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MED-GOLD

Turning climate-related information into added value for traditional **MED**iterranean **G**rape, **OL**ive and **D**urum wheat food systems

Deliverable 1.7
Guidelines for collecting feedback from the users involved in the development of the pilot services

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DOCUMENT STATUS SHEET

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1.3.	27-02-2019	UNIV LEEDS	34	Final report

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EXECUTIVE SUMMARY

This report constitutes Deliverable 1.7, “Guidelines for collecting feedback from the users involved in the development of the pilot services”. The report provides a set of general guidelines for managing the ongoing interactions with the users across the three pilot services. Methods are proposed for collecting feedback from the users during the development of the pilot services.
However, given that the beta tools are still being finalised, some of the exact details around this next stage of engagement and collection of feedback from users are still being developed and refined. The University of Leeds will provide the necessary support to all three pilot services teams towards the effective development, running and collating of the information gathered from these user engagement activities in the coming months.

With this deliverable, the project has contributed to the achievement of the following objectives (DOA, Part B Table 1.1):

No.	Objective	Yes
1	To co-design, co-develop, test, and assess the added value of proof-of-concept climate services for olive, grape, and durum wheat	
2	To refine, validate, and upscale the three pilot services with the wider European and global user communities for olive, grape, and durum wheat	
3	To ensure replicability of MED-GOLD climate services in other crops/climates (e.g., coffee) and to establish links to policy making globally	
4	To implement a comprehensive communication and commercialization plan for MED-GOLD climate services to enhance market uptake	
5	To build better informed and connected end-user communities for the global olive oil, wine, and pasta food systems and related policy making	x

1. INTRODUCTION

This report constitutes Deliverable 1.7, "Guidelines for collecting feedback from the users involved in the development of the pilot services". The report provides a set of general guidelines for managing the ongoing interactions with the users across the three pilot services. Methods are proposed for collecting feedback from the users during the development of the pilot services.

All three pilot services teams have initiated their work in relation to user engagement including conducting participatory workshops or focus groups to identify the key decisions across the three pilot services. These initial engagement activities took place in Spring 2018 and are further described in Deliverables D1.6., D2.1., D3.1. and D4.1. (see RD 1 to 4).

Following an initial stage of engagement with the users in the first year of the project, the development of the three pilot services has been ongoing and will continue to do so in the coming months. At this point in time, the beta versions of the tools are almost finalized and will be presented and discussed with the users in order to collect feedback on general aspects such as how easy the information is to use, the adequacy and potential usability of the tools provided to support the users' decisions, their preferences for receiving the information (mechanisms for receiving, visualisations, etc), as well as their preferences for engaging in the ongoing development of the tools.

This report provides a summary of the development of the tools to date pursued in each of the pilot services, based on the initial engagement with the users. The next steps regarding the presentation and discussion of the beta tools with the users in the coming months are also described. However, given that the beta tools are still being finalised, some of the exact details around this next stage of engagement are still being developed and refined. The University of Leeds will provide the necessary support to all three pilot services teams towards the effective development, running and collating of the information gathered from these user engagement activities in the coming months.

1.1. DEFINITIONS AND ACRONYMS

1.1.1. Definitions

Concepts and terms used in this document and needing a definition are included in the following table:

Table 1- Definitions

Concept / Term	Definition
Elevators	Cooperative of farmers

1.1.2. ACRONYMS

Acronyms used in this document and needing a definition are included in the following table:

Table 2 - Acronyms

Acronym	Definition
CAP	Common Agriculture Policy
WP	Work package

2. REFERENCES

2.1. REFERENCE DOCUMENTS

The following documents, although not part of this document, amplify or clarify its contents. Reference documents are those not applicable and referenced within this document. They are referenced in this document in the form [RD.x]:

Table 3 - Reference Documents

Ref.	Title	Date
[RD.1]	D1.6. Guidelines for appraising needs and critical decisions across the pilot services	2018
[RD.2]	D2.1. Report on the Knowledge capitalization of the olive oil sector	2018
[RD.3]	D3.1. Report on the two case studies at seasonal and long-term timescales for the wine sector	2018
[RD.4]	D4.1. Report on the identified specific needs and opportunities	2018

3. PREVIOUS ENGAGEMENT ACTIVITIES ACROSS THE PILOT SERVICES

The appraisal of users' needs, their key vulnerabilities and critical decisions across the three pilot services was performed in Tasks 2.1, 3.1 and 4.1 within the first 12 months of the project. Each work package developing the pilot services – WPs 2, 3 and 4 – engaged with different sectors and end-users and thus different decision contexts and climate information needs.

These initial engagement activities were informed by discussions within the MED-GOLD consortium and supported by the guidelines provided in the deliverable D1.6. "Guidelines for appraising needs and critical decisions across the pilot services" [RD.1]. The guidelines described in D1.6. provided a set of general guidelines for managing the interactions with the users across the three pilot services, as well as a robust approach to the ways in which information is gathered from the users and collated.

Table 1 below describes the main engagement events that took place in the first year of MED-GOLD and helped to inform the first stage of development of the three pilot services. For a full account of these engagement activities and the information collected the reader is referred to RD2 to 4.

Table 4 – Summary of engagement activities and main findings to date across the three pilot services

WP and pilot service	Method	Partners involved	Users engaged	Main findings
WP2 Olives/ olive oil	1 Workshop (June 2018)	DCOOP BSC GMV EC2C	19 agronomists / field technicians working in DCOOP	• Phytosanitary treatments, fertilization, and irrigation are the most important key decision from the participants because these activities have an impact in the olive production and quality. Also, these decisions are connected directly with the weather variables. The agronomists can act over these key decisions for improving them and consequently, the olive production and quality can be increased. • The most relevant weather parameters are precipitation, temperature, and wind. because these variables condition the olive crops process; whilst most significant weather parameters are accumulated, expected, maximum and minimum. • The kind of weather/climate information most useful is next 7 days in advance. • In October and March, the agronomists need more climate information because in these months they have to make decisions about different farming activities. In March the olive field must be prepared for the next season, for this reason, over this month the agronomists planning about irrigation, pruning, and fertilization, among others activities. However, In October the fields must be ready for the harvesting without problems that decrease the production and/or the quality of the olives.

				• Total precipitation in winter is the most practical climate index because it affects several critical key decisions as the harvesting or possible damages in the olives.
WP3 Grapes/ Wine	4 Focus groups (May 2018)	SOGRAPE UNIV LEEDS	9 process managers at SOGRAPE	• For seasonal forecasts, 6-month lead-time weekly forecasts of temperature and precipitation would be ideal, updated weekly, with a minimum reliability of 70%. It should be noted that one of the FGs mentioned they would like to have access to information, by e-mail or SMS, with ready-to-use information, easy to interpret and understand. • For decadal forecasts, quarterly projections of average temperatures (maximum and minimum) and precipitation would be ideal with quarterly updates. Additionally, it would be important to quantify the expected magnitude of increase /decrease of temperature. The agreed minimum reliability for which they would consider using such forecasts would be 80%.
WP4 Durum wheat/ pasta	2 Workshops (May 2018)	BARILLA JRC HORTA CNR ENEA	1st workshop: 11 technical experts from Italian political institutions, breeding, academic world and stocks	1st workshop: • General interest in weather and climate information; • Sectors that would most benefit from climate information are considered to be genetic improvement which would benefit most from climate projections, and plant protection, which would benefit from both seasonal forecast (for field agro-management) and from climate projections (e.g. emerging risks of new pest and diseases as well as changes in the most incurring ones). • Legislation, Policy and CAP are also considered important sectors where climate projections could play a key role, for instance by allowing the development of tailored interventions on land and water resources as well as

			exchange markets. 2nd workshop: 15 farmers and elevators	defining regional incentives on specific sectors/cultivations. Plant nutrition (especially regarding N) is another sector that could benefit from weather and climate predictions, e.g. allowing correct fertilisation planning. The food industry is influenced in terms of quantity and quality of productions and, therefore, in the definition of market prices. Mechanisation is recorded to be somehow another component that could benefit from climate predictions and projections in terms of development/use of best suited machinery and investments according to future soil humidity. 2nd workshop: ● Seasonal forecast information would be relevant in the agro-management planning from October to July mainly for fertilisation and variety/density selection at sowing to minimize the exposure to weather extremes and maximize both the yield and the protein content, the use of fertilizers (e.g. nitrogen) and the harvesting time. Sub-seasonal information would also be of interest, mainly at the monthly time scale, for pests/disease and weed management in supporting decisions, as well as water balance, even with a wind impact estimate. Soil moisture variability has received large attention. Predictions needs are mostly in terms of humidity, temperature and precipitation, soil water balance and wind. ● Decadal predictions and climate projections are not directly of interest for Granoduro.net users, but are recognized as potentially important for breeding and seeds producers, and they can have an impact on strategic policies (from CAP to regional ones). This kind of information can however play a relevant role in supporting planning decisions which require several years to be

				implemented, such as decisions in terms of equipment purchase (irrigation plants), emergence of new pests/diseases, use of new varieties.

4. SUMMARY OF WORK DONE ON THE PILOT SERVICES TO DATE

4.1. OLIVES / OLIVE OIL

This pilot service will provide climate indices identified by the users during the workshop in 2018, on both seasonal and long-term climate projection timescales. A number of indices are being considered in the development of the tool, including:

- Mean summer Tmax
- Mean winter Tmin
- Total precip (winter, summer, Annual)
- No of dry days (Winter, Annual)
- No of wet days (annual)
- Threshold climatic Indices for olive trees
- No of days Tmax>30C in spring
- No of days Tmax>40C in summer
- No of days Tmin<-8C in winter
- No of days Tmin<-3C in winter, spring, annual
- The anomaly of the minimum daily temperature
- The anomaly of the maximum daily temperature
- Daily precipitation
- Daily wind velocity
- Number of days with temperature above 30º C
- Mean summer maximum temperature (average daily maximum air temperature during summer)
- Mean winter minimum temperature: average daily minimum air temperature during winter
- Number of winter cold stress days: count of days with minimum temperature below 6ºC from Dec 21 to Mar 21 (Northern Hemisphere (NH)
- Number of annual and spring heat stress days: count of days with maximum temperature above 30ºC per year and from Apr 21 to Jun 21 (NH)
- Number of summer heat stress days: count of days with maximum temperature above 32ºC|36ºC|40ºC from Jun 21 to Sep 21 (NH)
- Total annual, summer and winter precipitation: total rainfall per year, from Jun 21 to Sep 21, and from Dec 21 to Mar 21 (NH)
- Number of annual and winter dry days: count of days with precipitation below 2 mm per year and from Dec 21 to Mar 21 (NH).

The post-processed temperature and precipitation seasonal predictions for the southern Iberian Peninsula (including Andalusia) for the period 1981-2015 have been uploaded to the ICT platform. These predictions have been bias corrected through a cross-validation calibration process considering the JRA-55 reanalysis as the reference dataset.

Regional climate model data from the EURO-CORDEX database has been post-processed. Data from five different GCM-RCM pairs was downloaded for a continuous period spanning 1971 to 2100 under two distinct greenhouse gas emission scenarios, RCP4.5 and RCP8.5. In addition, essential climate variables (here, temperature and precipitation) from these simulations will be bias-corrected based on the E-OBS gridded observational dataset for the pilot areas (Figure 1).

During the initial workshop, the users identified 'good and bad years', in which yields of olives were high/poor. Climatic indices relevant for olive sector were calculated for these and other years, to allow the climatic conditions of these 'good and bad years' to be characterised.

The complexity of the climate impact in the productivity will most likely require the use of numerical modelling capabilities to relate those indexes with the productivity. Calculations based on these indices are being carried out for the estimation of the exceedance probabilities and the return periods of the selected bad years.

Figure 1 below illustrates the workflow adopted in WP2 regarding the use of climate change projections in the olives/olive oil pilot service.

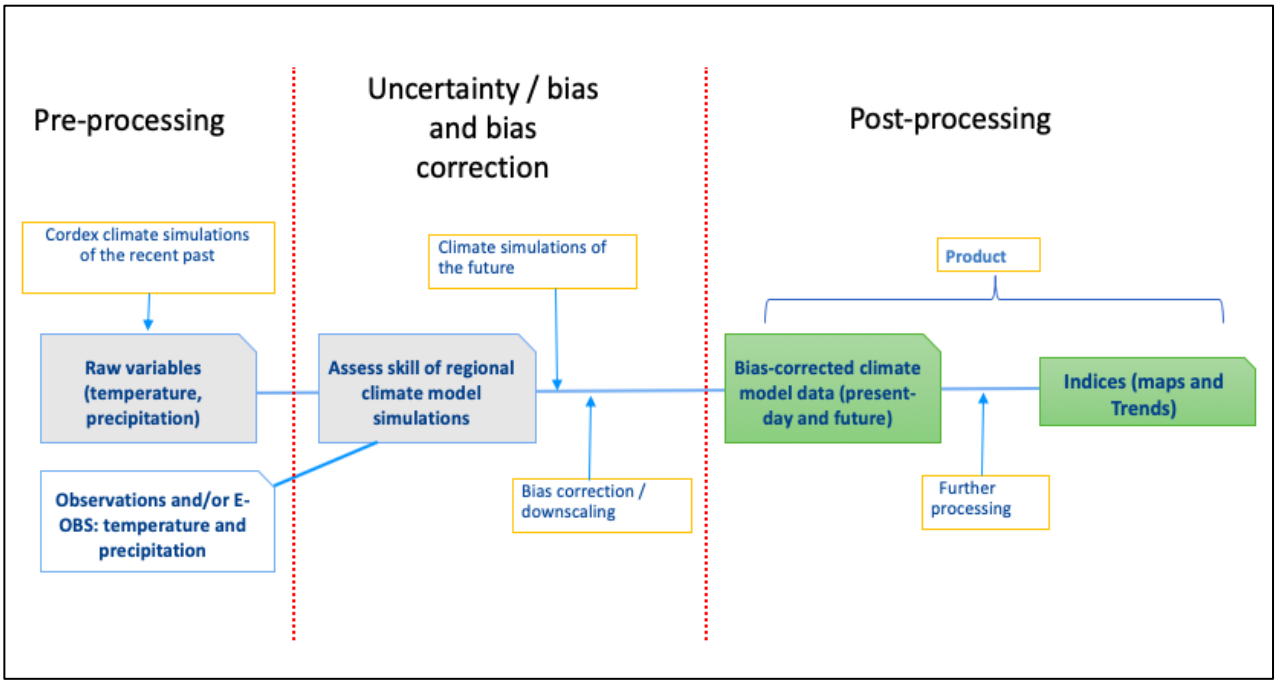

Figure 1 - Workflow of the climate projections used in the climate service for the olives/olive oil sector.

4.2. GRAPES / WINE

The information collected during the focus group discussions has served as a starting point for the development of what will constitute the prototype of the wine climate service developed within MED-GOLD.

The users at SOGRAPE are interested in having a climate service that provides information about essential climate variables (e.g. temperature, precipitation) and other climatic indices relevant for the wine sector using both seasonal predictions and climate change projections. Starting from the climatic indices described in Fontes et al. (2016), SOGRAPE selected the five most relevant indices affecting the decision-making processes of the wine sector. These indices are the number of heat stress days (SU35), spring total precipitation (SprR), growing season mean temperature (GST), growing degree days (GDD) and warm spell duration index (WSDI). In a later discussion the precipitation during the harvest was also added (HarvestR).

For the development of the climate service for the wine sector, different sources of information will be used, including seasonal predictions and climate change projections, but also reanalyses and observational datasets.

For this reason, one of the activities carried out has been the identification of several observational sources that fulfilled the requirements needed for the development of this task. SOGRAPE, with the help of BSC, ENEA, NOA and Met Office, has identified several observational non-climatic datasets and weather stations in the vicinity of SOGRAPE's properties that met all the requirements needed to be used in the development of the service.

The selected weather stations are (all data are available to MED-GOLD partners):

- Guiães with data records from 1964 to 2009;
- Folgosa-Armamar, from 1964 to 2009, and;
- Pinhão-Santa Bárbara, from 1941 to 2017.

A first phase of the wine climate service will be a beta version of the tool (MS6 during the second year of the project). After several discussions amongst WP3 partners - BSC, ENEA, NOA, Met Office, GMV and SOGRAPE – it was decided that the beta version of the tool will be centred on the specific case study of year 2002 (which was identified as one of the bad years). The characterisation of this case study has begun based on observations (ENEA) and the calculation of the essential climate variables and indices with seasonal predictions (BSC) and climate change projections (NOA, Met Office). In particular, ENEA has characterized year 2002 based on observations from Santa Barbara weather station, focusing on the GST and SprR indices. BSC has obtained bias-adjusted seasonal predictions and their associated skill for four essential climate variables (mean temperature, maximum temperature, minimum temperature and precipitation) and the GST index for the year 2002 with the ECMWF SEAS5 seasonal prediction system. NOA has started to analyse daily output from selected regional

climate models (RCMs) developed within the CORDEX (http://www.cordex.org) initiative. The analysis involves both the raw climatic data as well as the data derived after bias correction. The areas of interest examined are both the Mediterranean and the Douro Valley.
Figure 2 below illustrates the workflow adopted in WP3 regarding the use of seasonal forecasts in the grapes/wine pilot service.

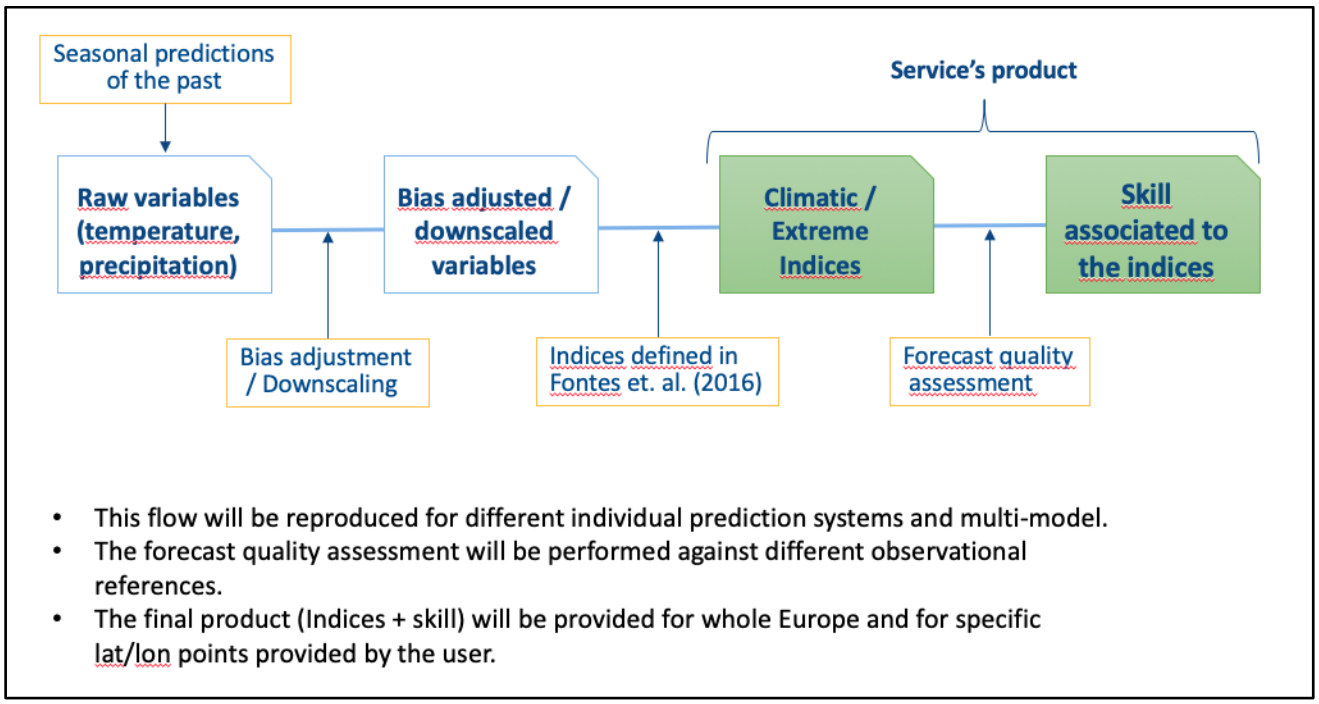

Figure 2 - Workflow of the seasonal climate service for the grapes/wine sector.

4.2. DURUM WHEAT / PASTA

The two workshops conducted in 2018 have helped to inform the pilot service in WP4 and the different tools required by the users. Three distinct simulation tools are expected to be developed within this WP, including:

- Delphi (led by CNR and used by Barilla) - Modelling system simulating durum wheat yield and biomass. It will be assessed using a new method of within-season predictions of yield and biomass at the selected three case study locations in Italy by feeding the Delphi model with ECMWF Sea 5 database bias corrected by MED-GOLD partners and made available on the ICT platform. This new method will be benchmarked against the current methodology implemented in Delphi that is based on three synthetic weather scenarios constructed using historical weather observations (wet, dry and average conditions).

- Granoduro.net® (led by HORTA and used by Barilla/elevators working with Barilla) - After an analysis of the information collected during the initial scoping workshop, WP4 partners decided to propose to users a prototype information based on pure climate indicators, while the output of the phenological model of Granoduro.net® would remain as a useful indicator for the monitoring and short-term weather forecast component. The workflow for the seasonal component of the services for durum wheat would follow the same scheme illustrated in figure 1. The indicators to be adopted are as follow:
    - Winter cumulated rainfall (Dec/Jan/Feb) as an indicator for the nitrogen leaching effect and the soil workability;
    - Drought/heat stress (Apr/May/Jun) as an indicator of the stress suffered by the plants due to dry conditions;
    - Growing Degree Days (AMJ) as an indicator of the development of the crop.

The computation of the climate indices will be based on ECMWF Sea 5 database bias corrected according to the methodology proposed by BSC and made available through the ICT platform.
An additional important methodological note concerns the spatial resolution of the information that will be provided with the prototype service. Taking advantage of a classification of climatic zones already adopted in Granoduro.net®, the development team of WP4 will present information aggregated at the level of climate clusters.

- WOFOST / MARS (led by JRC and of potential use to policy-makers): simulation model for the quantitative analysis of the growth and production of annual field crops. CMIP5 & 6 Helix and Cordex Projections made available on the ICT platform.

5. NEXT STEPS FOR THE PILOT SERVICES

The focus during the first year of the MED-GOLD project has been on understanding the needs of the users in the three sectors. This was achieved by engaging with them to identify the entry points and opportunities to develop tools that support their decision-making processes. The necessary climatic and non-climatic data have also been acquired in order to start the development of the beta versions of these tools. Following from this initial stage of engagement and development, the three pilot services will soon be in a position to be presented to, and discussed with, the users in order to exchange ideas and collect their feedback about general aspects of the beta tools. The sections below describe the immediate steps that will be taken by the three pilot services in the coming months.

Section 6 below provides general guidelines that each pilot service should consider when engaging with the users of the tools regarding the type of data and feedback that need to be collected to ensure that the tools are adequately presented, discussed and tested by the users as well as suggestions regarding the main mechanisms and methods that can be considered in future engagement activities.

5.2. OLIVES / OLIVE OIL

The next steps in the Olives/olive oil pilot service will be the development of the beta version of the tool. Data from one model (i.e. Regional Climate Model RCA4 driven by the HadGEM2-ES GCM) for three periods 1971-2001, 2031-2060 and 2071-2100 and under the two scenarios will be uploaded on the ICT platform.
Following the development of the Beta version of the tools, they will be presented and discussed with a smaller group of agronomists working at DCOOP (selected from those which attended the initial workshop). The idea for this second stage of engagement is to work with a smaller and more targeted group of agronomists in order to facilitate the discussions around the tools developed and help us understand the potential applicability and usefulness of the tools to support the advisory activities that DCOOP agronomists provide to farmers.
Although this group of agronomists have not yet been selected, a few suggestions of potential participants are:

- The Director of Supplies Department from DCOOP: an agronomist although his main activity is the coordination and management of resources (human and raw materials).
- The Coordinator of Technical Field Departments: an agronomist who coordinates the team of agronomists at DCOOP;

- One participant from the Olive oil logistics department from DCOOP who estimates the yield for the next seasons and may benefit from having access to these tools.
- One participant from the research and innovation department from DCOOP.

The date for the workshop has not been decided although it is anticipated that it will take place before summer 2019.

5.3. GRAPES / WINE

The next steps for the grapes/wine pilot service include:

- Finalising the characterization of the 2002 case-study;
- Finalise the rest of the case studies (two good years and two more bad years in terms of quantity and quality of the wine produced in that specific year): 1988 and 1993 (bad years) and 2007 and 2011 (good years);
- Complete the first beta version of the tool which will include the following agro-climate indices for both seasonal and long-term climate change projections: GST, GDD, SprR, SU35, WSDI, for observations for the good/bad years possibly together with the first version of the compound risk index introduced considering as possible sources of risks High/Low spring precipitation; high autumn rainfall and low GST and GDD;
- In the case of seasonal predictions, the tool will include a first workflow of the bias correction of the essential variables and the computation of at least one index from those put forward (the number of stress days, SU35; Spring total precipitation, SprR; growing season mean temperature, GST; growing degree days, GDD; or warm spell duration index, WSDI). The seasonal forecasts will be characterized for the 2002 case study in the form of tercile maps. This visualization will be progressively refined considering the feedback collected from users in SOGRAPE.

Following from this, the beta tools will be presented and discussed with the users in a participatory workshop which is expected to take place in May 2019 at the latest. This workshop will allow us to present the tools developed to date and collect feedback on the quality and value metrics and their understanding from the end-user point of view, on the best way to convey the information for decision-making (e.g. type of visualisations, periodic reports, etc) and understand the potential benefit of having these tools to inform and support the users' decision-making processes.

5.4. DURUM WHEAT / PASTA

In the coming months, the three simulation tools will continue being developed using the new climate data available on the ICT platform.

The Delphi tool will be tested by users at Barilla, who will be submitted the pilot examples and will then provide direct feedback to CNR, in due course of the project.

The other two tools will be presented during a participatory workshop on 3rd April to be held at the Barilla premises in Parma, Italy. This workshop will invite farmers and elevators as well as institutional stakeholders to two separate sessions (morning and afternoon sessions). The farmers and elevators will test the tool developed by HORTA (Granoduro.net) and the MARS tool developed by JRC, whilst the institutional stakeholders will test the MARS tool developed by JRC. Pilot examples will be built on four harvest / reference years: 2008, 2016, 2017, 2018.

The structure of this workshop is still being discussed, but it is expected that the users (both farmers/elevators and institutional stakeholders) will be presented with examples of the tools developed and will be given the opportunity to feedback on general aspects such as their understandability of the information provided by the tools, their potential usefulness to support their decisions, how they would like to receive this information moving forward (e.g. regarding visualisations, mechanisms for receiving the information, etc) as well as how/if they would like to continue being involved in the development of these tools and how they would like to provide feedback (i.e. through email, face-to-face meetings, access to online data, etc) on future developments of the tools.

6. GENERAL GUIDELINES FOR ENGAGING WITH, AND COLLECTING FEEDBACK FROM, THE USERS

Each of the pilot service in MED-GOLD includes different tools (i.e. using different climate data, focusing on different decisions and being developed for different users, etc) being developed in different ways.

The next steps for the pilot services will include finalising the development of the beta versions of the tools followed by another round of engagement with the users to test and discuss this first version of the tools. After this next round of engagement, it is anticipated that the users involved in the co-development of each of the tools will continue to be engaged and provide feedback on further refinement and adjustments (see figure 3).

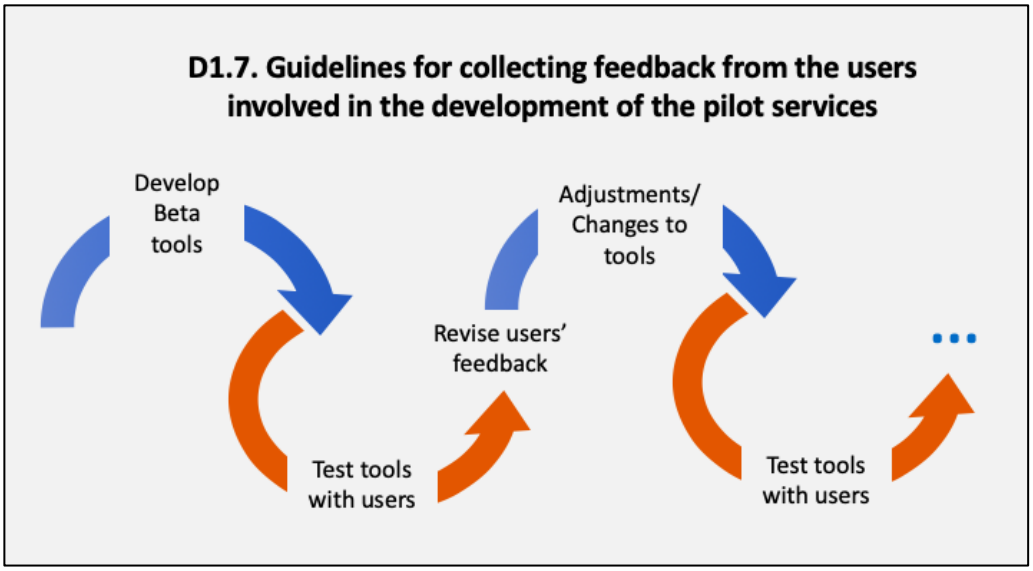

Figure 3 – Schematic representation of feedback loops between the tools developed in MED-GOLD and users.

6.1. FEEDBACK TO BE COLLECTED DURING SECOND THE ROUND OF WORKSHOPS

Despite differences across the pilot services and the tools currently being developed, there are general topics that need to be discussed with the users in the next stage of engagement as well as key areas of feedback that will need to be covered when presenting and testing the tools with the users in order to help further develop and refine these in the coming months.

It has already been decided by the three pilot services that the next round of engagement with the users will take the form of participatory workshops. With this in mind, please note that D1.6. "Guidelines for appraising needs and critical decisions across the pilot services" include

a whole section on general aspects to be considered when running workshops (which is also included in Appendix 1 for your perusal).

During the next round of workshops with the users (and in future engagement activities) it is critical to clearly distinguish between the tool developed with seasonal forecasts and the tool developed with climate change projections. Our suggestion would be to separate these discussions to avoid confusion (i.e. first discuss the seasonal forecasts and then the projections or vice-versa but make it crystal clear to the users about what you're discussing and on what you are collecting their feedback).

Feedback to be collected from the users in relation to the beta tools, include:

- Questions on the **technical aspects of the tool**:
  - Is the tool relevant in terms of the indices proposed/climate information provided to the users?
  - Are there aspects of the tool that are not relevant and could be removed (e.g. a specific index that is not that relevant to their work)?
  - What are the critical indices/information provided in the tool? (this is to help us narrow down the number of indices to those that are absolutely essential).
  - Is the information provided in the tool easy to understand? Can it be improved and if so, how?
  - Is the tool well presented in terms of visualisations and the message being conveyed? Can this be improved and if so, how?
  - Is there something they do not understand regarding the tool being proposed? If so, what?
  - For those tools using 'good and bad' years – it is also advisable to ask users about the weather/climate background in those years to ascertain if climate played a role in it at all or not;

- Questions on the **potential usability of the tool**:
  - Is the tool being proposed useful to help improve the way they make decisions? If so, how? If not, why not?
  - What is the decision(s) that will be enhanced by having access to that tool? Please ensure that they describe the users describe the decision(s) with as much detail as possible;
  - How will the tool help them improve that decision(s)?
  - Would the users actually use the tool if it became available to them in the future? If so, how would it help them? If not, why not?

- In their opinion, would the tool bring any benefits (such as economic costs) to their work and/or organisation's activities? Pleas describe.
- Are they aware of other type of decisions within their organisation that could benefit from having access to the information provided in the tool? If so, what decisions are those and who's responsible for that area of work?

- Questions on **Next steps on the development of the tool**:
  - Will the users be willing to continue being involved in the development of the tool? This would involve being engaged in the next stages of the tool development and provide feedback on how to improve it to suit their information needs.
  - If so, how would they like to keep being informed and provide feedback on the latest developments of the tool (e.g. feedback provided through the ICT, via email, survey, telephone, webinar, face-to-face, etc)? It is important also to define the periodicity of these feedback cycles.
  - Would they be interested in testing a final version of the tool using a real seasonal forecast?

The feedback collected from the users should be gathered and integrated in a consistent manner in order to synthesise and organise the information collected to help support the development of the pilot services as well as allow a degree of traceability and justification of the actions taken when developing and refining the tools at a later stage. As such, we will ask partners to integrate the information collected in a database for summarizing the data collected particularly regarding the key topics identified in section 6.1.

The University of Leeds will support the three pilot services in structuring and developing the sessions for their next round of workshops as well as develop an online Excel spreadsheet (similarly to what was developed in D1.6.) which each pilot service should use to compile the information gathered after the second round of workshops.

6.2. Future engagement activities following the next round of workshops

After the next round of workshops with the users that will take place in the next coming months to discuss the beta tools developed to date, the pilot services will need to continue engaging and collecting feedback from the users (see figure 3 above). These next stages of engagement and feedback collection will need to be discussed and agreed with the users at the next round of workshops.

There are a number of mechanisms and methods that can be considered and implemented to continue engaging with the users in the future, including:

Table 5 – Mechanisms and methods that can be used to engage and collect feedback from users

Mechanisms/ methods	Advantages	Disadvantages
ICT platform	Can be used to share the latest developments of the tools with the users and collect feedback directly from there; Cheap solution to engage with users' numerous times.	Users may not have time/appetite to engage with the platform; Difficult to convince them to provide feedback if they are not engaged in the process.
Face-to-face meetings (e.g. workshops/focus groups)	Easier to engage with users and collect their feedback; allows group discussion, testing/evaluating ideas; easier to control the type of feedback being collected; easier to create a rapport with users and empower them in the co-development process	More expensive to run and requires more time and commitment from the users' side; expertise required to run a workshop effectively.
Online meetings (webinars)	Easy and cheap to run; some level of control over the feedback being collected but this also depend on having a good moderator; easy to run periodic meetings.	Harder to engage with users and easier to have dominant voices; some users may not be technological-oriented and may prefer not to be engaged this way.
Online survey	Easy and cheap to run; potential for a bigger sample size; good method to use when discussing a very specific aspect of the tool.	Limited in how much feedback we can collect and how much we can go in depth into specific issues; possibility of misinterpreting the feedback collected; higher chances of a lower rate of response; bias of the data collected and reliability of results.

Telephone	Easy to use when needing to clarify particular aspects with one particular user.	Harder and more time consuming to collect feedback from a larger group;

Ultimately, future engagement (following from this next round of workshops) need to be decided and agreed with the users. Some users may be more willing to provide feedback online whilst others may prefer to attend a workshop. There is also the possibility of considering mixing some of these methods to provide updates on the tools and collect feedback from the users. For example, we can potentially use the ICT to provide access to users so they can see the latest developments made to the tools and then run a webinar with them to discuss these developments and collect feedback (e.g. orally and/or via an online form).

It is therefore critical for the success of MED-GOLD that the users are actively engage in the development of the pilot services in order to ensure that the tools developed are adequate and fit their needs. To support this process, the University of Leeds will prepare a set of slides to be used in the next round of workshops with the users explaining the various options and mechanisms for engaging with them and collect feedback in order to help the discussion between the pilot services teams and the users involved.

APPENDIX 1 – CONSIDERATIONS ON PARTICIPATORY WORKSHOPS

Considerations on participatory workshops

This section covers some basic aspects that should be considered and addressed when organising a participatory workshop. Although not comprehensive this section aims to provide some general ideas of the aspects and issues that each of the pilot teams will have to consider ahead of the workshops.

Preparing for the workshop

The workshop facilitators play an essential role in steering the group discussion and ensuring that everything runs on time according to the agenda. As a facilitator, it is important to be aware – to watch, listen and learn. Be vigilant of group dynamics and observe where some participants are perhaps dominating the conversation, while others are quieter and perhaps unwilling to express their opinions. Such instances require careful facilitation to ensure that the dominant participant(s) still feel valued in expressing their views, but steering the focus of the conversation back on track or creating opportunities for others to speak (whilst not making them feel pressured to talk if they do not want to). This is really an exercise in 'interactive equality', where the aim is not necessarily to give equal air time, but a fair opportunity to talk and contribute to the groups' discussion (Chambers, 2002).
Actively creating opportunities for turn-taking is one approach – e.g. 'let's hear from someone else'. The interactive sessions of the workshop could provide another means of mediating group dynamics, for example, you could place the more dominant speakers in one group.

There are a number of aspects that the **facilitators need to ensure ahead of the workshop** including:

- Ensure you have all the material needed to run the workshop (e.g. stationery material, laptop and projector, etc) although this will depend on what type of interactive sessions will be pursued;
- Prepare the room with time: arrange the tables and chairs as necessary; distribute stationery material (post-its, pens etc.);
- Have a register form so that participants sign it as they come in (make sure they do!). This include their name, organisation, country, email contact and if they wish to be part of the Med-Gold mailing list. A template for a register form is included in Annex 1.
- Check that catering will be delivered on time;
- Set up laptop and facilities for projecting PowerPoint presentations and upload presentations;

- Check that the location to the workshop is clearly 'sign-posted' in the building.
- Provide background information about the project ahead of the workshop so participants are aware of the project and its aims.

During the workshop

The workshop facilitators should be the first to give a brief and informal welcome and introduction to the day. This is an opportunity to outline some logistics (e.g. location of toilets, fire drill procedure etc.) before going into the group introductions.
The next step is the 'Getting to know each other'. There are a range of activities to introduce participants that can not only help familiarise the participants with the organisers (and vice versa), as well as with one another, but can also serve as a means of easing participants into the workshop and activities ahead. This is an opportunity to set the tone for the workshop and ensure that participants feel welcome and that this is an environment where they can talk openly about their experiences and opinions.
In shorter workshops (i.e. 2 hours) we advise you to use the standard introductions around the table and just ask them to say their name, and the organisation they come from. In longer workshops, participants can also be introduced by asking not only their name and organisation but also a brief explanation of their interest in the workshops (and possibly their expectations for the day).
Following from the introductions the participants should be made aware of the structure of the workshop (this can be made by showing a slide with an agenda for the day) and a short presentation on the Med-Gold project (covering also issues of data confidentiality).
Following from this, the workshop will go into the interactive sessions which is where the key topics (see section 2) will be explored and discussed amongst participants. These interactive sessions will be developed in the coming weeks between the pilot services teams and the University of Leeds who will provide support in the preparation of the interactive sessions.
It is important to leave enough time at the end of the workshop for 'wrapping-up' the day's discussions. It is advisable to nominate one of the facilitators ahead of the workshop so that they can make some notes throughout the day and summarise the main themes/findings from the day's discussion. This should take 10 minutes to complete. Beyond the main 'take home messages', organisers should reiterate the value of the workshop and how participants' contributions will be used within the Med-Gold pilot services project.
To facilitate reflection from participants, a feedback form for participants to complete at the end of the workshop can also be used to give them an opportunity to reflect on what they may have learned from the day and provide us with further comments/suggestions regarding their sector/pilot service/the Med-Gold project.
Participants may also be interested in receiving a summary of the workshop findings and, as such, we advise the organisers to take notes from the various workshop sessions (e.g.

feedback from the discussion groups, questions asked, etc) in order to prepare a summary to send to participants after the workshop. We advise partners to make a summary of the notes taken during the workshop (by the facilitators) and circulate this to the participants as a token of appreciation for their contribution. We don't provide any particular structure for producing this summary but, as a rule of thumb, it should include an introduction (to the Med-Gold project and the workshop), content and agenda of the workshop, participants (just the name and organisation) and the main findings and group discussions for each of the sessions that took place during the workshop. You should also include next steps for the project i.e. what we're doing with the findings for the workshop and the next stage of the project (you can also ask again if they wish to continue being involved in the project in case they haven't done so already through the workshop register form).

After the workshop

The feedback collected from the users should gathered and integrated in a consistent manner in order to synthesise and organise the information gathered to help support the development of the pilot services as well as allow a degree of traceability and justification of the actions taken when developing and refining the tools. As such, we will ask partners to integrate the information collected in a database for summarizing the data collected particularly regarding the key topics identified in section 6.1.
The University of Leeds will develop an online Excel spreadsheet (similarly to what was done in D1.6.) which each pilot service should use to compile the information gathered after the workshops in the coming weeks.

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