D3.4 – Typology of interactive innovation project approaches

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Better Rural Innovation: Linking Actors, Instruments and Policies through Networks
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Deliverable No. 3.4

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Technical details of Deliverable 3.4

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Highlights of this report

A typology is an organised system that divides a population into groups which can be described and featured by a particular constellation of the attributes that form the basis of the typology. The elements within a type have to be as similar as possible and the differences between the types have to be as strong as possible. Although every type can be defined as a combination of its attributes, meaningful relationships must exist between the individual properties of the type. A typology is a complex theoretical statement and not a classification system.

The overarching concept measured by this typology is ‘efficiency of innovation co-creation by a multi-actor partnership’. This is disaggregated into two dimensions: ‘attitude towards interaction’ with two categories and ‘structural components of the organisational innovation system’ (OIS) with four categories ‘dissemination and embedding’ and ‘the enabling environment’). The result is a matrix of eight distinct ‘ideal types’ of innovation co-creation activity.

The concepts that distinctively correspond to each of the eight cell types are formulated, based on the data from the 200 ‘light-touch’ reviews. These are described firstly by structural component of the OIS and secondly by attitude towards interaction. Both dimensions are conceptualised as carrying equal weight in terms of their collective effect on speeding up or slowing down co-creation for innovation.

From the LIAISON Task 3.1 data, the possible most important issues per structural component of the OIS are identified. While it might be anticipated that ‘indifference towards interaction’ may slow down innovation, the typology does not attempt to demonstrate such a causal relationship. Rather, it is anticipated that considerable insight will be gained from the LIAISON WP4 case studies concerning the validity of the profiles of the ideal types that form this typology.
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Acronyms

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<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>AIS</td>
<td>Agricultural Innovation System</td>
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<td>AKIS</td>
<td>Agricultural Knowledge and Innovation System</td>
</tr>
<tr>
<td>MLP</td>
<td>Multi-level perspective</td>
</tr>
<tr>
<td>OG</td>
<td>Operational Group</td>
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<tr>
<td>OIS</td>
<td>Organisational Innovation System</td>
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<td>D</td>
<td>Deliverable document listed in the DoA of the LIAISON project</td>
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<tr>
<td>DoA</td>
<td>Description of Action of the LIAISON project</td>
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<tr>
<td>EC</td>
<td>European Commission</td>
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<tr>
<td>SCAR</td>
<td>Standing Committee on Agricultural Research</td>
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<tr>
<td>EIP-Agri</td>
<td>European Innovation Partnership agricultural Productivity and sustainability concept</td>
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<td>SO</td>
<td>Specific objective of the LIAISON project</td>
</tr>
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<td>SWG</td>
<td>Strategic Working Group</td>
</tr>
<tr>
<td>EURIC</td>
<td>European Rural Innovation Contest of the LIAISON project</td>
</tr>
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<td>T</td>
<td>Task within a workpackage</td>
</tr>
<tr>
<td>ESIF</td>
<td>European Structural and Innovation Funds</td>
</tr>
<tr>
<td>TIS</td>
<td>Technological Innovation System</td>
</tr>
<tr>
<td>H2020 or Horizon 2020</td>
<td>The EU Framework Programme for Research and Innovation 2014-2020</td>
</tr>
<tr>
<td>TN</td>
<td>H2020 Thematic Network [project]</td>
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<tr>
<td>IPR</td>
<td>Intellectual property rights</td>
</tr>
<tr>
<td>WP</td>
<td>Workpackage of the LIAISON project</td>
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<tr>
<td>LIFE</td>
<td>The EU’s funding instrument for the environment and climate action.</td>
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</table>
LIAISON Task 3.3 has constructed a multidimensional conceptual typology of interactive innovation project approaches. The term ‘typology’ refers to conceptually derived interrelated sets of ideal types. When typologies are properly developed and fully specified, they are complex theories that can be subjected to rigorous empirical testing using the quantitative models developed. The typology is based on the conceptual framework developed in LIAISON WP1 and informed by the results from the 200 ‘light-touch’ reviews conducted in Task 3.1. The overarching concept measured by this typology is ‘efficiency of innovation co-creation by a multi-actor partnership’. This overarching concept is disaggregated into two dimensions: ‘attitude towards interaction’ with two categories and ‘structural components of the organisational innovation system’ with four categories. These dimensions are conceptualised as carrying equal weight in terms of their collective effect on speeding up or slowing down interactive innovation in agriculture, forestry and related sectors. The result is a matrix of eight distinct ‘ideal types’ of innovation co-creation activity, each named according to the concept that corresponds to it. The typology will be tested in WP4 and will contribute to the future work of WP1.
## Relevant definitions

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Categorical versus continuous</td>
<td>A basic distinction between two types of variables. Corresponds to the differences between nominal and ordinal scales, on the one hand, and interval, ratio, and absolute scales, on the other.</td>
</tr>
<tr>
<td>Cell types</td>
<td>The concepts and associated terms located in the cells of a typology.</td>
</tr>
<tr>
<td>Multidimensionality</td>
<td>The property of being based on two or more variables; i.e., constructed around multiple attributes or characteristics that assume different values.</td>
</tr>
<tr>
<td>Overarching concept</td>
<td>The overall concept measured by the typology, as opposed to the component concepts that correspond to the row and column variables, the categories of those variables, or the cell types.</td>
</tr>
<tr>
<td>Row and column variables</td>
<td>The two (or more) dimensions that form a typology.</td>
</tr>
<tr>
<td>Type</td>
<td>An analytic category that may be (but is not necessarily) situated in and defined by a typology.</td>
</tr>
<tr>
<td>Typology</td>
<td>An organised system of types that breaks down an overarching concept into component dimensions and types.</td>
</tr>
<tr>
<td>Typology, conceptual</td>
<td>A form of typology that explicates the meaning of a concept by mapping out its dimensions, which correspond to the rows and columns in the typology. The cell types are defined by their position vis-à-vis the rows and columns. May also be called a descriptive typology.</td>
</tr>
<tr>
<td>Typology, explanatory</td>
<td>A form of typology in which the cell types together form the dependent variable, and the dimensions that establish the rows and columns are the independent variables.</td>
</tr>
<tr>
<td>Typology, multidimensional</td>
<td>A form of typology in which cell types are created by cross-tabulating two or more variables.</td>
</tr>
<tr>
<td>Typology, unidimensional</td>
<td>A form of typology in which cell types are created based on a single categorical variable.</td>
</tr>
<tr>
<td>Variable</td>
<td>An attribute or characteristic that is present or absent; alternatively, present or absent to varying degrees.</td>
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Source: Collier et al. (2012)
1 Introduction

The LIAISON project is being part-funded by the European Commission (EC) within the frame of Horizon 2020 (H2020) call topic RUR-16-2017. The project is expected to make a significant and meaningful contribution to optimising interactive innovation project approaches and the delivery of European Union (EU) policies to speed up innovation in agriculture, forestry and rural areas.

LIAISON has nine work packages (WPs): WP1 provides the conceptual framework and ensures a common understanding of key terms and concepts between teams. WP2 aims to enhance the participatory methods we use to work together. WP3, of which this Deliverable is part, is providing the foundation for WP4. WP4 will guide the in-depth assessment of 32 interactive innovation projects in a range of sectors and countries. WP5 is testing and enhancing the methods used for assessing the effectiveness and impact of interactive innovation projects. WP6 integrates all findings and synthesises the main recommendations. WP7 brings practitioners and stakeholders to the project and facilitates the dissemination and exploitation of project results. WP8 aims to ensure a successful and efficient implementation of the project by coordinating all activities and processes. The WP8 team is responsible for an efficient administrative management, and financial monitoring, reporting, and it ensures compliance with data management standards and risk management. WP9 covers ethics issues.

In LIAISON WP3, Deliverable D3.1 ‘Light-touch’ review database’ described the process by which a ‘long list’ of around 300 projects and initiatives were selected. The LIAISON European Rural Innovation Contest (EURIC) was introduced in D3.3. Deliverable D3.2 reported the results of the ‘light-touch’ review of the final shortlist of 200 projects and other initiatives. D3.4, describing the typology, is the final Deliverable of LIAISON WP3.

1.1 The contribution of a typology to the LIAISON research

One of the expected impacts of the research specified in the RUR-16-2017 call text is the “delivery of a set of good examples of various types of multi-actor research projects and [Horizon 2020] thematic networks which compile practice-ready knowledge and connect successfully with Operational Groups” (our emphasis). By investigating “how co-creation and co-ownership of project results can be improved and quantified/qualified in order to speed up the use of project results in practice”, the [LIAISON] project should “explore how instruments and approaches under the various policies could be further adjusted and how they contribute to innovation ... in a broad range of agriculture and forestry sectors” and foster the “development of best practices for building and implementing multi-actor project proposals and consortia”. As part of this work, the project “will examine how practically/legally to construct consortia with different types of actor, taking into account the different status of the various types of organisations involved (partner, subcontractor etc.)”.

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LIAISON Task 3.3 (Typology of interactive innovation project approaches) attempts to address some of these issues. It was due to be completed in M19 with the submission of Deliverable D3.4 (Typology of interactive innovation project approaches). D3.4 would be an annotated report presenting a typology of multi-actor research and innovation projects, elaborated with regard to activities, resource and relational networks/linkages. It would identify, describe and critically assess the key features of each ‘type’ of project. The development of the typology would be informed by the results of LIAISON Task 1.3 (Identification and first analysis of concrete mechanisms in support of innovation) and the typology itself would be based on the outputs of Tasks 3.1 and 3.2.

A typology can reduce the complexity in a sample and help to deal with the variability and diversity. Alvarez *et al* (2014) listed four main reasons to develop a typology, in their case on the topic of farm diversity:

- **Targeting**: the distinction between farming systems is aimed at identifying appropriate interventions per farming system type;
- **Scaling-out**: typologies contribute to understanding how appropriate interventions can be disseminated at a large scale;
- **Selection**: typologies support the selection of representative farms or the formulation of (average) prototype farms for detailed analyses;
- **Scaling-up**: typologies support the extrapolation of ex-ante impact assessments to larger spatial or organisational scales.

According to the Description of Action (DoA), the LIAISON typology was expected to guide the selection of a ‘representative’ set of projects for in-depth analysis in WP4. This indeed happened, but only indirectly, owing to the overlapping timescales of Tasks 3.3 and 4.2. The WP4 case study selection was initiated during the LIAISON General Assembly meeting which was held in Évora, Portugal in September 2019 (M17) using the results of Deliverable D3.2. Thus, both Tasks used the same ‘evidence base’. However, a typology is not a classification system, as discussed below, and the primary shortlisting criterion in WP4 was the ‘insightfulness’ of the cases.

The LIAISON DoA also states (p.18) that the results of Task 3.3 would “feed into Task 1.1, Task 2.3 reflections, and the ongoing work in WPs 4-7”. Thus, the typology was expected to support the LIAISON project in further developing its conceptual framework and thereby achieving all five of its specific objectives (SO) listed below. Furthermore, the typology was formulated concurrently with the WP4 analytical framework which is designed to understand why some approaches are more successful than others in “speeding up innovation” (call topic text).

The typology is therefore contributing to achieving LIAISON SO1 which is addressed by WP1:

- To develop with relevant actors a shared, but versatile, conceptual framework for the **analysis and assessment of innovation processes** and change in agriculture, forestry and rural areas.
It also forms part of the analytical framework that will be developed by WPs 2-7 in pursuit of SOs 2-5:

- **To identify good practices** and spread widely their use in the planning and implementation of interactive innovation. This can be achieved by using a multi-actor approach to co-identify, adapt and adopt effective current practices **across a range of EU-funded projects currently aimed at speeding up innovation in rural areas**.

- **To identify, develop and disseminate a set of 'good' practices for the effective governance of innovation projects and actions**, and promote 'clever alliances' through partnership by recognising good governance and effective partnership practices for EU-funded rural innovation projects.

- **To present recommendations for the creation of a coherent institutional and policy environment by identifying, understanding and disseminating what constitutes an effective 'enabling environment'** for successful interactive innovation projects, and what does not.

- **To identify and test methods for assessing the effectiveness and impact of innovation projects**, including a better quantitative and qualitative measurement of scientific efforts impacting agricultural practices and systems, including the impact of facilitating actors and involvement of education.

This Deliverable D3.4 begins by reviewing some of the general principles of typologies and then describes some approaches that have previously been used in connection with EIP-Agri related actions. The conceptual basis of the LIAISON typology is then summarised. The next section describes the methodology used, starting with the scope of the typology, which is firmly grounded in the earlier WP3 research, and that of LIAISON WP1 to date, and followed by an explanation of the construction of the typology. The results of the research are presented in section 3 and the implications of the analysis for the future work of LIAISON are discussed in section 4.

### 1.2 General principles of typologies

A typology is an organised system that divides a population into groups based on one or more shared attributes (Collier *et al.*, 2012). These groups or *types* can be described and featured by a particular constellation of the attributes that form the basis of the typology. Accordingly, every typology is based on an ‘attribute space’ which results from the combination of the selected attributes and their dimensions (Kluge, 2000). An overview of all possible combinations which are theoretically conceivable can be gained if this attribute space is represented with the help of multidimensional tables. The elements within a type have to be as similar as possible (internal heterogeneity on the ‘level of the type’) and the differences between the types have to be as strong as possible (external heterogeneity on the ‘level of the typology’). Although every type can be defined as a combination of its attributes, meaningful relationships must exist between the individual properties of the type (Kluge, 2000).
Collier et al. (2012) emphasises key distinctions between different sorts of typologies:

- **Conceptual typologies.** These typologies make a fundamental contribution to concept formation in both qualitative and quantitative research. They analyse and develop the meaning of a concept in detail by mapping out its dimensions, which correspond to the rows and columns in the typology. The cell types are defined by their position vis-à-vis the rows and columns;

- **Descriptive versus explanatory typologies.** Conceptual typologies may also be called descriptive typologies, given that the dimensions and cell types serve to identify and describe the phenomena under analysis. These may be contrasted with explanatory typologies in which the cell types are the outcomes to be explained and the rows and columns are the explanatory variables;

- **Multidimensional versus unidimensional typologies.** Multidimensional typologies deliberately capture multiple dimensions and are constructed by cross-tabulating two or more variables. By contrast, unidimensional typologies are organised around a single variable.

In the literature, conceptual and explanatory typologies are sometimes confused (Collier et al., 2012). The stated goal of the research may be to conceptualise, but the analysis may then attempt to identify causal relationships.

The following subsections mostly deal with matters related to multidimensional conceptual typologies as these are the most applicable to the work of LIAISON.

1.2.1 Typologies as theories

Doty and Glick (1994) argue that although typologies have often been viewed as classification systems, they are in fact complex theoretical statements that should be subjected to quantitative modelling and rigorous empirical testing. A theory is a series of logical arguments that specifies a set of relationships among concepts, constructs or variables. Theories must meet at least three primary criteria:

- **Constructs must be identified.** Typologies contain two distinct kinds of constructs. The first is the ‘ideal type’. These are complex constructs that are intended to provide an abstract model, so that deviation from the extreme or ideal type can be noted and explained. Typologies also include the unidimensional constructs that are the building blocks of traditional theoretical statements. These ‘first order’ constructs are the dimensions used to describe each ideal type in the theory;

- **Relationships among these constructs must be specified.** A theory must hypothesise relationships among the constructs incorporated in the theory. Typological theories highlight the internal consistency among the first-order constructs within an ideal type, and they explain why this internally consistent pattern results in the specified level of the dependent variable(s);

- **These relationships must be falsifiable.** The predictions associated with a typology (i.e. the hypothesised relationships between similarity to the ideal types of
organisations and the dependent variable) must be testable and subject to disconfirmation.

Typologies are composed of two parts: (a) the description of the ideal types (i.e. the typology) and (b) the set of assertions that relate the ideal types to the dependent variable (i.e. the typological theory). They identify multiple ideal types, each of which represents a unique combination of the organisational attributes that are believed to determine the relevant outcome(s).

Both theoretical and empirical methods can be used to specify the ideal types. Arguing that multivariate statistics methods are often preferred over expert knowledge-based approaches because of the reproducibility inherent to their statistical foundations, Guarín et al. (2019) used multivariate analysis to produce a typology of small farms in Europe. By contrast, Doty and Glick (1994) argued that the primary advantage of theoretical specification is that the theory development process is not constrained by the sample because the ideal profiles are not specified with organisations in the sample. The theoretically specified ideal profiles might predict a level of effectiveness that has not been attained by any organisations in the sample.

1.2.2 Constructing a typology

Collier et al. (2012) list four ‘building blocks’ in the development of a typology:

- **Overarching concept.** This is the concept measured by the typology. This concept should be made explicit and should be displayed as the title in the diagrammatic representation of the typology;

- **Row and column variables.** The overarching concept is disaggregated into two or more dimensions and the categories of these dimensions establish the rows and columns of the typology. These dimensions capture the salient elements of variation in the concept, so the plausibility and coherence of the dimensions vis-à-vis the overarching concept are crucial. They may be categorical variables or continuous variables. The constructed types will be described with the help of these properties;

- **Matrix.** Cross-tabulation of the component categories of these dimensions creates a matrix. The challenge of creating a matrix can push scholars to better organise the typology, tighten its coherence and think through the relationships among different components;

- **Cell types.** These are the concepts and associated terms located in the cells. The cell types are ‘a kind of’ in relation to the overarching concept measured by the typology. The conceptual meaning of these types derives from their position in relation to the row and column variables which, as well as providing the defining attributes of each cell type, should also (as discussed briefly below) provide consistent criteria for establishing the types. Kluge (2000) outlined an extra step whereby further analysis within and between the groups can lead to fewer types in the final version of the typology.
Although one option is simply to give labels to the cell types that repeat the names of the categories for the corresponding row and column variables, it is valuable to take the further step of formulating the concepts that distinctively correspond to each cell type (Collier et al., 2012).

Typological theories explicitly define multiple patterns of the first-order constructs that determine the dependent variable (Doty and Glick, 1994). The way that the first-order constructs combine to determine the dependent variable can vary considerably across the set of ideal types. For example, two constructs may be positively related in organisations that resemble one ideal type, negatively related in organisations that resemble a second ideal type, and unrelated in organisations that resemble a third or fourth ideal type.

Kluge (2000) and Collier et al. (2012) both cite examples of multidimensional typologies in which one dimension reflects the behaviour of the subject. Kluge (2000) mentioned a study that analysed the relationship between the occupational career and the delinquent behaviour of adolescents. Following data analysis, on the basis of these two central analytical dimensions an attribute space with eight possible combinations was developed. Career could be ‘successful’ or ‘failed’, while behaviour could be ‘continuous delinquency’, ‘episode’, ‘minor offences’ or ‘conformity’. The study referred to by Collier et al. (2012) addressed the topic of targeting rewards in electoral mobilisation. The row variable was whether the prospective recipient of the reward is inclined to vote (behaviour) and the column variable was whether the prospective recipient favoured the political party offering the reward.

Geels and Schot (2007) developed a typology of multiple transitions pathways. They used the multi-level perspective (MLP), which understands transitions as outcomes of alignments between developments at multiple levels. The MLP distinguishes three levels of concepts, niche-innovations, sociotechnical regimes and sociotechnical landscape and argues that transitions come about through interactions between processes at these three levels. They state (p.400) that “[t]he alignment of these processes enables the breakthrough of novelties in mainstream markets where they compete with the existing regime” and illustrate this system with a Figure (p.401). They recognise that what they term ‘regime transformation’ is not a monolithic process dominated by rational action, not least because the ‘communities of interacting groups’ differ between levels. For regimes these communities are large and stable while for niches they are small and unstable.

1.2.3 The importance of methodological rigour

Doty and Glick (1994) caution against an overemphasis on describing the typology and under-emphasis on developing the underlying theory. Developing a valid model of a typological theory is complicated by three factors:

- **The ideal types unique to each theory must be modelled.** Precise definitions of the ideal types described in a typology are a prerequisite for modelling the ideal types. Doty and Glick (1994) state [p.46] that “[t]ypologists typically provide very rich descriptions of the ideal types identified in their typologies, but often they...
describe the ideal types with different constructs and with relatively vague and inconsistent terms”. Although these may provide the reader with a ‘feeling’ for the ideal types, they do not provide the unambiguous definitions that are a prerequisite of rigorous theory development and modelling;

- **The relative theoretical importance of the first-order constructs used to describe the ideal types must be included in the model.** Theoretical specification requires expert raters (or the original theorists) to develop the ideal profiles that represent the ideal types of organisations. Judgments are based strictly on the interpretation of the theory. The value of each relevant first-order, unidimensional construct that best describes each ideal type of organisation is determined. The mean of the values assigned to each construct for each ideal type constitutes the ideal profile for the corresponding ideal type. The assumption of equal importance among first-order constructs also has been explicitly adopted;

- **Any assumptions about contingency factors and hybrid types must be modelled.** Contingency factors can restrict an organisation’s choice among the types or the existence of hybrid types and indeed contextual contingencies may limit a given organisation to a single effective organisational type. Such constraints need to be addressed. Furthermore, hybrid types which are combinations of the initial ideal types may exist. According to Doty and Glick (1994), theorists rarely, if ever, specify the pattern of permissible hybridisation in their typologies. Many typologies assert that some hybrid types may exist, but fail to specify the forms of hybridisation that are allowed in the theory.

Collier et al. (2012) caution against the error of using non-equivalent criteria in formulating the cell types. They cite the example of a typology that distinguished ‘Anglo-American’, ‘Continental European’, ‘pre-industrial non-European-American’ and ‘totalitarian’ political systems. The typology seems to have been developed from an Anglo-American perspective and, although the first two types are well elaborated, it rather crudely classifies a number of countries as totalitarian or pre-industrial on the basis of perceived negative, rather than positive, attitudinal values associated with political culture.

### 1.3 ‘Typologies’ applicable to the EIP-Agri

The terms ‘classification scheme’, ‘taxonomy’ and ‘typology’ have frequently been used interchangeably (Doty and Glick, 1994). The first two terms categorise phenomena into mutually exclusive and exhaustive sets with a series of discrete decision rules. Unlike typologies, they do not identify a unique and distinct set of ideal types. Two notable examples of ‘typologies’ or ‘classifications’ have developed been in the frame of EIP-Agri. The first (Fotheringham et al., 2016) was a ‘typology’ applied at the programme level while the second (Knotter et al., 2019) used data to classify Operational Groups (OG) into categories and then explore correlations between them.
1.3.1 Evaluation study of the implementation of the EIP-Agri

This report (Fotheringham et al., 2016) evaluated the implementation of the EIP-Agri in 96 out of 111 RDPs in 26 EU Member States. It concluded that the EIP-Agri addresses the need for projects linking research and practice and is a flexible tool that can be adapted to divergent circumstances and policy contexts. Farmers are more likely to become involved in the innovation process under the EIP-Agri as compared with other funding streams for innovation in the agricultural sector. It made five recommendations for improving the EIP-Agri’s effectiveness, covering: (a) improving multiplication to maximise effectiveness; (b) simplifying and improving administrative systems and rules; (c) promoting the understanding of the EIP-Agri’s added value; (d) better integrating the EIP-Agri into national/regional Agricultural Knowledge and Innovation Systems (AKIS); and, in the longer term, (e) to improve links to and awareness of potential ‘follow up’ funding.

Understanding the two or three key factors that matter most when it comes to the strategic choices made by EU Member States and regions informed the study’s approach to the development of a ‘typology’ which, in contrast to accepted practice (Doty and Glick, 1994; Collier et al., 2012), they then used to classify RDPs into clearly distinct groups. The classification was expected to create a structure that would allow the key features and choices regarding the implementation of the EIP-Agri throughout the EU to be summarised, and then guide the selection of a sample of RDPs for evaluation and as well as provide a framework to categorise and interpret the results.

When constructing the typology, Fotheringham et al. (2016) looked at some of the key choices surrounding the implementation of the EIP-Agri with a view to identifying the most appropriate variables. This meant choosing variables for which sufficient data were available and which could meaningfully be divided into categories. Their preference was for variables which fitted neatly into an ordinal or interval scale, allowing for some quantitative comparison, but nominal variables were also considered. The result was a typology based on two dimensions:

- **Envisaged average budget for individual OGs (large/medium/small).** This variable was thought to be useful partly because the data from different RDPs were readily comparable but more importantly for the insight it provided into the nature of the projects Managing Authorities planned to support. Small projects were likely to involve a targeted set of innovation actors directly working to address a focussed problem. Larger projects may bring together relatively more stakeholders with a view to addressing (a broader variety of) questions at regional/national level, or a small number of actors tackling bigger problems;

- **Prescriptiveness in the approach to selecting OGs (open/restrictive).** How Managing Authorities define the parameters for and select OGs was expected to be a useful dimension for the typology because it has substantial effects on the kinds of projects that are funded and their practical implementation. Openness, allowing OGs to propose any projects in the frame of the measure, indicated that a Managing Authority was keen to support project ideas that developed in a
bottom-up manner. Restrictiveness, whereby Managing Authorities pre-defined themes in advance, indicated a top-down approach.

Fotheringham et al. (2016) were able to report fully on 84 of the 96 RDPs that were programming for the EIP-Agri. The numbers of RDPs allocated to each type were as follows: small and open: 3; medium and open: 16; large and open: 17; small and restrictive: 6; medium and restrictive: 20; large and restrictive: 22. All six types were geographically diverse. For example, the post-socialist EU Member States were represented in five of the six types while the various UK-based programmes were distributed across three types.

The authors noted that no strong links were observed between the ‘typology’ and other programming decisions that were of interest to them and that the typology was not particularly useful for examining key trends and features. Indeed, the effectiveness of the typology in terms of achieving internal heterogeneity within the types appeared to be rather limited. For example, as regards financial resources and envisaged spending, there were substantial variations in the different budgetary envelopes analysed between countries and regions in each group of the typology as well as in the EIP-Agri budget shares. Similarly, there did not appear to be a direct relationship between the types and the arrangements regarding innovation brokerage services. In terms of priority themes and sectors, beyond the three ‘open’ types unsurprisingly tending to pursue a more flexible approach, the approaches taken to prioritisation of themes did not fit well with the typology. No clear trends emerged with regard to the types regarding cross-border arrangements either.

The approach used by Fotheringham et al. (2016) has the merits of being simple and following a commonly used methodology. However, beyond showing that the EIP-Agri is able to fill a gap, at least in conceptual terms, in widely diverse contexts, the ‘typology’ seems to be of only limited value. Indeed, it can be argued that the output of the exercise is a ‘classification’ rather than a ‘typology’. Doty and Glick (1994) emphatically state (p.1994) that “[r]esearchers should never test typologies by examining the extent to which they can correctly classify organizations because classification is not the purpose of typologies. Further, their tests of typological theories should not categorically assign organizations to one of the ideal types.” The rather unsatisfactory results obtained by Fotheringham et al. (2016) in terms of the relationships between the types and the programming decisions show how crucial for adequate interpretation is the correct selection of the typology/classification categories.

1.3.2 Operational Groups Assessment 2018

This study (Knotter et al., 2019) assessed the 612 EIP-Agri OGs that were approved and running until April 2018. It focussed on the state of play of the setting up and implementation of the OGs, their results and how these are disseminated, while also reflecting on the support provided by other institutional actors such as Managing Authorities and Rural Networks. As part of this work, a clustering exercise was carried out using data available from the European Union’s system for fund management database. Knotter et al. (2019) did not use the term ‘typology’ but rather described
their work (p.5) as “a useful method to gain insights about the OGs based on the information available on them”. They identified and grouped similar projects according to categories that took into account the following considerations:

- The categories used to describe the OGs were sufficiently representative so that each OG could be associated to them;
- The categories allowed the grouping of OGs to obtain a better insight into their main thematic focus and activities, and to link this with other characteristics such as partners involved, location etc.
- The categories were useful in facilitating the development of connections between OGs.

The first phase involved defining the categories that were applicable to the OGs according to single keywords using a methodology composed of six steps as described by Knotter et al. (2019). The resulting categorisation was reproduced in Appendix 3 of LIAISON Deliverable D3.2 (p.66). It included the following main categories:

- **Product/sector**: The NACE classification of economic activities\(^1\) was applied;
- **Type of agriculture**: For example, mixed farming, agro-ecology, conservation agriculture, and forestry;
- **Type of challenge**: These included resource management, food safety/product quality and socio-economic sustainability/competitiveness. OGs could have multiple objectives, and there were also sub-categories;
- **Type of solution**: The main categories were production changes, new technology solutions, value chain innovations, and ‘other’, but several sub-categories were again available;
- **Lead partner type**: In addition to farmer/forester or their organisation/association, the following types were specified: advisor, researcher, business, SME, public body, NGO, education and ‘other’;
- **Partnership structure**: This covered (a) number of (formal) partners and (b) types of entity included.

In the second phase, OGs were clustered according to the categories. The clustering had two purposes:

- To allow performing analyses on the different types of OGs, their structure and patterns of OG set-ups and functioning. It provided evidence-based indications of their different activities and focus;
- To capture the diversity of OGs’ work in a relatively detailed manner at the individual OG level.

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Knotter et al. (2019) point out that the methodology has some limitations. The OG allocation to the categories was not always evident and highly dependent on the available information while even when the information was available the clustering remained a matter of interpretation. For example, the types of agriculture were not always mutually exclusive, while universities could be either ‘research’ or ‘education’ institutes. Nonetheless it proved possible to allocate 601 OGs to at least some clusters although for ‘partnership structure’ the figure was just 239.

In the third phase, correlations were conducted between the individual cluster categories in cases where it was anticipated that the relationships between categories could give interesting information about the OGs, their challenges and their activities. Specifically, the following correlations were highlighted:

- **Challenge and Solution**: what types of solutions are typically used to tackle which types of problems faced by OGs?
- **Sector and Challenge**: do certain sectors addressed by OGs face certain challenges more than others? If so, which?
- **Type of agricultural/forestry activity and Challenge**: are certain OG challenges more prevalent for certain types of agricultural or forestry activity?
- **Country and Challenge**: do OGs in select countries face differing challenges?
- **Type of agricultural/forestry activity and Solution**: are certain OG solutions more frequently applied for certain types of forestry or agricultural activity?
- **Country and Type of agricultural/forestry activity**: do OGs in certain countries address certain types of agriculture more than others?

In addition to the clustering exercise, Knotter et al. (2019) conducted a questionnaire survey of OGs that generated 236 responses. In addition to gathering basic data about the OG (country, start date etc.) questions were asked about the partnership, preparation phase, collaboration, outcomes, support and follow-up, as summarised in Appendix 3 of LIAISON Deliverable D3.2 (p.65). These data were not used for clustering or for producing correlations, although they did allow some very interesting analysis of the sample.

The methodology of Knotter et al. (2019) informed the one developed for the LIAISON ‘light-touch’ reviews. The same six categories were used for grouping the reviewed projects and non-project activities during the desk research and, it has to be noted, some similar issues in terms of allocating projects to categories were encountered. The shortcoming of the OG Assessment, from the perspective of LIAISON, is that it dealt with just one specific group of projects and not the broad diversity of approaches identified during the WP3 research. Furthermore, it did not, and did not claim to have, produced a ‘typology’ but rather a ‘classification’.
1.4 Conceptual basis of the LIAISON typology

In the literature, the topic of interactive innovation is being approached at two levels (Cronin et al., 2020), namely the micro-level, focusing on multi-actor partnerships (e.g. Van Lancker et al., 2016), and the macro-level of the higher-level Agricultural Innovation System (AIS) (e.g. Coenen and Díaz López, 2010). The latter authors cite Carlsson and Stankiewicz (1991) who defined Technological Innovation Systems (TIS) as (p.111) “network(s) of agents interacting in a specific economic/industrial area under a particular institutional infrastructure or set of infrastructures and involved in the generation, diffusion, and utilisation of technology. Technological systems are defined in terms of knowledge or competence flows rather than flows of ordinary goods and services. They consist of dynamic knowledge and competence networks”2. Van Lancker et al. (2016) consider TISs to be part of a Global Innovation System which includes Organisational Innovation Systems (OIS), which they define (p.42) as “innovation network[s] of diverse actors, collaborating with a focal innovating organization in an innovation process, to generate, develop and commercialize a new concept, shaped by institutions”.

In their definition of an OIS, Van Lancker et al. (2016) derive four main structural components: (a) the innovation process, (b) the actors, (c) the innovation network and (d) the institutions. Innovation is viewed as an evolutionary, non-linear and iterative learning process, which requires intense communication and collaboration between different actors in order to take into account its multi-dimensional aspects. Similarly, citing Lundvall (1992), Coenen and Díaz López (2010) note that innovations are iteratively enacted through networks of social relations, rather than through singular events by isolated individuals or organisations. To understand innovation as an inherently social, interactive learning process is the defining feature of the systems approach to innovation. Any analysis of interactive innovation at the micro-level (OIS) therefore involves two dimensions, i.e. (a) the networks of social relations described by Coenen and Díaz López (2010) and (b), the four structural components approach of Van Lancker et al. (2016) and these form the framework of the LIAISON typology.

2 Van Lancker et al. (2016) use the term ‘Technological Innovation System’ for a system surrounding a particular technology and ‘Sectoral Innovation System’ for a network of agents interacting in a specific economic or industrial area. It could be argued that the A(K)IS is an example of the latter rather than the former, but the point remains that it is a level of organisation that is clearly distinct from the OIS which is centred on an innovation partnership.
2 Methodology

2.1 Scope of the LIAISON typology

In line with the RUR-16-2017 call text, the starting point for the subject of the typology is ‘interactive innovation project approaches’. The purpose of LIAISON is to understand the interactive innovation concept from the point of view of different actors and stakeholders represented at different levels of the process. The focus is on multi-actor innovation co-creation activities involving farmers and foresters (and not in actions that support innovation transfer or training in innovation and/or those that do not include practitioners in the co-creation process). Hence, process and experience of the project execution are of more interest than the research findings of these projects. As described in LIAISON Deliverable D3.2, the unit of observation in LIAISON WP3, which is also used as a unit of selection, is ‘multi-actor innovation co-creation partnerships’. Five ‘key tests’ were applied when shortlisting multi-actor partnerships for ‘light-touch’ review: (a) direct relevance of the topic of the project; (b) demonstration of a multi-actor partnership; (c) a significant level of engagement of practitioners; (d) a clear intention to innovate; and (e) the quality of the project description. These ‘tests’ were elaborated in LIAISON Deliverable D3.1.

In our analysis, we consider a ‘multi-actor innovation co-creation partnership’ to be at the core of an OIS as defined by Van Lancker et al. (2016). Frequently, especially but not only in the case of ‘projects’, a partnership or consortium includes a coordinator (organisation) which is analogous to the ‘focal innovating organization’ of the OIS. As discussed in the next paragraph, the OIS concept is applicable to projects and non-project approaches.

The results of the ‘light-touch’ reviews conducted in LIAISON Task 3.1 and described in D3.2 form the evidence base for the typology. Of the 200 reviews, 162 were of ‘projects’ and 38 were of other forms of cooperation. Reflecting the emphasis in the call text on EIP-Agri related activities in particular, and EU-funded actions more generally, 87 ‘light-touch’ reviews were of H2020 projects and EIP-Agri OGs, and altogether 135 (i.e. around two thirds) were of projects financed by the EU. However, the results of the ‘light-touch’ reviews showed that a wide variety of project-based and non-project approaches, including formal and informal partnerships, and even activities with no external funding, appear to be potentially effective means of fostering innovation co-creation in agriculture, forestry and the agri-food chain. All these ‘share the space’ in the AKIS. They include activities that were clearly ‘multi-actor’, in that constituent actors had different ‘labels’, such as farmer, researcher or advisor, and also peer-to-peer networks of farmers and foresters where the various

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3 LIAISON Deliverable D1.1 states that the notion of the ‘project’ encompasses a number of key characteristics: it is time specific with a stated start and end-date; it is responsive to local social, economic and environmental context; it is task oriented, with a specific set of achievable objectives; it is composed of identified actors and partners; it is endowed with limited resources (people, finance, authority); it has capacity to achieve beneficial change through innovation.
partners with had complementary types of knowledge. Any typology should take into account this diversity when attempting to identify the factors that are key to ‘speeding up’ (or ‘slowing down’) multi-actor innovation. Hence, the LIAISON typology is based not only on ‘projects’, but on the insights gathered from a broad range of ‘interactive innovation approaches’.

2.2 Development of the typology

The overarching concept or dependent variable measured by the LIAISON multidimensional conceptual typology is ‘efficiency of innovation co-creation by a multi-actor partnership’ (in agriculture, forestry and related sectors). After the methodology of Collier et al. (2012), and the theoretical arguments of Coenen and Díaz López (2010) and Van Lancker et al. (2016), the two dimensions of the overarching concept (i.e. the row and column variables in the typology matrix) are ‘attitude towards interaction’ and the ‘structural components of the OIS’. The rationale behind these choices and their alignment with the LIAISON conceptual framework are discussed next.

2.2.1 Attitude towards interaction

The RUR-16-2017 call text states that the interactive innovation approach “relies on knowledge exchange and the empowerment of all actors concerned and focuses on getting results implemented in practice”. It emphases actions that are implemented in the frame of the European Innovation Partnership "Agricultural Productivity and Sustainability" (EIP-Agri), namely Horizon 2020 (H2020) multi-actor research projects and thematic networks compiling practice-ready knowledge, and OGs funded under rural development programmes (RDPs). But it notes that “other EU and national policies may also contribute to innovation, e.g. the Farm Advisory System, Rural Development funding supporting farm advisory services, knowledge and information actions, LEADER, specific national/regional or particular H2020 instruments etc.”. The call text anticipates that improving the targeting and interlinking of these various activities can help to speed up innovation in rural areas, leading to more competitive, sustainable and climate-smart agriculture [and forestry].

For these various reasons, the attitude of participants in the consortium/partnership towards interaction (with others) is identified as being highly relevant to any analysis of how to optimise interactive innovation. Thus, in our typology we look at attitude towards interaction within and beyond the multi-actor partnership. This approach is in line with the published literature from other disciplines. As described above, both Kluge (2000) and Collier et al. (2012) cite examples of multidimensional typologies in which one dimension reflects the behaviour of the subject.

The Deliverables of LIAISON WP1 clearly define the conceptual basis of the research in WP3, and Deliverable D1.2 has already pointed out that innovation is a social process between different types of actor (farmers, foresters, businesses, academics, NGOs etc.). Van Lancker et al. (2016) note (p.41) that “innovation is viewed as an evolutionary, non-linear and iterative learning process, which requires intense
communication and collaboration between different actors in order to take into account the multi-dimensional aspects of innovation”. They stress that in a multistakeholder, multidimensional setting, learning between collaborating partners plays a vital role, and this demands interaction and communication. Klein Woolthuis et al. (2005) and other authors refer to this as the ‘systems of innovation’ approach.

‘Attitude towards interaction’ is clearly a continuous, rather than a categorial, variable since discrete ‘steps’ in the attitude of participants cannot be defined. To illustrate the contribution of attitude towards interaction to optimising interactive innovation, however, two illustrative levels of attitude are used in the LIAISON typology, namely ‘fosters interaction’ and ‘indifferent towards interaction’. These can be interpreted as representing the ‘positive end’ and the ‘middle’ of the scale of attitude. It is assumed that any actor with any kind of ‘negative’ attitude towards interaction would not want to participate in an interactive partnership. It will be recalled that Kluge (2000) also referred to a study in which ‘behaviour’ was categorised, (in this case, delinquency into four types).

### 2.2.2 Structural components of the OIS

LIAISON Deliverable D1.2 points out that “[i]nnovation is not a process that occurs in a vacuum but is situated instead in a complex, multi-dimensional system that determines its speed, outputs and, to varying degrees, its direction” (p.7). D1.2 (p.8) observes that “the concept of innovation pathways provides an organised attempt to explain some possible directions in which projects (and other actions) are implemented and innovation is created. For example, the identification of innovation pathways makes it more feasible to identify the necessary shifts needed in an innovation process to enhance its impact and can therefore greatly facilitate its optimisation”.

EC (2017) identified three so-called ‘pathways of innovation’, namely ‘identify and nurture potential new ideas’, ‘build capacity to innovate’ and ‘build enabling environment for innovation’ (see also Douthwaite et al., 2017 for source material). Inspired by the work of, for example, Fieldsend (2016) on the importance of upscaling innovations, LIAISON D1.2 added a fourth ‘pathway’, ‘actively disseminating and embedding new innovations’. In a very useful development, D1.2 then integrated the seven phases of the Innovation Spiral (Wielinga et al., 2018) with the four ‘pathways of innovation’. The initial idea and inspiration fit to Pathway 1, planning, development and realisation to Pathway 2, and dissemination and embedding to Pathway 3. There is no association between the Innovation Spiral and Pathway 4.

It should be recalled that the primary purpose of the work of LIAISON Task 1.3 (which resulted in D1.2) was the identification and first analysis of concrete mechanisms in support of innovation. This approach is important, but distinct from, that being pursued in WP3 where the emphasis is on improving our understanding of the interactive innovation process. In other words, D1.2 focuses more on the macro-level (to use the terminology of Cronin et al., 2020), and the LIAISON typology complements this approach by considering the micro-level, i.e. innovation partnerships, while accepting that the two levels are inextricably linked, not least through the which
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degree of ‘success’ at the local level is indeed, in part, ‘shaped by institutions’ (as stated by Van Lancker et al., 2016).

Consequently, in lieu of the ‘pathways of innovation’ as described in Deliverable D1.2, the LIAISON typology uses the structural components of the OIS as the second dimension in the cross-tabulation matrix. These illustrate potential ‘pressure points’ through which the entire interactive innovation process can be optimised. Of equal importance among these is the interaction between the partnership and the enabling environment (described by Klein Woolthuis et al. (2005) as the legal (e.g. regulation and law) and customarily institutions (e.g. culture and values) that together constitute the ‘rules of the game’ or the ‘codes of conduct’). A multi-actor partnership can ‘optimise innovation’ by ‘interacting’ with the enabling environment in two directions. It can make recommendations on how the enabling environment can be used, but equally importantly (and perhaps more so concerning that particular activity), the partnership may have more ‘success’ (i.e. the innovation process may be ‘optimised’) if it exploits the enabling environment to the extent possible, as discussed in sections 3 and 4.

Whereas ‘attitude towards interaction’ is a continuous variable, ‘structural components of the OIS’ is categorical. The multi-level perspective (MLP) employed by Geels and Schot (2007) can also be applied to the LIAISON research, as follows:

- ‘The actors’ applies to interaction between actors;
- ‘The innovation process’ addresses interaction at the consortium/partnership level;
- ‘Dissemination and embedding’ covers interaction between the partnership and the actors in the wider AKIS;
- ‘The enabling environment’ considers interaction between the partnership and the institutions.

This perspective reflects the assertion of Van Lancker et al. (2016) that innovating organisations should employ a dynamic, layered collaboration strategy (although their analysis was confined to the two layers that pertain to ‘the innovation process’ and ‘dissemination and embedding’), a point returned to in subsection 3.3 below. As became evident from the results of the LIAISON ‘light-touch’ reviews with regard to the location of the reviewed projects and non-project approaches in the Innovation Spiral (see section 4), Van Lancker et al. (2016) pointed out that this ‘layeredness’ is dynamic in time, depending on the stage of the innovation activity.

2.2.3 The cross-tabulation matrix of the LIAISON typology

The two options for ‘attitude’ and the four ‘structural components’ result in a 4x2 matrix and eight cells. The work of LIAISON WP1 is the starting point for the development of the typology and, as indicated above, the results of the 200 ‘light-touch’ reviews provide the evidence base. When formulating the ideal types, appropriate attention was paid to methodological rigour. With reference to Collier et al. (2012), equivalent criteria were used in formulating the cell types and each cell is
attributed a name that reflects the concept corresponding to it. The extensive data sets available from the earlier research in LIAISON WP3 were used to construct the ideal types using theoretical rather than empirical methods. Similarly, the data sets made it possible for the relative theoretical importance of the first-order constructs to be estimated. Contingency factors, where applicable, were described. Hybrid types were deemed not to exist between the ‘structural components’ as these are essentially discrete levels of the MLP. Although attitude towards interaction is a continuous variable, it is composed of first order constructs that are discrete.

This approach to constructing a typology is consistent with that of Mathé et al. (2016), who sought to develop a typology of innovation support services. They identified four components of these services, governance mechanisms, funding mechanisms, capacities of service providers and the methods for providing services. These components possess some similarities to the four structural components of the OIS. More generally, they considered innovation to be a context-dependent and complex process involving various actors that interact along this process, a view shared by the LIAISON consortium. For this reason, they assumed that, rather than one single model, ‘best-fit’ context- and situation-specific solutions to support innovation exist and that, in turn, various configurations in which innovation can be supported and accompanied also exist. It is reasonable to assume, in the light of earlier research and the findings of LIAISON WP3, that there is not one single approach to ‘speeding up’ innovation but that ‘various configurations’ in which innovation co-creation can be optimised also exist.

**Efficiency of innovation co-creation by a multi-actor partnership**

<table>
<thead>
<tr>
<th>Structural components of the OIS</th>
<th>Attitude towards interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fosters interaction</td>
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<tr>
<td>The actors</td>
<td>Diverse engagement</td>
</tr>
<tr>
<td>The innovation process</td>
<td>Inclusive community</td>
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<tr>
<td>Dissemination and embedding</td>
<td>Open network</td>
</tr>
<tr>
<td>The enabling environment</td>
<td>Action mobilises support</td>
</tr>
</tbody>
</table>

*Figure 1: Cross-tabulation matrix of the LIAISON typology*

In addition to the data gathered from the ‘light-touch’ reviews, the development of the typology was informed by feedback from five WP3 breakout groups convened during the LIAISON General Assembly (GA) meeting held in Évora, Portugal in September 2019, and from four break-out groups moderated by LIAISON colleagues at the
Organic Innovation Days (organised by TPOrganics) in Brussel in December 2019. Details of this feedback are recorded in LIAISON Milestone document MS12. A draft of this Deliverable was shared with the members of the LIAISON Project Advisory Board and their valuable comments were incorporated into this final version.

The research involved in the preparation of this Deliverable complied with the ethical principles described in subsection 2.5 of LIAISON Deliverable D3.2.

3 Results

In this section, the concepts that distinctively correspond to each of the eight cell types are formulated, based on the data from the 200 ‘light-touch’ reviews conducted in LIAISON Task 3.1. For purely practical reasons associated with the preparation of this Deliverable, it is structured firstly by structural component of the OIS and secondly by attitude towards interaction. This approach does not imply that the former is somehow the ‘dominant’ dimension of the typology. Both dimensions are conceptualised as carrying equal weight in terms of their collective effect on speeding up or slowing down interactive innovation in agriculture, forestry and related sectors.

3.1 The actors

According to Van Lancker et al. (2016), the relevant actors of the OIS are those groups or individuals who affect or are affected by the innovation process (our emphasis). They suggest that the innovation network consists of two layers. The first is a smaller, core group of stakeholders with whom the organisation works in close collaboration, sharing knowledge openly. From the perspective of LIAISON, this is the interactive innovation partnership (or consortium) introduced in subsection 2.2 in which the ‘organisation’ referred to by Van Lancker et al. (2016) may be the lead partner. The second consists of a larger periphery of diverse stakeholders that are less involved, but participate in the innovation process, with whom not all information is shared. The actors in the core partnership (whether organisations or individuals) are introduced in this subsection.

Innovation partnerships can involve actors with a broad diversity of ‘labels’, such as firms, research institutes, customers, authorities and financial organisations (Klein Woolthuis et al., 2005). Lamprinopolou et al. (2014) defined four broad categories of actors in the AKIS (research, direct demand/enterprise, indirect demand and intermediary) and these formed the basis of the analysis of partner involvement in the 200 project and non-project activities in Tables 9 and 10 and accompanying text in LIAISON Deliverable D3.2. Across the range of reviewed projects and non-project approaches, there is a broad diversity of actor involvement. While many projects saw substantial researcher participation, several entries to the LIAISON EURIC (especially non-project activities) involved multi-actor partnerships along the supply chain, and

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4 The innovation process that the actors pursue is considered in subsection 3.2. The ‘larger periphery’ is the topic of subsection 3.3, while subsection 4 addresses the enabling environment.
indeed many included individual participants (such as farmers or foresters) as well as organisations. All these various types of activity can be described as being ‘multi-actor’ although, as explained in the next subsection, this feature alone does not guarantee genuine ‘innovation co-creation’ in a partnership.

The EIP-Agri approach is intended to capitalise on two forms of knowledge and two modes of innovation defined by Jensen et al. (2007) as follows. The Science, Technology and Innovation mode is based on the production and use of codified scientific and technical knowledge while the other is an experienced-based mode of learning based on Doing, Using and Interacting. The authors argue that both modes need to be reconciled through formal processes of research and development that produce explicit and codified knowledge in combination with learning from informal interaction within and between organisations (e.g. through user-producer interaction) resulting in competence-building often with tacit elements. This logic applies especially to H2020 projects and EIP-Agri OGs as there is an implicit implication in published materials that the primary aim of the EIP-Agri is to speed up innovation by fostering faster translation of research results into practice through partnerships of (in particular) farmers and foresters, researchers and advisors/knowledge brokers.

Actor ‘labels’ are of only limited value in indicating the worth of an innovation partnership as the primary criterion is its collective capability which in turn is influenced by individual partner capacity. An organisation may have infrastructural weaknesses that limit its ability to contribute effectively to innovation co-creation, such as poor access to broadband Internet, or even a reliable energy supply. Research institutes may have inadequate accommodation or laboratory facilities, and/or lack scientific and applied knowledge and skills, including language skills. Another issue is the motivation (or otherwise) and willingness (or not) to work in multi-actor innovation co-creation partnerships.

The better that actors know each other, the more trust they have in each other and the more they are prepared to take risks and share ideas. This introduces another aspect of actor capacity: networks. LIAISON Deliverable D3.2 noted that the consortia of many reviewed projects included, at least, a core group of partners that had previously worked together in earlier projects and has over time formed a well-established (international) network of known and trusted partners. These networks are well placed to deliver individual innovation actions, but can also hold back the overall level of innovation by excluding less well connected actors, such as those from certain groups or geographical regions, that may have unique capacities that are not being mobilised.

Based on this analysis of the actors in the innovation partnership, the following two ideal types in the LIAISON typology can be characterised:

3.1.1 Ideal type ‘diverse engagement’

The attributes of this ‘ideal type’ of actor empower it to maximise the extent of its involvement in interactive innovation partnerships:
- **Willingness to interact**: high level of willingness driven by factors such as enthusiasm, pride in achievement and positive previous experiences of cooperation, for example in earlier projects. This willingness may extend to participating in a broad range of innovation topics or with a wide variety of actors (including those outside their ‘comfort zone’), to leading the partnership and/or designing the programme of activities;

- **Motivation for interaction**: the primary motivation is autonomous (Dato Mansor *et al.*, 2015), for example driven by the desire to find a solution to a problem;

- **Attitude towards interaction**: the actor sees itself as a participant in a collective activity in which genuine cooperation will lead to results of value to a wide range of users. Interaction may continue even after the result has been achieved;

- **Approach to self-assessment**: the main evaluation criterion is the extent to which the problem is solved;

- **Conceptual understanding**: the actor has a good understanding of the principles of innovation co-creation which underpins its effective contribution to the work of a partnership;

- **Degree of network inclusion**: long-established and active involvement in networks that are extensive in terms of, for example, geographical distribution and complementary knowledge;

- **Formality of network inclusion**: a partner in formal (common interest) networks that are intended to be well placed to initiate interactive innovation activities, for example by attracting commercial funding;

- **Familiarity with the process**: extensive previous participation in interactive innovation partnerships means that the actor has the capacity to design effective programmes of activities (for example, ensuring dissemination and embedding) and/or secure financial support;

- **‘Track-record’ of interaction**: wide experience of participating in multi-actor interactive innovation co-creation activities (with a diverse range of partners) can instil an internalised belief in the value of the interactive innovation approach and reinforce the reputation of the actor as a valuable and reliable partner (or indeed as the leader of a partnership);

- **Availability of resources**: existence of sufficient workforce of the required calibre and adequate infrastructure (such as farmland or forested area) mean that (a) the actor has the necessary resources to contribute to an interactive innovation partnership and/or (b) its resources are in demand by potential partners seeking to complement their own capabilities;

- **Language skills**: Good language skills allow participation in international partnerships;

- **Gender inclusion**: There is a deliberate intention to ensure gender balance and inclusion of representatives of disadvantaged groups in the workgroup.
3.1.2 Ideal type ‘focused effort’

The attributes of this ‘ideal type’ of actor require it to maximise the return on its involvement in interactive innovation partnerships through targeted participation:

- **Willingness to interact**: limited level of willingness caused by factors such as unsatisfactory previous experiences of cooperation. The actor does not aspire to lead a partnership and will only consider participation in innovation activities of exceptional interest;

- **Motivation for interaction**: the primary motivation is controlled (Dato Mansor et al., 2015), for example driven by financial reward, such as receipt of project funding or the near certainty of a marketable product;

- **Attitude towards interaction**: the actor participates in the collective activity in the expectation of it producing results (such as new knowledge) from which it can directly benefit. The interaction ends once the result has been achieved;

- **Approach to self-assessment**: evaluation criteria include, for example, number of scientific papers published;

- **Conceptual understanding**: the actor’s understanding of the principles of innovation co-creation is limited, which may limit the value of its contribution to the innovation partnership, and it is dependent upon the advice of other actors in the partnership;

- **Degree of network inclusion**: limited involvement in terms of duration and/or the size and/or the diversity of the actor’s network;

- **Formality of network inclusion**: not included in any formal (common interest) networks and therefore effectively excluded from many potential interactive innovation activities;

- **Familiarity with the process**: lack of previous participation in interactive innovation partnerships means that the capacity of the actor to design programmes of activities and/or secure financial support is low or confined to very few topics, localities or funding sources;

- **‘Track-record’ of interaction**: limited experience of participation in multi-actor interactive innovation co-creation activities means that both the internal belief in the value of the interactive innovation approach and the reputation of the actor as a valuable partner are weak;

- **Availability of resources**: workforce or infrastructure limitations mean that (a) the actor has restricted capacity to contribute to an interactive innovation partnership and/or (b) its resources are of only limited interest to potential partners;

- **Language skills**: extent of language skills limits participation to national partnerships;

- **Gender inclusion**: participation in the workgroup is determined solely on merit (e.g. skills).
3.2 The innovation process

One basic conceptual underpinning of the ‘system of innovation’ approach is that innovation does not take place in isolation. Interaction between actors (such as firms, universities, intermediaries) is central to the process of innovation. In turn, at the core of the concept of interaction are both cooperation and interactive learning (Lundvall, 1992, cited by Klein Woolthuis et al., 2005). In the frame of the EIP-Agri, the EC states that an innovation in the agricultural and forestry sector can in general terms be described as ‘a new idea that proves successful in practice’. Two points arise from this. Firstly, an innovation is by definition successful; there is no such thing as an ‘unsuccessful innovation’. Secondly, there is no need to use the term ‘successful innovation’, as this is a pleonasm. The implication of this perspective is that, unlike an ‘invention’, an ‘innovation’ and the process of innovation should involve ‘practitioners’ or ‘[end] users’. It need not necessarily involve ‘academics’ or ‘researchers’, reflecting the point made in LIAISON Deliverable D3.1 that the prerequisite of interactive innovation is the inclusion of actors with ‘complementary forms of knowledge’, and that a group of innovators could be composed of, for example, farmers engaged in peer-to-peer learning rather than actors with different ‘labels’.

The way in which diversity of expertise in the partnership can optimise innovation co-creation is a function of the innovation process itself. Van Lancker et al. (2016) argue that the innovation process within the OIS concept has three main phases, the innovative idea, which is developed into an invention, which in turn is followed by commercialisation. Each main phase contains several subphases. The idea development phase includes identifying potential sources of innovations, generating innovative ideas, judging the feasibility of these ideas and selecting the most attractive ideas for further development. Project design, resource allocation, research and development, and small-scale testing together comprise the invention phase. Constituents of commercialisation are demonstration, marketing strategy, supply chain formation and market introduction.

If the innovation process depends upon interaction between actors with complementary forms of knowledge, i.e. it is of necessity both ‘interactive’ and ‘multi-actor’, what is the novelty of the approach being fostered by the EIP-Agri and being analysed by the LIAISON consortium? Crucially, the EIP-Agri approach demands innovation co-creation ‘all along the project’ with a clear role for the different actors in the work plan, from the participation in the planning of work and experiments, their execution up until the dissemination of results and the possible demonstration phase. In this paradigm, the involvement of practitioners is not confined to the dissemination and embedding phases of the Innovation Spiral (such as the ‘scaling up’ activities at the end of the innovation process). Rather, the expectation is that bringing together a broad range of experience and expertise from the start of the process will serve to optimise it by generating the creativity which may lead to innovation.

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5 https://ec.europa.eu/eip/agriculture/en/what-innovation
The Innovation Spiral concept reflects the fact that the innovation process involves frequent iteration and feedback in order to be able to repeat process stages to undertake corrections, adjust to unforeseen developments and correct mistakes. There are, therefore, ample opportunities for the various actors to influence the process through knowledge sharing ‘all along the project’. The very complexity of the innovation process is the reason why it can benefit from being open to actors with different types of knowledge and other resources. This diversity, with its multiplicity of different perspectives on the nature of the ‘problem’ and the feasibility of possible ‘solutions’ can help to mitigate the risk of ‘network failure’ (see e.g. Van Lancker et al. 2016) such as ‘lock-ins’ in thinking due to ‘group think’ which can lead to myopia and inertia within the partnership.

On the other hand, not all actors will make an equal contribution to the innovation process during every phase. At any point in the process, some forms of expertise will be more apposite than others, even if there is still merit in this expertise being challenged by other actors in the partnership. For example, academics may lead the earlier phases of the collaboration, but their ideas may be scrutinised by practitioners, while later the roles may be reversed. Furthermore, as mentioned above, Doty and Glick (1994) note that ‘contextual contingencies’ may limit the range of options that are open to the network.

Based on this analysis of the ways in which multi-actor innovation partnerships self-organise, the following two ideal types in the LIAISON typology can be characterised:

3.2.1  Ideal type ‘inclusive community’

This ‘ideal type’ of interactive innovation partnership features informal structures and inclusion of all partners in the organisational arrangements it adopts to maximise its capacity to optimise innovation co-creation:

• **Duration**: the innovation co-creation activity has an indeterminate time schedule. This tends to be a feature of networks and ‘bottom-up’ innovation partnerships without any external funding;

• **Administrative basis of the partnership**: the innovation co-creation activity is not covered by a consortium agreement or any other kind of legal or paralegal framework. This tends to be a feature of networks, small partnerships and ‘bottom-up’ innovation partnerships without any external funding;

• **Setting of objectives and targets**: project objectives and targets are discussed collectively among all partners, and defined and set based on consensus. This may be a lengthy process in order to achieve a clear vision that is shared by all;

• **Formality of work plan**: informal and/or general and/or indeterminate plan of activities that is (potentially) responsive to changing circumstances (even if the overall goals and objectives remain unchanged), including the emergence of important information that was not available at the beginning of the project;

• **Focus of work plan**: the work plan is organised around practical activities or events;
- **Structure of work plan**: although there is a clear set of objectives for the innovation activity as a whole; partners develop their own sub-objectives for their programme of work;

- **Distribution of responsibilities**: roles, tasks and responsibilities are shared as widely as possible between some or all partners and are not necessarily clearly defined;

- **Distribution of workload**: partners make a balanced contribution to the workload of the innovation activity;

- **Hierarchy in the partnership**: all partners are equal. Decision making is undertaken collectively, and individual partners take the lead only on a short-term basis to deliver a specific innovation activity;

- **Degree of knowledge and information sharing**: as much knowledge and information as possible is shared among all partners; procedures for sharing are informal;

- **Frequency of communication**: communication among all partners occurs regularly and/or frequently;

- **Form of communication**: communication mostly takes place through physical meetings, including (where appropriate) field visits. This approach is most feasible with small, local partnerships;

- **Language of communication**: use of language within the partnership (as opposed to in dissemination activities) reflects the needs of the partners. In small, local partnerships only one language may be necessary. In larger, dispersed partnerships, communication in several languages may be necessary to maximise inclusion, for example of practitioner partners.

### 3.2.2 Ideal type ‘structured organisation’

This ‘ideal type’ of interactive innovation partnership features formal structures and an emphasis on clear management in the organisational arrangements it adopts to maximise its capacity to optimise innovation co-creation:

- **Duration**: the activity is designed to be completed in a fixed term. This is a feature of projects and a requirement frequently imposed by funding programmes;

- **Administrative basis of the partnership**: a consortium agreement or equivalent legal or paralegal framework is in place. Again, this is frequently a requirement imposed by funding programmes;

- **Setting of objectives and targets**: project objectives and targets are defined by the lead partner or a core team of partners, resulting in a clear vision shared by the most senior actors in the partnership;

- **Formality of work plan**: formal and/or detailed and/or structured set of activities with clearly defined expected outputs, as often required in projects and by
funding programmes. Any (significant) revisions require compliance with an approvals procedure before implementation;

- **Focus of work plan:** the work plan is organised around workpackages (or equivalent);
- **Structure of work plan:** there is a clear set of objectives for the innovation activity as a whole; but specific partners are responsible for sub-objectives (e.g. workpackages) of this programme of work;
- **Distribution of responsibilities:** roles, tasks and responsibilities clearly and discretely distributed among partners according to their skills, resources, interests or other criteria;
- **Distribution of workload:** core partners undertake most of the work in the innovation activity;
- **Hierarchy in the partnership:** there is a designated consortium/partnership leader and/or a core team of partners that take the lead both in decision making and managing the innovation activities. The relative seniority of partners may vary over the course of the innovation activity according to circumstances;
- **Degree of knowledge and information sharing:** knowledge and information is shared between partners on a ‘need to know’ basis, minimising the risk of information overload. Knowledge and information is shared according to formal procedures;
- **Frequency of communication:** communication among all partners occurs only when necessary, because sometimes there is nothing to share;
- **Form of communication:** communication predominantly occurs electronically (email, Skype®). This is essential in the case of partnerships that are large and/or geographically dispersed;
- **Language of communication:** communication within the partnership takes place in one language only, thereby minimising administrative and possibly cost burdens.

### 3.3 Dissemination and embedding

Chesbrough (2003) noted that one of the principles of the so-called open innovation paradigm is that “not all of the smart people work for us”. Open innovation strongly propagates collaboration, stressing the importance of opening up the organisation to bring external knowledge and ideas into the organisation, and also to commercialise internally developed ideas through outside channels. If we accept the assertion made in subsection 2.1 that a ‘multi-actor innovation co-creation partnership’ is at the core of an OIS, then it can be argued that ‘opening up’ the partnership to external knowledge and ideas can potentially also optimise innovation. In line with the analysis of Van Lancker *et al.* (2016), all entities or individuals not employed by the organisation (in our case, the partnership), are considered to be external agents outside of the organisational boundaries.
It will be recalled that Van Lancker et al. (2016) distinguished between two ‘layers’ in the innovation network, a smaller, core group of stakeholders and a larger periphery of diverse stakeholders. The layered strategy allows organisations (partnerships) to have a large, heterogeneous [external] network which has a positive effect on the development of innovation, while allowing a more closed approach to networking, which crucially is proven to have a beneficial effect on innovation performance.

One of the most striking results from the 200 ‘light-touch’ reviews conducted in LIAISON WP3 was the high frequency with which long-term participatory structures were established beyond the core consortium. These were not simply one-day conferences or workshops, but mechanisms for genuine, two-way interaction (normally with actors with complementary skills and/or knowledge) throughout the life or the project or non-project activity. For example, several H2020 projects set up ‘practice-led innovation networks’ or ‘farmer innovation groups’ as tools to foster innovation co-creation. Other types of ‘outreach’ practices included ‘farmer (discussion) groups’, ‘commonage groups’, ‘joint action teams’, ‘pilot innovation environments’, ‘clusters’, ‘co-creation sessions’ and ‘ambassadors for innovation and technology’. Activities included disseminating scientific and other results, spreading knowledge and getting information back that extended the impact of the project. There were also instances of consortia launching calls for innovation proposals that were open to multi-actor partnerships.

Interaction between the partnership and external actors can take other forms. For example, 153 of the LIAISON interviewees said that their projects had connections to other projects or initiatives, while 46 did not. Only about 15 H2020 projects did or do not have links to other projects while all LIFE and ERASMUS+ projects have links to other projects. The group with the highest percentage of projects with no links to others is those funded by ESIF. In particular, 24 of the 37 EIP-Agri OGs (i.e. 37.8 per cent) appear to have no connections with other projects.

As Van Lancker et al. (2016) notes (p.43), an innovation network “can act as a reference group, suggesting adjustments to be made to the innovation to better fit the external expectations. Furthermore, the whole innovation network, including the peripheral stakeholders, should help create legitimacy and support for the innovation”. They go on to state, however (p.46), that “at a certain point, due to increasing searching- and information costs, bargaining- and decision costs, and policing- and enforcement costs, diminishing returns of this openness set in. Thus, a balance has to be found between consulting (and participating with) too many stakeholders, resulting in too much lost time and resources, and consulting with too few stakeholders, which can lead to incomplete information (or suboptimal partnerships)” (our parentheses).

The establishment of long-term participatory structures and/or other forms of communication with actors in the wider AKIS is an essential prerequisite to ensuring that innovation is optimised, and the great majority of LIAISON interviewees stated that communication outside the partnership is of major importance. Information collection and dissemination is an inherent aspect of almost all reviewed project and non-project types, and it is integrated into the way of working in most instances.
However, considerable caution must be exercised not to imply that ‘more consultation is better’ in every instance. As with the other three structural components of the OIS, therefore, although two distinct ‘ideal types’ can be identified, the LIAISON typology does not claim that one is superior to the other.

The two ideal types in the LIAISON typology can be characterised as follows:

3.3.1  Ideal type ‘open network’

This ‘ideal type’ of interactive innovation partnership adopts the following approaches to maximising engagement with other actors in the AKIS in order to optimise innovation co-creation:

- **Setting objectives**: during the design phase of the innovation activity, exercises such as market research and exploring consumer demands are carried out in consultation with external stakeholders with a view to validating the practicality of the planned actions and focusing them on users’ needs. This was described in LIAISON Task 3.1 as ‘bottom-up’ stakeholder involvement, with stakeholders actively influencing the direction of the work of the partnership;

- **Checking results**: external stakeholders are asked to check certain results arising from the work of the interactive innovation partnership. This was described in LIAISON Task 3.1 as ‘top down’ stakeholder involvement, with stakeholders playing a passive role in the work of the partnership;

- **Partnership competence**: limitations in the collective competence of the partnership make intensive interaction with external actors throughout the duration of the interactive innovation activity desirable or even essential. The existence of any limitations will be determined by factors such as the complexity of the topic. Examples include gaps in expertise (e.g. different disciplines) or geographical representation and can occur for various reasons. For example, budgetary limitations imposed by funding programmes may preclude the inclusion of all desired participants in the partnership, or it may only become apparent during the course of the work that some expertise is missing from the partnership;

- **Partner networks**: the partnership does not include organisations with their own extensive networks (e.g. farmers’ organisations) and is therefore obliged to disseminate its outputs and gather feedback by actively engaging with external stakeholders through formal activities, for example by setting up platforms or networks;

- **Inclusion of individuals**: the partnership is composed only of a limited number of organisations and no persons in an individual capacity. Engagement with external stakeholders is necessary to achieve ‘mass’ dissemination or consultation/feedback;

- **Quality of engagement**: the partnership establishes long-term participatory structures to involve other actors, thereby maximising potential for feedback;
• **Breadth of engagement**: the partnership makes special efforts to interact with a broad range of actors (e.g. academics, advisors, practitioners), to communicate in several different languages, and/or to engage hard-to-reach or disadvantaged groups such as smallholder farmers, women farmers and farmers in remote areas. These actions may be an obligation of any financial support programme or a consequence of the topic of the innovation;

• **Location of engagement**: high importance is attached to holding meetings in the demonstration field rather than the classroom to improve communication between the partnership and external practice stakeholders;

• **Duration of engagement**: external stakeholders are engaged throughout the entire period of the interactive innovation activity;

• **Participation in educational activities**: the partners take part in educational activities to share their ideas and results with a future generation of potential entrepreneurs;

• **Links with other projects or actions**: the partnership has links to other former and/or ongoing projects or initiatives, and may engage in joint research/development, sharing data and results, and/or dissemination/consultation activities with other projects;

• **Funding of innovation activities**: the partnership funds interactive innovation activities by external stakeholders, for example in the form of sub-projects;

• **Type of outputs**: the partnership develops practical tools (e.g. software) that can be used by external stakeholders, even after the end of the project;

• **Follow-up activities**: Engagement with external stakeholders continues after the interactive innovation action has ended (possibly in connection with setting up a new one), and the results of the action continue to be available to them.

3.3.2  **Ideal type ‘targeted activity’**

This ‘ideal type’ of interactive innovation partnership places more emphasis on internal innovation co-creation and adopts the following alternative approaches to engaging with other actors in the AKIS:

• **Setting objectives**: the practicalities and relevance of the planned activities are already known (e.g. through past experience or the nature of the topic) and no pre-consultation is necessary;

• **Checking results**: this does not occur, for example owing to confidentiality issues;

• **Partnership competence**: the partnership includes all necessary competences (whether it be, for example, either very many partners with a wide range of expertise, or a narrow geographical distribution owing to the limited topicality of the work) and no external input is needed to fill any gaps;

• **Partner networks**: the partnership includes organisations with their own extensive networks through which outputs can routinely be disseminated and feedback gathered in passive ways (i.e. through partners’ existing
communication channels and informal interaction) without the need for formal activities;

- **Inclusion of individuals**: the partnership includes many individual participants. This is commonly the case in multi-actor partnerships along the supply chain (especially non-project activities) as illustrated by several entries to the LIAISON EURIC. With so many participants within the innovation activity, there may be less need to engage with actors outside it;

- **Quality of engagement**: only ‘ad hoc’ engagement with external stakeholders (for example, occasional workshops and conferences) is justified;

- **Breadth of engagement**: the topic of the interactive innovation activity does not merit any special effort to engage with a broad range of actors, in several languages and/or with hard-to-reach or disadvantaged groups, thereby saving on resources, for example for making translations;

- **Location of engagement**: no special emphasis is placed on choice of location as this is not relevant to the topic of the innovation;

- **Duration of engagement**: it is only necessary to engage with external stakeholders at certain stages of the interactive innovation activity, such as towards the end during a scaling-up phase;

- **Participation in educational activities**: such participation is not of any value or is ruled out for reasons of confidentiality;

- **Links with other projects or actions**: links with other projects are very limited, or are not necessary and would therefore be a drain on resources, or are undesirable, for example for reasons of confidentiality;

- **Funding of innovation activities**: such activities are not funded;

- **Type of outputs**: outputs are primarily in the form of documents such as ‘deliverables’ or ‘practice abstracts’;

- **Follow-up activities**: no follow-up activities are deemed to be necessary.
3.4 The enabling environment

Models of the AKIS (e.g. EU SCAR, 2013, p.18) normally depict the actors who use and produce knowledge and innovation for agriculture and interrelated fields, the ways in which they are organised and the knowledge flows between them. In contrast to models of the AIS (e.g. Tropical Agriculture Platform, 2016, p.2) the so-called ‘enabling environment’ is excluded from the AKIS. This important conceptual distinction between the two models is reflected in the LIAISON typology, where the willingness of participants to interact with other actors in the AKIS beyond the multi-actor partnership is analysed separately from their willingness to interact with (engage with) the institutions that comprise the enabling environment.

The concept of the enabling environment was introduced earlier in this Deliverable, as being described by Klein Woolthuis et al. (2005) as the legal (e.g. regulation and law) and customarily institutions (e.g. culture and values) that together constitute the ‘rules of the game’ or the ‘codes of conduct’. This distinction between the ‘formal’ (‘hard’) and ‘informal’ (‘soft’) institutions is widely accepted. The former tend to be more tangible and include laws, regulations, contracts, standards, product specifications and property rights (Coenen and Díaz López, 2010). By contrast, informal institutions influence social and economic life in a subtle, often intangible way. Examples include trust, habits, norms and values, beliefs, conventions, traditions, routines and preferences (ibid.). Critically, these rules shape, and are shaped by, the interactions between actors that take place within these rules (Klein Woolthuis et al., 2005, our emphasis). Equally importantly, Klein Woolthuis et al. (2005) emphasise the clear distinction between institutions and organisations. The former correspond to rules and the latter are players.

Multi-actor innovation partnerships cannot operate independently of the enabling environment as this constrains behaviour and regulates interaction between primary actors (Coenen and Díaz López, 2010). Van Lancker et al. (2016) note (p.43) that “institutions of national (e.g. patent system, laws), sectoral (e.g. sectoral labor [sic] market) or other system levels can also influence how the innovating organization is shaped, how the relationships between organizations are formed and which innovative ideas are viable, consequently influencing the innovation process and the OIS as a whole”. Furthermore, “hard institutions in the OIS level would include non-disclosure agreements, collaboration contracts, intellectual property (IP)-arrangements, written agreements about the distributions of the developed value, etc. that can facilitate the open sharing of knowledge and resources between the stakeholders”. Van Lancker et al. (2016) point out that there also needs to be alignment in ‘soft’ institutions such as beliefs, norms and values, and expectations between partners, supplemented by a certain level of trust.

But, participants in the multi-actor partnership have a degree of flexibility in terms of the extent to which they engage with the enabling environment and, crucially, aspire to mobilise the resources of the enabling environment to optimise interactive innovation. As with the other three structural components of the OIS, optimisation might best be achieved through interacting with the enabling environment or (to the
extent possible) being indifferent to it. For example, obtaining a financial contribution from a grant programme may provide the partnership with the resources it needs to innovate. However, constraints imposed by the programme on, for example, eligibility of partners and/or activities, and opportunities for commercialisation of the innovation, might mean that innovation is optimised if the consortium is ‘indifferent’ to this opportunity (i.e. does not seek funding). Coenen and Díaz López (2010) observe that the institutions of the enabling environment can be conceptualised as ‘enabling constraints’.

Table 1: Factors relevant to the interaction of innovation partnerships with the enabling environment

<table>
<thead>
<tr>
<th>Factor</th>
<th>Nature of the factor</th>
<th>Fosters interaction</th>
<th>Indifferent towards interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of financial support</td>
<td>+</td>
<td>Increases motivation for cooperation</td>
<td>Privately funded partnerships, sufficient financial resources</td>
</tr>
<tr>
<td>Intellectual property rights</td>
<td>+</td>
<td>Creates trust for sharing ideas</td>
<td>Open nature of innovation, trust exists</td>
</tr>
<tr>
<td>Non-EU regulations</td>
<td>–</td>
<td>Bridging the gap: bilateral agreements</td>
<td>No non-EU partners in the partnership</td>
</tr>
<tr>
<td>An innovation broker</td>
<td>+</td>
<td>Increases the competence of the partnership</td>
<td>Competence available; reluctance to devote resources</td>
</tr>
<tr>
<td>Lack of trust</td>
<td>–</td>
<td>Solution: devote more time and effort</td>
<td>If the level of trust is acceptable</td>
</tr>
<tr>
<td>Administrative limitations</td>
<td>–</td>
<td>Solution: creating ‘bypasses’, wise planning; influencing the system</td>
<td>In regions where it is not relevant</td>
</tr>
<tr>
<td>Weak culture of participation</td>
<td>–</td>
<td>Solution: clear views on shared benefits, trust building</td>
<td>In regions where there is a history/culture of participation</td>
</tr>
<tr>
<td>Lack of political stability</td>
<td>+</td>
<td>Solution: resilience</td>
<td>In countries where it is not relevant</td>
</tr>
<tr>
<td>Unpredictable weather conditions</td>
<td>–</td>
<td>Solution: wise planning (scenarios)</td>
<td>Weather is not relevant</td>
</tr>
</tbody>
</table>

Analysis of the data from the LIAISON ‘light-touch’ reviews led to the identification of two distinct ‘ideal types’ of interactive innovation approaches based on the attitude of the partnership towards interaction with the enabling environment. The first type fosters interaction and is called ‘action mobilises support’, while the second type is indifferent towards interaction and is named ‘self-sufficient venture’. An important distinction, as already indicated, is between those interactive innovation activities that were being implemented with project funding (i.e. ‘mobilise support’) and those that were not (i.e. ‘self-sufficient’). This and other factors that contribute to
distinguishing the two types are listed in Table 1. Two important points arise from this list:

- Some factors were perceived by ‘light-touch’ review interviewees to have either a potentially ‘positive’ or ‘negative’ impact on optimising interactive innovation. This is valuable information but will require validation during the in-depth research that will be conducted in LIAISON WP4;

- In some instances, a partnership can be ‘indifferent’ towards a factor because it is not relevant to that specific situation, i.e. there are ‘contextual contingencies’ (Doty and Glick, 1994).

3.4.1 Ideal type ‘action mobilises support’

Specific factors of the enabling environment induce certain responses from this ‘ideal type’ of interactive innovation partnership which are intended to contribute to optimising innovation co-creation:

- **Availability of financial support**: can increase motivation for cooperation and fosters interaction among partners, as well as providing the partnership with the resources needed to innovate. Partnerships may secure different types of funding for contrasting activities on separate occasions, or a mix of funding to support a particular activity;

- **Intellectual property rights (IPR)**: seem to be a very important issue to be tackled to enable ‘free’ co-creation. Without proper protection of IPR, partners can be reluctant to share novel ideas and work openly and honestly with each other;

- **Non-EU regulations**: when the consortium involves partners from non-EU (especially non-European) countries, different laws and regulations come into play which are not harmonised with the EU regulations. To bridge the gap, partners can engage themselves in bilateral discussions and agreements. However, these processes usually take more time and effort;

- **An innovation broker**: as an actor from the economic environment, can help in selecting the partners, writing the proposal, clarifying rules in areas where the partnership requires it and at the same time is ready to devote financial resources to it;

- **Lack of trust**: if the social environment of the partnership lacks social capital/trust, it is important to spend the required amount of time and effort to build it between the partners;

- **Administrative limitations**: constitute a challenge in several cases (especially in certain regions/countries), which requires the partnership to spend more time with wise planning and build ‘bypasses’ in the process where applicable. At the same time, the partnership might aim to influence the system/policy to mitigate or eliminate administrative burdens;
- **Weak culture of participation**: can limit interactivity among partners and stakeholders. Clear views on shared benefits as well as building trust might reduce this burden;

- **Lack of political stability**: requires the consortium to be resilient and to develop skills and procedures to get through the changes;

- **Unpredictable weather conditions**: may cause delays in experiments. With preliminary risk assessment and wise planning, it can be handled.

### 3.4.2 Ideal type ‘self-sufficient venture’

Specific factors of the enabling environment induce alternative responses (or, in some instances, non-responses) from this ‘ideal type’ of interactive innovation partnership which are also intended to contribute to optimising innovation co-creation:

- **Availability of financial support**: the partnership is indifferent towards interaction with funding programmes in cases which are privately funded and/or already have the required financial resources;

- **Intellectual property rights**: it is not perceived as an issue in several partnerships. Supposedly this is the case when the nature of the innovation is less exclusive, the benefits can be shared appropriately, and/or the partners have more trust in each other;

- **Non-EU regulations**: partnerships are indifferent to this factor when do not intend to involve partners from non-EU countries in their activities;

- **An innovation broker**: is not involved if the partnership is ready and feels capable to perform all the activities and/or if they are reluctant to devote financial resources to it;

- **Lack of trust**: is not an issue if the level of trust is sufficient in the partners’ social environment (higher level of social capital);

- **Administrative limitations**: these are not relevant in certain countries/regions and the partnership can be ‘indifferent’ towards them;

- **Weak culture of participation**: a partnership can be ‘indifferent’ to this factor in cases/countries/regions where partners are ready to cooperate and share their opinions;

- **Lack of political stability**: this factor does not affect partnerships in countries with a stable political environment where continuity is secured;

- **Unpredictable weather conditions**: are not an issue if the topic it has no relevance in the activities of the partnership.
4 Discussion

LIAISON Task 3.3 has constructed a multidimensional conceptual typology of interactive innovation project approaches. The typology is based on the conceptual framework developed in LIAISON WP1 and informed by the results from the 200 ‘light-touch’ reviews conducted in Task 3.1. The overarching concept measured by this typology is ‘efficiency of innovation co-creation by a multi-actor partnership’. This overarching concept is disaggregated into two dimensions: ‘attitude towards interaction’ with two categories and ‘structural components of the organisational innovation system’ with four categories. These dimensions are conceptualised as carrying equal weight in terms of their collective effect on speeding up or slowing down interactive innovation in agriculture, forestry and related sectors. The result is a matrix of eight distinct ‘ideal types’ of innovation co-creation activity, each named according to the concept that corresponds to it.

4.1.1 Interpretation of the typology results

The fact that this is a conceptual and not an explanatory typology needs to be clearly restated here. The methodology demands that there should be internal consistency among the first-order constructs within an ideal type (Doty and Glick, 1994). This constraint leads to some associations which at first sight might be unexpected. For example, most European universities would claim to promote gender inclusion in their multi-actor innovation co-creation activities. At the same time, it is almost certainly true that in most instances the primary driver for their participation in such activities is the availability of external (co-)funding. Yet, these two approaches are features of different types in the LIAISON typology. The reason for this is that promotion of gender inclusion is interpreted as ‘fostering interaction’ (with a diversity of individuals) while inclusion solely on merit could be viewed as being ‘indifferent towards interaction’. In the case of motivation for interaction, the desire to find a solution to a problem may reflect a desire to foster interaction, whereas participation in partnerships in response to the primary need to secure external funding may indicate indifference towards interaction.

While it might be anticipated that ‘indifference towards interaction’, for example within a consortium by opting to confine decision making to a core group of partners rather than adopting a genuinely inclusive approach, may slow down innovation, the typology does not attempt to demonstrate such a causal relationship. It may be that confining decision making to a core group maximises its efficiency and speeds up innovation. In any case, Doty and Glick (1994) point out that ‘contextual contingencies’ may limit the options that are open to a given organisation (in our case, a multi-actor innovation co-creation partnership). Whereas a small partnership with a narrow geographical distribution and a limited budget may be able to involve all partners in decision making, in other instances, such as some H2020 project consortia that include 25 or more partners from across the EU and beyond, a more centralised approach to (day-to-day) decision making may be a practical necessity.
The authors of LIAISON Deliverable D1.2 suggest that, in addition to the factors of ‘process’, ‘policy’ and ‘people’ identified by Hartwich (2013) (see also D3.2, p.9), the concept of an ‘innovation pathway’ (see EC, 2017) also influences the progress on innovation in a rural context. An alternative interpretation could be that the innovation pathway (or the innovation process) is the result of the interactions between the three factors identified by Hartwich (2013). In other words, innovation occurs as a product of the (innovation) ‘process’ conducted by ‘people’ (i.e. actors) in the frame of ‘policy’ (i.e. the enabling environment). This analysis is consistent with that of Van Lancker et al. (2016), who identified four ‘commonalities’ which permit a general definition of an innovation system: (a) a complex of diverse innovation actors (b) that work in collaboration (c) on the generation, development and utilisation of innovation, (d) shaped by a number of institutions.

In Task 3.1, LIAISON interviewers were asked to assess the level of innovation co-creation in the reviewed projects. Based upon their answers, four types of arguments supporting their judgements were identified: (a) the diversity of partners; (b) the partnership and its structure; (c) co-creation exists at two levels; and (d) time and resource availability (see D3.2, subsection 3.4.1). These have a degree of alignment with the four main structural components of the OIS concept formulated by Van Lancker et al. (2016). The first can be fitted to ‘the diverse actors’, the second to ‘the innovation process’ and the third to ‘the innovation network’. While there is no close link between the fourth argument and ‘the institutions’, it could be suggested that time and resource availability are at least partly influenced by the ‘enabling environment’. Time that needs to be devoted to finding information and/or form filling is time that is not available to devote to the process of innovation co-creation.

The Innovation Spiral concept was also addressed in Task 3.1. The ‘light-touch’ reviews included assessments of where the reviewed projects and non-project approaches were located in the Innovation Spiral. The implicit assumption in our WP3 trial design, namely that a project was located in one phase of the Innovation Spiral, proved to be unfounded. With the benefit of hindsight, this is not a surprise. Many of our reviewed examples progressed through multiple stages of the Spiral over time, or indeed the entire Spiral. In other words, the reviewed project or non-project activity involved the development of the initial idea and inspiration among the actors; planning, development and realisation during the innovation process; and dissemination and embedding through the innovation network.

The typology methodology demands that the relative theoretical importance of the first-order constructs used to describe the ideal types must be included in the model (Doty and Glick, 1994). This should be done by ‘expert raters’ based on the interpretation of the theory. In the following paragraphs, we attempt to identify the possible most important issues per structural component of the OIS.

The actors

Knowledge is the foundation of an organisation’s competitive advantage, but this knowledge resides within the individuals it employs. Thus, willingness to interact and
motivation for interaction at both the individual and ‘corporate’ level are important issues concerning knowledge sharing. Fogg (2009) argued that human behaviour is a product of three factors: motivation, ability and triggers. An intrinsic willingness (and ability) to interact needs to be present but knowledge sharing will not occur without a trigger and motivation. Two types of motivation are described in the literature (Dato Mansor et al., 2015). Autonomous motivation means engaging in an activity volitionally, for example pursuing an activity out of interest and because it is enjoyable (intrinsic motivation), and because it is personally meaningful and fits one’s value system (identified regulation). Controlled motivation means engaging in an activity out of pressure that can come from outside sources, such as promised rewards and threats of punishment (external regulation), or inside sources, such as when one’s self esteem is contingent upon successfully completing a task (introjected regulation).

For many of the projects and non-project activities reviewed in LIAISON Task 3.1, the trigger was the identification of a problem which could potentially be solved by multi-actor cooperation. This often motivated one actor to invite others to form a partnership, or to resurrect or prolong a partnership to address the issue, in other words the motivation was autonomous. On other occasions, the trigger was the publication of a call for (project) proposals accompanied by co-financing. Here the motivation was controlled because it involved a ‘promised reward’ (i.e. money). It should not be assumed that the former is ‘better’ than the latter. Many projects funded by EU Framework Programmes, for example, have yielded outstanding results although the primary motivation for the participants was controlled.

Various aspects of network inclusion are another important feature of the ideal types in the typology. The extent of interlinking between actors and projects was clearly illustrated by the results of the ‘light-touch’ reviews. Many interviewees stated that the current project was developed from an earlier one, and frequently this earlier project was delivered by a partnership drawn from the same network. This finding prompted LIAISON Milestone document MS3 to pose the question “Where does the project end and the network start?” Clearly, wide inclusion of a diversity of actors in a network can be beneficial, both for the network and for the actors concerned.

Choosing to maintain a limited network, as in ideal type ‘focused effort’, is not necessarily a negative approach. Actors, whether organisations or individuals, may wish to devote their potentially restricted capacity (associated with availability of resources) to interactive innovation activities of most interest to them. It is of note that almost 40 per cent of EIP-Agri OGs reviewed in LIAISON Task 3.1 appear to have no connections with other projects, suggesting that some participants may have limited networks and indeed be new to interactive innovation activities. The problem arises when exclusion is a consequence of, for example, ‘path dependency’. As pointed out in LIAISON Deliverable D3.2, owing to their longstanding involvement in EU funding programmes, many organisations in the older EU Member States have established networks of partners that they know and trust, and have both a ‘track-record’ of interaction and familiarity with the process of participating in interactive innovation partnerships. It can be difficult for actors from newer EU Member States to break into these networks and EU data cited by D3.2 suggest that this is the case. This can limit
the capacity of networks to identify and nurture potential new ideas. Furthermore, Fotheringham *et al.* (2016) point out that the EIP-Agri has the capacity to involve only a very small percentage of all the farmers in the EU.

**Conceptual understanding** among actors of the principles of innovation co-creation is a topic whose importance is probably greatly overlooked and understated. It is not enough for a partnership to be ‘multi-actor’; the partners must recognise that the innovation co-creation activity they design and implement demands knowledge sharing ‘all along the project’ in order to be successful. Although the concept is well established, it is still not sufficiently understood by many actors in the AKIS.

### The innovation process

A very important aspect of the innovation process is its *duration*. The primary distinction among the 200 activities reviewed in LIAISON Task 3.1 was between ‘projects’, which inter alia normally have a fixed term, and ‘non-projects’, which may take the form of long-term cooperation networks. LIAISON Milestone document MS1 notes that over the last 20 years, the ‘project’ has become a key form of contemporary governance and policy implementation within the EU. As MS1 points out (p.13), Sjoblom and Godenhjelm (2009) described the project as “a post-modern symbol of adaptability and contingency – it is thought of as a superior way of reacting to unforeseen and non-standard situations”. The project is the ‘methodology of choice’ for the EIP-Agri for many good reasons, as discussed in the LIAISON WP1 Deliverables. Consequently, it is at the core of the RUR-16-2017 call text, which refers to “optimising interactive innovation *project* approaches” (our emphasis).

If the fixed-term nature of the project approach as the potential to be a weakness, it is often addressed by partnerships and networks perpetuating themselves to secure follow-up funding, an example being the H2020 project NEFERTITI, which is the successor to the projects AgriDemo-F2F and PLAID. The LIAISON ‘light-touch’ review results have shown that networks may secure project funding on multiple occasions to support their activities, even in instances where this is not the primary objective. Nonetheless, the (fixed term) ‘project’ is not the only means of achieving co-creation of innovation in agriculture, forestry and related sectors. Many of the LIAISON EURIC entries were not ‘projects’ and indeed many of the inspirational actions represented by the LIAISON Rural Innovation Ambassadors are non-project activities. Thus, projects cannot be the sole focus of the LIAISON research.

Innovation co-creation is a complex process based on social interaction and collective decision making, and several factors are important in determining its success. The first of these concerns *setting of objectives and targets*, which follows on from the initial identification of the problem that (frequently) precedes the formation of the partnership. An inclusive approach at this stage, more than any other, defines the idea of multi-actor cooperation ‘all along the project’.

The topics of *degree of knowledge sharing*, and *frequency, form and language of communication* were frequently mentioned during the ‘one telephone call’ interviews in LIAISON Task 3.1, and most interviewees expressed great satisfaction in terms of
communication and information exchange within their consortia or partnerships. “Different types of actor sitting down together and discussing issues” was felt to be one of the two most successful ways of sharing complementary forms of knowledge. Note that this wording does not make a distinction between face-to-face and electronic communication, and interviewees assessed the latter form of communication very positively. The second way mentioned in Task 3.1, namely excursions and field days, clearly involves face-to-face communication.

Finally, LIAISON interviewees strongly emphasised the importance of equality between the partners in terms of recognising the value of their complementary forms of knowledge. There were instances where interviewees felt that their potential and/or contribution was undervalued. Maximising each partner’s contribution does not, however, necessarily require an even hierarchy in the partnership or an equal distribution of workload or responsibilities among the partners. Differences between partners in resources, interests and competences will determine the optimal arrangements for the partnership.

**Dissemination and embedding**

The LIAISON interviewees agreed that engagement with external stakeholders through dialogue ‘all along the project’ is also essential: communication about the project/initiative beyond the partnership was important to a great extent for 138 of the reviewed projects. For example, potential users of an innovation must believe in the product in order to use it and this trust can be gained by ensuring their involvement in setting objectives at the beginning of the innovation process.

The duration and quality of engagement are arguably the most important factors in determining how dissemination and embedding contributes to optimising innovation. As already indicated, many partnerships reviewed by LIAISON set up long-term participatory structures, not just to disseminate results, but also to cultivate feedback that will help with the further development of the project and/or to adapt the innovation(s) to the demands of the external environment. This practice now seems to be well established but it has perhaps received inadequate attention with regard to evaluation of (EU) project proposals. While any evaluation guidelines cannot be too prescriptive, as there will be instances where extensive engagement is not appropriate (for example for security or other reasons of confidentiality), long-term dialogue with stakeholders should now be seen as the norm rather than the exception. Several LIAISON interviewees also emphasised sharing of knowledge and dissemination as the next step after project closure, indicating the importance of conducting follow-up activities.

It is not enough to adopt a ‘one size fits all’ approach to stakeholder engagement. The LIAISON project, for example, maximises its breadth of engagement through several independent actions. The 15 Rural Innovation Ambassadors identified through the EURIC will be expected to be a ‘disruptive influence’ on the work of the consortium. The consortium is formulating several theories concerning interactive innovation, including this typology, and we will expect the Ambassadors to challenge these
theories in the light of their practical experience. In the frame of WP6, four ‘macro-regional hubs’ composed of a range of stakeholders were set up at the beginning of the project. The participants are being encouraged to question the extent to which possible EU-wide approaches to optimising interactive innovation are applicable to their local circumstances. LIAISON consortium colleagues regularly participate in meetings of the SCAR-AKIS SWG, a forum in which EU-, national- and regional-level policy makers co-create interventions designed to improve the functioning of the AKIS. It is important that LIAISON maintains its awareness of policy developments, but it is increasingly starting to contribute to them as well. Several LIAISON partners also have connections with academia, such as working with PhD students. These are all examples of what LIAISON calls long-term ‘outreach’ activities that are taking place alongside conventional ‘dissemination’ of project results.

The inclusion of actors in the innovation partnership with their own partner networks, notably farmers’ and foresters’ organisations, creates a ‘short cut’ through which engagement with very large numbers of relevant stakeholders, who will be favourably disposed to accepting the project outputs, can take place. Maintaining links with other projects or actions is also very important. This is quite distinct from maintaining networks. These other projects are also actively innovating, and links between them have the potential to optimise the process. Such links are increasingly encouraged between projects in the frame of EIP-Agri (H2020 projects and EIP-Agri OGs) but can also occur elsewhere in the AKIS.

**The enabling environment**

Regarding interactive innovation, the ‘soft’ issue of culture of participation is a very important part of the enabling environment, because clear differences in culture of participation exist across the EU. In particular, there is a reluctance to join partnerships among some actors in former socialist EU Member States, which is reputed to be associated with memories of forced collectivisation. This means that in such regions, motivation may have to be boosted through the application of other incentives.

All but a few of the reviewed projects and non-project activities benefited from external funding. Another very important issue, therefore, is availability of financial support. Funding programmes are a ‘hard’ institution (a ‘rule of the game’) that can trigger or increase the motivation of actors to identify a solution to the problem through partnerships. Undoubtedly, as discussed earlier, there are many instances where for at least some actors the primary motivation to participate in an innovation co-creation activity is the funding, and for them the outputs of this activity are a secondary consideration.

Securing financial support for an innovation co-creation activity frequently imposes obligations on the partnership, such as the need to comply with external monitoring and evaluation rules. This is an example of a situation in which, in terms of compliance, the partnership cannot exercise a choice on whether to ‘mobilise support’ or be ‘self-sufficient’. The only option is to comply with these rules.
The LIAISON typology makes a distinction between those interactive innovation partnerships that ‘foster interaction’ with innovation brokers and those that do not (i.e. are ‘indifferent’ to them). Klein Woolthuis et al. (2005) would argue that innovation brokers should be referred to as ‘missing actors’ and cannot be regarded as systemic failures on the ‘rules’ side (i.e. part of the enabling environment). This is a valid point, but support for innovation brokers and innovation brokering is a key aspect of current EU agricultural innovation policy, meaning that innovation brokering then becomes a ‘rule’ rather than an ‘actor’. Innovation brokers were not widely used among the projects and non-project activities reviewed by LIAISON, although interviewees reported positive experiences with them.

By contrast, unpredictable weather conditions, although mentioned by interviewees in the LIAISON ‘light-touch’ reviews, cannot strictly be defined as an ‘institution’, but is included here as another illustration of the differences in the enabling environment encountered by actors across the EU. The ‘hard’ issue of administrative limitations is more important in some parts of the EU than in others. These big differences in the enabling environment between regions, whether it be the weather or the ‘hard’ (e.g. regulations) or ‘soft’ (e.g. attitudes) ‘rules’, means that it is necessary to recognise the fact that not all regional innovation systems in the EU perform similarly. The main regional features of the AKIS and their implications for innovation in agricultural and rural development were explored in the LIAISON WP6 macro-regional workshops, with the following conclusions:

- In the Danube Balkan macro-region, the main precondition of innovation development is to change policy targets and the context of cooperation. The knowledge sharing function of the AKIS is rather weak. Among farmers and some other groups of actors in the AKIS there is a lack of trust and reluctance to co-operate. Large farms have their own innovation networks while small, semi-subsistence farms tend to be disconnected. Agricultural research is not sufficiently focused on the needs of farmers;

- In the Mediterranean macro-region, participants in the discussion also considered the AKIS to be underdeveloped. In general, farmers need much better support to be able to learn. Trust, stability and views on ‘shared benefits’ are mostly lacking due to the weight of tradition and conservative mentalities and poor economic and structural conditions;

- There are big differences between countries in the operation of the AKIS in the Nordic-Baltic macro-region. Social and institutional frames for technology-based innovation projects in the Nordic countries are generally better than in the Baltic States. In Denmark, innovation more recently linked to bio- and recycling economy is very promising. On the other hand, from Lithuania, it was noted that “people are afraid of such activities”. Cooperatives were mentioned by a Polish stakeholder as an effective form of innovation knowledge sharing. Farmers’

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Van Lancker et al. (2016) defines a regional innovation system (p.41) as “an interrelationship of innovation actors [i.e. the AKIS] and institutions [i.e. the enabling environment] in a particular region that enables the generation, diffusion, and appropriation of innovation”.
sectoral organisations were suggested as the most effective way to target innovative farmers;

- In the North Atlantic macro-region, so-called ‘strong’ AKIS have notably more positive contextual factors than negative ones. The region was described as having some of the best conditions for innovation and investment. This relates to the economic strength, climate and population density with an increasingly more diverse agriculture. Advisory services are well organised with educated farmers and developed support infrastructure for agricultural operations. These factors contribute to the high uptake of innovative approach.

Finally, it should be recalled that interaction with the institutions of the enabling environment can be a two-way process. Partnerships can attempt to modify the rules to make them more favourable to optimising innovation. This is most evident in the case of projects specifically designed to make recommendations concerning policy formulation, such as Interreg projects.

4.1.2 General conclusions

LIAISON Deliverable D3.2 referenced the idea of an analytical characteristics framework and stated (p.13) that “the adopted framework should identify the main traits that shape a project and that to a large extent determine its failure or success”. The characteristics of such a framework could include governance, knowledge and learning, networking, institutions, capacities/skills/agency, and policy/enabling environment. To meet the aspiration set out in D3.2, the LIAISON typology addresses all these characteristics. The ‘main traits that shape a project’ are, in line with the OIS concept of Van Lancker *et al.* (2016), the attitude of the actors towards interaction, the features of the (interactive) innovation process adopted by the partnership, the ways in which the partnership engages with the wider AKIS, and its attitude towards dealing with the institutions of the enabling environment.

As with any genuine typology, the results presented here constitute a theory to be tested (in our case in LIAISON WP4) and potentially falsified. Doty and Glick (1994) list three important implications for typological theories that concern their testing. Firstly, the ideal types represent organisational forms that might exist rather than existing organisations. Thus, empirical examples of ideal-type organisations are likely to be rare or non-existent. Secondly, the ideal types are complex phenomena that must be described in terms of multiple dimensions. Thirdly, each ideal-type organisation represents a unique combination of the dimensions used to describe the set of ideal types. Actual organisations may be more or less similar to an ideal type, but they should not be assigned to specific types.

The methodology of LIAISON WP4 fully acknowledges these three implications. The 32 case studies were selected for their diversity and ‘insightfulness’ rather than as representatives of ‘ideal types’. In the course of the research, analysis of ‘the interactive innovation process within the case’ will consider the attitudes of the actors and the dynamics within an interactive innovation project. ‘Interaction with others’ will look at engagement beyond the partnership. ‘Policy and project’ and ‘interaction
with the context and environment’ will cover the interface between the partnership and the enabling environment. In this way, it is anticipated that considerable insight will be gained from the WP4 case studies concerning the validity of the profiles of the ideal types that form this typology.

In turn, this insight will inform the further development of the LIAISON conceptual framework being developed in WP1. The discussion in LIAISON Milestone document MS1 of how best to approach the issue of ‘optimisation’ [of innovation] raised several key questions concerning **aiming at the target** (how to improve its visibility), **shooting at the target** (what form of intervention) and **hitting the target** (knowing what to aim at, when to aim, how to aim). The typology offers some insight into how to do so. Similarly, according to the RUR-16-2017 call text, one of the expected impacts of LIAISON is the development of best practices for building and implementing multi-actor project proposals and consortia. The LIAISON typology will support the forthcoming project recommendations on this topic.
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