



Horizon 2020 Societal challenge 5:  
Climate action, environment, resource  
efficiency and raw materials

# MAGIC

## Moving Towards Adaptive Governance in Complexity: Informing Nexus Security

GA No. 689669, Funding type RIA

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| <b>Internal reviewers:</b>                   | Mario Giampietro (coordinator) and (co)PIs of all partners  |

## **1. Changes with respect to the DoA**

The Second Progress Meeting was held in the beginning of Month 25, from 4 to 6 June 2018, rather than in Month 24, as laid down in the DoA, as the consortium could not find a date that was convenient for all in the month of May 2018. However, this slight delay (reflected in milestone MS3—‘Second Progress Meeting’—and reported to the Project Advisor through the communication centre of the participant portal) has not affected the timing of the submission of the corresponding minutes of the meeting herewith enclosed.

## **2. Dissemination and uptake**

The minutes are primarily intended for internal use by the consortium itself as a written reference to the main points discussed during the meeting and the action points and responsibilities agreed upon. The document also serves as a reference to the Project Advisor and external reviewers for monitoring the advancement and course of action of the project.

## **3. Short Summary of results**

The minutes of the Second Progress Meeting summarize the main points discussed during the meeting, as well as the general course of further action, specific short-term action points, and responsibilities agreed upon by the Consortium and the General Assembly. The PowerPoint presentations shared during the meeting have been instrumental in the discussions and have been made available to the consortium in its shared google drive. They are available upon request. The meeting was hosted by the team of the Università degli Studi di Napoli Federico II from 4 to 6 June 2018 in Naples, Italy. All partners were represented.

## **4. Evidence of accomplishment**

The enclosed minutes and the MAGIC project website showing pictures taken during the meeting (see <https://magic-nexus.eu/events/magic-second-progress-meeting>).



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Deliverable 1.2

## **Minutes of the Second Progress Meeting**

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## **Abbreviations**

CA: Climate Analytics GmbH

CAP: Common Agricultural Policy

DG: Directorate-General

DoA: Description of Action

EC: European Commission

EEA: European Environment Agency

EU: European Union

F-V-D: Feasibility-Viability-Desirability

GA: General Assembly

GHG: Greenhouse gas

HUTTON: The James Hutton Institute

IPCC: Intergovernmental Panel on Climate Change

ITC: Instituto Tecnológico de Canarias, S.A.

JRC: Joint Research Centre – European Commission

MS: Member State

MuSIASEM: Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism

NDS: Nexus Dialogue Space

NIS: Nexus Information Space

PM: Person-month

QST: Quantitative Story-Telling

SDGs: Sustainable Development Goals

SMCA: Societal Multi-Criteria Evaluation

SSPs: Shared Socioeconomic Pathways

UAB: Universitat Autònoma de Barcelona

UiB: University of Bergen

UNINA: Università degli Studi di Napoli Federico II

UT: Universiteit Twente

WEF: Water-Energy-Food

WFD: Water Framework Directive

WP: Work Package

WU: Wageningen University

## Summary

The minutes of the Second Progress Meeting summarize the main points discussed during the meeting, as well as the general course of further action and specific short-term action points agreed upon by the MAGIC Consortium and the General Assembly.

The PowerPoint presentations shared during the meeting have been instrumental in the discussions and have been made available to the consortium in its shared google drive. They are available upon request.

The meeting was hosted by the team of the Università degli Studi di Napoli Federico II, from 4 to 6 June 2018, at the Centro Congressi Università di Napoli Federico II (Sala B), Via Partenope 36, in Naples, Italy. All partners were represented.

These minutes are primarily intended for internal use by the consortium itself as a written reference to the main points discussed during the meeting and the action points and responsibilities agreed upon.

## 1. Agenda

### MONDAY—04 June 2018

09:00—09:15 Welcome by local organizers

*Roberta Siciliano & Michele Staiano (UNINA)*

#### WHERE DO WE STAND?

09:15—09:45 Project overview (30 min)

*Mario Giampietro (Coordinator)*

09:45—10:45 WP4—Where we stand and where to go from here (40 min + 20 min Q&A)

*Mario Giampietro (UAB)*

#### 10:45—11:15 Coffee break

11:15—12:15 WP3—Where we stand and where to go from here (60 min including Q&A)

MAGIC NIS: SLIM protocol for QST: from real problem to MuSIASEM approach

*Roberta Siciliano & Michele Staiano (UNINA)*

NIS backend and frontend implementation

*Rafael Nebot (ITC)*

12:15—13:15 WP2—Where we stand and where to go from here (60 min including Q&A)

*Ângela Guimarães Pereira, Paulo Rosa, Thomas Völker (JRC)*

#### 13:15—14:30 Lunch

14:30—16:00 WP5—Phase I: Presentation of work plans (case selection for QST, available and missing 'ingredients', communication, stakeholder engagement)

*(Moderator: Richard Aspinall, UNINA)*

Overview *(Keith Matthews, WP5 leader) (10 min)*

Task 5.2 Water Framework Directive *(Maarten Krol, UT) (10 min)*

Task 5.3 Energy directives *(Mario Giampietro/Maddalena Ripa, UAB)(10 min)*

Task 5.4 CAP *(Keith Matthews/Kirsty Blackstock, HUTTON)(10 min)*

Task 5.5 Environment *(Evelien de Olde, WU)(10 min)*

Task 5.6 Circular Economy *(Thomas Völker, JRC & Roger Strand, UiB)(10 min)*

Discussion (30 min)

#### 16:00—16:20 Coffee break

16:20—18:00 WP6—Presentation of work plan for innovation tasks (case selection for QST, available and missing 'ingredients', communication, stakeholder engagement)

*(Moderator: Imke de Boer)*

Overview *(Raimon Ripoll Bosch, WU, WP6 lead) (10 min)*

Task 6.2: Innovation Biofuels *(Abigail Muscat, WU)(10 min presentation)*

Task 6.3: Intervention Environmental Protection *(Akke Kok) (10 min)*

Task 6.4: Innovation Shale Gas Extraction *(Violeta Cabello) (10 min)*

Task 6.5: Policy Solution Green Bonds (*Jan Sindt & Luis Zamarioli, CA*) (10 min)  
 Task 6.6: Innovation Alternative Water Sources (*Baltasar Peñate Suarez*) (10 min)  
 Task 6.7: Innovation Saving Water in Irrigation (*Maarten Krol, UT*) (10 min)  
 Task 6.8 Innovation Electric Vehicle & Storage (*Maddalena Ripa, UAB*) (10 min)  
 Discussion (20 min)

18:00—18:15 Wrap-up of the day (*Richard Aspinall, UNINA*)

## TUESDAY—05 June 2018

### WHERE DO WE GO FROM HERE?

09:00—09:15 Organization of the day

*Mario Giampietro (coordinator)*

09:15—11:00 WP5—Moving forward; Discussion among WP5 task forces and WP2-3-4 leaders on the implementation of work plans (*Moderator: Roger Strand, UiB*)

#### 09:15—10:00 Resolving issues of WP5 Phase 1

09:15—09:25 Wrap-up of Day 1 discussion: unsolved questions  
*(Keith Matthews)*

09:25—10:00 Discussion with WP2-WP3-WP4 panel: How can WP2, WP3, WP4 help?

#### 10:00—11:00 Next steps for Phases 2 and 3 of WP5

10:00—10:20 Projection of next steps for Phases 2 and 3 of WP5: Task 5.7 Climate and Task 5.8 EU sustainability goals  
*Keith Matthews & Jan Sindt (10 minutes each)*

10:20—11:00 Discussion with WP5 policy teams and WP2-WP3-WP4 panel: How to proceed and how to ensure partner involvement?

### 11:00—11:30 Coffee break

11:30—13:15 WP6—Moving forward; Discussion among WP6 task forces and WP2-3-4-5 leaders on the implementation of work plans (*Moderator: Kirsty Blackstock, HUTTON*)

#### 11:30—12:30 Resolving issues of WP6 work plans

11:30—11:45 Wrap-up of Day 1 discussion: unsolved questions  
*Raimon Ripoll Bosch (WP6 lead)*

11:45—12:30 Discussion with WP2-WP3-WP4-WP5 panel: How can WP2, WP3, WP4, WP5 help?

#### 12:30—13:15 Next steps: Overarching tasks WP6

12:30—12:40 Task 6.9: Innovation EU low-carbon strategy (*Jan Sindt, CA*) (10 min)

12:40—12:50 Task 6.10: Lessons learned on Innovation Assessment (*Roger Strand, UiB*) (10 min)

12:50—13:05 Discussion with WP6 innovation teams: What input to overarching tasks is expected from innovation teams? (15 min)

13:05—13:15 Wrap up & action points (*Raimon Ripoll Bosch, WP6 leader*) (10 min)

**13:15—14:30 Lunch**

14:30—16:00 Working towards IMPACTS in WP5 and WP6 (Policy, Horizon 2020-FP9, EUROSTAT)  
(Moderator: Zora Kovacic)

Working toward expectations in GA (Mario Giampietro, UAB) (10 min)

IPCC Shared Socio-Economic Pathways (SSPs) (Jan Sindt, CA) (10 min)

Discussion (70 min)

**16:00—16:15 Coffee break**

16:15—17:30 General Assembly Meeting

*PIs only (please appoint substitute if PI not present)*

16:15—17:30 Parallel session: Demo of Nexus Information System and demo of Nexus Dialogue  
Space; Other spontaneous working groups

*All others*

**19:00 Social dinner – location to be confirmed (offered by UNINA)**

**WEDNESDAY—06 June 2018**

*MANAGEMENT, DISSEMINATION, AND WRAP UP*

09:00—09:15 Debriefing General Assembly Meeting

09:15—10:15 WP1 (Involvement Advisory Board; Synergy workshop and common case NL;  
Reporting; Gender issues; Communication problems)

*Mario Giampietro, Sandra Bukkens, Maddalena Ripa (UAB)*

10:15—11:00 WP7 (Publications—Open access and acknowledgements; Conference attendance;  
Commitment to Nexus Times; Final conference planning; D7.3; D7.9; D7.10)

*Mario Giampietro, Sandra Bukkens, Zora Kovacic (UAB)*

**11:00 – 11:30 Coffee break**

11:30—13:00 Action points & Wrap up

13:00 – 13:15 END OF MEETING AND FAREWELL

## 2. Minutes

### Day 1 – Monday 04 June 2018

#### Welcome Address

The host of the meeting, Roberta Siciliano (UNINA), welcomes the participants and stresses the importance of the meeting for strengthening cooperation and sharing of information, and reducing the gap between theory and practice.

#### Project Overview

The project coordinator, Mario Giampietro (UAB), presents an overview of the progress made at project level during the second year and underlines that the achievements in the operationalization of the MuSIASEM tool-kit and quantitative story-telling (QST) are quite remarkable given that MAGIC is doing things differently from business as usual. Priorities set for year 2, such as showing that the MAGIC tool kit can be produced and applied and realizing meaningful engagement at EC level (e.g., EEA workshop), were met. He stresses that a complex project as MAGIC cannot be managed in the traditional way. MAGIC is about self-organization out of chaos and emergent properties (more than the sum of the parts). More planning will be possible in the second half of the project as we now have a better idea of the big picture, and a shared purpose and role has emerged for the various participants (attractor). The next step now is to transfer the information generated by MuSIASEM and QST to policymakers and other stakeholders (implementing the jukebox idea). The jukebox idea consists in the creation of a shared pool of user-friendly material (information and ideas), classified by the domains of the various WP5 and WP6 tasks, for use both in engagement (with a wide variety of stakeholders) and broader dissemination.

Points of discussion include:

- Changing the specific assumptions with regard to the same narrative and same MuSIASEM approach can lead to different QST and conclusions. It is therefore important to specify the assumptions at the moment of disseminating the results. This requires that the different views/assumptions in the jukebox material should be made explicit so that they can become part of the discussion itself.
- In relation to the above, it is clarified that MAGIC is not about endorsing one specific assumption or claiming that some assumptions are right and others wrong. To test the quality of the narrative in terms of its feasibility, viability and desirability, MAGIC simply flags whether or not there may be a problem with certain assumptions or lack of considerations (e.g., 'This narrative is possible only under the assumption that ...; Is this assumption realistic?').

#### Work Package 4 – Nexus Structuring Space

The presentation of WP4 by Mario Giampietro (UAB) focuses on the MuSIASEM toolkit and deliverables 4.2 and 4.3, and the operationalization of feasibility (externalization versus self-sufficiency), viability (societal organization in relation to the hours of work required in economic sectors), and desirability (an emergent definition based on societal organization). A simplified proxy of desirability at the level of the whole economy and analogous to the concept of GDP can be generated in the MAGIC tool-kit and is called BEP (Bioeconomic Pressure).

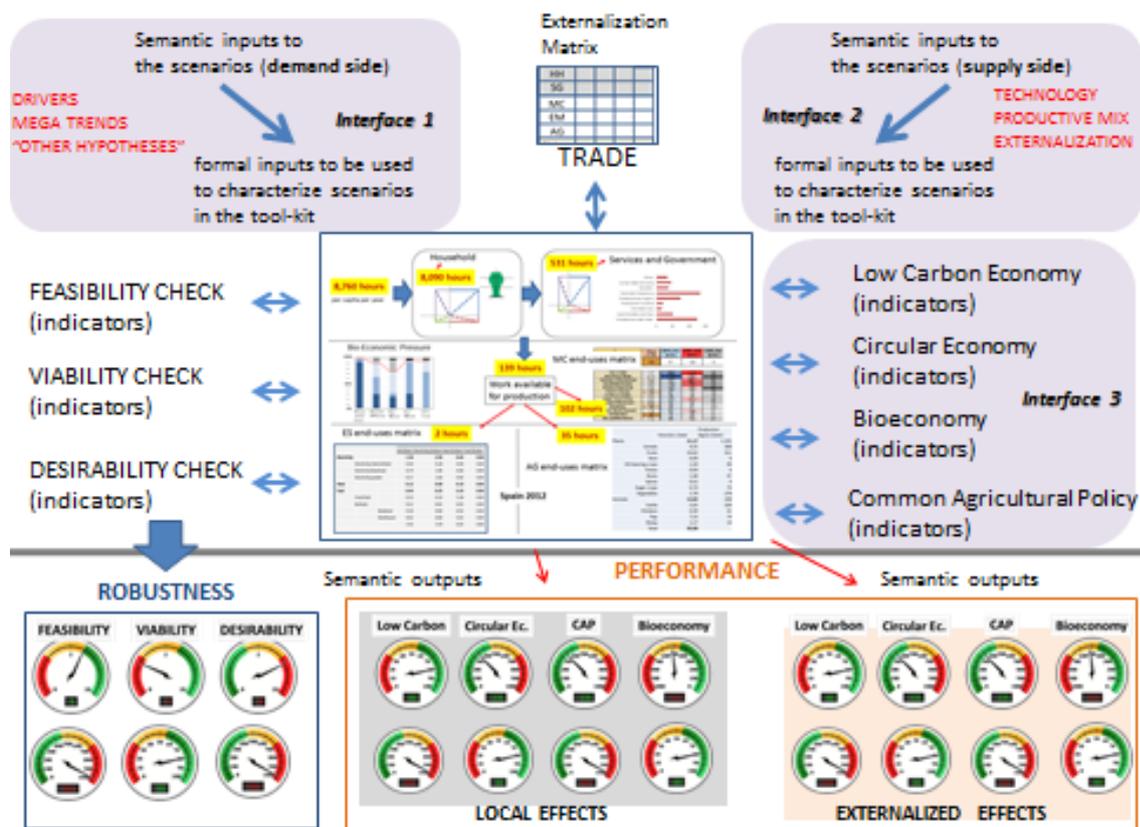


Figure 1. Overview of possible applications of the MAGIC toolkit (from the presentation)

The feedback received in the joint European Environment Agency (EEA)-MAGIC workshop (May 2018) has been extremely useful for WP4 in that it flagged that we have to better clarify the key role of interfaces between semantic/formal information. We have 3 key interfaces (see figure 1 above, from the presentation): (i) Interface 1 (initiating conditions): transforming semantic inputs about scenarios (effects of drivers; megatrends, other assumptions) into formal inputs into the tool-kit; (ii) Interface 2 (policies): transforming semantic inputs about scenarios (changes in technology, productive mix, externalization as determined by policies) into formal inputs into the tool-kit; (iii) Interface 3 (targets of policies): explaining the “meaning” of the quantitative results generated by the tool-kit with indicators that make it possible to study synergies or trade-offs (in relation to the targets they need/want to achieve). MuSIASEM can help interpret the indicators (provide external referents) and evaluate performance in terms of local and externalized effects.

Points of discussion include:

- How to choose indicators? One thing is developing indicators for studying the results of policies in relation to policy goals (interface 3), another to develop indicators for studying the robustness of the story-telling in relation to feasibility, viability and desirability (F-V-D).
- Performance might best be communicated as a semantic output because at the EEA-MAGIC workshop it emerged that many people have difficulty in interpreting numerical results as such. For example, putting the quantitative results in a dashboard gives meaning to the data (see bottom part of Fig. 1). However, this does not take away that the visualization of the results need to be

carefully explained and discussed with stakeholders, especially in relation to the choice of benchmarks used in the dashboard representation.

- How do we deal with policies that obviously don't achieve their own stated goals? Even when seen as unfeasible and even unviable, they may be more desirable than alternatives. We should recognize this problem of discrepancies with regard to targets set and the problems of incompatibility of policies, and tackle this problem in phase 3 of WP5: how much do policies need to change to achieve/combine goals together? When considering feasibility, viability and desirability simultaneously, there is no optimal solution. The aim is to generate an informed process of deliberation.
- It is argued from the view of WP2 (engagement) that the MAGIC tools are good to show discrepancies between reality and targets and among targets from different policies, describing the difficulty in achieving changes toward SDGs and climate goals. However, we need to engage in *constructive discussion*. Can we offer a solution? Is there any *positive message* linked to the negative ones about biophysical sinks and externalization? How do we incorporate and give more prominence to this other, economic, social and cultural dimension? Economy and society outcomes are often the main aspects of deliberation. How does MuSIASEM provide material for these discussions? WP4 lead puts forward that the strength of MuSIASEM lies in that it allows a discussion of social-ecological systems outside of the reductionist economic narrative. MuSIASEM is a non-monetary accounting system—designed to draw attention to the elements that underpin the monetized economy—the outputs are implicit in the economic sectors thus highlighting another part of the system. Whilst things like culture are not explicitly included in the model, the ingredients of how culture is reproduced (e.g., allocation of human activity to societal activities) are there and reflected in the indicator bio-economic pressure.
- While MuSIASEM has become more user-friendly during the course of the project, language remains a problem (e.g., bio-economic pressure)—there is the need for continuously translating MAGIC terms into more conventional ones.

### Work Package 3 – Nexus Information Space

WP3 lead (Roberta Siciliano, UNINA) presents an overview of the WP3 tasks and achievements. She illustrates the possibilities for statistical analyses (e.g., cluster analysis) and visualization (e.g., Sankey diagram and polygons) based on a multi-scale analysis of an Italian municipal waste system (representing a possible approach toward the elaboration of case studies for the circular economy). WP3 lead stresses the need to share raw data in the consortium. Partners need to enter their raw data directly in the NIS themselves following MAGIC's SLIM protocol, at least the data that were used for the analyses in order to guarantee transparency (i.e., references to data sources and calculations) and reproducibility of results. The UNINA team supports each policy and innovation team in organizing raw data for populating the data repository and improving visualization of results for deliverables and other outputs.

Rafa Nebot (ITC) provides a brief update on the development of the automated MuSIASEM toolkit (software application). In collaboration with UAB and UNINA (Michele Staiano) several iterations have been run in response to new developments in the nexus framework resulting from work on D4.2 and D4.3. Concrete data sets from WP5 and WP6 are now needed to test the tool and demonstrate its usefulness.

### Work Package 2 – Nexus Dialogue Space

The JRC team provides an overview of the stakeholder engagements realized in the second year of the project and the various engagement forms (workshops, focus groups, lunch meetings, pair interviews)

experimented. Synergies with related initiatives within JRC have been exploited, through the workshop with the WEF Nexus Flagship on water narratives, which has been very useful. The idea of 'teams' of policy makers remains problematic given that DG staff do not have a mandate to participate in MAGIC. Due to calendars, mobility (DG staff move quite frequently across DGs), institutional arrangements, teams are necessarily adaptive and fluid. Lunch time talks in Brussels did not materialize. Individual semi-structured interviews and break-out sessions in existing events (piggybacking) seem to be the formats that work better.

As regards the contribution of WP2 to WP5 and WP6, JRC draws attention to the variety of case studies, notably in WP6. Case studies operate on different scales, and different degree of involvement of JRC. JRC needs to know in which case studies their involvement is needed, and in what that involvement consists of. Partners need to identify their stakeholders and clarify what they want to get out of the engagement and how (which format). WP5 and WP6 task leads are requested to provide this information to the JRC team following the work plan presented. JRC will also provide guidelines on what information is needed for reporting on stakeholder engagements (not organized by JRC) for milestones MS9, MS11 and MS16.

An update of contents of the Dialogue Space is presented. It is emphasized that partner input is needed to implement the dialogue space. Partners are urged to actively contribute to the forum. JRC recognizes that there are some technical problems with the virtual engagement rooms due to recent changes in common web browser settings. These are being looked into.

The ensuing discussion focuses on stakeholder engagement:

- WP5 lead emphasizes the need for coordination in stakeholder engagement among WP2 and WP5/6, not only for reporting but also to avoid that the same DG officers are contacted unknowingly by different persons (avoiding stakeholder fatigue). Various case studies may have shared stakeholders. HUTTON proposes that one person of each policy and innovation task has access to the secure server in order to maintain a shared list of stakeholders contacted, and where useful consider common engagement events (disadvantage broadening of topic for discussion). HUTTON team commits to following up on this.
- It may be useful to rethink what it is that we want to achieve with the stakeholder engagement (in relation to building relationship of trust). MAGIC's focus on dissonance may create fear. Perhaps the focus should be more on the learning process. The number of policy makers engaged is not a measure of success, the quality of the engagement is. This learning process was exemplified during the EEA workshop, where MAGIC involvement was requested. It is also observed that stakeholder engagement for WP5 may have to move beyond the DGs because that is where the nexus is implemented (e.g., EEA).
- Maarten Krol (UT) briefly comments on the stakeholders workshop of SIM4NEXUS that he attended in April 2018 in the context of the common biofuel case in the Netherlands. The Dutch environmental assessment agency was represented, and the discussion there leaned toward low-carbon economy, bio-based economy and circular economy. SIM4NEXUS's approach is predominantly focused on economic aspects, and in this sense the two projects complement each other. It will likely be of mutual benefit to invite SIM4NEXUS to MAGIC stakeholders workshops on common topics.

## **Work Package 5 – Quality Check on Policy Narratives**

WP5 lead, Keith Matthews (HUTTON), summarizes the scope of phase 1 of WP5, recalling that all policy areas eventually have to speak to the sustainable development goals (SDGs) and climate change goals, and presents a brief overview of the policy areas and selected narratives, setting the stage for the presentations by the five policy task groups.

The presentations by the five WP5 policy task leaders (WFD, energy, CAP, Environment, circular economy) follow the common template priority provided by the WP5 lead, detailing how the QST cycle has been implemented for phase 1 and what still needs to be done. Deadlines are tight but feasible. The environmental policy task lead (WU) reports difficulty in integrating biodiversity in the MuSIASEM framework, and flags that the environmental directives (those stated in the DoA) are relatively old and not directly linked to the nexus. The selected narrative, however, is strongly linked to the nexus (externalization). The Circular Economy team on the other hand, dealing with a relatively new directive, has made rapid progress with QST, but observes a potential bias in stakeholder engagement with interviewees all being prone to ‘unthinking consensus’.

WP5 lead summarizes the lessons learned from these presentations and flags issues for further discussion/attention, which include:

- Differences in focal scale (pan-EU, national, river basin) of MuSIASEM applications among policy areas and how this will translate into insights for policy across the EU?
- Explicit link to SDGs and Climate Change Goals are missing?
- Level of policy focus (policy objectives versus implementation) of the specific directives addressed is not always clear.
- Are all teams addressing more than one element of the WEFE nexus?
- Operationalizing F-V-D not always clear; desirability component is not well developed for most policy areas.
- Importance of (common) benchmarks to communicate with stakeholders.

The need for further input from and collaboration with WP2 and WP4 is emphasized and a bottleneck in WP2 and WP4 support is to be anticipated. Interaction with WP3 has thus far been limited.

The discussion that follows focuses on the following issues:

Narratives considered in MAGIC seem to have a recurring theme around efficiency and optimization to achieve goals (neo-liberal bias). It is observed that policy makers are currently using only economic representations of energy, food and water; they are not even using one nexus element at the time in the biophysical sense. It is not so much the silo approach that is the problem but the dominant economic paradigm. The economic approach is currently the only way available to policy makers to address the common concerns of individual policy areas (offering a common denominator), exemplified by the natural capital approach. In phase 2 and 3, MuSIASEM and QST will be used to analyze in biophysical terms how the different policies come together and how they can match to reach SDGs. MAGIC thus fills an important gap and potentially reduces the cognitive dissonance across scales and institutions.

A recurrent question is when and how do policy-makers interact with each other? A more profound institutional analysis is needed (as already initiated by HUTTON) to explore the windows of opportunity for interaction with MAGIC. HUTTON commits to following up on broadening the institutional analysis together with other interested partners.

The UNINA team reminds partners of the role of WP3 in handling the huge amount of data and the exigent requirement in H2020 for reproducible results. Impredicativity is flagged as a major challenge here because all data in MAGIC can be considered either “primary data” (top-down assessments) or dependent variables (bottom-up assessments) depending on the application.

## **Work Package 6 – Quality Check on Innovation Narratives**

The WP6 lead, Raimon Ripoll (WU), briefly recalls the objectives of WP6 and summarizes the goal of this WP6 session: to see where we are with the various innovations (what has been done with regard

to phase 1 and 2 of WP6) and what we are planning to do (what still needs to be done for phase 1 and what is planned for phase 2). All the individual innovation task presentations (available in the shared google drive) follow this outline. Some specific issues emerge:

- Biofuel (Task 6.2): WU and UT present phase 1 and 2 of this task, which has two different case studies at different scales. Given recent developments, the focus of the task is on bioenergy in general, rather than biofuels specifically. Collaboration with SIM4NEXUS is envisaged in the case study at national level. The case study on biorefineries still needs to be further defined. In Phase 1, a literature review has been performed to understand the competing use of biomass for feed, food and fuel purposes. Next steps include the mapping of stakeholders for the case studies.
- Environmental protection (Task 6.3): WU (task lead) observes that a major criticism concerning maintaining biodiversity in agriculture is that there is no consensus on how to measure biodiversity. A literature review has been done to gain insight in commonly used indicators for biodiversity, with an emphasis on indicators that link biodiversity to agricultural land use. In phase 2, scenarios of land use in agriculture (e.g., different levels of intensity) will be evaluated to assess the nexus between food production and biodiversity conservation. The involvement of stakeholders still needs further clarification. The recent EEA-MAGIC workshop has been useful and offers a good entry point that will be followed up.
- Shale gas exploitation (Task 6.4): Questions are raised as to how the proposed SWOT analysis relates to MuSIASEM and F-V-D? The SWOT analysis is proposed as one way of explaining the alternatives in the analysis to the stakeholders, but other approaches exist (NAIADE). It is put forward that Poland would be more interesting than the UK as a case. It is also questioned why shale gas was selected as an innovation in the first place given that it is 'bad' with regard to all elements of the nexus (no trade-offs). Counter argument is that this makes it a perfect example of intoxication of economic narratives; only economics can justify shale gas extraction.
- Green bonds (Task 6.5): CA team explains that this innovation (better 'solution') is about privatizing public interest. How is public funding allocated? There is currently great interest in green bonds as the EC is looking into regulating green bonds but no indicators have been proposed yet. CA proposes to use the other WP6 innovations as their case studies. This proposal is well received. Input from partners would be needed by the latest June 2019. Guidelines will be provided later this year on what input is required.
- The Alternative Water Sources innovation (Task 6.6) is already well underway with a participatory workshop, organized by JRC, taking place 18-20 June in Gran Canaria.
- Saving Water and Irrigation (Task 6.7): UT proposes to build on results from the Figaro project, using consumptive and non-consumptive water use as proxy for the analysis of trade-offs (evapotranspirated water is consumptive water use—good from farmer's perspective (plant growth), but bad from an environmental perspective). The HUTTON team observes that data sharing across WP5 and WP6 (with CAP analysis) may be useful here. UNINA team offers to assist in bridging datasets used across the different tasks.
- EV & storage (Task 6.8): The question is raised whether this innovation will be linked with the one on biofuel. UAB team confirms that indeed the two innovations will be linked through energy policy (decarbonisation and externalization of minerals for batteries) narratives. In addition, this innovation will be linked to the circular economy policy (batteries). UiB observes that this innovation would lend itself well for public participation (citizen engagement), notably in Norway, where both citizen engagement and the expansion of electric vehicles is strong. This idea will be followed up by UiB and UAB teams.

WP6 lead concludes this session with the observation that the case studies for the innovations are very diverse, but that nonetheless synergies among innovations should be explored and also with the policy cases of WP5. The coordinator observes that none of the presentations made explicit reference

to an analysis of the *assessment process* of the innovation in relation to its presumed goals. The quality of the assessment process is the main motivation for WP6 and should be given due consideration.

## Wrap Up Session

Richard Aspinnall (UNINA) wraps up the Monday session with the following conclusions:

- Biggest challenge: sustainability—many dimensions in one go. Ponder MAGIC’s full title: moving to adaptive governance in complexity...
- MuSIASEM is powerful. It is not a model, but a different way of thinking (framework or approach). Its power lies in its simplicity.
- This brings along challenges: (1) pushback from reductionist scientists as ‘too simple’ for any one part of the big picture, (2) economics and policy—look at Raworth’s doughnut economics for safe operating space, (3) normally not anyone’s job to look at the whole system except Jeff Sachs’, (4) difficulty of understanding what the acronyms and language mean in wider circles.
- Engagement: Who is the audience? ; What do you want them to do as a result of the interaction (better informed, or more than that)? ; What is the appropriate mechanism and format to get to this audience and achieve that (sowing seeds; building relationships; success is when they ask you for advise-anticipate)? Use the open doors.
- Real magic for MAGIC is greater than the sum of its parts—work on emergent properties, help each other to be effective, build the basins of attraction. Avoid the risk of underselling MAGIC in putting all the effort in putting the pieces together. Don’t miss out on chances of explaining what you are doing (land-use strategies)!

## Day 2 – Tuesday 05 June 2018

### Work Package 5 – Moving forward

This open discussion session, moderated by Roger Strand (UiB), revisits some of the issues raised in the WP5 discussion of Day 1, and looks forward to phases 2 and 3. (In deviation from the program, fluid and open rather than panel discussions are held).

*Content choices: How to integrate the Sustainable Development Goals & Climate Change Goals in our analysis?*

WP5 lead poses the question as to how the various policy tasks are considering these goals in their analysis and which goals in particular? How do the considered policies map to the SDGs and Paris goals and how do the selected cases? Policy tasks need to be explicit on this issue. The deliverables of phase 1 form the input for phases 2 (diagnosis) and 3 (simulation) of WP5 that explicitly address EU policy commitment to EU sustainability & climate change goals. To what extent are EU policies in conflict with these goals? And to what extent are SDGs and climate change goals conflicting with each other? HUTTON commits to circulating a summary of relevant SDGs; CA will circulate a summary of the Paris goals (incl. targets).

*Stakeholder engagement to close phase 1 QST loop*

WP5 lead flags the need to coordinate stakeholder engagement to avoid stakeholder fatigue. Various WP5 and WP6 task leads indeed confirm potential stakeholder overlap. It is agreed that WP5 and WP6 task leads share their stakeholder engagement plans and HUTTON will work on a shared stakeholder list in their secure server (limited access). The possibility of combined focus groups is raised; shared among WP5 policy areas but also among WP5 and WP6 tasks, or possibly in relation to common SDGs.

While there would be an obvious advantage in saving resources and efforts, there would be the disadvantage of having to cover more ground in limited time. As regards the format of stakeholder engagement, JRC suggests training sessions may have greater uptake than lunchtime events. Lunch time seminars tend to be passive.

*Common template for reporting of phase 1 deliverables?*

WP5 lead poses the question whether it would be desirable to have a common template (outline) to get similar structures for each of the WP5 phase 1 deliverables. Given the diversity in the approaches among the policy areas it is decided that individual customization of the basic template (on drive) is preferable, but that all should include dedicated sections that cover how the policy/ies considered address the SDGs and climate change goals to help with shared learning and integration in phase 2.

WP5 lead will check and possibly adapt the basic template. A deliverable size of 20-30 pages is suggested and a technical and policy summary should be included. Timely internal peer review of the deliverables is considered important and UAB commits to seeing to this.

*Looking ahead to phase 2/3*

WP5 lead draws attention to the new timing of WP5—with the delay in phase 1 (taking 18 rather than 12 months), phase 2 and 3 now span together 18 months rather than 12 months each (in reference to GANTT chart). The description of the DoA for phases 2 and 3 with regard to the impact of EU policies on Sustainability and Climate is purposefully flexible and adaptable to the outcomes of phase 1. There is debate about the interpretation of the DoA with regard to the meeting kicking off phase 2. It could be just the Magicians, but the suggestion is that we start Phase 2 by hosting an event with stakeholders to reflect on the outcomes of phase 1 (phase 2 focuses on a quantitative analysis (QST) of the interactions, synergies and tensions among policies). Reflection on who to invite and who our stakeholders are with regard to policy *interactions* suggests that this includes both ‘impact people’ and ‘knowledge holders’ (of complexity) and goes beyond single desk EC officials including also EC institutions such as EEA and member state (MS) institutions. Institutional analysis is useful here.

*Institutional analysis*

Institutional analysis is highly relevant for progressing to phases 2 and 3 of WP5 (and link with WP2 and WP6) to seek windows for understanding interaction and influencing change. The HUTTON social science team has started an institutional analysis of where the ‘nexus sits in EU institutions’ given that ‘it is no-one’s job to look at the wider nexus’ (building on their Nexus Times article). HUTTON considers extending this analysis beyond EU institutions to include member state institutions (e.g., EIONET for some of the policy areas). The idea of HUTTON is endorsed by the consortium and it is agreed that partners interested in collaborating in the institutional analysis contact HUTTON (Kirsty), who will coordinate the initiative (results of the institutional analysis expected by December 2018).

*Feasibility, viability and desirability*

The Feasibility-Viability-Desirability (FVD) concept is recognized as a key way in which the metrics of MuSIASEM can be translated to policy makers and hence as essential to closing the (QST) loop. But while feasibility and viability are clearly defined, it emerges that the operationalization of desirability remains a challenge within the consortium. Different people have different interpretations. According to WP4: “Desirability is *normative*, a recognition of post-normal science and the role that knowledge and data play in political and contested decision-making.” But desirability seems to have multiple dimensions and can occur in several places in the QST loop. Interpretation (acceptability) of outcomes (indicators in relation to values of benchmarks) is (only) part of the answer. In this line, WP4 lead proposes that the exploration of the option space (the outcomes of QST with regard to feasibility and viability, such as the externalization matrix, the environmental impact matrix and bio-economic

pressure) can be used to discuss desirability with stakeholders (a direct link here to multi-criteria analysis). Participatory processes are useful to this purpose. But still, we have to try to understand normativity as it floats through the process (e.g., dealing with: perceptions, procedural interpretation in moving from perceptions to representations; how desirability is embedded inside institutions—in relation to benchmarks/targets).

#### *Cross-cutting task on climate (Task 5.7)*

Task lead Jan Sindt (CA) comments on the shared socio-economic pathways (SSPs) that have been put forward in earlier meetings as a potential way to focus the various insights derived from phase 1. Given the case studies in WP5, it is questioned whether it is possible to do a meaningful cross-cutting analysis with regard to SSPs and climate. For this to be possible all WP5 policy areas would need to consistently apply MuSIASEM at the MS level (covering all MSs) so that the case studies could feed into a coherent pan-European level in phases 2 and 3. This is not the case. Some of the case studies in the WP5 policy tasks involve sub-national levels or only selected MSs. It is put forward that the MuSIASEM applications and data of WP4 (at national level) can be used and further developed for WP5, adopting the 2030 and 2050 projections from EUROSTAT, to shape phases 2 and 3 with regard to the climate task (through GHG data → mitigation). That does not take away that CA will also build on the input of the specific case studies of WP5 to show whether, where and how climate has been considered in policy.

### **Work Package 6 – Moving forward**

WP6 lead (Raimon Ripoll, WU) reflects on the presentations of the seven individual innovations of the previous day and draws attention to the wide diversity of the innovation cases with regard to the scale of the analysis, the location, the type of stakeholders involved. While WP6 is more bottom up than top down compared to WP5, the two work packages share concerns with regard to: common template/frame (coherency in approach to phases 1 and 2 among innovations), operationalization of desirability, stakeholder engagement, calendar (few internal deadlines, only deliverables at end), linking case studies to call (SDGs, low-carbon goals).

#### *Coherency in approach*

- The project coordinator recalls the common denominator of the WP6 innovations, that is, *the quality of the assessment process of the innovation* (not the quality of the innovation itself). WP6 is not so much about policy, but about the framing of the innovations (the process of selecting and operationalizing the innovation).
- WP6 involves a theoretical reflection of the role of innovation to deal with the nexus problem (e.g., techno fix narratives). Theoretical conversation among the case studies is needed along the way—not towards the end—to make the tasks convergence to a comparable message (common approach). UiB commits to setting some overarching questions to guide the development of the case studies.
- Governance of innovations is included in the overarching task of UiB. The idea of the assessment process in the individual innovation tasks is more focused on the attributes considered. However, it can be useful to establish a link with phase 3 of WP5 here (e.g., water innovations with WFD).
- WP5 and WP6 share a common narrative in making technology the answer (techno-fix narrative). An analysis of the meta-narrative behind the EU funding rationale for smart inclusive growth (reflected in the assessment procedure of innovations) is useful in this regard (overarching task).

### *Stakeholder engagement*

- Include the idea of the techno fix narrative in the stakeholder engagement: What are the pros and cons of the innovation and discuss this with the stakeholders (possible approach: multi-criteria analysis).
- JRC observes that stakeholder engagement plans are markedly different among the various innovation tasks and more decentralized compared to WP5. WP6 task leads need to clarify expected input from WP2. JRC commits to contacting WP6 task leads to solicit this information.

### *Data sharing - WP3 involvement*

- Better coordination is needed among all partners (WP4-WP5-WP6) with regard to the data sets to ensure *consistency in data* used for related cases (and especially for cases within the same task – e.g., biofuel). Data sharing among WP5 and WP6 (e.g., CAP farm-level data with environmental and water saving innovations) can be useful to improve insights. Partners need to share data through the NIS. Collaboration and data sharing need to be improved.
- It is the role of the UNINA team to manage and coordinate the NIS, and each innovation team should have one UNINA member on board to fulfil this role.
- Results from QST should also come back and be organized in terms of reproducibility in the NIS.

### *Calendar/timing*

The strong interdependency of tasks and WPs is an organizational issue and timing becomes essential. Collaboration and sharing must be improved with regard to work plans, stakeholders, and data.

### *Cross cutting task—EU low-carbon strategy*

- Relevance of article 2 of the Paris Agreement on Climate Change: EU presumes that targets are feasible and *affordable*, where affordable is defined purely economic (compared to importing fossil fuels). QST can deal with feasibility and viability and also with the effect of externalization, a relevant issue with regard to economic growth in developing countries and protection of the environment outside Europe.
- Given that the various cases are at different levels (national, regional, watershed) the focus will have to be on a qualitative rather quantitative assessment as to how they feed in the EU low-carbon strategy.
- EU2050 low-carbon strategy does not cover water, nor are there targets for agriculture. CA proposes a focus on energy policies and energy related innovations.
- As for energy-related innovations, a focus on power capacity is recommended so as to relate to the phasing out of coal (replacing coal plant power capacity with renewable energy power capacity).
- An alternative proposal would be to reverse the analysis and assess the material needs (energy, economic cost) for the various innovations.

### *Cross-cutting task—Lessons learned in innovation assessment*

- The analysis (lead UiB) will be essentially top-down. Case studies will enrich but not drive this task.
- Information on the case studies is needed along the way and well before the deliverables are written up. Innovation task leads need to share material (work plans, intermediate results) on the drive for UiB to consult. WU commits to organizing WP6 on the drive.
- Earlier material circulated by UiB (e.g., memos of 2 February and 18 July 2017) and D4.1 (Part 1, section 1) “What is the nexus” are worth re-reading as they are relevant in relation to the question as to what innovations are trying to solve. Policies tend to resort to technical innovation as a solution to the challenges they face. Our central question is: *For what kind of problem are the innovations a solution?* In many cases we deal with a technology push rather than a technology pull. The idea of social-technical imaginaries sits well with most QST narratives. Impredicativity

problem – even if an innovation is not a success with regard to its explicit purpose, it may be a success in other regards.

### *Wrap up*

WP6 lead concludes the session with a commitment to circulating WP6 action points, including work plans and a schedule of virtual meetings around the common ground discussed, organization and use of shared drive, and collaboration with WP3.

## **Working towards Impacts in WP5 and WP6**

*Coordinator deviates from the agenda and instead of addressing “working toward expectations in GA” he returns to the unsolved issue of how to handle desirability in the analysis of the various case studies that came up in Day 1.*

The coordinator presents a brief overview of Societal Multi-Criteria Evaluation. SMCA addresses the necessity of integrating quantitative analysis (the results of MuSIASEM) in an analytical tool capable of identifying policy relevance and studying the quality of the assessment process. SMCA links back to the QST cycle, desirability, and institutional analysis: You have to define first of all who your actors are and their power relations in order to explain (or justify) the given set of criteria, attributes and targets selected to define performance indicators. The *representation* of desirability found in institutions (coming from a procedural definition of desirability) is always a sub-set of the virtually infinite universe of *perceptions* of desirability. It is essential to be able to discuss who decides what is relevant when assessing desirability and how it was decided. SMCA lends itself particularly well for structuring and organizing the participatory discussion of the results of the MAGIC tool-kit with various stakeholders. Moreover, its use can be combined with the ethical matrix (a tool to elicit values from stakeholders). The latter is especially relevant with regard to the assessment of the desirability of the data found in the externalization matrix (when transferring your problems to other social-ecological systems). It is noted that NAIADE is a freely available software tool for SMCA, developed at the UAB by Giuseppe Munda, now working at the JRC (i.e., MAGIC has in-house expertise). In the various case studies, it can be used to combine quantitative (fuzzy and crisp) and qualitative information, to characterize pros and cons of solutions in impact matrices, to characterize the position and the power relation of the various social actors (conflict analysis). In general terms it is a useful tool for organizing the information space in a process of deliberation (but ranking of options to be avoided).

### *Impact: IPCC assessments, SSPs*

The discussion with regard to the climate focus in MAGIC continues the arguments touched upon earlier in the discussion of the overarching climate task in WP5 and WP6:

- Even though the Paris Agreement sets only an overall target, and no specific targets for the agricultural or water sector, it must be kept in mind that MAGIC is a nexus project and so it is essential, and agreed upon, to not only focus on energy, but also include (agricultural) land-use emissions (in UK, the second largest emission sector is agriculture). Emission reduction is relevant for CAP, and the biofuel innovation is also linked to land-use emission. Even though land-use emissions are difficult to quantify, it is not a valid argument for exclusion. MAGIC can seek impact along this line.
- Build the climate approach from the QST applications at national level carried out in WP4 to explore in WP5 what may happen (anticipation), including externalization to understand whether or not we are meeting climate targets. A first set of data is more or less available for all EU countries (to complete the EU28) and all the sectors. The existing analyses can be expanded to provide insights about expected changes in GHG emissions in relation to the water/agriculture/energy policies explored in WP5 and the innovations in WP6. It is about providing insights (significant differences),

not exact numbers. The automated MuSIASEM tool (software) developed by ITC would be important here for data handling.

- We can describe the profile of emissions by sector and study the possible effect of policies and innovations (technological changes) within sectors (incl. land-use changes) and a restructuring of the economy in terms of the relative importance of the various sectors.
- As to the question whether this analysis can be linked to existing models (e.g., IPCC) scenarios, it is clarified that the concept of baseline does not refer to a given point in time, but to an expected metabolic pattern (the baseline). Then to the change that a policy or innovation induces on that expected metabolic pattern.

## **General Assembly Meeting**

Points discussed during the General Assembly (GA) include meetings, involvement of the Advisory Board, the question of prioritizing assistance from the support work packages WP2, WP3 and WP4, communication, and integration of PhDs. It is decided that:

1. The next consortium meeting will be hosted by the University of Twente in the month of May 2019. The Advisory Board will not be convened for this meeting (in deviation from the DoA Part A). It will include a dedicated PhD session.
2. The Advisory Board will be convened in January 2019 instead (provided they are available) to meet with PIs only. The focus of the meeting will be on the ambitions of the project for the latter part of the project.
3. Regular meetings of the policy task leads and innovation task leads will be convened by, respectively, the WP5 lead (HUTTON) and the WP6 lead (WU). PI meetings will be convened when need is signaled to the coordinator.
4. Concern is expressed about a possible bottleneck in work, with most policy and innovation tasks requiring assistance from WP2, WP3, WP4 in the same period (July-October 2018). WP2 (JRC) and WP4 (UAB) leads emphasize the importance of communicating the need for assistance well in advance to allow for planning. WP4 lead recognizes that several partners need guidance in designing MuSIASEM analyses and shaping the benchmarks in QST, especially where narratives are involved whose analysis has not been exemplified earlier in WP4 deliverables. UAB indicates its availability to guide and assist these partners. All the same, if demand for assistance should exceed human resource capacity in WP2, WP3 or WP4, it will be up to the PIs in question to prioritize assistance given.
5. Concern about communication is expressed by the coordinator. PIs in question commit to responding (more promptly) to e-mails. It is observed that it is hard to keep up with MAGIC e-mail exchanges and filter out and conserve the most important/interesting threads. It is put forward that the Dialogue Space might offer a solution here as an internal mechanism providing private threads capturing e-mail discussions. This suggestion will be explored.
6. Concern about the integration of MAGIC PhD students is also expressed. Most PIs recognize that the complexity of the project can be intimidating for PhDs, and special efforts should be made to integrate PhD research into the project. Visits to partner institutions are proposed as a solution, as well as involvement in tasks, such as the Nexus Times or social media that cover the multiple facets of the project and allow for socializing. Moreover, it is agreed that at next project meetings space will be made for PhD candidates to discuss their work with the more senior members of the consortium (e.g., a special PhD session).

## Demo of Nexus Dialogue Space and Nexus Information Space

Parallel to the GA meeting demonstration sessions are given (sequentially, not parallel as stated in the program) by Paulo Rosa (JRC) to illustrate the use of the Nexus Dialogue Space (NDS) and by Michele Staiano (UNINA) and Rafa Nebot (ITC) to illustrate the use of the Nexus Information Space (NIS) for MuSIASEM applications.

Paulo Rosa shows and explains the freshly released posts in the NDS section of the MAGIC website (viz. discussion forum, ask a question and the Nexus Times) and reports on several features of the virtual engagement room (whiteboard, sharing of files, recording of video). He recalls how to register for participating in and promoting the dialogue tools.

Michele Staiano briefly highlights the bridges between MuSIASEM's math rationale and the computer-science formal representation of the accounting system. He introduces some of the key ingredients of the ontology upon which the current MAGIC backend data model is based, explains the specific needs raised by the heterogeneity in the actual NIS data ecosystem, and introduces the mixed strategy, that is adapters internal to the NIS frontend and commercial software for transformers external to it.

Rafael Nebot then introduces the frontend/backend concept and gives a full demo of the currently available tools (e.g., categorizing and linking processors by specific funds and flows; query databases such as Eurostat and FAOSTAT). Participants then try the tools out on their own laptops/tablets and feedback is collected with regard to design and the need to deploy extra features. It is emphasized that there needs to be continuous back and forth between the developer and user for the tool to get up and running. A manual for users of the tool is forthcoming while a usable first version of the tool is expected by the end of September.

Finally, the best way to integrate the tools of the two spaces is discussed.

## Day 3 – Wednesday 06 June 2018

### Work Package 1 – Management

The project manager, Sandra Bukkens (UAB), debriefs on the outcomes of the GA meeting and touches upon the following arguments: Project meetings (see outcomes GA meeting), involvement of advisory board (see outcomes GA meeting), upcoming reporting, synergy activities, and gender issues. The presentation is self-explanatory and available on the shared google drive. Points to take home for the partners:

#### *Reporting:*

- Convergence of deliverables and milestones due in Month 30 (deadline 30 November 2018). No delays. Carefully plan your activities.
- Observe confidentiality in reporting on stakeholder engagement: Chatham House rule!
- Month 30 is also the end of reporting period 2 (RP2). RP2 technical and financial reports are due by the end of January 2019. Submit partner financial reports in portal for revision by coordinator before Christmas vacation. Draft technical report will also be circulated for comments before the vacation.
- Partners foreseeing deviations in resource use should inform project manager in advance so that she can consult with PO and include this in the technical report.

- Partners need to provide an estimate of dissemination expenses (and possibly of APCs). Sandra will remind partners (financial officers) in November 2018.

*Gender issues*

- Gender reporting now divided by academic and non-academic personnel. Even if we do not have an explicit gender dimension in research it is recommended to include it where relevant.

## **Work Package 7 – Dissemination**

The project manager (Sandra Bukkens) addresses the following issues:

*Implementation of dissemination plan, conferences*

- All partners need to actively contribute to the implementation of the dissemination plan.
- UAB team recognizes that D4.1, D4.2 and 4.3 are too dense for dissemination as such. UAB, WU, and UT need to rework the material following the jukebox concept for dissemination. This is about synthesizing the material for policy briefs, research briefs, etc., according to the purpose and target of dissemination.
- The project website (knowledge hub and dialogue space) and the Nexus Times are good means for dissemination, but we need partner input. We need to go beyond academic format and make content more accessible (but put authors and date to avoid plagiarism). Websites of partner institutions and other platforms are also good means for dissemination.
- Partners commit contributions to the forthcoming issues of the Nexus Times. Guest-editors for specific issues are suggested, as is inclusion of more reflexive debates.
- JRC has posted the Nexus Times on the internal facebook of the commission, but reach is limited. People need to update to receive notifications, so not many receive these notices.
- Partners are asked to keep the project manager informed about the upcoming conferences and events that they will attend to keep the shared calendar updated.
- We need to plan ahead for the EU side event at the COP24 (3-14 December 2018), possibly in collaboration with SIM4NEXUS. Call to be expected by the end of June/beginning July. Jan (CA) confirms that he will attend the COP24. We need relevant results in accessible format.

*Acknowledgements and open-access requirements*

- The consortium is reminded of their obligations to make proper acknowledgement to EC funding (incl. disclaimer), as well as of the obligation to publish in open access.
- Concern is raised about making underlying data available in open access where confidential data (e.g., interviews) is involved. UiB, UNINA and ITC will strengthen the practices to protect privacy already included in the data management plan and will explicitly address potential issues in the next revision of the data management plan.
- Concern is also raised about the high article processing fees of journals with good impact factor, and the fact that the embargo period of these journals always exceeds EC requirements. It is advised to comply as good as possible with the available budget (APCs are eligible expenses).

*Final conference*

The organization of the final conference in the last months of the project is discussed:

- It is agreed to split it into two events: one short event in Brussels focused on policy-makers and one (or more) separate scientific events.
- Volunteers for organizing the final policy event in Brussels include Roger (UiB), Keith (HUTTON), Angela (JRC) and Mario (UAB). It is expected that the PO will help with the organization of the event (e.g., space). Otherwise non-EC premises could be used (e.g., Scottish or Catalan delegation).

- Suggestions for scientific events include the BIWAES 2019, special session at IALE 2019 (Milan, Italy), or the next PNS conference.

### Action Points

Action points for the next coming months are drawn up (see next section).

### Closure

The meeting is closed at 13:00.

## 3. Short-term Action Points

| ACTION POINT   | WHO                              | DEADLINE              |
|--|----------------------------------|-----------------------|
| WP1: Set date for next consortium meeting May 2019 (doodle)  | UT (Maarten)                     | End of June 2018      |
| WP1: Set date for AB-PI meeting in January 2019  | UAB (Sandra)                     | 30/06/2018            |
| WP2: Provide guidelines to WP5 and WP6 task leads for required input for milestones MS9 and MS11 (also regarding meetings not organized by JRC)  | JRC (Angela)                     | End of June 2018      |
| WP2: Provide input for the Forum section of the Dialogue Space to Paulo; Work with partners towards a pilot usage of the dialogue place.   | All partners & JRC               | July 2018             |
| WP2/WP5/WP6: Update shared stakeholder list (ENGAGE excel sheets) on secure HUTTON server and ensure one person of each policy team and innovation team has access to keep it updated. | HUTTON                           | End of June 2018      |
| WP3: Remind all partners of the instructions in the DMP on how to upload excel files (or other formats for data and reports) in the NIS repository (NextCloud)                         | UNINA (Michele)                  | End of June 2018      |
| WP3: Provide a manual and webinar on how to upload/drop excel files for MuSIASEM case studies into the NIS frontend and exploit the backend for elaboration of analyses.               | UNINA                            | End of September 2018 |
| WP3: Each policy and innovation team lead sends a memo to UNINA (Mario in cc) on the data so far collected and describes the way they plan to collect further data.                    | Policy and innovation team leads | End of June 2018      |
| WP3: Establish 'EUROSTAT' task force, including composition and action plan (not limited to Eurostat databases; volunteers: Maarten; HUTTON; Roberta; Alfonso)                         | UAB (Mario)                      | End of July 2018      |
| WP5: Confirm composition of policy teams and remove conflicting files in the drive   | HUTTON (Keith)                   | Mid June 2018         |

|   |                       |                     |
|---|-----------------------|---------------------|
| WP5: Circulate a summary of SDGs to WP5 task leads  | HUTTON                | End June 2018       |
| WP5: Circulate a summary of Climate Change goals to WP5 task leads  | CA                    | End June 2018       |
| WP5: Provide input to JRC regarding their involvement in stakeholder engagement, if required. Template provided by JRC.   | WP5 task leads        | Mid June 2018       |
| WP5: Each policy team informs Kirsty on interest for institutional analysis. Kirsty takes it from there.  | WP5 task leads        | End of June 2018    |
| WP5: Check and adapt basic template for reporting of phase 1 deliverables   | WP5 lead (Keith)      | End of August 2018  |
| WP5: Organize internal peer review of WP5 deliverables due November 30  | UAB                   | End of October 2018 |
| WP6: Confirm composition of all innovation teams; each team needs to provide a contact point to JRC (for stakeholder and/or citizen engagement) and have a UNINA representative | WU (Raimon)           | End of June 2018    |
| WP6: Re-organize google drive or find other system to share documents (essential for overarching tasks)   | WU (Raimon)           | End of June 2018    |
| WP6/WP2: Provide input to JRC regarding their involvement in stakeholder and/or citizen engagement, if required. Template provided by JRC.                                      | Innovation task leads | Mid July 2018       |
| WP6: Set and circulate overarching questions to guide the development of the innovation tasks; recirculate earlier relevant memo(s)   | UiB (Roger)           | End of July 2018    |
| WP6: Provide input to WP6 task leads on information/data required for cross-cutting task low-carbon (incl. timing)  | CA (Jan)              | End of August 2018  |
| WP6: Distribute instructions to innovation task leads on required inputs for Task 6.5 Green bonds   | CA (Luis)             | 30 November 2018    |
| WP6: Explore the possibility of citizen engagement in Norway for the innovation EV&storage  | UiB (Roger)           | End of August 2018  |
| WP7: All partners inform Sandra of conferences or other events they plan to attend (MAGIC context) – Sandra updates MAGIC calendar accordingly                                  | UAB (Sandra)          | Continuous          |
| WP7: Circulate updated Nexus Times schedule   | Zora                  | 30 June 2018        |

## 4. Participants

|    | NAME                     | AFFILIATION |
|----|--------------------------|-------------|
| 1  | Mario Giampietro         | UAB         |
| 2  | Sandra Bukkens           | UAB         |
| 3  | Maddalena Ripa           | UAB         |
| 4  | Violeta Cabello          | UAB         |
| 5  | Zora Kovacic             | UAB         |
| 6  | Keith Matthews           | HUTTON      |
| 7  | Kirsty Blackstock        | HUTTON      |
| 8  | Dave Miller              | HUTTON      |
| 9  | Imke de Boer             | WU          |
| 10 | Raimon Ripoll Bosch      | WU          |
| 11 | Evelien de Olde          | WU          |
| 12 | Abigail Muscat           | WU          |
| 13 | Akke Kok                 | WU          |
| 14 | Maarten Krol*            | UT          |
| 15 | Charlotte Verburg        | UT          |
| 16 | Bunyod Holmatov          | UT          |
| 17 | Roger Strand             | UiB         |
| 18 | Sissel Aasheim           | UiB         |
| 19 | Ângela Guimarães Pereira | JRC         |
| 20 | Paulo Rosa               | JRC         |
| 21 | Thomas Völker            | JRC         |
| 22 | Roberta Siciliano        | UNINA       |
| 23 | Michele Staiano          | UNINA       |
| 24 | Massimo Aria             | UNINA       |
| 25 | Antonio D'Ambrosio       | UNINA       |
| 26 | Alfonso Piscitelli       | UNINA       |
| 27 | Giuseppe Pandolfo        | UNINA       |
| 28 | Carmela Iorio            | UNINA       |
| 29 | Richard Aspinall         | UNINA       |
| 30 | Jan Sindt *              | CA          |
| 31 | Luis Zamarioli           | CA          |
| 32 | Baltasar Peñate Suárez   | ITC         |
| 33 | Rafael Nebot Medina      | ITC         |

\* Substitutes PI at General Assembly meeting