**The European Landscape Learning Initiative: Past and Future
Environments and Energy Regimes Shaping Policy Tools**

DELIVERABLE D5.2

Communication & Dissemination Plan

Version 1.0

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Author(s)	A) Karl-Johan Lindholm B) Katherine Snow C) Chris Sandom
Name (Organisation)	A) Uppsala University B) Vrije Universiteit Amsterdam C) Wild Business Ltd.
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Project coordinator	Vrije Universiteit Amsterdam De Boelelaan 1081 1081 HV Amsterdam The Netherlands
Contact details	RUUD VAN OOIJEN r.van.ooijen@vu.nl

About TERRANOVA

TERRANOVA: The New Learning Initiative between Humanities and Science: Mapping Past Environments and Energy Regimes, Rethinking Human - Environment Interaction and Designing Land Management Tools for Policy.

This project aims at improving our diachronic long term understanding of landscape histories and land use strategies in Europe in the Holocene and Anthropocene. Previously identified socio-cultural transitions and the effects of natural forcings will be critically assessed in a new intellectual interdisciplinary arena created by the TerraNova project. Regional and continental syntheses will be used to anchor a new generation of landscape and climate change models which include the effects of past human actions and generate scenarios for landscape management and rewilding. Ultimately this project will contribute to identifying major previous shifts in resource use and energy regimes and provide options for the future transition to a low carbon society.

Beneficiary 1: VUA	Vrije Universiteit Amsterdam, NL	
Beneficiary 2: LU	Universiteit Leiden, NL	
Beneficiary 3: MLU	Martin Luther Universitaet Halle-Wittenberg	
Beneficiary 4: UU	Uppsala University	
Beneficiary 5: RE	Rewilding Europe	
Beneficiary 6: AU	Aarhus University	
Beneficiary 7: CNRS	Centre National de la Recherche Scientifique	
Beneficiary 8: IUCN	International Union for Conservation of Nature	
Beneficiary 9: USN	University College of Southeast Norway	

PARTNER ORGANIZATIONS: P1. FREIE UNIVERSITAET BERLIN, DE; **P2** The University of Évora; **P3.** ASOCIATIA WWF PROGRAMUL DUNARE CARPA, RO; **P4.** The European Landowners Organization; **P5.** Ştefan cel Mare University of Suceava; **P6.** ASOCIACIÓN ESPAÑOLA PARA EL ESTUDIO DEL CUATERNARIO; **P7.** TALLINN UNIVERSITY; **P8.** Landscape Research & Management; **P9.** Geoconcept; **P10.** Wild Business; **P11.** Film University Babelsberg KONRAD WOLF; **P12.** ACADEMIA ROMANA - FILIALA IASI; **P13.** UNIVERSITY OF PLYMOUTH; **P14.** LINNE UNIVERSITETET; **P15** The University of Hong Kong

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1. EXECUTIVE SUMMARY

The following document fulfils the TerraNova Network Work Package 5's deliverable number D5.2: Communication & Dissemination Plan (TCDP), due to be completed in initial form by Month 12.

TCDP will apply throughout the TerraNova project. It will be updated as needed throughout the duration of the project by the Supervisory Board in close cooperation with the Work Package coordinators.

This document contains the latest version of the Terra Nova Network's approach to communication and dissemination of research and results, internal communication practices, and some preliminary thoughts on project exploitation.

2. INTRODUCTION

2.1 PROJECT CONTEXT

The current state of the global environment, detailed for example in the United Nations' Global Environment Outlook (UN-GEO) report published in 2019[1], requires urgent human action across a range of interconnected domains. TerraNova's mission is to generate better-informed scenarios for land managers to enable the transition to a low-carbon society. The UN-GEO report identifies several "lifeway transformations" as key to any chance of a sustainable future for the planet, including adapting to climate change and transitioning to clean energy (UN-GEO pp. 6f.). Studying and managing landscapes through time connects with boosting chances for the EU to design and manage transformations like these which all bear upon human-landscape interactions. There are also wide-ranging economic impacts to be managed in the landscape of the future; "Implementing the right actions to combat land degradation and support sustainable land management policies has a direct effect on the livelihoods of millions of people across the planet" (UN-GEO p. 375, Executive Summary for Section 15). The world, including the European Union, is significantly depleting its biodiversity in ways which intersect tightly with the ways it is driving climate change, and rewilding offers an innovative European landscape management strategy capable of addressing both these crises at once[2].

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[1] Published by Cambridge University Press in 2019, available online via the UN Environment Programme's website, www.unenvironment.org/resources/global-environment-outlook-6.

[2] Cf. e.g. Rewilding Europe, "The twin crises of climate change and biodiversity loss: Making space for nature in Europe", available online at https://www.rewildingeurope.com/wp-content/uploads/publications/the-twin-crises-of-climate-change-and-biodiversity-loss/index.html, drawing from Fernández et al., "Boosting ecological restoration for a wilder Europe", 2020, DOI: http://www.isbn-a.de/cgi-bin/isbn_2010.exe/showresolution?isbn13=978-3-9817938-5-7.

2.2 THE TERRANOVA PROJECT

TerraNova is a network of 15 Early Stage Researchers (ESRs), their supervisors, co-supervisors, and secondment hosts. Through the research of the ESRs and spinoff papers, projects, and lectures, as well as white papers and other results geared toward private sector and policy-maker use, TerraNova aims to improve understanding of landscape histories and land use strategies in Europe at the end of the Pleistocene, throughout the Holocene, and, now, at the beginning of an "Anthropocene", an era distinguished by overwhelming global evidence that earth system processes are now altered by humans. The goal is moreover to educate ESRs to become lifelong contributors in this domain of inter-sectoral and inter-disciplinary research. While building on extant research and integrating existing data where appropriate, TerraNova envisions its research as a fresh way of obtaining results. Its approach is best encapsulated under the concept of 'integrated landscape analysis', or ILA.

Part of the approach will entail generating a new type of landscape-and-climate change model which includes the effects of past human actions to build better future projections. TerraNova's ILA divides past human-landscape interactions into four energy regimes: 1) the hunter-gatherers' energy regime, 2) the timber, agriculture and animal power shift, 3) the contemporary industrial carbon-based coal and oil regime, and 4) a projective future regime of combined low-carbon sources – the regime policymakers the world over as well as in Europe urgently require to safeguard the planet for future generations. Dividing the study of landscapes into four energy regimes and emphasizing the cross-cutting quality of ILA, TerraNova enables new tools for steering policymakers and landowners toward supporting a low-carbon future through a richer understanding of past landscape use patterns.

2.3 KEY DEFINITIONS

Unless specified otherwise, the following definitions apply throughout this document.

> **[External] Communication:** The conveying of information about and the promotion of "the project AND its results/success" to "multiple audiences beyond the project's own community including media and the broad public[3]". The goal of communication is to demonstrate the "impact and benefits of EU-funded R & I activities" including their relevance for addressing "fundamental societal challenges[4]". (R & I stands for Research and Innovation.)
>
> **Dissemination:** Releasing *results* of the project, including but not limited to in the form of peer-reviewed, semi-popular, or public publications or other forums, live or online, with an aim of effecting knowledge transfer/the spread of the impact of the project beyond its own boundaries[5].
>
> **Exploitation:** Exploitation can be seen as a natural consequence of good dissemination to appropriate target audiences. Exploitation refers to actions

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[3] EU IPR Brochure p. 13.
[4] EU IPR Brochure p. 13.
[5] EU IPR Brochure p. 13.

initiated or expanded based on the use of project results which were disseminated to relevant parties within and beyond the academy and the project's own field(s). Exploitation is a "specific term for the H2020 Programme" which refers to the utilization of "results produced in an EU project in further activities (other than those covered by the project, e.*g. in other research activities; in developing, creating and marketing a product, process or service; in standardization activities*)[6]".

Reflects TN Network's exchanges/interactions with whom?	Internal communi-cation	External communi-cation	Dissemi-nation	Exploita-tion	Website & social media
Terra Nova ESRs	✔				✔
Other EU and international students at post-grad level		✔	✔		✔
External partners and other TN Network stakeholders	✔			✔	✔
Policy makers		✔	✔		✔
General Public		✔	✔		✔
Potential business partners and employers		✔	✔	✔	✔

Table 1. Relevant audiences for TerraNova's (TN's) internal/external communication, dissemination, exploitation, and web presence strategies

2.4 TERRANOVA'S MAIN MESSAGES, THEMES, AND DISSEMINATION TARGET AUDIENCES

TerraNova is primarily a training network of Early Stage Researchers (ESRs), and as such, its core dissemination mode will be through peer-reviewed publications published in academic journals, as well as a small number of discursive PhD theses also made available to the academic community upon completion. The fifteen research areas of the ESRs form the backbone of this core dissemination output.

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[6] Cf. https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/glossary.

Building from these fifteen core competencies, TerraNova has designed a communication and dissemination strategy which also relays project progress and results beyond the peer-review community.
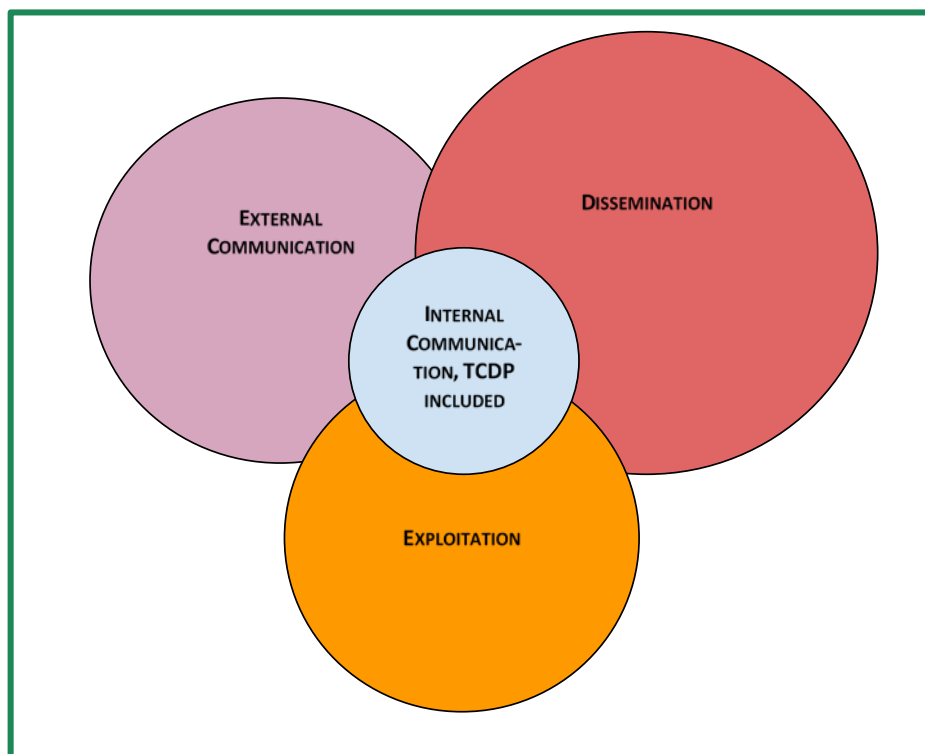
Figure 1. The relationship among internal and external communication, dissemination and exploitation

The research of TerraNova, as noted in Section 2.1 above, bears great relevance for Europeans from a number of different segments of the population. TerraNova has five key families of objectives/key messages designated as appropriate for communication and dissemination across five main target audience groups beyond the scientific and academic communities.

Some of these messages or objectives are meaningful even in the stages before the formal dissemination of project results can begin, though some will require the research to be at a more mature stage before launching. Table 2 shows methods color-coded to designate early-stage, mature-stage, and continuous types of C & D activities.

Target audience	Objectives/ key messages	Main methods: **RED: Early stage of project** **BLUE: Mature stage of project** **GREEN: Continuous throughout project**
General public	o Increase public awareness of the nature-culture relationships in past, present and future landscapes. o Better understand public concerns regarding landscape management and rewilding.	● **Field excursions with the public, during TAFS weeks** ● **School visits, teaching activities & town hall meetings** ● **TV Documentaries on the project, depiction of landscapes in media** ● **Final popular science conference** ● **Massive Open Online Course (MOOC)** ● **TerraNova website** ● **Press releases** ● **Social media**
Students	o Enhance scientific understanding of nature-culture relationships in the past, present and future landscapes. o Widen mono-disciplinary views with interdisciplinarity.	● **Host students for study trips to research and rewilding areas** ● **'Open days' during TAFS weeks targeted at local graduate students** ● **MOOC** ● **TerraNova website** ● **Social media**
Policy makers	o Provide scientific guidance on threats and opportunities for Europe's landscapes relating to climate change. o Support decision makers addressing landscape management and pursuing rewilding.	● **Town hall meetings during TAFS weeks** ● **White papers** ● **Policy recommendations for sustainable landscape management** ● **EU networking meeting** ● **Online strategies, tools, guidelines** ● **TerraNova website** ● **Social media**
Small to Mid-size Enterprises (SME's)	o Provide scientific insights into innovation and smart growth relating to landscape management, rewilding, and other topics linked with ILA	● **Face-to-face meetings** ● **Town hall gatherings** ● **Applied science reports** ● **'Open days' at rewilding locations**
Non-Governmental Organizations (NGO's)	o Develop and apply a co-production of knowledge dissemination strategy	● **Stakeholder conferences** ● **Targeted e-mail communication via TerraNova network (newsletter)**

Table 2. Communication & dissemination priorities in addition to academic publishing

2.5 ROLE OF THIS DELIVERABLE IN PROJECT

This plan provides additional detail on the above-noted five families of themes and five families of audiences, and strategies for communicating and disseminating them appropriately throughout the life of the project. It also covers peer review publications, internal communication strategies, web-based communication methods – which span multiple communication and dissemination activities and functions – and also includes some preliminary thoughts on project exploitation.

This deliverable should be seen as a continuation of/as interacting with the TerraNova Data Management Plan (DMP), Deliverable 5.1.

Like the DMP, this Communication & Dissemination Plan (CDP) falls under Work Package (WP) 5. WP5 coordinates the overall communication and dissemination strategy of TerraNova in order to ensure that the project results are transferred to scientists, policy makers, stakeholders and the public.

3. WEB PRESENCE, SOCIAL MEDIA, AND TRADITIONAL MEDIA

3.1 WEBSITE

The TerraNova website (**www.terranova-itn.eu**) serves as the primary portal for other researchers, NGOs, SMEs, policy makers, potential business partners, younger students, and the general public to interface with and learn about the work of TerraNova. It is a key communication portal. The website will be maintained to include as much live content as possible, to include short video clips, links with social media accounts, and relevant project news and events. A basic course in film-making has been provided to the ESRs by Film Academy Babelsberg – Konrad Wolf during the first TerraNova Academy Field School (TAFS), held in Berg en Dal, Netherlands in October 2019.

The website will also host a short (approximately 500 words or less) monthly blog written regularly by the ESRs, and potentially by supervisors and external partners on an occasional basis. These blogs will feature simple themes spun off from the ESR's core research geared toward the general public with no specialized training.

In order to make these blogs public-friendly, and enable consistent use of these blog themes across multiple media platforms or venues where interacting with the general public is concerned, each ESR will choose for their blog a topic connected with their research that is able to cross out of academic audiences. This relatively simple theme will serve as each ESR's most basic "pet theme" which they can use as appropriate not only as the substance of their blogs, but also on social media, and when giving public talks in schools, etc., in order to build social media followers and general interest and awareness which is truly outside of academic silos. For example, the researcher looking at the ecological impact of megafauna on landscape over time might choose as his pet theme 'the carbon footprint of the domestic dog from the early Holocene to today'; the ESR researching the socio-economic value of landscape management might choose a theme such as 'Who are Europe's land managers now, and who were they through

time?'; or an ESR researching rewilding might choose something along the lines of 'Europe's most fascinating lost species and how their like could return'.

*Image 1. TerraNova website, **www.terranova-itn.eu** (live but still under construction)*

3.2 SOCIAL MEDIA

TerraNova utilizes a Twitter account (handle: **@terranova4eu**) for communication purposes and dissemination purposes, as well as to attract followers who might, as the project progresses toward completion, be linked with possible exploitation of project results.

This account should be used or tagged to send tweets making use of research or referring to the project. This account is also used or tagged to advertise conferences where ESRs or affiliated researchers will be presenting, public events offered by the network, etc.. ESRs and supervisors should regularly contribute to the TerraNova account.

TerraNova also maintains a Facebook page, **TerraNova-ITN**. This page will allow for further informal discussions and publication of events.

The website, social media, and any traditional media (fliers, posters, etc.) will all be linked and cross-referenced in order to achieve widest possible outreach.

Useful hashtags:

#TerraNova

#H2020

#rewilding

Partner organizations to tag:

@RewildingEurope

@EU_H2020

Image 2. TerraNova Twitter Account

3.3 TARGET AUDIENCES FOR WEB-BASED MEDIA

Target audiences for the website are, as noted above, the general public as well as scientific researchers and members of the business community. The website is often the first or second point of contact for those interested in TerraNova and its research.

Target audiences for social media are primarily:

- Existing Twitter followers of partner organizations who may be interested in work of TerraNova;
- Researchers following themes on Twitter such as Landscape, Archaeology, Geology, Climate Change, Sustainability, Rewilding, etc.; and
- Members of the general public, especially youth, interested in sustainability issues more broadly.

3. 3. 1 Analytics

Once a quarter at a minimum, website managers and those maintaining the social media accounts should review basic analytics of the site and perform any 'tinkering' needed to

improve outreach. This will enable inclusion of web presence metrics in periodic reporting to the EU, as required[7].

3.4 EXPANDED AND TRADITIONAL MEDIA PRESENCE

In order to serve goals of raising public awareness TerraNova works with media outlets including:

- IUCN European network
- Film University Babelsberg - Konrad Wolf
- Rewilding Europe.

Where possible and appropriate, TerraNova encourages all ESRs and network participants not to overlook traditional or neo-traditional media – print and/or online popular science or news magazines, television, radio, podcasts, knowledge clips posted to YouTube, etc. – and its continued relevance to communication and dissemination objectives.

4. INTERNAL COMMUNICATION

4.1 INTRODUCTION

TerraNova operates from the view that strong internal communication is important because it strengthens the network constituted by the TerraNova consortium, and leads in turn to strong external communication and dissemination practices. It also helps spark ideas, and can augment favorable results down the road in terms of working with external parties on project exploitation.

Consequently, TerraNova aims to build strong messaging and communication within the team, to build upon and further strong external communication and dissemination activities.

4.2 TAFS AS INTERNAL COMMUNICATION EVENTS

An important aspect of the TAFS conferences will be to capitalize on group gatherings to a) improve communication internally and b) coordinate external communication and dissemination plans and strategies for the subsequent 4 – 6 months (until the next TAFS).

TAFS meetings usually begin with a full day during which all 15 ESR projects are presented and discussed. This stimulates the multidisciplinary training of the ESRs in formulating shared research questions and a true discussion between natural and social

[7] Cf. page 12 of the EU Grants: H2020 Guidance -- Social Media guide for EU funded R & I projects – V1.1 – 7.1.2020 document, available online.

sciences, and between academic and non-academic partners. The ESR projects are grouped into two transdisciplinary groups.

The 'Atlas' group is devoted to the construction of an online digital atlas of landscape evolution. This Atlas has many intended end-users in a variety of sectors of society, ranging from policymakers, NGO managers, and landowners to investment managers, higher education professionals and visual and textual media makers.

The 'Policy' group works primarily on translating the outcomes of the research into policy guidelines. This group works to generate policy briefs and white papers, and to develop strategic guidelines and scenarios (to include with respect to engaging with practitioners).

Meetings of these groups during TAFS facilitate brainstorming on how to best communicate to the public about the Atlas and about TerraNova's work as a whole, and how to target policy makers and those interested in policy on land use and sustainability.

Two future TAFS meetings (numbers 4 and 6) are planned to be larger in size, incorporating the entire network of 24 partners in TerraNova as well as carrying out external communication and dissemination to stakeholders at the local and regional (TAFS 4, in Rennes, FR) and national and international (TAFS 6, in Brussels, BE) levels.

4.3 TROUBLE-SHOOTING IN INTERNAL COMMUNICATION

Supervisors will continue to work to ensure TAFS are effective in a transdisciplinary sense.

Supervisors must also more generally continue to lead the development of the shared cross-cutting themes (e.g., energy regimes; transitions) fundamental for the research objectives of TerraNova, without impacting clarity for individual research projects, finding the balance between looking inward and looking across boundaries and research silos. In addition, where possible, ESRs and supervisors will continue to work to define and deploy holistic terms to aid in the project's emergent unified messaging themes, e.g., "Integrated Landscape Analysis", or ILA.

Another internal communication effort will be to preserve methods, lessons learned, etc., to aid in the development of a post-doc training program linked with TerraNova.

In addition, suitable arrangements on the data infrastructure side must be maintained to allow for TerraNova alumni to remain in contact with the project for an additional 2 years after project completion (For further details, see D5.1, TerraNova Data Management Plan).

4.4 ADDITIONAL CONSIDERATIONS

Internal communications must cover basic privacy, legal, and data security concerns in accordance with all EU standards and protocols.

The official language of the project is English.

Wherever feasible and appropriate, remote (e.g. Zoom or Skype) teleconference meetings will be substituted for in-person meetings. All appropriate measures should also be taken pertaining to TAFS meetings to limit the carbon footprint of each TAFS, e.g., encouraging ESRs to take ground transportation to/from TAFS where possible, utilize carpooling during TAFS meetings, etc..
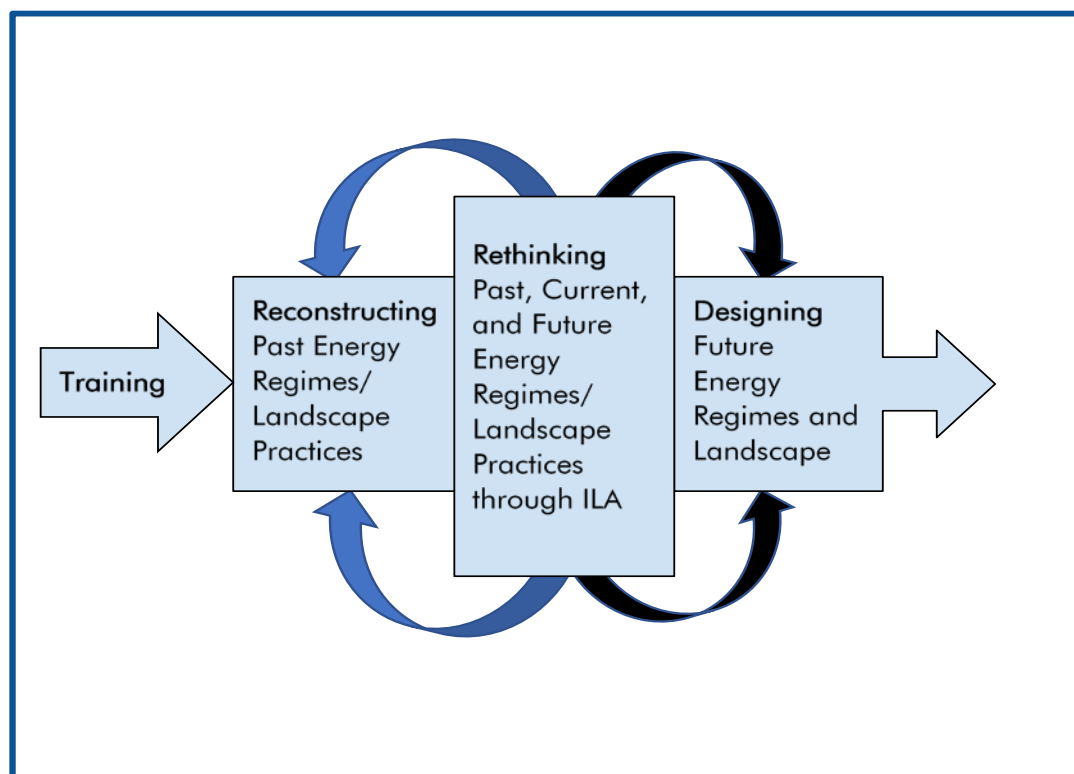
Figure 2: TerraNova progression toward contributing to the low-carbon future

5. EXTERNAL COMMUNICATION

5.1 KEY EXTERNAL COMMUNICATION MESSAGE TYPES AND CONTENTS

External communication, hereafter referred to as communication, pertains to sharing information about the project and its results to audiences outside academia (cf. Section 2.3 above).

Per official EU guidance, H2020 projects must communicate in order to effectively show the general public and other audiences the ways in which "the research, training and mobility" fostered by the H2020 project "contribute[s] to a European 'Innovation Union'". There is also the need to "account for public spending", and in this vein communication "should provide tangible proof that the funded action adds value by":

- showing how **European and international collaboration** has achieved more than would have otherwise been possible, notably in achieving scientific

excellence, contributing to competitiveness and, where relevant, solving societal challenges;

- showing how the outcomes are **relevant to citizens' everyday lives**, by creating jobs, training skilled researchers, introducing novel technologies, bringing ideas from research to market or making lives more comfortable in other ways;
- **promoting results**, which may possibly influence policy-making, and ensure follow-up by industry, civil society and by the scientific community[8].

This TCDP is TerraNova's foundation for answering this requirement, and part of the project's attention to ensuring these requirements are met.

5. 1. 1 Current message types/content

As of month 12, which is still fairly early on in the TerraNova project, there are three main families of messages suited for external communication:

- General issues related to researching landscapes and their histories
- Linking past and current landscape management quandaries and policy/land-use choices
- Understanding European landscapes as multifunctional mosaics contributing to Natural Capital.

In addition, TerraNova will also begin publishing, in month 7, one blog on the project web site each month, authored by an ESR (and occasionally by supervisors or other partners, by invited arrangement). As discussed in Section 3.1, these blogs will be aimed at the general public. In order to make these blogs public-friendly, and enable consistent use of these blog themes across multiple media platforms or venues where interacting with the general public is concerned, each ESR will choose for their blog a topic connected with their research that is able to cross out of academic audiences. This relatively simple theme should be informal and not derive from having already generated project results. This most basic "pet theme" can be used as appropriate not only as the substance of blogs, but also on social media, and when giving public talks in schools, in order to build social media followers and general interest and awareness which is truly outside of academic silos. This helps build a baseline of simple, recognizable messaging by the TerraNova project which is shared with the general public.

5. 1. 2 Anticipated message types/content

In the future, as TerraNova nears completion and research by the ESRs matures, we see several additional themes emerging well-suited to communicating to the broader public:

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[8] "H2020 Programme Guide for Applicants", Version 1.5, 19 May 2017, p. 36. Available online via ec.europa.eu, under 'Guides for Applicants'.

- Concrete examples of how specific landscapes operate on the survival, cultural, and heritage levels
- Ways of saving European landscapes
- Specific examples of how ILA helps solve problems related to the transition to a low-carbon future
- Specific stories of nature-human interaction mined from specific landscapes' 'deep history'
- Seeing ourselves through the lenses of landscape and energy regime shifts of the past/future: stories and examples from the past which inform the future
- How TerraNova is supporting good European landscape management and decision-making
- Envisioning with the help of the Atlas the future course of human-landscape interaction in Europe
- The potential benefits of restoring landscapes to a wild or semi-wild state, particularly where abandoned agricultural land is concerned.

5.2 KEY EXTERNAL COMMUNICATION PARTNERS

TerraNova is designed to pursue dialogue with a wide array of stakeholders. Throughout the life of the project, these include:

- Partner organizations within the network, when disseminating to a broader audience within the organization: for example, presenting to a wider group within the International Union for the Conservation of Nature (IUCN), rather than only the liaison affiliated with TerraNova
- External stakeholders in the project, e.g. the IUCN, European Landowners Organization (ELO), World Wildlife Fund (WWF), the Association for Applied Geography - Geoconcept (GCT), the Spanish Quaternary Research Association (AEQUA), Landscape Research & Management (LRM), and Rewilding Europe (RE) networks
- The general public, including students/youth and seniors

Towards the end of the project and following its completion, external communication partners will also include:

- Policymakers at local, regional, and national/transnational level
- Private sector businesses with an interest in exploitation of TerraNova research.

5.3 ADDITIONAL EXTERNAL COMMUNICATION METHODS AND TIMELINES

In addition to the web-based communication activities reviewed in Section 3 above, the following activities are planned for the TerraNova project. These link with the main communication and dissemination themes and methods reviewed in Section 2.4, including in Table 2. Here they are again linked with a planned timeline.

Continuous throughout project:

- Press releases
- EU networking meetings
- Online strategies, tools, guidelines
- 'Open days' at rewilding locations
- Targeted e-mail communication via TerraNova network (newsletter)

Early stage of project (Month 1 – 24):

- Field excursions with the public, during TAFS weeks
- School visits, teaching activities & town hall meetings
- Host students for study trips to research and rewilding areas
- 'Open days' during TAFS weeks targeted at local graduate students
- Town hall meetings during TAFS weeks

Mature stage of project (Month 24 – 48 and into after-project period):

- TV Documentaries on the project, depiction of landscapes in media
- Final popular science conference
- Massive Open Online Course (MOOC)
- White papers
- Policy recommendations for sustainable landscape management
- Face-to-face meetings
- Town hall gatherings
- Applied science reports
- Stakeholder conferences
- Podcasts.

6. COMMUNICATION IMPACT AND PERFORMANCE INDICATORS

6.1 INTERNAL COMMUNICATION

The impact and performance indicators for internal communication practices within the TerraNova network will be monitored on a continuous basis. The project manager and the WP5 leader will oversee project-wide internal communication quality assurance measures to include ESR and supervisor/partner surveys which cover internal and external communication as well as dissemination topics. The first such survey was conducted on 13 December 2019, cf. Appendix III. Appendix III also contains a list of C & D activities carried out to date in TerraNova and highlights some planned future actions.

Individual supervisors will continue to be the first and last line of moderating internal communication practices and problems as experienced by the ESRs and by fellow

supervisors as well (who often become research partners). It remains their responsibility to relay commentary, whether in the domain of best practices and/or complaints, to the WP5 leader and the TerraNova project management team.

6.2 EXTERNAL COMMUNICATION

Measuring impact and performance of external communication activities begins with simple documentation of instances of external communication activities. This is currently covered in a document kept in the Google share drive for the project. The document acts as a log book for TerraNova individuals, work packages and the thematic teams. The information in the log book provides the basis for bi-annual progress reports (generated as TAFS events) on communication and dissemination projects undertaken by project participants.

The log book is also used to track impact indicators derived from analytics for web-based initiatives, both public-facing metrics such as views, follows, or likes, and administrator-only metrics, such as page views and other tracked features and interfaces.

7. DISSEMINATION

TerraNova aims to disseminate research results across the three main project areas: Reconstructing, Rethinking, and Designing for the future landscapes.

7.1 RECONSTRUCTING

TerraNova models past climates and anthropogenic land cover, using archaeological, palaeobotanical and macrofaunal data. Key **reconstructing the past landscapes of Europe** themes cluster around acquiring a 'baseline' for early stage Europe and understanding and reconstructing facets of culture-landscape balances in early European landscapes.

TerraNova aims to reconstruct the deep history of the European landscape, to understand the changing course of human-nature interactions over time, with a special focus on times of transition between energy regimes. Reconstructing-focused deliverables include scientific publications (15-18 peer-reviewed and one high impact paper), vegetation mapping, agent-based modelling, and data contributions to the TerraNova digital Atlas. See Appendix II for a complete list of TerraNova deliverables related to dissemination, with their planned dates by project month.

7.2 RETHINKING

Key **rethinking current and future energy regime landscape transitions** themes cluster around modelling climate and other anthropogenic changes to the European landscape in current and future energy regimes, including considerations of megafauna distribution. Dissemination products will look at best ways to rethink the outcomes of

human-environment interactions over the past three energy regimes, with the goal of informing future energy transitions via a long-term environmental and social perspective. They will come mainly in the form of scientific peer-reviewed publications and contributions to or aspects of the Atlas. (Again cf. Appendix II for a list of dissemination-linked deliverables keyed to the rethinking of European landscapes.)

7.3 DESIGNING FOR THE FUTURE LANDSCAPE

TerraNova aims to design land management tools for policy makers' and decision-makers' use as they design sustainable landscape management plans and strategies. TerraNova performs spatial mapping and stakeholder-based evaluation of biodiversity and ecosystem services, to inform models of future land use in the cultural landscape. The goal for **designing the future landscape**-themed dissemination products is to assist policymakers and the public reach decisions based on an understanding of long-term landscape change in the European context. The project aims to generate future scenarios for cultural landscape change, with integrated landscape, cultural heritage and biodiversity models, to inform current planning initiatives, e.g. for the transition to a low-carbon society. This will be done primarily via scientific peer-reviewed publications, scenario and social valuation planning, rewilding and other landscape management policy input, and the generation of other instruments, tools, and protocols relevant to land use planning in this context. (Cf. Appendix II.)

7.4 KEY DISSEMINATION TARGET AUDIENCES

For all TerraNova research, a key element of the dissemination strategy is to ensure key target audiences and beneficiaries are identified and engaged using appropriate methods. The following target audiences are recognized as particularly important and the table below links these intended audiences with a variety of dissemination methods to consider:

AUDIENCE	DISSEMINATION METHODS TO CONSIDER
General public	- Website & Social media - News features & Press releases - Blogs & Vlogs - Infographics & Animated Infographics - Popular science books, Graphic novels, Children's books - TV programs
Government & Local/Regional/National policy makers	- Website & Social media - Research briefing notes - The Atlas - Infographics & Animated Infographics

	- Direct contributions to Governmental calls for evidence - Reports for policy-makers - Dissemination workshops aimed at policy exchange
Academia - across disciplines, natural, social sciences and humanities	- Academic peer-reviewed research articles, opinion, policy, and practice pieces - Monographs, Book, Edited book - The Atlas - Website & Social media - Blogs & Vlogs - MOOC & Conferences
Students (Education)	- Academic peer-reviewed research articles, opinion, policy, and practice pieces - Monographs, Book, Edited book, Textbook - The Atlas - Website and Social media - Teaching material - MOOC & Conferences
SMEs & Consultancies & NGOs (including but not limited to: European Landowners Organization, IUCN network, Rewilding Europe Network)	- Website and Social media - Blogs & Vlogs - Infographics & Animated Infographics - Academic peer-reviewed research articles, opinion, policy, and practice pieces - Reports for practitioners - The Atlas - Co-creation of tools and services through collaboration - Dissemination workshops specifically aimed at sharing results and their potential for practical application - Intellectual Property Rights commission meetings at TAFS events.

7.5 DISSEMINATION GUIDELINES

In general, all dissemination should follow the guidelines provided by the EU and available online. Some highlights of these guidelines are included in the Quick Guide for ESRs and TerraNova network members provided in Appendix I, as well as links for where to find them in more detail online.

The below subsections cover further TerraNova aims and guidelines for the project's dissemination approach.

7. 5. 1 Academic Peer-Reviewed Publications (Research articles, Methods articles, Opinion pieces, Policy & Practice perspectives, Published books)

One of the most important means of disseminating project results will be through academic publications in recognized and reputable journals, targeting the scientific community, industry, NGOs, and others.

Goals encompass:

1. Two to Four green open access papers per ESR. This translates to 15-18 for Reconstructing, 12-16 for Rethinking, and 8-10 for Designing for the future.
2. Two to Three high impact papers, with the aim of one per theme.
3. In some disciplines, ESRs may seek to publish a single PhD thesis with chapter division, which would replace the two to four published papers.

The practices of publishing:

1. With regard to authorship and author order, all research teams should follow good scientific practices. Authorship and author order should be agreed at the beginning of research initiatives and reviewed and amended with the development of the project.
2. All publications should indicate all authors' contributions to the work.
3. All funding should be acknowledged including: "This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 813904".
4. All partners should be informed regarding technical and legal requirements contained in relevant EU documents, especially Articles 29 and 38 of the relevant Model Grant Agreement, available for internal use , and the H2020 Guide to Open Access publishing available at http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf.
5. In order to be able to prove ownership (as well as to determine the date of generation), all TerraNova participants will maintain documents for at least the duration of the project and 5 years beyond, showing the progress in knowledge generation. The Consortium Agreement details dissemination procedures, ownership of results and access to background information.

7. 5. 2 Atlas

An important dissemination output will be the TerraNova **online digital Atlas**, generated in open source format and coordinated by our academic beneficiary VUA. All consortium partners agree to update this Atlas. Specifically, VUA will be responsible for hosting the online Atlas during and at least 5 years after the project. VUA will also actively explore possibilities to sell licenses for additional thematic Atlas layers, to stakeholders targeted by TerraNova.

Results will be documented in an open access digital Atlas of ancient landscapes, energy regimes and climate scenarios. The Atlas will hopefully also generate 6 – 10 Green access scientific papers to be published, and one high-impact paper.

The target audience for the Atlas is broad, including academia, SMEs, NGOs, industry, and consultancies.

The new local and joint courses will continue after completion of TerraNova and physical and digital course materials will be made widely available. International organizations and NGO's like IUCN, ELO, GCT, AEQUA, ARFI and WWF, and small and medium companies like WB and LRM, offer continuing collaborations after the TerraNova project. All partners are committed to continue to update the digital Atlas and Policy documents after the end of the project, e.g. via alumni networks. TerraNova will further aim to influence IUCN, WWF and ELO and the ecosystem-based approaches of the EU Biodiversity Strategy to actively support and maintain the Digital Atlas in the longer term and/or find ways to seek funds via commercial ways to maintain the Atlas, such as licensing thematic layers and working with start-ups.

7. 5. 3 Website and social media

At a minimum, all dissemination outputs should be accompanied by posts on the TerraNova website News page and mentioned on the Twitter feed. Website mentions can serve to disseminate summary research highlights and direct readers to other dissemination products. Twitter threads can be used to provide a short summary, key visuals, and links to the relevant material.

All authors should make suitable information available to those managing the website and social media accounts 2 weeks ahead of publication.

7. 5. 4 Media engagement

Key dissemination products, in particular publications and custom products such as the Atlas, should be accompanied by a Press Release and distributed to relevant media outlets.

Press releases should be produced by the lead host institution's Media Relations Team or press office and shared with collaborators at least two weeks ahead of publication.

Co-authors, in collaboration with their own media relations office, should adapt the original press release for their own key audiences, including:

1. Translating the press release into appropriate languages
2. Providing alternative quotes and examples to make the piece more relatable to their target audience

Press releases should be coordinated to ensure embargos are adhered to and to help promote broad engagement.

7. 5. 5 *Blogs and vlogs*

Blogs and vlogs provide an excellent opportunity to make research findings more accessible to the general public and other interested parties. They can also be relatively simple to produce so can be an excellent dissemination product to support a key publication or to report more general observations and experiences from TerraNova activities.

Careful consideration should be given to the key message to be disseminated. In addition:

- The story of the research should be a key part of the blog or vlog to engage the reader and bring the key message to life
- The distribution plan should be considered to ensure a relevant audience is engaged. The blog or vlog could simply be for a personal website, the TerraNova website, a partner's website, or an external blog sharing site such as The Conversation.
- Blogs and Vlogs should be kept short, e.g. ~600 words and/or 3 minutes in length.
- Any blogs and vlogs should be accompanied by posts on social media and the News page of the TerraNova website.

Blogs and vlogs should also:

- Ensure permission is secured from all co-authors to share any results that are included.
- Ensure appropriate permissions to publish images, figures, and photographs/video footage.
- Be shared with all partners 2 weeks prior to publication.
- Credit the work of others.
- Follow EU guidelines.

7. 5. 6 *Infographics and animated infographics*

Once a substantial body of evidence has been accumulated, either by a single research team or by multiple research teams working on a related topic, and a clear and powerful story has been generated, infographics & animated Infographics can be created and can serve as a powerful dissemination tool.

7. 5. 7 *Briefings (Research and Policy)*

Policy and Practice Research Briefings should be produced and distributed to target stakeholders for more applied research outcomes. These can be based on research publications but should be short.

7. 5. 8 Policy and Practice Reports

When a substantial body of evidence has been generated across multiple publications, a report to target policy makers or groups of practitioners can be an effective tool. However, these are substantial undertakings that will require a dedicated team, a rich variety of resources to draw upon, and a publication budget. A variety of TerraNova partners, including Rewilding Europe, IUCN, MLU and ELO have experience and expertise in producing such reports and could offer a good opportunity for collaboration.

7. 5. 9 Workshops

In order to engage and achieve effective dissemination of results to practitioners and policy-makers workshops aimed at co-creating practical tools and products from TerraNova research, suitable workshops can be arranged.

7. 5. 10 Conferences

Likewise, conferences offer an important venue to share research results. This entails both encouraging ESRs to attend conferences, and the hosting of at least one conference within the network. In the case of conference attendance by ESRs, researchers can use conferences to help spread the use of the energy regimes framework in interdisciplinary landscape history. In the case of a TerraNova -hosted conference, currently there is a plan to host a popular science conference in 2021, to engage a broad cross-section of the general public as well as specialists.

7. 5. 11 MOOC

The MOOC constitutes a threefold dissemination portal. Firstly, course material can integrate TerraNova research themes and provide ESRs with teaching and/or guest lecturing opportunities on their work. Secondly, it will lead to the development of course material which can be used in other classrooms. And thirdly, the MOOC dovetails with the post-doctoral training plans by building expertise and teaching experience in the TerraNova mode of approaching ILA, which can then augment ESRs' progression into the post-doctoral stage of their careers.

8. IMPACT AND PERFORMANCE INDICATORS FOR DISSEMINATION

Measurement of impact and performance for dissemination of the project results will vary with the type of dissemination project and type.

The core technical dissemination output of academic papers in peer-reviewed journals will be measured by the number of publications, and their citation counts where applicable.

Another core dissemination activity is the ability to interface with and influence or inform policy makers, including those affecting land use policy and rewilding policy decisions. The most concrete and important impact indicator here would entail a TerraNova white paper or policy recommendation binder being specifically cited or included in a policy decision-making process, e.g., to rewild a certain piece of land. Where this is unattainable, ESRs and their supervisors must document each substantial interaction with policymakers or decision-makers and adjust impact and performance measures as needed.

For other dissemination measures, web-based analytics, audience attendance for public events, course enrolment and response for the MOOC, etc., will also serve as impact and performance indicators for dissemination activities.

9. EXPLOITATION

We will here consider a few elements of how best to lay the groundwork for exploitation of project results, though exploitation proper will not commence until the month 24 – 30 range at the earliest, and possibly not until project completion in month 36 and the months immediately thereafter. Given this time consideration, exploitation strategies will need to be further refined and developed as domains of potential exploitation crystallize more concretely.

Some of the main families of exploitable results envisioned for Terra Nova include:

- Atlas spin-offs and patents
- Green business concepts, potentially including an advisory service or tool regarding rewilding and economic cost/benefit analysis
- Postdoctoral training lines able to be developed which build on the work and approach of TerraNova

Exploitation is the primary field of interest in Terra Nova for the profit-driven (private sector) as opposed to the publication-driven (academic) domain. Given the area of specialization of TerraNova in Integrated Landscape Analysis (ILA), however, there will remain a strong non-profit and policy flavour to most exploitable results.

Much of TerraNova's relevant framework for exploitation is covered in the document 'TERRANOVA's vision on Intellectual Property Rights', Deliverable 6.6, notably *Table 1: Exploitable Terra Nova project results, end user and methodology* in this document.

The online digital Atlas, which will remain active for at least 5 years after TerraNova's month 48 (project completion), has the potential to generate the sale of licenses to access the online digital Atlas.

There is also the potential for more messaging and media to be produced, in a commercial mode, after the project is completed, such as best practices, tools and protocols and entrepreneurial initiatives.

Exploitation will need to adhere with relevant laws and guidelines, and with the IPR strategy laid out in 'TERRANOVA's vision on Intellectual Property Rights', Deliverable 6.6.

10. CONCLUSION

TerraNova will continue to pursue strong external communication from a foundation of positive, transparent and collaborative internal communication. The project will aim for a range of traditional and novel dissemination modes and target audiences. The exploitation of results should enable European policymakers, decision-makers on land use, and the general public to appreciate the work of the project in advancing Integrated Landscape Analysis and supporting the European Union's move toward a more sustainable and green future.

APPENDIX I. C & D 'QUICK GUIDE' FOR PROJECT PARTICIPANTS

TERRANOVA NETWORK PARTICIPANTS' QUICK GUIDE TO C & D

This C & D Plan

This C & D Plan is a living document. If you have suggestions, comments, or any questions, please contact WP5 manager, contact information karl-johan.lindholm (at) arkeologi.uu.se.

Communication

Solid internal communication is the keystone for all communication and dissemination activities. ESRs should also look to develop a simple theme for use with the public and on social media, as well as communicating clearly and concisely across a range of venues and media the more technical side of their research, with special attention to how TerraNova is helping Europe understand and prepare for a lower carbon future through Integrated Landscape Analysis (ILA).

Dissemination

The following considerations are taken from the EU literature on communication & dissemination regulations, available online (see 'Further Resources' below), and should be followed as appropriate.

- Any dissemination of results must indicate that it reflects only the author's view and that the EU is not responsible for any use that may be made of the information it contains.
    - dissemination of results (in any form, including electronic) must:
        - display the EU emblem and
        - include the following text:
            - "This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 813904".
- When displayed together with another logo, the EU emblem must have appropriate prominence.
- Where possible, translations should be made of at least one dissemination product associated to each result to engage relevant and wider audiences.
- TerraNova must inform the H2020 Program not only before a communication activity expected to have a *major* media impact, but before any activity expected to have mainstream media coverage. This allows the Agency to boost the resulting publicity.

Planning well ahead for maximal policy impact

Each ESR is invited to keep a virtual binder of policy-relevant ideas and findings, including where possible some ideas which might be simplified and engaging for a non-specialist, very busy policy maker, linked with their research as they progress. This enables rich material to be harvested at the end of the project with maximal flexibility across multiple audiences employing varying degrees of formality and technical sophistication.

Exploitation

Since most TerraNova research will be open access, ESRs in consultation with their supervisors and secondment hosts should decide whether any portion of their research is suitable for patenting and remove this aspect of the research from open source work flow at an early juncture.

Website and social media

All ESRs and network participants are invited to regularly tag the TerraNova Twitter account. The handle is **@terranova4eu**. Relevant hashtags include:

#TerraNova

#H2020

#rewilding

#BiodiversityStrategy

Partner organizations to tag include:

@RewildingEurope

@EU_H2020

@EULandownersOrg

Handles for all other beneficiary and partner organizations, e.g. @VUAmsterdam, @UniLeiden. Etc.

The Facebook Page is: **TerraNova-ITN**.

The website, **www.terranova-itn.eu**, will host monthly blogs; each ESR will be asked to write 2 throughout the life of the project. Assigned dates and further guidance have been distributed to the ESRs and are also available with supervisors.

Log your activities!

Anything counting as a communication or dissemination event, please log in the share drive: the document is "Progress: Communication_Dissemination" in the WP5 folder.

Quick Links for More Info

The below are good resources to find further guidance on Communication and Dissemination practices and protocols in the H2020 framework.

Rules on open access (and opting out):

http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf

Annotated Grant agreement giving detailed rules for communication and dissemination, as well as exploitation (and other issues) – See especially Section 3.

https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

You can also consult relevant portions of the H2020 online manual, e.g.:

https://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/grant-management/dissemination-of-results_en.htm

APPENDIX II. DISSEMINATION-RELATED DELIVERABLES

Reconstructing-linked dissemination deliverables (WP2)

Deliverable		Project month expected
D2.1	Scientific publications (15-18 peer-reviewed scientific publications + 1 high-impact synthesis paper)	18-42
D2.2	Vegetation cover maps (continental and sub-regional)	48
D2.3	Map/database of natural disturbance regimes during Energy Regimes 1, 2 and 3	46
D2.4	Agent-Based Models for past environments in three European field laboratories	42
D2.5	Data contributions to the TerraNova digital Atlas developed in WP3	18-42

Rethinking-linked dissemination deliverables (WP3)

Deliverable		Project month expected
D3.1	Scientific publications (12-16 peer-reviewed journal articles + 1 high-impact synthesis paper).	18-42
D3.2	Preliminary publication of the digital atlas of the landscape evolution of Europe	18
D3.3	Final publication of the Digital atlas of the landscape evolution of Europe	48

D3.4	Documentation of pathways and perceptions of future landscape change contextualized in the long-term landscape history of Europe	46

Designing for the future landscape-linked dissemination deliverables (WP4)

Deliverable		Project Month expected
D4.1	Scientific publications (8-10 peer-reviewed journal papers + 1 high impact, synthesis paper)	18-42
D4.2	Scenarios and social valuations of land management and landscape change	36
D4.3	Guidelines on land management practices with rewilding and assisted restoration	46
D4.4	Strategic (context-dependent) guidelines for the management of cultural landscapes	46
D4.5	Instruments, tools, and protocols for land planning in context of landscape transitions	48

APPENDIX III. COMMUNICATION AND DISSEMINATION ACTIVITIES IMPLEMENTED TO DATE AND ANTICIPATED FUTURE MILESTONES

Activities to date include, but are not limited to:

Internal Communication and CDP Creation

- On 13 December 2019, and again on 7 January 2020, TerraNova C & D survey, to aid in the drafting of the most effective plan for ESRs and supervisors, was distributed to ESRs, Supervisors, and Partner Organizations.
    - The survey asked questions and did some basic trouble-shooting for communication (both internal & external) experiences to date and inquired into main dissemination goals and target audiences for the short-term and longer-term of the project.
    - This response rate showed that surveys are potentially not the most effective way of canvassing supervisors and partner organizations, though they are effective for keeping track of ESR attitudes toward and perception of internal communication strategies and practices.

- An internal log book has been established for significant communication and dissemination events, kept on the share drive.

- Per H2020 requirements, C & D activities will continue to be monitored through the life of the project, and included in our periodic reports to the EU funding body, as laid out in: https://ec.europa.eu/research/participants/data/ref/h2020/gm/reporting/h2020-tmpl-periodic-rep_en.pdf.

- TAFSI held in October 2019 in Berg en Dal, Netherlands, was an opportunity for networking, improving internal communication, and working on C & D related issues and strategies as a group.

- Good internal communication and some discussions toward collaborative research have been reported among ESRs.

- TCDP was drafted and submitted in March 2020.

- The global Covid-19 virus pandemic led to the cancellation of TAFS II scheduled for March 2020 in Aarhus, Denmark; a virtual meeting was held in its place.

External Communication

- The Twitter account has been set up. Handle: @terranova4eu.

- The TerraNova website has been set up and is under construction. Web address: www.terranova-itn.eu.

- One public event featuring three lectures has been given during TAFSI in the vicinity of Nijmegen, Netherlands on the subject of rewilding and future landscape management.

- One radio interview was given by project director Sjoerd Kluiving on October 2019, Link: https://podcastluisteren.nl/ep/Radio-Swammerdam-Klimaatontkenning-lite-in-het-antropoceen#/

Dissemination

- Two posters have been presented at public academic workshops:
  - An ESR presented a poster to the 'Transitions in Water-/Energy-/Food-Infrastructures' Workshop in Amsterdam, organized by the Environmental Humanities Center of VUA, on 1 November 2019, conveying information on the ESR's research agenda on past energy transitions and anthropic impacts on landscapes of the past and/versus the current day.
  - One poster communicating the TERRANOVA project in the recruitment phase has been presented by the project director on the NWO life sciences congress: Life2019, 28-28 May 2019.
- Multiple less formal, internal additional presentations have been given by ESRs at their host universities and institutions.

Planned future events/milestones involving communication/dissemination include:

- TAFS conferences will continue every 6 months, and will include at least one public event per TAFS.

- White paper, Policy recommendations for sustainable landscape management strategies will commence in Month 12.

- At TAFS meeting 4 in Rennes, France, scheduled for Spring 2021, dissemination of results to local and regional stakeholders will take place
.

- At the 'Brussels lunch', scheduled to take place during TAFS 6 in Spring 2022, dissemination of results will take place to national and international stakeholders.

- TerraNova conference: "Managing landscape histories, past, present and future", is scheduled for 2022.

- ESRs will be encouraged to attend and present at International Landscape Archaeology Conference (LAC2020), now postponed until Summer 2021, where they can receive feedback from an interdisciplinary external community of geologists, archaeologists, geographers and paleo-ecologists.

- ESRs are encouraged to attend and co-organize sessions at larger conferences e.g. the World Archaeology Congress, EAA, LAC, PAGES, OSM and YSM.

- The launch of the TerraNova MOOC is anticipated in Month 42.

- Communicating internally will continue: Besides digital communication, the network will meet periodically face-to-face and via telephone conferencing; the WP leaders will continue to hold Zoom meetings approximately every 6 weeks.

- Communicating with EU funding and oversight authorities will continue as required. Particularly in light of possible unforeseen consequences of the ongoing Covid-19 pandemic, as specified in the grant agreement, Project Management will ensure that TerraNova project adheres to the following EU H2020 requirements to keep all relevant entities appraised of any delays or impact on ESRs and/or other project participants (cf. Grant Agreement number: 813904):
    - Each beneficiary must keep information stored in the Participant Portal Beneficiary Register (via the electronic exchange system; see Article 52) up to date, in particular, its name, address, legal representatives, legal form and organization type.
    - Each beneficiary must immediately inform the coordinator — which must immediately inform the Agency and the other beneficiaries — of any of the following:
        - (a) events which are likely to affect significantly or delay the implementation of the action or the EU's financial interests, in particular:
            - (i) changes in its legal, financial, technical, organizational or ownership situation (or those of an entity with a capital or legal link);
            - (ii) changes in the name, address, legal form or organisation type of an entity with a capital or legal link;

- (b) circumstances affecting:
  - (i) the decision to award the grant or
  - (ii) compliance with requirements under the Agreement.