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N. Turpin, Diana Kopeva, M. Raley, O. Baqueiro, Guillaume Deffuant, G. Woltjer, B. Meyer, Mario Njavro, L. Jelinek, B. Haudidier, et al.

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Prototypical Policy Impacts on Multifunctional Activities in rural municipalities

A collaborative project under the
EU Seventh Framework Programme

Periodic Report

Deliverable no. D0.3

Nadine Turpin, Diana Kopeva, Marian Raley, Omar Baqueiro, Guillaume Deffuant, Geert Woltjer, Burghard Meyer, Mario Njavro, Ladislav Jelinek, Baptiste Hautdidier, Ramon Laplana

Partners: PRIMA partners

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Collaborative project (Small or medium-scale focused research project)
Grant agreement no. : 212345
Project duration: November 2008 - - November 2011

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PRIMA aims to develop a method for scaling down the analysis of policy impacts on multifunctional land uses and on the economic activities. The scoped policies will include the cohesion policy (ERDF, ESF, CF), the enlargement process (IPA) & the rural development policy (EAFRD) of the European Commission, with a special focus on agriculture, forestry, tourism, and ecosystem services. The approach will: rely on micro-simulation and multi-agents models, designed and validated at municipality level, using input from stakeholders; address the structural evolution of the populations (appearance, disappearance and change of agents) depending on the local conditions for applying the structural policies on a set of municipality case studies. Involving eleven partners, the project is coordinated by *Cemagref*.

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PROJECT PERIODIC REPORT

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Project title: Prototypical Policy Impacts on Multifunctional Activities in rural municipalities

Funding Scheme: Collaborative Project (Small or medium-scale focused research project)

Date of latest version of Annex I against which the assessment will be made: 29 October 2008 (approval date)

Periodic report: 1st ☑ 2nd ☐ 3rd ☐ 4th ☐

Period covered: from November 1st 2008 to April 30th 2010

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Declaration by the scientific representative of the project coordinator

I, as scientific representative of the coordinator of this project and in line with the obligations as stated in Article II.2.3 of the Grant Agreement, declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
- The project (tick as appropriate):

  ☐ has fully achieved its objectives and technical goals for the period;

  ☑ has achieved most of its objectives and technical goals for the period with relatively minor deviations[1];

  ☐ has failed to achieve critical objectives and/or is not at all on schedule[2].
- The public website is up to date, if applicable.
- To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 6) and if applicable with the certificate on financial statement.
- All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 5 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name of scientific representative of the Coordinator: Dr Nadine Turpin

Date: ..25./ ..06./ 2010

Signature of scientific representative of the Coordinator: .

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1 PUBLISHABLE SUMMARY

Nadine Turpin

Facing structural change, European rural areas still fulfil multiple social, economic and ecological functions. Because of scale interplays and sustainability trade-offs, their future dynamics are yet particularly difficult to ascertain. PRIMA aims to develop methods for scaling down the assessment of policy impacts on multifunctional land-use and economic activities. The project focuses on agriculture, forestry, tourism, and ecosystem services, with special attention to the structural effects of the policies.

The PRIMA project started in November 2008, connecting 11 research institutes and universities from 9 countries to progress in this domain. This project includes the following actions:

- Review the EU structural policies, identify driving forces at EU, national and regional levels for multifunctional land use activities and provide baselines for the design of national and regional scenarios on multifunctional land use activities.
- Interaction with stakeholders: pre-model engagement with stakeholders in terms of scenario design and formulating agent decision rules for agent-based models, on-model engagement with stakeholders mirroring agent-based models, and post-model engagement with stakeholders in terms of assessing model outputs.
- Design and develop micro-simulation and multi-agents models, of local dynamics and of the impact of European structural policies at the municipality level. - Build a mapping between available data on municipalities and prototypical, contrasted evolutions of micro-simulation and agent based models. This will allow us to aggregate the results provided by these models at a regional level, on a set of regional case studies, and to compare these results with existing models at regional scale.
- Investigate the potential of the approach to design a method that enhances the scope of Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA) and Sustainable Impact Assessment (SIA).

The project is split into 6 workpackages, and includes intensive communication among workpackages, especially when working on the case studies (see Figure 1 :for details).

During the first 18 months of the project, we focused on literature and documents reviews, to root the model in the latest scientific paths along fitting the modelled objects to the issues raised by the stakeholders in the six case study areas.

We analysed the strategic and planning documents in six countries (corresponding to PRIMA 6 case study areas): though very few documents specifically address directly the multifunctionality concept, many measures are targeted to several pillar of sustainable development at the same time (*1*). Thus, we adopted an operationalised definition of multifunctionality, derived from

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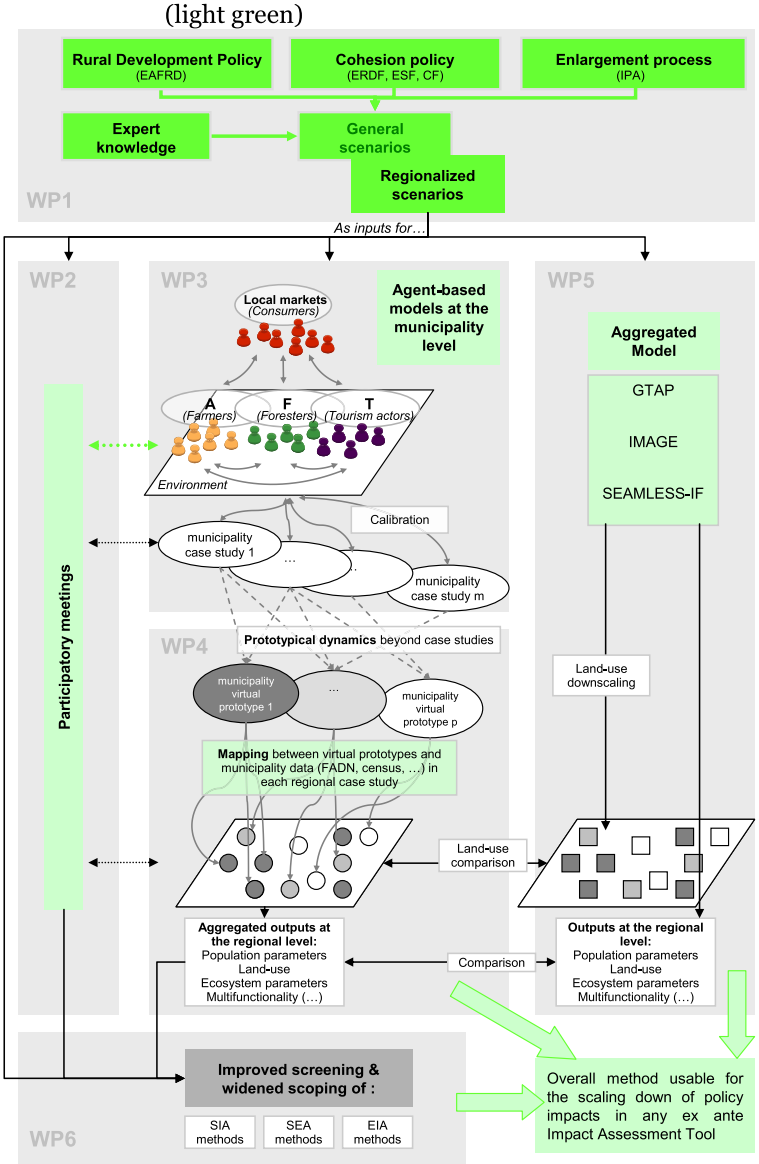
the EU definition[2] in PRIMA, a piece of land cell or a municipality is considered as multifunctional as soon as it supplies jointly commodity and non-commodity outputs. The degree of multifunctionality is assessed as the amount of jointly supplied outputs (2).

Figure 1 : main modelling steps in the PRIMA project, including completes ones (green) and nearly completed ones (light green)



[2] EU definition of Multifunctionality : "The complementary roles that farming plays within society, over and above its role as a producer of food. It includes the contribution of farming to sustainable development, the protection of the environment, the vitality of rural areas and the maintenance of an overall balance between the incomes of farmers and the incomes of people in other occupations" (Europa web site, glossary)

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An analysis of the strategic and planning documents in the case study areas highlights that many measures are targeted to several pillars of sustainable development, even though multifunctionality (MF) concept is often unaddressed. Because of the bottom-up governance of the European cohesion policy, a large variety of priorities and measures has been observed, so we oriented the first stakeholders interviews towards their major objectives and the specific measures they activate from the cohesion policy to reach their own objectives.

Two groups of stakeholders were identified: those who can assist in scenario and model development and in model validation (drawn from the institutions which implement policy), and the actors who may be affected by the policy and whose behaviour will be captured in the AB model. Two rounds of interviews have been performed, the first one to gain contextual information about the wider case study information. From cluster analysis and this information, sets of municipalities were selected, then a second round of interviews was conducted to identify relevant policy issues and appropriate policy measures. These interviews provide the main events which have occurred during the last 20 years, policy outcomes, the EU funding streams, proposals for new measures.

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Figure 2 : Presentation of Prima objectives in Istria (Zagreb meeting)

A conceptual model has been developed from extensive literature review and information collected during the surveys. This model focuses on the population dynamics in rural municipalities and on the decision making behaviours observed in such areas, including indicators requirements to match with IA methods. A general method for generating households from different available data at municipality level has been designed: at this level, only average data are available and the method enables to generate relevant individual data to be included in the models. The model has been adapted to the case studies: at this stage, downscaling occurs to input data for the models.

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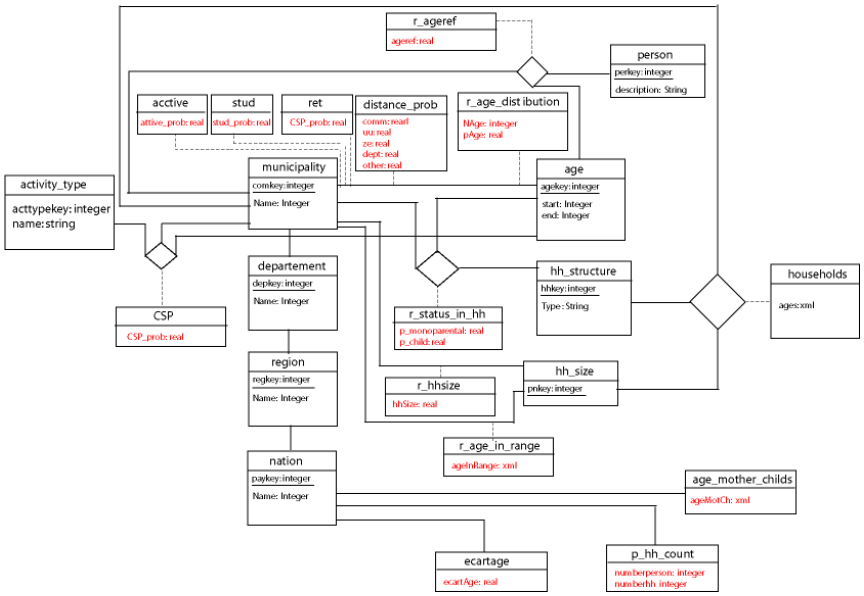
Figure 3 : database conceptual scheme for the Auvergne model



We developed a working regional economic model that interacts between global changes (GTAP-IMAGE interactions) and multi-agent based tool at local level. It covers activities agriculture, forestry, services and nature. A start has been made with a program for downscaling. We are working on a procedure to generate the basic regional data for the input. We have to start data generation and theoretical and empirical work to improve on the allocation procedures of national developments to regions.

Considering backbone scenarios, first modelling at European level started, with the identification of key economic and demographic factors that drive land use patterns at regional and local levels. External drivers and policies have been distinguished. GTAP and IMAGES have been linked to provide a working modelling framework. Last, we progressed towards enhancing the scope of IA methods, with a review of literature and extensive work between all workpackages.

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2 Project objectives of the period

The main objectives of the reporting period were:

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- WP1: analyse and assess EU policies on multifunctional land use activities, develop baselines for the design of national and regional scenarios on multifunctional land use activities.
- WP2: identification of stakeholders and stakeholder roles, Pre-model engagement with stakeholders and to a lesser extent on-model engagement with stakeholders.
- WP3-4: Design micro-simulation and agent based model framework, and implement it, test the framework on pilot municipalities, and define a mapping between available data at municipality level and prototypical dynamics derived from the AB model developed in WP3.
- WP5: Identify key economic and demographic factors at European and global level, and link GTAP and IMAGE to provide a working modelling framework.
- WP6: review the theory on impact assessment analysis with a special emphasis on ecosystem and biodiversity functionalities in SIA, EIA, SEA, identify a balanced list of potential impact indicators for ecologic, economic and social impacts to qualify land use change and agents behaviors provided by WP3.
- interactions between WPs: build a common culture on scenarios to be introduced into the models (WP1-3-5), exchange concepts on impact indicators, prepare in-between WPs the stakeholders interactions.

3 Work progress and achievements of the period

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Geert Woltjer
Burghard Meyer
Mario Njavro
Ladislav Jelinek
Baptiste Hautdidier
Ramon Laplana

Prima teams have achieved WP1 work and now focus on related publications. WP2 has made substantial progress in steps 1 and 2 in stakeholders' interaction, and now concentrates on publications and step 3 (on-model engagement). Doing so needs deep interactions with WP3, who designed and implemented a common general micro-simulation model. However, the development of simulations in pilot municipalities is delayed 3 to 4 months, which delays the relative tasks.

A major conceptual change arose during the modelling period, and WP3 and 4 models should be developed together, leading to a closer cooperation than initially planned. Modellers' conceptualisation of prototypical dynamics evolved towards groups of municipalities and their network structures.

Modelling in WP5 in on good way, and WP6 cooperates with the other workpackages to progress towards the design a method that enhances the scope of Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA) and Sustainable Impact Assessment (SIA).

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3.1 WP 1 | From policies objectives to scenario design at national and regional levels

Focussed on the impact assessment of general and specific EU policies on multifunctional land use, WP1 activities have entailed the development of general baselines for the design of national and regional scenarios.

3.1.1 Progress towards objective 1 (To analyse and assess EU policies on multifunctional land use activities)

An extensive document review of strategic and planning documents in the six case study countries (France, Germany, United Kingdom, Czech Republic, Croatia, Bulgaria) was achieved, with a specific focus on the existing policy application on different levels and areas (agriculture, forestry, tourism, environment) that focus on concepts related to the PRIMA project (T1 - M 1.1 and D1.1).

A screening impact matrix was developed, allowing to range the detailed policy measures according to their importance, with regards to multifunctionality. The output of the matrix is used for the development of the scenarios and for the modelling of socio-ecological dynamics (WP3 and WP4).

During the review process, the relevant driving forces were identified, with a focus on major development trends, possible modifications, and their effects on the multifunctionality of land use and development of economic activities (D1.2, M1.2 and M1.3).

3.1.2 Progress towards objective 2 (To develop baselines for the design of national and regional scenarios on multifunctional land use activities)

Socio-economic profiles of the six case-study regions have been prepared (D1.3). Alternative scenarios have been developed on the basis of aforementioned assessments (D1.1). They focus on policy changes and possible results/outputs of the EU policy implementation on regional and local (LAU) level. These scenarios, reference points for the down/upscaling in WP3/4/5 will be verified and improved during the project duration, as part of WP2 activities.

A set of criteria for the selection of municipalities was designed. A two-step clusterisation allowed to identify contrasted LAU 1 and LAU2 units in the six case study areas (M1.4). The selected municipalities (and sets of municipalities) are subject of in-depth studies in WP2 (pilot individual and focus group discussions), WP3 and WP4 (population dynamics and scenario dynamics).

As a subsequent result, a database of available socio-, economic, environmental statistical information on NUTS 2, NUTS 3 and LAU 1 was developed (D1.4). The database is serving the needs of WP3, WP4, WP5 and WP6.

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3.1.3 Significant results

- Multifunctionality is relevant for the regional governance of structural funds, but remains mostly unaccounted for.

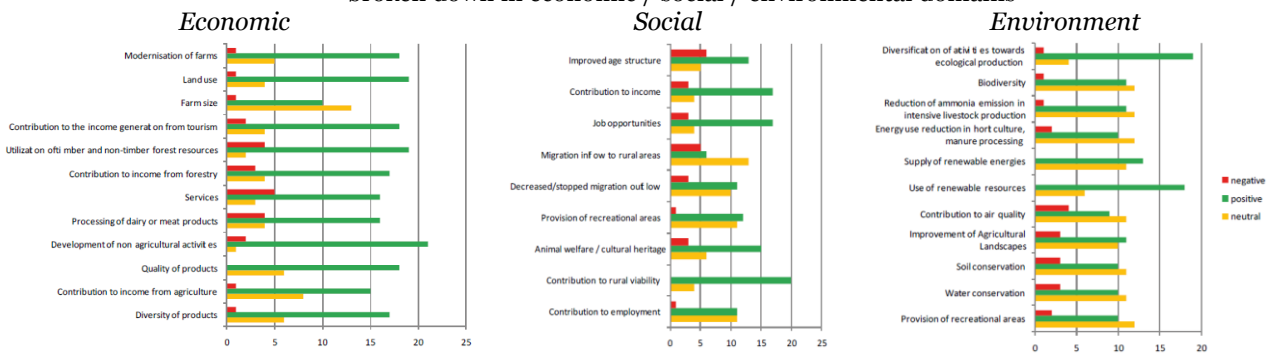
- The detailed review and analysis of the EU policies (on national and regional level and their impact on multifunctional land use) revealed that, in most cases, regional strategic and planning documents support measures for multifunctional land use activities only in an indirect way.

- The study revealed significant differences between country and thus the necessity of developing participative initiatives integrating these specificities in the different case studies. The diversity of institutions and organizations involved in the process of implementation of Structural and Cohesion Funds, and European Agricultural Fund for Rural Development (EAFRD) appeared high within case study regions. Direct Beneficiaries (excluding Local authorities) are not involved directly in the process of policy measures' development. They rarely participated in the regional strategy development and in the identification of measures and priorities in the national planning documents.

- The complexity of 'MF' impacts is tractable with detailed expert-based assessments

- An original analytical framework was developed for the analysis of the impact of policy priorities / measures on multifonctionality. Based on indicators translating the multifunctional character of the activities on the basis of the three SD pillars, the framework was confronted with every measure of the policies on the basis of an expertise from PRIMA scientists; the potential impacts were informed according to three levels "positive", "neutral" or "negative "; a synthesis joining all the indicators was made by measure of policy, followed by a classification of the various measures by priority. (Cf figure 4. for the general overview of IPA)

Figure 4 : Potential impacts of IPA on multifunctionality indicators, broken down in economic / social / environmental domains



Source: PRIMA D1.1, § 4.2

This analysis of the potential impacts of policies on the multifunctional character of the activities shows the domains of action supposed to have the greatest influence in terms of multifonctionality. To quote Croatia as an ex-

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ample, IPA highest positive effects are strongly related to measures focusing on support of new enterprises or restructuration, capacity building, environment protection, local sectorial knowledge, education and diversification of local activities

- Regional scenarios highlight four plausible futures with regards to MF impacts of EU policies

- Four alternative scenarios for general development based on strategic documents related to the multifunctional land use activities as illustrated by Figure 5.: Combined impacts of selected driving forces (external/internal), for the four scenarios

- The *'baseline'* scenario, is_a projection of the status quo in terms of agricultural and environmental policies, technological and market conditions, and the projection of technological trends and of decided policy changes to be implemented until the target year 2013.
- An *'Environment'* scenario was built on the assumption that measures for landscape, natural and cultural heritage preservation will be leading, with an explicit recognition of multifunctional land use activities.
- The *'Rural development'* scenario puts the emphasis on: increasing competitiveness of agriculture and forestry; improving land management; implementing complex measures for environment protection and preservation, wider rural economy through new agricultural and non-agricultural activities; increasing the role of local initiative groups in regional and local decision making process.
- The *'Infrastructure & Competitiveness'* scenario assumes that Cohesion policy will have leading role on national and regional level, focusing on improvement of business environment, establishment of business opportunities and favorable environment for business initiatives linked to multifunctional land use on regional level.

Alternative scenarios developed within WP1 give the general framework . According to the country specifics they will be adjusted in the modeling in WP3, WP4 and WP5.

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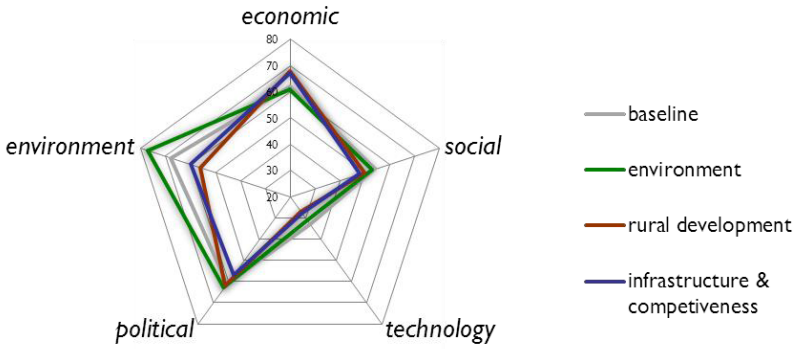

Figure 5 : Combined impacts of selected driving forces (external/internal), for the four scenarios

Source: adapted from PRIMA D1.3, § 7.4

- Restricted sets of LAU1/LAU2 levels indicators capture convincingly the social-ecological internal diversity of case study regions.

- A database was designed and developed with statistical information related to the domains of agriculture, forestry, tourism and environment at different levels (NUTS2 to LAU2). Based on existing sources (National Statistical Offices, FADN, National/Regional surveys, EUROSTAT, ESPON, and other), the dataset consists of eight modules (General information, Land, Population / Labour, Economic Indicators, Tourism, Agriculture, Forestry and Environment).

- Original approaches based on cluster analysis were developed to select municipalities for the construction of prototypical cases representing typical, contrasted macroeconomic features and multifunctional aspects of land use in a given region. Relying on the extraction/adaptation of only seven indicators from the database (population density, population growth over the last 15 years, remoteness, share of GDP/GVA by sector, areas in NATURA 2000, unemployment rate, old-age dependency ratio), the exercise demonstrated the relevance and feasibility of parsimonious indicators lists for the analysis of social-ecological change in rural municipalities.

3.1.4 Deviations from work programme

The review of the EU policies and documents on national and regional level took more time than planned. This delayed finalization of deliverables D1.1 and D1.2, and milestones M1.1 and M1.2: they were made available with a four-months delay.

At PRIMA midterm, all WP1 outputs had been delivered, scenario formulation and data collection tasks handed as planned to WP2/WP3: in accordance with the coordination, the focus was put on the writing of scientific papers.

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3.2 WP2 | Stakeholder perspectives and participatory approaches

Annex 1 summarises WP2's objectives as four sequential steps:

Step 1: Identification of stakeholders and stakeholder roles in terms of pre-model, on-model and post-model analysis

Step 2: Pre-model engagement with stakeholders in terms of scenario design and formulating agent decision rules for agent-based models (of WP3)

Step 3: On-model engagement with stakeholders mirroring agent-based models (of WP3)

Step 4: Post-model engagement with stakeholders in terms of assessing model outputs (of WP3 and WP4)

Substantial progress has been made towards Steps 1 and 2, and to a lesser extent to Step 3.

3.2.1 Identification of stakeholders and stakeholder roles

A literature review of stakeholder identification, drawing on both business management and environmental management literature, was submitted as D2.1. (Task 2.1.1). Two groups of stakeholders were identified. First those who can assist in scenario and model development, and in model validation, who are drawn from the institutions which implement policy. Second, the actors who are the targets of policy (or who may be affected by it) and whose behaviour will be captured in the agent based model. An interest-influence matrix will be used to identify the most relevant actors for the particular policies studied.

A limited scoping study was conducted in early 2009 by each partner to gain contextual information about their wider case study region. Employing a written interview guide, a round of approximately 5 informal interviews with officials (both public sector and practitioners) with an interest in the rural economy, farming, forestry and tourism was conducted. As well as supporting stakeholder identification, by investigating institutional structures and access to EU development funds, the interviews identified categories of municipalities and their differential evolutions, and relevant EU policy options and their likely impacts.

During discussion at the Zagreb, Croatia meeting (October 2009) it was decided that stakeholder participation in scenario design would occur at two stages, one at the pre-model stage and the other at the on-model stage. First, for each individual case study area, the views of institutional and local stakeholders would be elicited to identify policy areas of local relevance for further study. These would reflect the social, economic and environmental characteristics and needs of individual areas, and permit researchers subsequently to develop scenarios ('storylines'), consisting of plausible sequences of events

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and appropriate policy responses. At a second stage, in Autumn 2010, stakeholders would be confronted with these scenarios and the results obtained from modelling them. They would be asked to comment critically on scenario plausibility, the model's underlying assumptions about causality and actor behaviour, and the model's scope. At the same time, stakeholders will be invited to create new scenarios for the model.

3.2.2 Pre-model engagement with stakeholders

D2.2 (almost complete) reviews the literature on stakeholder input to scenario development and formulating agent decision rules (Task 2.2.1). Participative techniques may be used for a number of functions including identifying a focal issue; defining how systems work and the driving forces behind them; and development of storylines and policy options. Stakeholder participation is likely to enhance the robustness of the subsequent scenarios and hypothetical actor behaviour.

As outlined in the previous section, a second round of interviews was conducted early in 2010 in relation to one specific case-study municipality per project partner, and the results are presented in D2.2. These interviews identified relevant policy issues and appropriate policy measures, and provide material for scenario development.

3.2.3 On-model engagement with stakeholders

A two day workshop was conducted in Montpellier, France in February 2010 which explored a range of participative methods suitable for on-model stakeholder engagement (Tasks 2.1.2 and 2.3.1). These included participative simulations; role-playing games, participative (conceptual) modelling, and interactive storytelling. The preferred method for use in PRIMA was interactive story telling for the purposes of: refining the pre-determined scenario, its scope and outcomes; checking the conceptual models, and improving and validating the computer models. This method is based on the generation of a framework for telling a story from simulation outcomes. Its main advantage is that more concrete elements are provided for generating discussion with stakeholders.

3.2.4 Significant results

The identification of appropriate stakeholders to participate in model development and validation is an important step in PRIMA. Some useful tools are offered by stakeholder analysis, by which the human landscape in which policies are enacted, or where firms operate, can be systematically described.

A useful starting point is a stakeholder map, whereby a policy is dissected into its component elements and processes, prior to relevant actors being mapped onto it. From the first maps drawn, we decided that two types of stakeholders are to be engaged in the participative processes. Firstly are the actors whose behaviour is to be represented in the agent based models. These stakeholders, have been selected in a three steps procedure: (i.) defining the policy, its effects, processes and boundaries. (ii). identifying the groups and

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individuals who are affected by those social and natural systems , and (iii). prioritising those groups and individuals for involvement in the process. Identifying key contacts has been achieved by starting with known contacts and then snowballing.

The second group is involved in policy scenario development and model output validation. It includes policy experts and practitioners who may also be conceptualised as stakeholders who represent the interests of civil society, on whose behalf they develop appropriate policies. One approach for policy scenario development is to attempt to mirror the group actually involved in formulating policy for the locality, although a final decision on the approach to be taken has not yet been reached. Either group will be involved in the on-model stage (model improvement) next fall.

The scenarios developed in PRIMA have both quantitative and qualitative elements. The proposed method systematically follows 7 main steps.

1. Identify factors which shape the place including its endowments (e.g. land quality, accessibility, population size, planning constraints) and drivers of change. Also gain insight into agent behaviour (possible response to policy) to help design hypothetical policies.

2. Identify the focal issues which are perceived to be of greatest importance in the area and which future policy might address and have a measurable impact upon. In the context of PRIMA, only the impact of various EU policies is under consideration.

3. Identify a hypothetical policy response to reach a desired end point and appropriate measures.

4. Develop at least 2 storylines (future without policy change; future with hypothesised policy change). Agent behaviour will be included explicitly. Identify corresponding elements (variables, relationships) in the quantitative model and any underlying assumptions.

5. Validation of the storyline – plausibility of the assumption, actor behaviour and the outcome.

6. Final scenario consisting of a storyline and quantitative outputs from the modelling process.

7. Validation of the scenario (both quantitative and qualitative elements)

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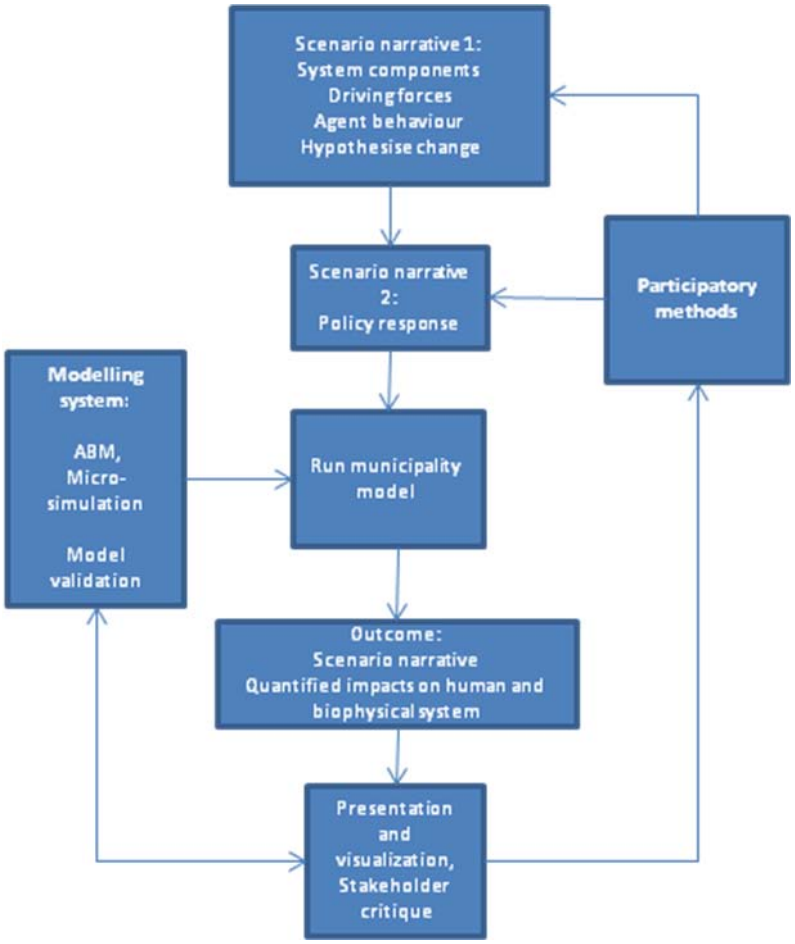

Figure 6 : Scenario development combining participatory methods and computer modelling

Source: adapted from Verburg et al (2006)

The following outputs were extracted from the interviews:

1. A description of the main processes and events which have occurred in the last 20 years (approximately) and which have shaped the municipality as it is today.

2. A list of Policy Outcomes, with scores allocated by respondents to show their perceived desirability for the case study area (priorities) and contextual information to help explain these responses.

3. For the high priority outcomes, a table showing the current measures available under EU funding streams, and the perceptions of interviewees as to whether these measures have the capacity to deliver the desired outcomes in the case study area.

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4. Where measures have been found inadequate, the reasons for expected failure.

5. Proposals for changes to existing measures, or proposals for new measures which are expected to achieve the Policy Outcome.

6. A comparison of the perceptions of the 2 stakeholder groups: do 'institutional' people have a different perception of the priorities and the likely effectiveness of policies from 'local' people?

7. A list of current policy measures which a) contributes to the delivery of the desired policy outcomes; and b) are thought to be effective; and also a list of 'improved' and new policy measures suggested by interviewees. This list forms the starting point for the development of a draft storyline, including policy response and hypothesised agent behaviour, which will subsequently be modified in the light of discussions with stakeholders. (see above)

3.2.5 Deviations and proposed corrective actions

Some unexpected events, like the Regional elections in France delayed somehow the work (the stakeholders were not available for surveys during the preparation of these elections, or feared that the project would interfere with their programme). Thus, the first stage (pre-modelling) has been completed late in June. The second stage (on-model engagement) is planned for Autumn 2010.

1. M2.1.2, M2.1.3: Some stakeholders have been interviewed to obtain contextual information about regions and individual case study areas. However, identification of all stakeholders, and the compilation of a database of all relevant stakeholders will only be possible when the actual policy for study has been finalised. This may be accomplished using a policy map and interest-influence matrix, as described in D2.1. No impact on other tasks or resources is expected.

2. D2.3 is in progress, but late. Work on D2.3 was initiated by the workshop in Montpelier, and is expected to be completed at end-July 2010. No impact on other tasks or resources is expected.

3.3 WP3/WP4 | Agent Based Modelling and Generalisation of Prototypical dynamics

Work Packages 3 and 4 focus on the development of agent-based and micro-simulation models and their use for the extraction of general rules to describe development dynamics of the studied regions. Initially, the micro-simulation model was expected to be applied only on a small set of pilot municipalities in WP3. Then, it was planned that WP4 would define simplified versions of these dynamics, to be extended to all rural municipalities of a region, based on available data. During this period of the project, we managed to design a common micro-simulation model for the municipalities which is used in WP3 and WP4 (see working papers (*21*) and (*22*)). We believe that it is a significant

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achievement of the work period, which was not expected at the beginning of the project. This increased the interrelation between WP3 and WP4, which was already high. Therefore we think clearer to write a common progress report for these two work packages.

3.3.1 Objectives of WP3 and WP4:

1. Design micro-simulation and agent based model framework, and implement it
2. Test the framework on pilot municipalities
3. Define a mapping between available data at municipality level and prototypical dynamics derived from the AB model developed in WP3
4. Evaluate the uncertainties on the results provided by the mapping
5. Implement a procedure of aggregating the results at region level, including the associated uncertainties.

3.3.2 Progress towards objective 1 (Design micro-simulation and agent based model framework, and implement it)

As first progress towards this objective, we performed an extensive literature review to look at the available frameworks and models that share concepts related to the PRIMA project (Deliverable 3.1 (*13*)). In addition, the survey contains an overview of the main actors and dynamics which are present in rural areas.

As a subsequent step, we developed the conceptual model of social-ecological dynamics. The focus of the model is on the population dynamics of rural municipalities and the decision making behaviour of actors of such areas. Output requirements from WP6 were considered as part of this modelling effort. This was followed by the implementation of the simulation framework prototype to be used for pilot simulations.

The development of the model was done using feedback obtained by regional stakeholders (work being coordinated on Work Package 2); by using the stakeholder feedback (such as the description of main issues in the municipalities, current state and future trends forecasted by stakeholders) to drive the definition of the aspects considered in the model.

A first implementation of the model has been completed. This implementation serves as a basis of the implementation of variants for each regional case study.

3.3.3 Progress towards objective 2 (Test the framework on pilot municipalities)

We are late on this objective because the model development took more time than expected. The main progress towards this objective concerns the generation of the populations of households.

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3.3.4 *Progress towards objective 3 (mapping between available data and dynamics of AB model)*

First, the elaboration of the agent-based model led our view of this mapping to evolve. With the common model for WP3 and WP4, the problem of the mapping becomes: how to use the data available at municipality level to initialise and parameterise the model in all the rural municipalities of a region. This problem concerns each main variable of the model: population (households), activities of the inhabitants of the municipality, distribution of housing, distribution of land-use, main services and activities taking place on the municipality.

In this respect, the significant progresses for mapping to initialisation data are:

- We designed a general method for generating a population of households from a variety of generally available statistical data at municipality level. This method is original and led to a publication [8].
- We mapped the initialisation of the land use using CORINE land-cover (see working paper (*17*)).
- We used the available data in Auvergne to detect a variety of network structures between the municipalities (see working paper (*23*). This approach will help us to determine prototypical dynamics depending on these structures.

The significant progresses in the mapping of the dynamics are:

- We used job surveys (see working paper (*18*)) to assess general probabilities for activity changes.
- We used general demographic data for individual and household dynamics.
- We established statistical rules linking a variety of municipality population characteristics and the presence of services of different types in Auvergne (see working paper (*19*)). The same method can be used in other regions.
- We studied the transitions in the land use.
- We established a format for scenarios of evolutions of the main variables which are outside the model dynamics (see working paper (*24*)).

We plan to study the model in details, on simplified data and on real data, in order to establish prototypical dynamics. These prototypical dynamics will probably include sets of municipalities, organised with particular network structures.

3.3.5 *Progress towards objective 4: Evaluate uncertainties on the mapping*

We evaluated some uncertainties of the method for generating the households. These uncertainties are evaluated on distributions which were not used in the process of generation. However, in the global objective of evaluating the uncertainties of the model dynamics, we are behind the schedule. This is due to the change of our modelling approach.

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We plan now to evaluate the uncertainties of the model on the past data that we gathered. The idea is to initialise the model in 1990, and to check its predictions in further dates where data are available. This approach will be completed with sensitivity analyses of the model to different changes of parameters and initial data.

3.3.6 Progress towards objective 5: Implement a procedure of aggregating the results at region level

We developed a first prototype for visualising the different state variables of the model on a map. It is possible to get the aggregate values of the different variables of the model (variables describing the population, housing, land-use, services) for the chosen municipality, some subsets of municipalities or the global region. This prototype is developed using a data warehouse approach (see working paper (*25*)).

3.3.7 Significant results:

- Design and implementation of a common general micro-simulation model for WP3 and WP4 : initially, we planned to design a micro-simulation model to be applied on a set of municipalities, and then design simplified version of the dynamics extracted form the first model outcomes. Indeed, a common version of the model was finally developed, which is a major outcome of the project.

- Design of a general method for generating households from different available data at municipality level: at this level, only average data are available and the method enables to generate relevant individual data to be included in the models (led to a publication, see (8))

- Adaptation and implementation of the general model to the six case studies (see working paper (*17*)), considering specificities in demography, productive activities, population dynamics, services and land. The generation of data used for the initialization of the micro-simulation is based on the same process which has been described by (8). However, as this process was conceived for the generation data of a specific region, it considers some data sources that are not available in other regions. For this reason the algorithm has been modified in some cases, with the objective of using the data that is available for the adapted regions. After the generation of individuals and their household structure has been done, the next step in the adaptation of the model is the definition and distribution of the productive activities which describe the structure of the employment in the region. This step is completed first by defining the set of activities to consider in the model and then by distributing these activities, along with other employment information, to the previously generated individuals. Currently, the initialization of the synthetic population and their activities has been

- First mapping of the model to the data available at municipality level, related to: household generation, land-use, services, to the six case studies

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- First prototype for visualising the data at different type steps and different levels of aggregation based on data warehouse techniques.

3.3.8 Deviations from work programme

The main deviations are the following:

- The development of a common model for WP3 and WP4, led to a closer coordination between WP3 and WP4 than initially planned (common meetings and visits). This yields a more powerful development due to a closer interaction between work packages.
- The development WP3 of simulations in pilot municipalities is delayed 3 to 4 months due to the delay on the development of the conceptual model and framework implementation (in part to work-package coordination adjustments) and data availability, as data for some of the selected pilot regions has been available later than planned.
- This shift in schedule affects the tasks related to the stakeholder validation of the pilot modelling framework and the acquisition of data from regional partners (Deliverable 3.3 and Milestone 3.4).
- In addition, due to the deviations from the work programme mentioned before, there is a delay in the detailed study of the model dynamics and evaluation of its uncertainties: we expect milestone 4.1 to be late of 6 months and deliverable 4.1 to be late of 3 to 4 months.
- Milestone 4.2 is reached for the mapping of data with the initial state of the model (see (*17*), but we need to complete it with the mapping of scenarios (this will be done in interaction with the stakeholders).
- We expect milestone 4.3 to be on time, and to be applied to all the case studies.
- Our view of prototypical dynamics also changed in the course of the project. We find it more interesting to consider groups of municipalities and prototypical structures of their network. We believe that this option is more relevant than considering isolated municipalities.

3.4 WP5 | Aggregated modelling and compatibility checking

3.4.1 Progress towards the PRIMA WP 5 Tasks

Task 5.1: Identify key economic and demographic factors at European and global level driving land use patters at regional and local scales.

A distinction is made between external economic and demographic factors (e.g. economic growth, population trends, patterns of consumption and production) and policies (liberalisation of international trade through WTO, global agreements on biodiversity (CBD) and the control of greenhouse gas emissions (Kyoto), agricultural policy (CAP), etc.). Task 5.1 has been finished. A draft report is available as D5.1. A baseline has been developed as a background for the case studies. Additional policies may be implemented when they are relevant for the case studies or policy experiments.

Task 5.2: Link IMAGE and GTAP to provide a working modelling framework supporting interactions between sectoral production growth rates, with the

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use, productivity and intensity of land from GTAP and the demand for land and environmental indicators from the IMAGE model. Task 5.2 has been finished. A draft report is available as D5.2.

Task 5.3: Develop a working regional economic model that interacts between global changes (GTAP-IMAGE interactions) and multi-agent based tool at local level. It covers activities agriculture, forestry, services and nature. A start has been made with a program for downscaling. We are working on a procedure to generate the basic regional data for the input. We have to start data generation and theoretical and empirical work to improve on the allocation procedures of national developments to regions. The division of work for this task has to made yet. Probably a combination of LEI, PBL and UMB.

Task 5.4: Interact land use patterns at a range of scales and interact with multi-agent based modelling. Based on existing calculations, we will develop land demand to quantify land use changes. Assess compatibility of key drivers and land use patterns at a range of scales.

This part of the work package has not been started yet. Probably IAMO and CEMAGREF will have an import role in this part. This work has to wait till the multi-agent models are ready.

Task 5.5: Run SEAMLESS-IF and design a method to compare the aggregated outputs from AB models (task 4.3 and 4.4) with outputs and indicators from GTAP-IMAGE and SEAMLESS-IF.This part of the work package has not been started yet. CEMAGREF will take the lead in this. This work has to wait till the multi-agent models are ready.

3.4.2 Significant results

See above. A baseline scenario has been developed as an implicit background for the regional studies and case studies. Its purpose is to have a plausible development of the world population and economy. The assumptions are defined at the level of the LEITAP/IMAGE model as used in this project, where the economic developments of most EU-countries are modelled explicitly and the rest of the world is divided into regions that contain groups of countries. The main drivers are population, technological change, and the depletion of some important natural resources like crude oil. The available physical area is also included explicitly in the model. All other factors are determined by mechanisms in the model, where the model guarantees consistency across sectors and countries. For the baseline we assume a minimum number of changes.

The baseline takes the USDA projections of population and GDP as a starting point. Crude oil production projections are based on IEA projections, while land productivity projections are based indirectly on FAO projections. The distribution of technological change is based on a historical study about differences in productivity growth between different sectors.

Last, in the past LEITAP and IMAGE have been coupled as an interactive process. This didn't work out correctly, and seemed overly complicated. For

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this reason the coupling has been simplified a lot. The coupling is now a one way process. First, a land supply curve is calibrated for LEITAP based on information from IMAGE. Second, information from IMAGE about the differences in productivity from different grid cells and the way IMAGE allocates land to these grid cells, a correction factor for LEITAP is derived and implemented that corrects for the difference between marginal and average productivity.

3.4.3 Deviations and proposed corrective actions

None

3.5 WP6 | Improvement of Impact Assessment

The work progress in Milestones and Deliverables in temporal order:

- M 6.1 Working list of Indicators (M5) was done in time. A report is available.
- D 6.1 Working paper "Screening impacts of EU policies on rural areas" (M8) was done including the discussion of the essential aspects for PRIMA. A report is available. An update is planned at month 30 by including further methodological developments in sciences and experiences in PRIMA.
- M 6.2 Impact Assessment Workshops (planned in M9) was held on M11 (after the summer holidays) in Dortmund. A report on "Theory and methodology of impact assessment in PRIMA in the context of SIA, SEA and EIA" is available.
- M 6.4 Matrix of geocompatible database (M12). A draft is available. The report will be updated at month 32, when the outputs of PRIMA in form of model results and indicators are available.
- D 6.2 Working paper "Impact indicators to scope policy impacts to stakeholder involvement" (M15). The working paper is available.

3.5.1 Progress towards the PRIMA WP 6 Objectives

Aim of the WP is the enhancement of IA methodology in the fields of screening, scoping and assessment. Indicators of the three main dimensions of sustainability (economic, social and environmental) for rural areas are extracted for the usage in PRIMA. The general methodological and theoretical discussion about the scaling down of policy impacts of the economic and land uses activities, with regard on potential results of ABM, aggregated models, policy analysis and stakeholder participation and Impact Assessment approaches is done.

Progress of the three main objectives of WP 6 was done (1) to discuss how to translate the transformed outputs of WP3, WP 4 and WP 5 into comparable indicators (D 6.2); (2) to structure the impact assessment analysis (D 6.2) and (3) to enhance IA methodologies (D 6.1 report, M 6.2 report. The methodological basis to confront PRIMA outputs to criteria defining the screening and the scope of SIA, SEA and EIA guidelines is available now.

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3.5.2 Progress towards the PRIMA WP 6 Tasks

Task 6.1: Theory and methodology on SIA, SEA and EIA). A review of literature and theory on impact assessment analysis with special emphasis on ecosystem and biodiversity functionalities in SIA, SEA and EIA and recent ongoing EU-projects is applied in the reports on M 6.1 and D 6.1. The review on SIAT will be updated during the project run according to the availability of results of those projects (D 6.1). The Screening methodologies and the identification of the most important impacts EU policies are analysed by WP 1 and are confronted with the essential impacts in terms of IA (D 6.2). A workshop about "theory and methodology of impact assessment in PRIMA in the context of SIA, SEA and EIA" was organized in Dortmund (M 6.2).

Task 6.2: SIA impact indicators and agent behaviours. A balanced list of impact indicators for ecologic, economic and social impacts to qualify land use changes on the basis of the CMEF (Common Monitoring and Evaluation Framework) was intensively discussed during PRIMA meetings (M 6.1 and D 6.2). The applicability of the indicators at agent behaviours is worked out together with WP3 for impact assessment and generalization (D 6.2). First discussions about thresholds concepts are applied.

Task 6.3: Impact matrix methods. First work was done for development of impact matrices to "translate" changes of land uses and agent behaviours to impact assessment (see D 6.2 annex). Results are planned in M 6.3 (M26) and D6.3 (M28).

Task 6.4: Screening and scoping. Screening analysis was done (in WP 1) to list measures proposed for inclusion into IA because of potential significant impacts on sustainability. Main aspects of screening and scooping are methodologically integrated in the D 6.1 and D 6.2 reports. The full methodology for screening and scoping is content of the Impact matrix methods (M28) and also of the update of D 6.1 report. The handbook of efficient recommendations D 6.4 will include the methodological advances of the PRIMA approach (M34).

Task 6.6: Elaboration of GEO-compatible databases with all data from the project is planned in M 35 (D 6.6). The draft of M 6.4 is available.

3.5.3 Significant results

- The main methodological outcomes from the Dortmund workshop were (i) the choice of the indicators of the Common Monitoring and Evaluation Framework (CMEF) as a suitable basis to confront the local and regional outputs to the Nuts 2/3 level and the rural development, (ii) the linkage between CMEF and SIA based on thresholds for each indicator and (iii) the confirmation of the relevance of the impact matrix methodology to "translate" changes of agent behaviours to impact assessment for Multi Agent simulations and aggregated models.

- Regarding scaling down of the policy impacts, it has been demonstrated that the missing links between SIA and policies' impacts assessment and

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prognosis of potential impacts can be seen on the local and regional scale level in the clarification of the policies' impacts; Effects are seen from the general change to the formulation of programmes or plans of investments, on the regional level carried out by the competent authorities to the projects funding and application of the projects by the local actors. In close cooperation with WPs 1, 3 and 4, WP6 provided a balanced list of impact indicators to the local scale.

- Beyond the results mentioned here before those related to indicators deserve a specific development. A classification of land use changes has been defined as a differentiation of land use into "extensive" and "intensive" to differentiate and to deepen the application to land uses with negative/positive impact on "water quality", "erosion", "Natura 2000/Biodiversity", "extensive agriculture", "forest structure" and "Tourism infrastructure in rural areas".

- Moreover, the methodological approach to reach the translation of the different model outputs into indicators for the usage in Sustainable Impact Assessment has been achieved. It includes the output analysis (i) by a checklist to describe Impact Assessment indicators in PRIMA in a comparable way (e.g. for the description of the data used in each case study region) and (ii) a proposal for the thresholds definition and their use. The methodological approach to combine data and thresholds via impact matrix methods to assess the policy impacts (positive, neutral, negative) is content of the following year. The approach has been built to be applied on from Nuts 2 to Lau 1 scale level.

3.5.4 Deviations and proposed corrective actions

No major deviations from Annex I and their impact on other tasks as well as on available resources and planning occurred. Because of reasons of financial contracting WP6 (Partner TU Dortmund) started with 2 month delay at 1st of January 2009. The later start has not impacted essential delays in the work progress. For D 6.1 and M 6.4, it was decided to update the available drafts following the methodological progress in PRIMA. No major corrective actions are needed.

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4 DELIVERABLES AND MILESTONES TABLES

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4.1 Deliverables (excluding the periodic and final reports)

Table 1 : Deliverables for WP0

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I	Delivered Yes/No	Actual / Forecast delivery date	Comments
D 0.1	Definition of the preliminary project plan including quality assurance, common formats; Scientific project plan; Dissemination project plan	0	P1	R	CO	M2	Yes	M3	
D 0.2	Project web site	0	P1	O	CO/PU	M5	Yes		
D 0.3	Intermediary report	0	P1	R	PU	M19	Yes	M20	

Table 2 : Deliverables for WP1

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I	Delivered Yes/No	Actual / Forecast delivery date	Comments
D 1.1	Working papers "Critical analysis and assessment of EU policy on multifunctional land use activities on national and regional level" / "Identifying driving forces and trends of their development at EU, national and regional level for Multifunctional land uses activities"	1	P3	R	CO/PU	M7	Yes	M20	
D 1.2	Assessing capacity gaps in the demand and supply side of resources, institutions and legislation	1	P3	R	CO/PU	M9	Yes	M20	
D 1.3	Working paper "Socio-economic characteristics of case study sites (regions and LAU's) and alternative scenarios for	1	P3	R	CO/PU	M12	Yes	M20	draft

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	multifunctional land use activities on national and regional scales"								
D 1.4	Data base on NUTS 2/3and LAU 1 / 2 about agriculture, forests, tourism, environment and types of land use	1	P3	D	CO	M12	Yes	M13	

Table 3 : Deliverables for WP2

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I	Delivered Yes/No	Actual / Forecast delivery date	Comments
D 2.1	Identifying and characterising stakeholders and their roles in pre, on- and post-model analyses	2	P6	R	CO	M3	Yes	M10	
D 2.2	Elucidating stakeholder perspectives with regards to scenario design and formulating agent decision rules: Methodologies & Results	2	P6	R	CO/PU	M8	No	M20	draft
D 2.3	Elucidating stakeholder perspectives with regards to agent-based model development: Methodologies & Results	2	P6	R	CO/PU	M15	No	M21	late, but no impact on the rest of the project

Table 4 : Deliverables for WP3

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I	Delivered Yes/No	Actual / Forecast delivery date	Comments
D 3.1	Working paper "A review of literature and actors and interaction patterns in rural areas"	3	P7	R	CO/PU	M3	Yes	M8	
D 3.2	Working papers: "A generic agent architecture for formalising agents in rural areas"; "A conceptual model on social-ecological dynamics in rural areas"	3	P7	R	CO/PU	M8	Yes	M12	
D 3.3	Adaptation of Micro-Simulation Model to PRIMA Study Regions[3]	3	P7	R	CO/PU	M15	yes	M20	change in name

[3] Name of the deliverable has been change because the old one was completely unrelated to the current state of the deliverable. Old name: Working paper on pilot case implementation and exemplary simulations and protocol for stakeholder interaction with models based on pilot case study

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D 3.4	File structure with ABMF input data for regional settings	3	P7	P	CO	M15	Yes	M19	delivered as Excel files, accompanied by a word explanatory note
D 3.5	Working paper "Interaction between policies and structural change in an uncertain environment"	3	P7	R	CO/PU	M18	No	M23 2010	WP3 effort is on modelling

Table 5 : Deliverables for WP4, 5 and 6

Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I	Delivered Yes/No	Actual / Forecast delivery date	Comments
D 4.1	Working paper on prototypical dynamics and their mapping	4	P1	R	CO	M18	No	M23	Delay in the detailed study of the model dynamics
D5.1	Framework and listing of key economic and demographic factors at European and global level driving land use patterns at a range of scales; and technical and methodological assessment of their compatibility	5	P5	R	CO/PU	M15	Yes	M20	
D5.2	Linkage of IMAGE and GTAP, providing a working modelling framework for aggregated modelling	5	P5	P	CO	M18	Yes	M20	
D 6.1	Working paper "Screening impacts of EU policies on rural areas"	6	P2	R	CO/PU	M8	Yes	M12	Draft version to be updated till month 24; agreement of PRIMA scientific officer
D 6.2	Working paper "Impact indicators to scope policy impacts to stakeholder involvement"	6	P2	R	CO/PU	M15	Yes	M12	

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4.2 Milestones

Table 6 : Milestones

Milestone no.	Milestone name	Work package no	Lead beneficiary	Delivery date from Annex I	Achieved Yes/No	Actual / Forecast achievement date	Comments
M 0.1	Agreement on work plan	**0**	**P1**	**M1**	**Yes**	M3	
M 0.2	Update workplan and schedule	**0**	**P1**	**M12**	**No**		No change in the schedule, so no updated workplan
M 0.3	Agreement on dissemination procedure	**0**	**P1**	**M1**	**Yes**	M2	
M 0.4	Project Web site structure	**0**	**P1**	**M1**	**Yes**	M4	
M 0.5	PRIMA meetings	**0**	**P1**	**M1, M7, M13**	**Yes**	M1, M8, M13,M18	
M 1.1	Identified key issues of national and regional strategic and planning documents on multifunctional land uses activities	**1**	**P3**	**M6**	**Yes**	M10	
M 1.2	Identified factors having influence on driving forces and trends for future development at EU, national and regional levels	**1**	**P3**	**M5**	**Yes**	M12	Amended March 2010
M 1.3	Identified key problems in institutions, legislation, supply and demand side	**1**	**P3**	**M12**	**Yes**	M12	Amended March 2010
M 1.4	Set of criteria developed for area identification (below NUTS 3) in respect of comparability between country data sets	**1**	**P3**	**M11**	**Yes**	M13	
M 2.1.1	Asses state-of-the-art in stakeholder identification	**2**	**P6**	**M1**	**Yes**	M11	Reading notes
M 2.1.2	Database of all relevant stakeholders	**2**	**P6**	**M2,M14**	**No**	M22	currently being compiled and will be completed when the actual policy for study has been finalised

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M 2.1.3	Contact and characterisation of stakeholders	**2**	**P6**	**M2,M14**	**No**	M22	part of previous database
M 2.1.4	Establish roles of stakeholders in pre-, on- and post-model analyses	**2**	**P6**	**M3**	**no**	M22	policy map and interest-influence matrix under progress
M 2.2.1	Strategies for stakeholder participation in scenario design and formulating agent decision rules	**2**	**P1**	**M6**	**Yes**	M6	Working report
M 2.2.2	Stakeholder suggestions for amending / validating scenario design of WP3	**2**	**P6**	**M8**	**No**	M23	planned for the next stakeholders meetings
M 2.2.3	Stakeholder suggestions for amending / validating agent decision rules of WP3	**2**	**P6**	**M8**	**No**	M24	interaction with stakeholders on model outputs are planned from mid-nov
M 2.3.1	Strategies for stakeholder participation which mirrors the development of agent-based models	**2**	**P6**	**M14**	**No**	M24	interaction with stakeholders on model outputs are planned from mid-nov
M 2.3.2	Stakeholder assessment of agent-based model functionalities	**2**	**P6**	**M15**	**No**	M24	interaction with stakeholders on model outputs are planned from mid-nov
M 3.1	Review of theory concepts and their applicability to the analysis and simulation of social-ecological dynamics	**3**	**P1**	**M3**	**Yes**	M7	
M 3.2	Conceptual model on social-ecological dynamics in rural areas	**3**	**P7**	**M5**	**Yes**	M10	
M 3.3	Agent-based simulation framework parameterised for pilot case	**3**	**P7**	**M11**	**No**	M23	framework
M 3.4	Stakeholder validated ABMF in pilot region	**3**	**P7**	**M18**	**No**	M23	interaction with stakeholders on model outputs are planned from mid-nov
M 3.5	Protocol for adjustment of ABMF to other regional settings	**3**	**P7**	**M12**	**Yes**	M19	
M 3.6	Meeting with all regional partners on conceptual framework and data demand/requirements / availability in region	**3**	**P7**	**M 14**	**Yes**	M11, M19	notes available on PRIMA website

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M 3.7	Templates for data input to be filled in by regional partners	**3**	**P7**	**M15**	**Yes**	M19	Excel files
M 3.8	File structure for organisation and storage of regional data	**3**	**P7**	**M15**	**Yes**	M19	file template
M 3.9	Data from regional partners to parameterise regionally adapted models	**3**	**P7**	**M17**	**Yes**	M19	database
M 4.1	Prototypical dynamics on the pilot region case studies	**4**	**P1**	**M14**	**No**	M20	Delay in the development of conceptual model
M 4.2	First mapping using the pilot model	**4**	**P1**	**M18**	**No**	M22	Need to be completed with mapping of scenarios
M 4.4	Comparison of outputs from AB models and aggregated models	**4**	**P5**	**M18**	**No**	M22	late because of delays in WP3 model
M 5.1	Analytical framework of technical and methodological requirements to assess key drivers and land use patterns	**5**	**P5**	**M15**	**Yes**	M20	Internal assessment in the project
M 5.2	Working modeling framework for aggregated modeling	**5**	**P5**	**M18**	**Yes**	M20	Testing and simulation against a range of alternative scenarios
M 6.1	Working list of Indicators	**6**	**P2**	**M5**	**Yes**	M8	
M 6.2	Impact assessment workshop	**6**	**P6**	**M9**	**Yes**	M12	
M6.4	Matrix of geocompatible database	**6**	**P1**	**M12**	**Yes**	M17	Draft version to be updated as indicators results are provided

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5 PROJECT MANAGEMENT

5.1 Consortium management tasks and achievements

Baptiste Haudidier
Nadine Turpin
Ramon Laplana

The Consortium management activities have been organised in consistency with the DoW:

- administrative and financial project management
- scientific coordination
- dissemination and exploitation of the results

According to the DOW, a steering committee, composed of representatives of each institution, helps for management and scientific dissemination (cf table 7).

Table 7 : Steering committee composition

WP0 and site manager	Ramon Laplana and Nadine Turpin	Cemagref
WP1 and site manager	Diana Kopeva	UNWE
WP2 and site manager	Marian Raley	UNEW
WP3 and site manager	Omar Baqueiro	IAMO
WP4	Guillaume Deffuant	Cemagref
WP5	Geert Woltjer	LEI
WP6	Burghard Meyer	TUDo
Site manager	Ladislav Jelinek	UZEI
Site manager	Mario Njavro	AFSZ
UMB representative	Eirik Romstad	UMB
PBL representative	Arno Bouwman	PBL
RuG representative	Wander Jager	RuG

5.1.1 Administration of the Community financial contribution

All the payments have been allocated in due course to the different partners. All financial data related to payments are recorded in a specific account table in Cemagref.

Each partner assumes its own internal procedure for archiving expense documents.

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5.1.2 *Consortium agreement*

The consortium agreement has been granted[4], agreed and signed by all partners participating on the project.

5.1.3 *Project report templates and procedure*

Project reporting templates have been designed at the beginning of the project and are available for all partners. They concern deliverables and milestones. Templates were proposed by the coordination for timesheets as well. All partners have agreed on the use of mandatory records, with each beneficiary relying on its own.

5.1.4 *Reports revision process*

According to the management plan, all reports (deliverables and milestones) have been delivered with the acceptance of the relevant WP leader, reviewed by the scientific coordinator and then checked by the coordinator. After validation, final documents have been uploaded in the part of the website dedicated to deliverables.

The organisation of results for presentation and publication is managed by the WPs leaders.

5.1.5 *Communication with the PRIMA scientific officer*

All requests from the Community Scientific Officer (*i.e.* communication strategy) have been satisfied in due time.

5.1.6 *Integration between WPs*

The coordinator has established a mailing list for the project members to facilitate communication (discussions, negotiations and decision making) through electronic mails. Due to the highly pluri-disciplinary nature of the project, some scientists have been in frequent communication to interoperate approaches and methods. In addition, WP leaders spent short periods in each other's institutions in order to learn specific methodological aspects or to organize local interviews meetings (*eg*. IAMO -> Cemagref; TUDo - > IAMO).

Meetings' organisation: following the kick-off meeting held in Brussels, meetings have been organized in partnership with the concerned institution (ie. UNWE, AFSZ, UZEI), involving a scientific part, a study site visit and meet-

[4] Accessible in the collaborative workspace by PRIMA members: `https://prima.cemagref.fr/intranet-workspace/administrative-financial-reporting/project-documents/consortium-agreement/view`

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ings with local stakeholders. The minutes of these meeting are available on the web site for all partners to access.

Specific thematic workshops have been organized between September 2009 and February 2010 in Dortmund, Clermont-Ferrand and Montpellier (minutes are available on the website):

- Date:17th –18th September 2009
  Venue: TU Dortmund,
  Topic: Theory and methodology of impact assessment in PRIMA in the context of SIA, SEA and EIA
  Participants: Prima scientists, mostly WP6 members
  Invited speaker: Marta Perez Soba, Alterra; Land-use function outputs of SENSOR FP6 funded project compared to expected PRIMA results

- Date: 9th October 2009
  Venue: Halle (Saale), Germany
  Topic: First insights on the link between WP3 model and WP6 indicators for Impact Assessment..
  Participants: PRIMA WP3/WP6 scientists

- Date: 1st –3rd February 2010
  Venue: Cemagref- Montpellier
  Topic: To design and train mutually on methods for stakeholder on-model and post-model engagement.
  Participants: PRIMA WP2 scientists

- Date: 24th February 2010
  Venue: Halle (Saale), Germany
  Topic: Draft definition of Land Use modelling approach suitable for the WP3 model.
  Insights on linking WP3 model and WP6 indicators for Impact Assessment by using the proposed Land Use model.
  Participants: PRIMA WP3/WP6 scientists

Several Audio conferences have been organized: WP4/WP3 on a monthly rate in 2010, internal WP1 (march/april/october 2009)

The collaborative space set up as an internal part of the PRIMA website (Cf. below) was dedicated to internal project discussion and exchanges. Several tools, including Wiki pages were proposed to and tested by PRIMA partners

EU Database acquisition: on the behalf of the consortium (mostly WP3/WP4 modellers) the coordinator negotiated with Eurostat (ECHP database).

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5.1.7 Advisory board

According to the DoW, an advisory board has been set up at the beginning of the project. Its role is to assist the consortium for the scientific development and dissemination actions. The board is composed of two well recognised scientists, whose expertises cover the main scientific fields of the rationale of PRIMA.

Pr. Markku Ollikainen:
Professor of Environmental and Resource Economics
Department of Economics and Management / University of Helsinki, Finland
Fields of expertise: Resource and environmental economics, Forest economics, Multifunctionality

Dr. Klaus G. Troitzsch:
Professor of computer applications in the social sciences
Institute for IS Research
University Koblenz-Landau, Deutschland
Fields of expertise: Social science methodology , Modelling and simulation in the social sciences , Multi-agent simulation in social science applications , Stochastic processes, Demography , Nonlinear dynamics , Synergetics and social sciences , Axiomatization of theories in the social sciences , Computer science applications in public administration

Advisors were invited during the project meeting, and the PRIMA partners did their best to follow their advices. At M6, main comments and advices were the following:

- Guaranty for success: the project has a lot of prerequisites, from each the software are close to be running, clear view on how RuG and Cemagref blocks are going to be integrated in the core model (*Comments taken into account*)
- To have in mind that stakeholders may influence greatly the modelling framework, maybe if the modellers propose class-objects that the stakeholders could choose to use or not. (*Comments taken into account*)
- Suggestion to provide a toy model that will be build within the next months may be the basis for a "half-automatic factory" of models. (*started but took more time than initially planned: the work effort was put WP3/WP4 integration*)
- Some differences in framing between the different packages, but opinions should converge, especially on share understanding on multifunctionality and on the consequences of the policy scenarios. The bigger the understanding, the easier it will be for the modellers. In the models, what you put in strongly condition what you get out: modelling the trade-offs between commodity and non-commodity outputs is a challenge. Close cooperation is needed. (*inter WP meetings have been organized*)

At M18, main comments and advices were:

- - Similar to a FP project led by one adviser, where all building blocks were more or less well prepared by midterm, but nothing was really con-

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nected. From experience, PRIMA will succeed in putting all the building blocks together. Some of them will have to be slightly reshaped in order to fit them smoothly together, but project advances showed that this is possible. (*The Clermont-Ferrand meeting, involving case study leaders and modelling teams in may-june 2010, addressed these concerns*)

- Guess to have some more meetings between the regional teams and the modelling teams, and these meetings will be something much like the discussion between project members and stakeholders, and these discussions will have to be planned once first running regional models are available — which will be the main task of the third project year. (*idem.*)
- Case studies are interesting, but need a step towards more concrete work and links between the case studies and models. (*idem.*)

5.1.8 Co-operation with other projects

As planned in the DoW, Cemagref – as coordinator - has signed a contract with the SEAMLESS association, for the use of the SEAMLESS licence (convention; meeting in 2010). Cemagref is now part of the SEAMLESS association, who is favourable to common model development.

One member of the coordination team attended the final conference of the SENSOR FP6 project ('*User Forum for Sustainability Impact Assessment Tools Land Use: Risk, Transparency and Integration*', April 22-23, 2009, Brussels, Belgium). A WP leader of SENSOR attended a PRIMA WP6 meeting.

5.2 Problems which have occurred and how they were solved or envisaged solutions;

A mistake was discovered for the planning of WP6 work: the initial delivery date of D6.1 (M8) was deemed too early for the work to really benefit from the outputs of WP3/4/5. In accordance with our scientific officer, a shortened draft version was issued on time, to be completed on M24.

5.3 Changes in the consortium, if any;

Under new WP leaders: WP2, 3, 5. Two WP leaders (WP2, WP3) have left their institutions and one (WP5) has wished to be stood in. After formal exchanges with the three concerned institutions and without any difficulty, three scientists (already involved at the beginning of the project) have accepted to play a WP leading role.

Change in the grant agreement: Scientists from LEI are technically employed by another entity called *Stichting DLO*, the Commission wants this entity to be explicitly mentioned as a subcontractor in the grant. This modification had no effect on the workloads or endowments of PRIMA partners.

Change in scientist: Three scientists left their institutions in PBL, IAMO and UNEW: they were replaced by scientists with the same fields of expertise.

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5.4 List of project meetings, dates and venues

Agendas and minutes of the meetings are available in the collaborative space, and included in M 0.5. PRIMA's meetings for all partners included:

Date : 4th- 5th November 2008
Venue: CLORA / Brussels, Belgium
minutes available at : https://prima.cemagref.fr/intranet-workspace/reunions-internes/brussels-2008-11-04-2008-11-05/
Date : 26th- 27th May 2009
Venue: UNWE / Sofia, Bulgaria
minutes available at : https://prima.cemagref.fr/intranet-workspace/reunions-internes/sofia-may-26-27th-2009/
Date: 28th-30th October 2009
Venue: University of Zagreb Faculty of Agriculture / Zagreb, Croatia
minutes available at : https://prima.cemagref.fr/intranet-workspace/reunions-internes/zagreb-2009-10-29-30/
Date: 24th- 26th Mars 2010
Venue: UZEI / Brno, Czech Republic
minutes available at : https://prima.cemagref.fr/intranet-workspace/reunions-internes/brno-2010-03-24-to-26/

The project meetings have been completed by several WPs and inter-WPS meetings, as depicted in table 8 (PRIMA WPs meetings)

Table 8 : PRIMA WPs meetings

Title	Date and Place	Main conclusions
Agent Based Modelling Workshop	Clermont-Ferrand, France. 14/10/2009	• **LISC** develops a micro-simulation model of municipality structural change, without a model of farming practises. • **IAMO/UZEI** Replicate method for initializing municipality households • A hierarchy of models shall be organized. This will be shared by all models corresponding to each region. • The Agent-Based model will replace some decision rules in the Micro-simulation model. • WP4 Model will be based on simplifications of WP3 model. We envisage now to implement it as a network of municipalities.
WP3/WP6 Meeting	9/10/2009 Halle (Saale), Germany	• First insights on the link between WP3 model and WP6 indicators for Impact Assessment.
WP2/WP3 meeting	1-3/02/2010 Montpellier (France)	• schedule and frame the stakeholders interactions along the on-modelling phase
WP3/WP6 Meeting	24/02/2010 Halle (Saale), Germany	• Draft definition of Land Use modelling approach suitable for the WP3 model. • Insights on linking WP3 model and WP6 indicators for Impact Assessment by using the proposed Land Use model.
Modelling Workshop/Visit	Clermont-Ferrand 25/05/2010 – 4/06/2010	• Focus on networks of municipalities. • Reorganisation of the collaboration between modelling teams and case study teams. • Definition of objectives for November meeting. • Organisation of working papers.

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5.5 Project planning and status;

Some activities were postponed or delayed. Consequently, some deliverables and milestones were not accomplished as planned, hopefully with no significant impact to the progress of the programme.

Delays have been caused by a change in the concepts of the models: instead of developing a first model (wp3), then to wait for is outputs to develop the WP4 model, both have been designed in close cooperation. Such a large change is not supposed to occur in the second period of the project.

Of course, overuse of time in the first period will not impede time allocation on the second period. Thus, the original amount of work planned for the next tasks is still accurate. However, the project interaction between teams and case studies works well: several working meetings have been organised, and will be planned to coordinate the working effort so that no delay should occur. The main discussions and reporting events have been carefully scheduled till the end of the project: Nov 2010 for the first on-model tests with stakeholders for example, leading to improvements of the models.

5.6 Impact of possible deviations from the planned milestones and deliverables, if any;

See comments in the 'scientific achievements' part (§ 3.1.4) and deliverables / milestones' tables (4.1 & 4.2).

5.7 Any changes to the legal status of any of the beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs;

PBL experienced a merger and are now identified as a subdepartment of the *Ministerie Van Volkshuisvesting, Ruimtelijke Ordening En Milieubeheer*. The beneficiary remained a non-profit public bodies, but the cost method was modified (*actual indirect*)

5.8 Development of the Project website, if applicable;

As described in D0.2, the PRIMA website fulfils a triple objective: (i) a communication tool for the general public and the stakeholders involved in the research process; (ii) a repository for the public deliverables, milestones and related publications of the project; (iii) a collaborative tool for the members of the project. Granted with passwords, PRIMA members, scientific advisers and EU reviewers have access to the collaborative space where, depending on their editing rights, they can read, modify, submit and publish files.

The website was operational at the beginning of the project. Due to the scarcity of available deliverables and research outputs in the first steps of the pro-

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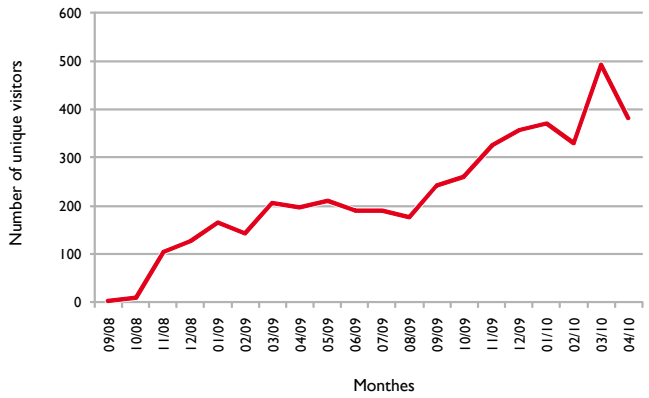
ject, the external traffic has remained rather modest but is on a steady rise, reaching 400 unique visitors per month in mid-2010 (with 20 000 hits and a bandwidth of 500 MB as monthly averages).

Figure 7 : Monthly traffic of the PRIMA website



5.9 Use of foreground and dissemination activities during this period (if applicable).

The PRIMA dissemination plan aims to spread scientific achievements to the widest possible audience of communities. Communications activities involve attending conferences, submit papers, provide diffusible information.

5.9.1 Conferences

Date	**Title**	**Number of persons attended + other information**
2-3/12/2008	Dissemination meeting of European Projects in the Czech Republic; organizer: UZEI - Kouty, Vysocina	Speaker: Jelínek Ladislav Topic: The PRIMA project
10-12/03/2009	AgSAP conference 2009. Wageningen University and Research Centre	Speaker: Turpin, Nadine Topic: The PRIMA project (Cf. ref. (26))
06/2009	8th International Workshop of Spatial Econometrics. Besançon	Speaker : Lionel Vedrine Topic : regional growth and spatial spillovers
21-25/09/2009	7th Brazilian Congress of Agroinformatics (7. Congresso Brasileiro de Agroinformática)	Speaker: Sonia Ternes Audience: ~200 Topic: first modelling approach to municipality dynamics
09/2009	Annual Scientific Conference of the UNWE	Speaker: Diana Kopeva Topic: The PRIMA project
9-11/12/2009	113th EAAE Seminar “The role of knowledge, innovation and human capital in multifunctional agriculture and territorial rural development” Belgrade, Serbia	Speakers: Gro Ladegård & Eirik Romstad Topic: Understanding the demand side and coordinating the supply side for connected goods and services

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19/04/2010	Seminar on modelling municipality dynamics IRES - Istituto di Ricerche Economico Sociali del Piemonte	Speakers: Sylvie Huet & Floriana Gargiulo Audience: ~20 Topic: Link to data and main assumptions of the model
20/05/2010	Seminar in University of Tours Computer Science Laboratory	Speaker: Hadj Mahboubi Audience: ~20 Topic: Design of data warehouse for model results.
Planned		
May 2010	Regional Studies Association Annual International Conference 2010. Pécs	Speaker : Lionel Védrine Topic : endogenous potential development of European regions
16-19/06/2010	Implementation of landscape ecological knowledge in practice (ILECO2010)" Poznań	Speaker: Meyer, B.C. Topic: Sustainability Impact Assessment (SIA) of policies
19 -23/08/2010	Sustainable Regional Growth and Development in the Creative Knowledge Economy- ERSA-Jönköping, Sweden	Speaker: Nadine Turpin Topic:

5.9.2 Articles Published, Press coverage, development web site, etc.

Date and Type	**Details**
Web site:	https://prima.cemagref.fr
Published	Gargiulo, F.; Ternes, S.; Huet, S. and Deffuant, G. (2010), 'An iterative approach for generating statistically realistic populations of households', *PLoS ONE* **5**, e8828 Ternes, S., Gargiulo, F., Huet, S., Deffuant, G. - 2009. Double modelling of the dynamic of activities in rural municipalities. 7th Brazilian Congress of Agro-informatics (7. Congresso Brasileiro de Agroinformática), 21/09/2009 - 25/09/2009, Viçosa, BRA. 5 p. S. Bouayad-Agha, L. Védrine, 2010, Estimation strategies for Spatial Dynamic Panel using GMM. A new approach to the convergence issue of European regions, *Spatial Economic Analysis*, 5(2), juin 2010
Under revision	S. Bouayad-Agha, N. Turpin, L. Védrine, Fostering the endogenous potential development of European regions : a panel data analysis of the cohesion policy on regional convergence over the period 1980-2005, en revision *International Regional Science Review*
Scientific publications in preparation	Cemagref, UNEW, UNWE, Screening impact of European cohesion policy measures at various scales : enhancing the scope of Sustainable Impact assessment towards multifunctionality, *PRIMA working paper, available at: https://prima.cemagref.fr/intranet-workspace/wp/wp1-private/wp1-working-papers/* (2010). IAMO, Cemagref, UZEI, UNWE, UNEW, AFSZ, Progress on the Initialization of Case Study Regions. , *PRIMA Working Paper. Available at: https://prima.cemagref.fr/intranet-workspace/wp/wp3-private/working-papers/progress-on-the-initialization-of-case-study-regions/* (2010).

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	Cemagref, Definition of Matrix for Transition of Activities at Regional Level. , *PRIMA Working Paper. Available at: https://prima.cemagref.fr/intranet-workspace/wp/wp3-private/working-papers/dynamics-of-activity-changes-in-the-auvergne-case-study/* (2010). Cemagref, Mapping municipality services to micro-simulation model by use of statistical-rules. , *PRIMA Working paper. Available at https://prima.cemagref.fr/intranet-workspace/wp/wp3-private/working-papers/mapping-municipality-services-to-micro-simulation-model-by-use-of-statistical-rules/* (2010). S. Huet, G. Deffuant, Common Framework for Micro-simulation Model in PRIMA project. , *PRIMA working paper. Available at https://prima.cemagref.fr/intranet-workspace/wp/wp3-private/working-papers/conceptual-model-on-social-ecological-dynamics-micro-simulation-model/* (2010). W. Jager, Q. Zhang, Individual Actor Model, *PRIMA working paper. Available at https://prima.cemagref.fr/intranet-workspace/wp/wp3-private/working-papers/individual-actor-decision-making-model-social-network-abm/* (2010). Cemagref, IAMO, A Study of Municipalities Commuting Network Structures. *PRIMA Working Paper. Available at: https://prima.cemagref.fr/intranet-workspace/wp/wp3-private/working-papers/a-study-of-municipalities-commuting-network-structures/* (2010). N. Dumoulin, Conceptual Structure for the Specification of Scenarios. , *PRIMA Working paper. Available at https://prima.cemagref.fr/intranet-workspace/wp/wp3-private/working-papers/conceptual-structure-for-the-specification-of-scenarios/* (2010). Cemagref, Graphical visualization of micro-simulation state using GIS map projections. , *PRIMA Working Paper. Available at: https://prima.cemagref.fr/intranet-workspace/wp/wp3-private/working-papers/graphical-visualization-of-micro-simulation-state-using-gis-map-projections/* (2010). Meyer et al. (=Group of WP 6, Deliverable D61): "Screening impacts of EU policies on rural areas" Methods paper how to screen the policy impacts in municipalities in the context of impact assessment sciences. Planned in: *Environmental Impact Assessment Review*, Impact Factor 1.25 Meyer et al. (=Group of WP 6, Deliverable D62): Sustainability impact assessment of policies on the municipality level. Planned in: *Impact Assessment and Project Appraisal* (without impact factor)

5.9.3 Other dissemination activities

Mailing list: A mailing list has been established at the beginning of the project and updated when necessary to support efficient communication.

Training: four PhD students have a significant involvement in PRIMA. Use of project material is made in several MsC level courses by PRIMA scientists (Meyer, Turpin…)

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Share dissemination documents

- *Flyer:* For general information about the project, a 4-pages flyer has been set up. 500 copies will be attributed in the next weeks to PRIMA scientist, to be used in all scientific or any other events they will participate. This flyer will be also sent to specific target communities by Email.

- *Presentation support:* A general PRIMA PowerPoint, presenting an overview of the project, was also made available for PRIMA members.

- *Newsletter:* The initially planned newsletter was replaced, for efficiency matters, by another media with a wide audience including science and policy actors. The participation, in the form of an editorial article of 3 pages in the *International Innovation Report* (report distributed to 39 000 readers across the whole of Europe, including member states, candidate countries, associated and INCO countries) was considered and validated by the coordination (publication during summer). The next newsletter including most salient results will be delivered in accordance with the DoW and the Dissemination plan

- *Participation to the FP7 communication strategy:* on Request of the Commission for FP7 external communication strategy, a A4 page factsheet of PRIMA was provided.

- *Poster:* A PRIMA poster, presented in a conference (26), was provided for use by all partners. It outlines the objectives, structure, partnership, methods and expected results.

- *Newspaper article:* One press interview (Mario Njavro/ Ramon Laplana) by a Croatian regional newspaper: communication about the objectives of the local trip/meeting, the aims of the PRIMA project and the importance of the Istrian case study for the project.

Meetings with local stakeholders

As part of WP1/2 activities, meetings have involved local/regional stakeholder. In the Bulgarian case study, representatives of national bodies have also been met: head of 'rural development' division / Ministry of Agriculture and Forests, head of 'European Integration' division / Ministry of Environment and Water, as well as other national experts.

During the visits associated with project meetings, the following stakeholders exchanged with the attendees:

Croatia: Director of the Istria Agency for Rural Development (http://www.azrri.hr/). *Topics covered*: (i) Local economic activities, their structure and the main development issues they raise; (ii) Istria rural development strategy: leader approach, trans-border cooperation, role of local action groups, integration between different development programmes (focus

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on irrigation and infrastructures); (iii) Discussion on local breeds, conservation programmes, development programmes, local products.

Czech Republic: manager of the 'Local Action Group' (covering the '*mikroregion*' Strážnicko) and mayor of the municipality of Tvarozna Lhota. *Topics covered*: (i) Regional development dynamics, as well as the past and actual projects designed to comply to EU cohesion aims; (ii) Viewpoint on the strengths and weaknesses of the region, as well as on how the municipality is acting in relation to the structural funds.

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6 EXPLANATION OF THE USE OF THE RESOURCES

TABLE 3.1 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **CEMAGREF** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP0, 1, 2, 3, 4, 6	Personnel costs	463 739,62	Personnel costs
WP0, 1, 2, 3, 4, 6	Remaining direct costs	34 321,34	Travel and subsistence expenses, consumables, meetings registration fees, translation, meetings organisation expenses
TOTAL DIRECT COSTS		***498 060,96***	

TABLE 3.2 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **TUDo** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP0,1, 2, 3, 6	Personnel costs	64 859,66	Salaries of working package leader and student assistant for the first project reporting period
WP6	Remaining direct costs	4 780,89	Travel expenses, Impact assessment workshop in Dortmund, Coordination
TOTAL DIRECT COSTS		***69 640,55***	

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TABLE 3.3 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **UNWE** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP0, 1, 2, 3, 6	Personnel costs	49 099,08	Honoraria under Civil Contracts of the Partner Project Coordinator (Management) for 18 months each Honoraria under Civil Contracts of 5 researchers in total for 11 man months Honoraria under Civil Contracts of 3 researchers in total for 2.5 man months Honoraria under Civil Contracts of 1 researcher in total for 1 man month Honoraria under Civil Contracts of 1 researcher in total for 1 man month
WP0, 1, 2, 3, 6	Remaining direct costs	9 049,68	Travel and subsistence: Kick-off meeting in Brussels – 2 people; Meeting under WP6,Dortmund -3 people; Annual project meeting, Zagreb – 4 people; Meeting in Brno – 2 people
TOTAL DIRECT COSTS		***58 148,76***	

TABLE 3.4 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **UMB** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP1, 5	Personnel costs	10 290,70	Personnel costs
WP1, 5	Remaining direct costs	2 739,56	Travel and subsistence
TOTAL DIRECT COSTS		***13 030,26***	

TABLE 3.5 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **DLO** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP2, 5	Personnel costs	45 380,59	Personnel costs
WP5	Remaining direct costs	4 399,20	Travel and subsistence expenses (NB: conflated with Personnel Costs in the online Form C)
TOTAL DIRECT COSTS		***49 779,79***	

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TABLE 3.6 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **UNEW** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP0, 1, 2	Personnel costs	45 961,62	Costs for Marian Raley (WP2 leader), Guy Garrod and Lee Stapleton to participate in WP2 and WP1 activities
WP0, 1, 2	Remaining direct costs	9 566,12	Costs for team members attending Prima meetings (Brussels, Sofia, Zagreb and Brno) and for collection of data for WP1 and WP2 (including accommodation and travel where interviews were required)
TOTAL DIRECT COSTS		***55 527,74***	

TABLE 3.7 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **IAMO** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP0, 1, 2, 3, 4, 5, 6	Personnel costs	106 585,11	Personnel Costs for 1 researcher with 19.27 PM; for 1 researcher with 3.78 PM; for 1 researcher with 1.41 PM and for 1 researcher with 0.44 PM
WP0, 1, 2, 3, 4, 5, 6	Remaining direct costs	5 867,29	Travel costs
TOTAL DIRECT COSTS		**112 452,40**	

TABLE 3.8 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **RuG** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP3	Personnel costs	44 654,03	Salaries of PhD and project leader for 18 months each
WP3	Remaining direct costs	3 664,09	Project meetings at Brussels, Sofia, Clermont-Ferrand, Brno and Guildford
TOTAL DIRECT COSTS		**48 318,12**	

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TABLE 3.12 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **AFSZ** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP1, 2, 3, 4	Personnel costs	19 608,65	Personnel cost based on the activities recorded in the timesheet and hourly rates. Activities include organisation and data collection, data analysis, communication, reporting, dissemination.
WP1, 2, 3, 4	Remaining direct costs	6 222,62	Travel, Participation on the project's meeting (Sofia, Montpellier, Brno) and travels to Istria Brussels (kick-off): 1018,27 € Sofia: 2109,61 € Montpellier 991,73 € Brno: 793,50 € Istra (total): 1309,51 €
TOTAL DIRECT COSTS		***25 831,27***	

TABLE 3.13 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **PBL** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP1, 5, 6	Personnel costs	4 878,09	102,5 h
WP1, 5, 6	Remaining direct costs	1 888,48	Travel, hotel and daily allowance
WP1	Personnel costs NOT declarable	761,50	Personnel cost (associated with the kick-off meeting in Brussels) are NOT declarable because in 2008 no data was entered on a timesheet. The costs are NOT calculated in the total costs. Travelling costs for Brussels though are calculated.
TOTAL DIRECT COSTS		***6 766,57***	

TABLE 3.15 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR **UZEI** FOR THE PERIOD 1 NOVEMBER 2008 – 30 APRIL 2010			
Work Package	**Item description**	**Amount**	**Explanation**
WP1, 2, 3, 4, 6	Personnel costs	16 705,00	Share of salaries of 4 researchers, (permanent staff) and 3 Junior researchers (of 1 student, 1 postdoctoral
WP1, 2, 3, 4, 6	Remaining direct costs	9 261,00	Travel expenses of six meetings and workshop. The organisation of international workshop meeting in region South Moravia, Brno, 26.-29.3.2010
TOTAL DIRECT COSTS		***25 966,00***	

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7 Project effort: planned/actual

In the following table: - P months are the persons month planned in the DOW for the total duration of the project
- A months are the actual persons month for the first reporting period

Effort for the reporting period (persons month)																
Partner	**WP 0**		**WP 1**		**WP 2**		**WP 3**		**WP 4**		**WP 5**		**WP 6**		**Total**	
	P	**A**	**P**	**A**	**P**	**A**	**P**	**A**	**P**	**A**	**P**	**A**	**P**	**A**	**P**	**A**
1. Cemagref	13,0	**9,9**	2,0	**11,5**	6,0	**10,9**	27,0	**28,9**	24,0	**14,1**	3,0		5,0	**3,4**	80,0	**78,8**
2. TUDo	1,0	**0,5**	2,0	**2,0**	2,0	**0,5**	4,0	**1,0**	2,0				17,0	**6,8**	28,0	**10,8**
3. UNWE	1,0	**0,5**	11,0	**11,0**	4,5	**2,5**	1,5	**1,0**	1,0		2,0		4,0	**1,0**	25,0	**16,0**
4. UMB			1,0	**1,0**							5,0				6,0	**1,0**
5. DLO	1,0		3,0	**0,4**	2,0	**1,0**					17,0	**5,0**			23,0	**6,4**
6. UNEW	1,0	**1,6**	3,0	**2,6**	17,5	**9,4**	1,5		1,0						24,0	**13,5**
7. IAMO	1,0	**0,5**	1,0	**0,2**	4,0	**4,6**	30,0	**18,0**	5,0	**0,4**	5,0	**0,1**	3,0	**0,4**	49,0	**24,2**
8. Rug							18,0	**14,0**							18,0	**14,0**
12. AFSZ			6,0	**6,2**	3,5	**1,8**	3,5	**1,8**	1,0						14,0	**9,8**
13. PBL			2,0								7,0	**0,4**	1,0	**0,5**	10,0	**0,9**
15. UZEI			3,0	**3,3**	2,5	**3,8**	7,5	**1,3**	1,0			**0,2**		**0,3**	14,0	**8,9**
Total	**18,0**	**13,0**	**34,0**	**38,1**	**42,0**	**34,6**	**93,0**	**66,1**	**35,0**	**14,5**	**39,0**	**5,7**	**30,0**	**12,4**	**291,0**	**184,4**

The total effort within the first reporting period is, for all partners excepted P1, more or less what was initially planned for this phase. Concerning Cemagref (P1), a large discrepancy is acknowledged between the estimated and actual effort. It is due to: (i) *Policy analysis*: as mentioned, the review of the EU policies and documents on national and regional level took more time than initially planned; (ii) *Clusterisation/ data collection effort*: specific methodological developments were taken by Cemagref teams; (iii) *Organization of meetings*: internal WP2 (Montpellier, 2010) and WP3/4 (Clermont-Ferrand, 2009/2010) meetings, not planned in the DoW, were deemed necessary and organized by Cemagref teams. As mentioned before, overuse of time in the first period will not impede time allocation on the second period. Thus, the original amount of work planned for the next tasks is still accurate. Cf. § 5.5 for details

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8 Financial statements – Form C and Summary financial report

Forms C were submitted online. A copy of the Summary Financial report is included here:

FP7 - Grant Agreement - Annex VI - Collaborative project

Summary Financial Report - Collaborative project

Project acronym	PRIMA	Project nr.	212345	Reporting period from	01/11/2008	to	30/04/2010	Page	1/1

Funding scheme	CP

Beneficiary nr.	If 3rd Party, linked to beneficiary	Adjustment (Yes/No)	Organization Short Name	Type of activity: RTD (A) Total	RTD (A) Max EC Contribution	Demonstration (B) Total	Demonstration (B) Max EC Contribution	Management (C) Total	Management (C) Max EC Contribution	Other (D) Total	Other (D) Max EC Contribution	Total (A)+(B)+(C)+(D) Total	Total (A)+(B)+(C)+(D) Max EC Contribution	Receipts	Interest
1		No	Cemagref	610,448.25	457,836.19	0.00	0.00	145,683.81	145,683.81	0.00	0.00	756,132.06	603,520.00	0.00	0.00
2		No	TUDo	111,424.88	83,568.66	0.00	0.00	0.00	0.00	0.00	0.00	111,424.88	83,568.66	0.00	0.00
3		No	UNWE	90,239.62	67,679.72	0.00	0.00	2,798.40	2,798.40	0.00	0.00	93,038.02	70,478.12	0.00	0.00
4		No	UMB	20,848.42	15,636.32	0.00	0.00	0.00	0.00	0.00	0.00	20,848.42	15,636.32	0.00	0.00
5		No	DLO	77,232.22	57,924.17	0.00	0.00	0.00	0.00	0.00	0.00	77,232.22	57,924.17	0.00	0.00
5		No	LEI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6		No	UNEW	88,844.38	66,633.29	0.00	0.00	0.00	0.00	0.00	0.00	88,844.38	66,633.29	0.00	0.00
7		No	IAMO	176,483.76	132,362.82	0.00	0.00	3,440.08	3,440.08	0.00	0.00	179,923.84	135,802.90	0.00	0.00
8		No	RuG	77,308.99	57,981.74	0.00	0.00	0.00	0.00	0.00	0.00	77,308.99	57,981.74	0.00	0.00
12		No	AFSZ	41,330.03	30,997.52	0.00	0.00	0.00	0.00	0.00	0.00	41,330.03	30,997.52	0.00	0.00
13		No	PBL | DRAFT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13		No	SUB-DEPT of PBL	10,826.51	8,119.88	0.00	0.00	0.00	0.00	0.00	0.00	10,826.51	8,119.88	0.00	0.00
15		No	UZEI	41,545.60	31,159.20	0.00	0.00	0.00	0.00	0.00	0.00	41,545.60	31,159.20	0.00	0.00
TOTAL				1,346,532.66	1,009,899.51	0.00	0.00	151,922.29	151,922.29	0.00	0.00	1,498,454.95	1,161,821.80	0.00	0.00
Requested EC contribution for the reporting periof (in €)													1,161,821.79		

There are two lines for partners 5 and 13:
5: As a result of a legal merger, there was a universal transfer of rights and obligations from LEI to DLO as from 1 january 2010, thus the blank line for LEI.
13: The actual partner (the Netherlands Environmental Assessment Agency) is identified as a subdepartment of the MINISTERIE VAN VOLKSHUIS-VESTING, RUIMTELIJKE ORDENING EN MILIEUBEHEER. They share a PIC number but have different cost methods, thus the 1st blank line in the form C editor.

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9 CERTIFICATES

List of Certificates which are due for this period, in accordance with Article II.4.4 of the Grant Agreement.

Beneficiary	Organisation short name	Certificate on the financial statements provided? yes / no	Any useful comment, in particular if a certificate is not provided
1	Cemagref	Yes	Expenditure threshold reached
2	TUDo	No	Expenditure threshold not reached
3	UNWE	No	*id.*
4	UMB	No	*id.*
5	LEI	No	*id.*
6	UNEW	No	*id.*
7	IAMO	No	*id.*
8	RuG	No	*id.*
12	AFSZ	No	*id.*
13	PBL	No	*id.*
15	UZEI	No	*id.*

A copy of Cemagref's signed certificate on the financial statements (Form C) is included in the nine following pages of this section.

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Cemagref
Sciences, eaux & territoires

Terms of Reference for an Independent Report of Factual Findings on costs claimed under a Grant Agreement financed under the Seventh Research Framework Programme (FP7)

The following are the terms of reference ('ToR') on which CEMAGREF 'the Beneficiary' agrees to engage the Competent Public Officer ("Agent Comptable") to provide an independent report of factual findings on a Financial Statement prepared by the Beneficiary and to report in connection with a European Union financed grant agreement concerning the Seventh Research Framework Programme (FP7), concerning "Prototypical Policy Impacts on Multifunctional Activities in rural municipalities" - PRIMA - grant agreement n° 212345 (the 'Grant Agreement'). Where in these ToR the 'European Commission' is mentioned this refers to its quality as signatory of the Grant Agreement with the Beneficiary. The European Union is not a party to this engagement.

1.1 Responsibilities of the Parties to the Engagement
'The Beneficiary' refers to the legal entity that is receiving the grant and that has signed the Grant Agreement with the European Commission.

- The Beneficiary is responsible for preparing a Financial Statement for the Action financed by the Grant Agreement in compliance with such agreements and providing it to the Auditor, and for ensuring that this Financial Statement can be properly reconciled to the Beneficiary's accounting and bookkeeping system and to the underlying accounts and records. Notwithstanding the procedures to be carried out, the Beneficiary remains at all times responsible and reliable for the accuracy of the Financial Statement.

- The Beneficiary is responsible for the factual statements which will enable the Auditor to carry out the procedures specified, and will provide the Auditor with a written representation letter supporting these statements, clearly dated and stating the period covered by the statements.

- The Beneficiary accepts that the ability of the Auditor to perform the procedures required by this engagement effectively depends upon the Beneficiary providing full and free access to the Beneficiary's staff and its accounting and other relevant records.

'The Auditor' refers to the Auditor who is responsible for performing the agreed-upon procedures as specified in these ToR, and for submitting an independent report of factual findings to the Beneficiary. The Auditor must be independent from the Beneficiary.

- The Auditor is a Competent Public Officer for which the relevant national authorities have established the legal capacity to audit the Beneficiary and has not been involved in the preparation of the financial statements.

- The procedures to be performed are specified by the European Commission and the Auditor is not responsible for the suitability and appropriateness of these procedures.

1.2 Subject of the Engagement
The subject of this engagement is the interim Financial Statement in connection with the Grant Agreement for the period covering 01 November 2008 to 30 April 2010.

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1.3 Reason for the Engagement
The Beneficiary is required to submit to the European Commission a certificate on a Financial Statement in the form of an independent report of factual findings produced by an external auditor in support of the payment requested by the Beneficiary under Article II.4 of the Grant Agreement. The Authorising Officer of the Commission requires this Report as he makes the payment of costs requested by the Beneficiary conditional on the factual findings of this Report.

1.4 Engagement Type and Objective
This constitutes an engagement to perform specific agreed-upon procedures regarding an independent report of factual findings on costs claimed under the Grant Agreement. As this engagement is not an assurance engagement the Auditor does not provide an audit opinion and expresses no assurance. The European Commission derives its assurance by drawing its own conclusions from the factual findings reported by the Auditor on the Financial Statement and the payment request of the Beneficiary relating thereto. The Auditor shall include in its Report that no conflict of interest exists between it and the Beneficiary in establishing this Report, as well as the fee paid to the Auditor for providing the Report.

1.5 Scope of Work
1.5.1 The Auditor shall undertake this engagement in accordance with these ToR and:

- in accordance with the International Standard on Related Services ('ISRS') 4400 *Engagements to perform Agreed-upon Procedures regarding Financial Information* as promulgated by the IFAC;
- in compliance with the *Code of Ethics for Professional Accountants* issued by the IFAC. Although ISRS 4400 provides that independence is not a requirement for agreed-upon procedures engagements; the European Commission requires that the Auditor also complies with the independence requirements of the *Code of Ethics for Professional Accountants*.

1.5.2 Planning, procedures, documentation and evidence
The Auditor should plan the work so that the procedures can be effectively performed. For this purpose he performs the procedures specified in 1.9 of these Terms of Reference ('Scope of Work – Compulsory Report Format and Procedures to be Performed') and uses the evidence obtained from these procedures as the basis for the Report of factual findings.

1.6 Reporting
The Report of factual findings, an example of which is attached to this ToR, should describe the purpose and the agreed-upon procedures of the engagement in sufficient detail in order to enable the Beneficiary and the European Commission to understand the nature and extent of the procedures performed by the Auditor. Use of the reporting format attached as Annex VII of the Grant Agreement is compulsory. The Report should be written in the language indicated in Article 4 of the Grant Agreement. In accordance with Article II.22 of the Grant Agreement, the European Commission and the Court of Auditors have the right to audit any work carried out under the project for which costs are claimed from the Union, including the work related to this engagement.

1.7 Timing
The Report should be provided by 18 november 2010.

Le Secrétaire Général
du Cemagref
Pierre-Yves B.

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AUDIT CERTIFICATE

Contrat	212 345
Contractant	Cemagref Parc de Tourvoie BP 44 92163 Antony Cedex France
Période	1/11/08 – 30/04/10

L'agent comptable
CUIDARD Sylvie
Domicilié Cemagref
Parc de Tourvoie BP 44
92163 Antony cedex – France

In accordance with my capacity of Competent Public Officer ("Agent Comptable") and the terms of reference attached thereto (appended to this Report), I provide my Independent Report of Factual Findings ("the Report"), as specified below.

Objective
As Competent Public Officer ("Agent Comptable"), established in Cemagref, Parc de Tourvoie BP 44, 92163 Antony Cedex, France, I have performed agreed-upon procedures regarding the cost declared in the Financial Statement of CEMAGREF hereinafter referred to as the Beneficiary, to which this Report is attached, and which is to be presented to the European Commission under grant agreement EU, entitled *Prototypical Policy Impacts on Multifunctional Activities in rural municipalities*, PRIMA, n°: 212345 for the following period : 1/11/08 to 30/04/10. This engagement involved performing certain specified procedures, the results of which the European Commission uses to draw conclusions as to the eligibility of the costs claimed.

Scope of Work
My engagement was carried out in accordance with:

- the terms of reference appended to this Report and
- International Standard on Related Services ('ISRS') 4400 *Engagements to perform Agreed-upon Procedures regarding Financial Information* as promulgated by the International Federation of Accountants ('IFAC);
- the *Code of Ethics for Professional Accountants* issued by the IFAC. Although ISRS 4400 provides that independence is not a requirement for agreed-upon procedures engagements,the European Commission requires that the Auditor also complies with the independence requirements of the *Code of Ethics for Professional Accountants;*

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As requested, I have only performed the procedures set out in the terms of reference for this engagement and I have reported our factual findings on those procedures in the table appended to this Report.
The scope of these agreed upon procedures has been determined solely by the European Commission and the procedures were performed solely to assist the European Commission in evaluating whether the costs claimed by the Beneficiary in the accompanying Financial Statement has been claimed in accordance with the Grant Agreement. The Auditor is not responsible for the suitability and appropriateness of these procedures.
Because the procedures performed by me did not constitute either an audit or a review made in accordance with International Standards on Auditing or International Standards on Review Engagements, I do not express any assurance on the Financial Statements.
Had I performed additional procedures or had I performed an audit or review of the Financial Statements of the Beneficiary in accordance with International Standards on Auditing, other matters might have come to my attention that would have been reported to you.

Sources of Information
The Report sets out information provided to me by the management of the Beneficiary in response to specific questions or as obtained and extracted from the Beneficiary's information and accounting systems.

Factual Findings
The above mentioned Financial Statement was examined and all procedures specified in the appended table for my engagement were carried out. On the basis of the results of these procedures, I found all documentation and accounting information to enable me to carry out these procedures has been provided to me by the Beneficiary.

Use of this Report
This Report is solely for the purpose set forth in the above objective.
This Report is prepared solely for the confidential use of the Beneficiary and the European Commission and solely for the purpose of submission to the European Commission in connection with the requirements as set out in Article II.4.4 of the Grant Agreement. This Report may not be relied upon by the Beneficiary or by the European Commission for any other purpose, nor may it be distributed to any other parties. The European Commission may only disclose this Report to others who have regulatory rights of access to it, in particular the European Anti Fraud Office and the European Court of Auditors.
This Report relates only to the Financial Statement specified above and does not extend to any other financial statements of the Beneficiary.
No conflict of interest exists between the Auditor and the Beneficiary in establishing this Report. The fee paid to the Auditor for providing the Report was € 0.

I look forward to discussing our Report with you and would be pleased to provide any further information or assistance which may be required.

Antony, november the 18 of 2010

S. CUIDARD.
Agent comptable

L'Agent Comptable

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Procedures performed by the Auditor

The Auditor designs and carries out his work in accordance with the objective and scope of this engagement and the procedures to be performed as specified below. When performing these procedures the Auditor may apply techniques such as inquiry and analysis, (re)computation, comparison, other clerical accuracy checks, observation, inspection of records and documents, inspection of assets and obtaining confirmations or any others deemed necessary in carrying out these procedures.

The European Commission reserves the right to issue guidance together with example definitions and findings to guide the Auditor in the nature and presentation of the facts to be ascertained. The European Commission reserves the right to vary the procedures by written notification to the Beneficiary. The procedures to be performed are listed as follows:

Procedures	Standard factual finding and basis for exception reporting
Personnel Costs	
1. Recalculate hourly personnel and overhead rates for personnel (full coverage if less than 20 employees, otherwise a sample of minimum 20, or 20% of employees, whichever is the greater), indicate the number of productive hours used and hourly rates. Where sampling is used, selection should be random with a view to producing a representative sample. **'Productive hours'** represent the (average) number of hours made available by the employee in a year after the deduction of holiday, sick leave and other entitlements. This calculation should be provided by the Beneficiary. [if average costs are used, a separate independent report is required on the methodology]	For each employee ~~in the sample of ___~~, the Auditor obtained the personnel costs (salary and employer's costs) from the payroll system together with the productive hours from the time records of each employee. For each employee selected, the Auditor recomputed the hourly rate by dividing the actual personnel costs by the actual productive hours, which was then compared to the hourly rate charged by the Beneficiary. No exceptions were noted. The average number of productive hours for the employees selected was 160 h. **If the productive hours or costs of personnel cannot be identified, they should be listed (together with the amounts) as exceptions in the main report.**
2. For the same selection examine and describe time recording of employees (paper/ computer, daily/weekly/monthly, signed, authorised).	Employees record their time on a daily/ weekly/ monthly basis using a paper/computer-based system. The time-records selected were authorised by the project manager or other superior. **If no time records are available which fit the above description, this should be listed as an exception in the main report.**
3. Employment status and employment conditions of personnel. The Auditor should obtain the employment contracts of the employees selected and compare with the standard employment contract used by the Beneficiary. Differences which are not foreseen by the Grant Agreement should be noted as	For the employees selected, the Auditor inspected their employment contracts and found that they were: – directly hired by the Beneficiary in accordance with its national legislation, – under the sole technical supervision and responsibility of the latter, and – remunerated in accordance with the normal practices of the Beneficiary. **Personnel who do not meet all three conditions should be listed (together with the amounts) as**

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FP7 Grant Agreement – Annex VII – Form D
Version 3, 01/12/2009

Procedures	Standard factual finding and basis for exception reporting
exceptions.	**exceptions in the main report.**
4. Use of average personnel costs	The Auditor found that the personnel costs charged to the financial statement: - are calculated using average costs in accordance with the methodology as specified in the Report of findings on the methodology dated _____. - have been calculated using amounts derived from the relevant period which can be reconciled to the accounting records of the relevant period. Where categories are used, the Auditor verified that the researcher (or research-related person) had been correctly classified. The Auditor obtained confirmation from the Beneficiary that the rates used were not budgeted or estimated amounts. **If amounts cannot be reconciled, or if estimates or budgeted amounts were used, this should be reported as an exception in the main report.**
Subcontracting	
5. Obtain a written description from the Beneficiary regarding 3rd party resources used and compare with Annex 1 to the Grant Agreement.	The Auditor compared the description of the 3rd party resources provided by the Beneficiary to the specification in Annex 1 to the Grant Agreement, and found them to be the same **If the descriptions do not clearly match, this should be reported as an exception in the main report.**
6. Inspect documents and obtain confirmations that subcontracts are awarded according to a procedure including an analysis of best value for money (best price-quality ratio), transparency and equal treatment. Full coverage if less than 20 items, otherwise a sample of minimum 20, or 20% of the items, whichever is the greater.	The Auditor obtained tendering documents for each subcontract entered into and found that the tendering process was followed and that a written analysis of value-for-money had been prepared by the Beneficiary in support of the final choice of subcontractor, or that the contract had been awarded as part of an existing framework contract entered into prior to the beginning of the project. **If the Auditor is not provided with evidence of either of the above situations, the amount of the subcontract should be listed as an exception in the main report.**
Other Direct Costs	
7. Allocation of equipment subject to depreciation is correctly identified and allocated to the project. Full coverage if less than 20 items, otherwise a sample of minimum 20, or 20% of the items, whichever is the greater.	The Auditor traced the equipment charged to the project to the accounting records and the underlying invoices. The Beneficiary has documented the link with the project on the invoice and purchase documentation, and, where relevant, the project accounting. The asset value was agreed to the invoice and no VAT or other identifiable indirect taxes were charged. The depreciation method used to charge the equipment to the project was compared to the Beneficiary's normal accounting policy and found to be the same. **If assets have been charged which do not comply with the above, they should be listed (together with the amounts) as exceptions in the main report.**
8. Travel costs correctly identified and allocated to the project (and in line with Beneficiary's normal policy for non-[EU] [*Euratom*] work regarding first-class travel, etc.) Full coverage if less than 20 items, otherwise a sample of	The Auditor inspected the sample and found that the Beneficiary had allocated travel costs to the project by marking of invoices and purchase orders with the project reference, resulting in traceable allocation in the project accounts. The costs charged were compared to the invoices and found to be the same. No VAT or other identifiable

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minimum 20, or 20% of the items, whichever is the greater. The Beneficiary should provide written evidence of its normal policy for travel costs (e.g. use of first class tickets) to enable the Auditor to compare the travel charged with this policy.	indirect taxes were charged. The use of first class travel was in line with the written policy provided by the Beneficiary. **Costs which are not allocated to project accounts and do not have a clear attribution (normally by writing the project number on the original invoice) should be listed (together with the amounts) as exceptions in the main report.**
9. Consumables correctly identified and allocated to the project. Full coverage if less than 20 items, otherwise a sample of minimum 20, or 20% of the items, whichever is the greater.	The Auditor inspected the sample and found that the Beneficiary had allocated consumable costs to the project by marking of invoices and purchase orders with the project reference, resulting in traceable allocation in the project accounts. The costs charged were compared to the invoices and found to be the same. No VAT or other identifiable indirect taxes were charged. **Costs which are not allocated to project accounts and do not have a clear attribution (normally by writing the project number on the original invoice) should be listed (together with the amounts) as exceptions in the main report.**

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Procedures	Standard factual finding and basis for exception reporting
Indirect costs	
10. Obtain and review a detailed breakdown of Indirect costs (reconciled to the accounting records) and confirm that the following costs are not present: a) identifiable indirect taxes including value added tax, b) duties, c) interest owed, d) provisions for possible future losses or charges, e) exchange losses, cost related to return on capital, f) costs declared or incurred, or reimbursed in respect of another Union or Euratom project, g) debt and debt service charges, excessive or reckless expenditure[5].	The Auditor obtained the total overhead amount which was allocated and reconciled this to the accounting records for the period in question. The Auditor recalculated the ratio of indirect costs [~~as a percentage of personnel costs/as a fixed personnel hourly rate~~ / as another cost driver specified by the Beneficiary] and agreed it to the rate used in the Financial Statement(s). The Auditor obtained a detailed breakdown from the accounting system of the indirect costs which have been charged to the contract, and reconciled the individual amounts to the general ledger of the Beneficiary. The Auditor found that costs for the non-research activities of the Beneficiary, such as manufacturing, education, marketing of products or services, etc., had not been included in the calculation. For each element of the breakdown, the Auditor obtained the Beneficiary's confirmation that it contained none of the ineligible costs specified (typical examples are leasing costs, loan charges, provisions for doubtful debt (but not normal accruals), local business and property taxes, customs duties, exchange losses from billing in a foreign currency). **Only the types of excessive and reckless expenditure listed in the Commission's guidance should be considered, the Auditor is not required to exercise professional judgement or provide assurance in this matter.** **Amounts which do not meet the above criteria or where the Auditor is not provided with sufficient information in order to inspect and compare the types of cost should be listed (together with the amounts) as exceptions in the main report.**
11. Assess use of a simplified method of calculation of overheads at the level of the legal entity. The Beneficiary may use a simplified method of calculation (either due to the lack of analytical accounting or legal requirement to use a form of cash-based accounting). This does not permit the use of a generalised estimate, or the use of a 'standard' rate that is not derived from the accounting records of the period in question. Thus the rate (but not the methodology) should be updated for each accounting period.	The Beneficiary's accounting system does not permit indirect costs to be ~~separately~~ identified for the individual departments. **[and/ or]** The Beneficiary's accounting ~~system is~~ cash-based and year-end adjustments are made using accounting estimates ~~in order to~~ charge certain accrued costs. The Auditor obtained the breakdown of overhead costs and the adjusting entries together with the source of the relevant accounting entries. The Beneficiary provided the Auditor with underlying calculations showing the basis for additional accounting entries. The Auditor agreed these calculations to the relevant sources of management information. **Any elements of a simplified calculation which represent percentage estimates and which cannot be**

[5] Excessive or reckless expenditure as defined in guidance notes issued by the Commission.

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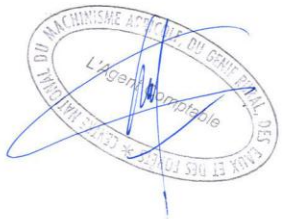
	compared to underlying data should be listed (together with the amounts) as exceptions in the main report.
12. Inspect and compare exchange rates into Euros.	The Auditor compared the exchange rates used for conversion with the applicable official exchange rates established by the European Union and the Beneficiary used [choose one]: • the conversion rate of the date where the actual costs were incurred • ~~the rate applicable on the first day of the month following the end of reporting period~~ **Where rates cannot be agreed, an exception should be noted, (together with the amount) in the main report.**
13. Identification of receipts. The Beneficiary is obliged to declare in its claim any receipts related to the project (income from events, rebates from suppliers, etc.)	The Auditor examined the relevant project accounts and obtained representations from the Beneficiary that the amounts listed represent a complete record of the sources of income connected with the project. The amount included in the claim regarding receipts is the same as the amount recorded in the project accounting. **Any discrepancies in the receipts noted in the accounts and those reported by the Beneficiary should be noted (together with the amount) as exceptions in the main report.**
14. Identification of interest yielded on pre-financing. The Beneficiary, when it is the coordinator of the project, is obliged to declare interest yielded on pre-financing	The Auditor compared the relevant project accounts with the interest ~~shown in the~~ bank statements and found them to be the same. **Any discrepancies ~~in the interest~~ noted in the accounts and those reported by the Beneficiary ~~should be noted~~ (together with the amount) as exceptions in the main report.**



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