, the responsibility of supervision will fall on MAFRD.

Coordination between the supervisory bodies will be ensured. A coordination meeting will be performed in occasion of a start-up seminar.

Unified reports will be produced, covering the object of the research in the three countries.

Reports will be submitted for approval to supervisory bodies (MAFRD for Kosovo), which will evaluate the compliance of the report with the scope of work and research objectives.

### **Level of effort, timeline and logistics**

For the implementation of the research, the following inputs will be provided:

**Team leader:** 3 man/months. The relevant cost will be shared in three equal parts, charged on each national budget.

#### ***In each country:***

1. Agro-economist, for a total input of three man/months
2. Agronomist, for a total input of twenty-one working days, to be used for the analysis of apples and tomatoes production costs.
3. Zootechnician, for a total input of seven working days, to be used for the analysis of production costs.

The timeline for the research is set in 3.5 months.

A detailed technical and financial proposal (with input and means) and action plan will be submitted to MAFRD ten days before the starting of activities.

The budget limit for the analysis is set in 17,000 Euro.

### **Requirements**

**Team leader:** Agro-economist (international expert).

Qualifications: Post-graduate degree in agricultural economics or related science; at least five years experience of sector and supply chain analyses, margin analysis and analyses of international trades of

food products, in transition countries, preferably in the Balkans. Excellent knowledge of written and spoken English. Knowledge of Albanian and Macedonian will be an asset.

***In each country:***

*Agro-economist* (national expert). Qualifications: Post-graduate degree in agricultural economics or related science; at least five years background in research and studies in agrifood productions, production cost and profitability analyses. Excellent knowledge of English written and spoken.

*Agronomist* (national expert): Qualifications: Post-graduate degree in agricultural sciences; at least ten years experience in vegetable and fruit production in the country; previous experience in preparing studies and analyses for national institutions or international development projects. Good knowledge of written and spoken English.

*Agronomist* (national expert): Qualifications: Post-graduate degree in zootechnics or veterinary sciences; at least ten years experience in cattle breeding and milk production in the country; previous experience in preparing studies and analyses for national institutions or international development projects. Good knowledge of written and spoken English.

**Reports**

1. An **inception report** will be submitted after three weeks from beginning of activities, specifying:
  - i) the first findings of the research; ii) the detailed timeline and the implementation arrangements (structure of field teams, questionnaires and structure of sampling); iii) the detailed methodology and the possible suggested changes to that one indicated in the present ToR; and iv) a preliminary table of contents of the final work
2. A **final report**, in four parts, namely:
  - 2.1 Implementation of the research.
  - 2.2 Comparative competitiveness analysis of apples for fresh consumption in Kosovo, Albania and Republic of Macedonia.
  - 2.3 Comparative competitiveness analysis of tomatoes for fresh consumption in Kosovo, Albania and Republic of Macedonia.
  - 2.4 Comparative competitiveness analysis of milk and dairy products in Kosovo, Albania and Republic of Macedonia.

The first part will provide the following information: 1.1 organization of the carried out activities, including planned and actual implementation schedule, 1.2 possible main findings additional to those ones included in the scope of work; 1.3 raising issues and suggestion for further researches, included possible amendments to methodology.

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