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Mapping of Climate Service Providers in Italy
Summary Report February 2014

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SUMMARY Joint Programming Initiative on Climate (http://www.jpi-climate.eu), launched in 2010, is a European Initiative between 14 European countries which coordinates jointly their climate research, fund, new transnational research initiatives, connects scientific disciplines, enables cross-border research and increases the science-practice interaction.

JPI Climate contributes to the overall EU objective of developing a European Research Area and is coordinated with the EU's Horizon2020 programme in response to the societal challenge of climate change.

JPI Climate is built upon four themes that are coordinated by Working Groups:
1. improving climate projections;
2. climate services;
3. societal transformation;
4. decision support tools.

It is within WG2 activities that this survey type has been carried out, to analyze the situation among some of these members on how and which climate services are provided at home and who delivers them. This work was first initiated by Germany (http://www.climate-knowledge-hub.org/index-en.html) and has been followed by Austria and now Italy, which results are presented in this report. The questionnaire in Italy was send out at the end of 2013 to 37 identified institutions, of which 16 filled out the questionnaire.

Keywords: climate services, impacts, adaptation, models, data, governance

This report is developed within the framework of GEMINA project, funded by the Italian Ministry of Education, University and Research and the Italian Ministry of Environment, Land and Sea. This follows the example of a climate service survey conducted by some partners of the European Union Joint Programming Initiative on Climate and its Coordinated Supported Action of which CMCC is part of.

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SUMMARY

1. INTRODUCTION TO JPI CLIMATE

Joint Programming Initiative on Climate (http://www.jpi-climate.eu/) is a European Initiative between 14 European countries to coordinate jointly their climate research and fund new transnational research initiatives. JPI Climate connects scientific disciplines, enables cross-border research and increases the science-practice interaction.

JPI Climate contributes to the overall EU objective of developing a European Research Area and is coordinated with the EU's Horizon2020 programme in support of excellent science, industrial leadership and the European response to one of the great societal challenges of our times - climate change. It was launched in 2010. There are currently other 9 JPI in other sectors.

The main objective of JPI Climate is bringing together existing and developing new excellent scientific knowledge that is needed to assist practitioners to adequately transform society towards climate resilience and consequently providing integrated climate knowledge and decision support services for societal innovation. JPI Climate is built upon four themes that are coordinated by Working Groups:

1) improving climate projections;

2) climate services;

3) societal transformation;

4) decision support tools.

2. RATIONALE OF THIS CLIMATE SERVICE SURVEY

It is within WG2 activities that this survey type has been carried out, to analyze the situation among some of these members on how and which climate services[1] are provided at home and who delivers them. This work was first initiated by Germany (http://www.climate-knowledge-hub.org/index-en.html) and has been followed by Austria and now Italy, which results are presented in this report. This Climate Knowledge Hub tool has been developed by Germany with the Austrian Center for Climate Services for each of the JPI Climate Member States.

The aim was:

1. to provide a guidance to support the climate service mapping activities in members of JPI Climate based on the experiences and lessons learnt

1 As "climate services" we understand information about climate, climate change and its impacts, which are tailored to specific users' needs and made available to them, as well as guidance in using this information (http://www.jpi-climate.eu/jpi-themes/research-agenda).

2. to provide an opportunity for those less experienced to learn from the experience of others on their mapping activities
3. to reflect the results of the mapping of climate service providers in an interactive manner with web-based maps
4. to visualize the results of the providers' mapping, and also for climate service users, possible users and the interested general public to get an overview about potential providers
5. to review the current capabilities for providing climate services
6. to lay the ground for a mid to long-term multi-disciplinary research on governance of climate services
7. to identify the areas where working on European scale provides added value
8. to increase the consistency at European level on data use, access and availability, methods' use and development, the translation of climate knowledge into climate services and transboundary differences on the interpretation of climate services

Therefore, the efficiency, credibility and quality of the climate services framework should be improved with a joint effort.

The idea of the Climate Knowledge Hub is to allow the user to filter according to the criteria of the categorization of climate service providers, e.g. I) form of corporate governance (public or private), ii) key activities (adaptation or mitigation etc.), iii) service portfolio, iv) spatial approach, v) sectorial activities, vi) the location of the providers is already presented on the map to allow the search for providers close to the users (e.g. for face-to-face advice).

The key difficulty with the development of an appropriate web tool is the establishment of a regular dialogue to exchange information from the provider to the user and vice versa. This dialogue could for example be stimulated by offering discussion for a blogs, or networks among providers and users. The database and the interactive map could facilitate this engagement.

The work on climate services usually is organized on the local, regional and national levels although some providers do operate at international level. Often this causes an overlap that may have positive and negative implications for users.

3. RESPONDENTS IN ITALY

The questionnaire in Italy was send out at the end of 2013 to 37 identified institutions, of which 16 filled out the questionnaire (response rate of 42%). 14 agreed that their portfolio could be published on the Climate Knowledge Hub.

1. ALLEANZA PER IL CLIMA (Climate Alliance) – data not public (http://www.climatealliance.it/)
2. ARPA Emilia Romagna - ER (Agency for the Environmental Protection of Emilia Romagna Region www.arpa.emr.it/sim)
3. ARPA Lombardia (Agenzia Servizi Settore Agroalimentare - Agency for the Environmental Protection Lombardia Region http://ita.arpalombardia.it/ITA/index.asp)
4. ARPA Friuli Venezia Giulia - FVG (Agenzia Servizi Settore Agroalimentare - Agency for the Environmental Protection of Friuli Venezia Giulia Region http://www.arpa.fvg.it/cms/)
5. ASSAM (Agenzia Servizi Settore Agroalimentare - Agency for agrofood services sector - Marche Region http://ita.arpalombardia.it/ITA/index.asp)
6. CMCC (Centro Mediterraneo per i cambiamenti cliamtici - Euro Mediterranean Center on Climate Change www.cmcc.it)
7. CNR (Centro Nazionale della Ricerca - National Resarch Center http://www.ibimet.cnr.it)
8. ENEA (Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile - National Agency for new technologies, energy and economic and sustainable development http://www.enea.it/en)
9. ENTECRA (Consiglio per la ricerca e la sperimentazione in agricoltura - Council for research and testing in agriculture http://sito.entecra.it/portale/index2.php)
10. EUROCUBE srl
11. ISPRA Ambiente (Istituto superiore per la protezione e ricerca ambientale – Institute for the protection and environmental research http://www.kyotoclub.org/)
12. KYOTO CLUB (http://www.kyotoclub.org/)
13. MEEO (Meteorological and Environmental Earth Observation http://www.meeo.it/index.php?section=1)
14. SIAS (Servizio informativo - Informative service of the Sicilian Region http://www.sias.regione.sicilia.it/)
15. UNIBO (Università di Bologna - University of Bologna http://www.unibo.it/it)
16. VICCS (Università Ca' Foscari di Venezia – Venice Centre for Climate Studies http://www.unive.it/)

4. MAIN GENERAL FINDINGS IN ITALY

(NOTE: RESULTS ANALYZED ON THE RESPONSES GIVEN. NOT ALL RESPONDENTS HAVE ANSWERED ALL QUESTIONS)

1. Eight of the respondents have between 200-500 or over 500 staff.
2. 6 are public institutes, 5 research institutions, 2 private companies, 1 NGO.
3. The respondents identify themselves with the definition given by JPI climate on CS.
4. Most of the climate service providers in Italy collaborate with other providers in one way or the other mainly through specific projects.
5. The earliest to start offering CS was in 1876, the latest in 2012, the rest as from the 90'
6. The main reasons to offer CS are: 1) there is a need to fulfill a request in a specific sector (specially agriculture, water and energy); 2) because it is an institutional duty.
7. All providers are interested in a continuous communication independent from projects. All collaborate with other organisations.
8. In six cases the respondents confirm that other institutions in Italy deliver similar services (but at different scale/scope).
9. The services offered in Italy are numerous: The examples given (with full description later under the indiviual responses) are:

   - iCOLT
   - Local climate scenarios
   - Local climate profile
   - Station statistic tables, some gridded maps, some tailored products
   - Station statistic tables grid maps trends
   - Agrometeorology
   - Climate change in Regione Marche
   - Weather forecasting for Regione Marche
   - Seasonal forecasting
   - User need requirements analysis
   - Climate information for energy management
   - Climate information for adaptation
   - National Agrometeorological Bulletin
   - IPHEN Phenological Bulletin
   - Heatwave alert for dairy cattle
   - Fund rising for implementation of urban resilience
   - Developing and planning adaptation and mitigation strategies and actions for public and private sector
   - Networking and cooperation in the field of sustainability, climate change and urban development
   - Climate indicators over Italy
   - Stakeholders engagment and participatory process for adaptation plan

- Communication and information
- Cost/benefit analysis
- Air quality by combining satellite and in situ measurements
- Meteo climate time series web platform
- Detailed regional climatology
- Analysis of extreme events
- Studies about land suitability on climatic basis
- Material and energy recovery

10. The main competences of the CS providers are: 1) technology; 2) applied and/or fundamental research; 3) management and 4) education.
11. The main thematic focus of their CS are: 1) impacts; 2) vulnerability; 3) adaptation and 4) climate systems.
12. The type of CS is: 1) data; 2) maps and graphics; 3) decision support tool and 4) consultancy/synthesis report.
13. Four of the CS are project bound and seven not.
14. The main climate data/indicators is which these CS are based are: 1) temperature; 2) precipitation and 3) wind.
15. These climate data/indicators mainly come from weather satellite/terrestial stations and gridded data.
16. The methods needed to produce CS are: 1) data collection, (measurements/interviews); 2) data analysis (mean/extreme values); 3) modelling; 4) literature; 5) interdisciplinary and applied research technology.
17. The communication on uncertainties related to CS is shown by: 1) probability functions; 2) by explaining them directly to users during ad hoc meetings; 3) through scientific papers.
18. The main time horizon is the future until 2040, followed by present/past. Very few focus on 3/6 months or go beyond 2100.
19. The spatial scales is either local, regional and/or national. Few go transnational/European/global.
20. The financing of CS is bascically with public funds (with or without calls), only one with private funds.
21. The main restriction is due to the end of the current financing.
22. Most of the users belong to the groups of decision makers/politicians, researchers, consultancies and general public.
23. The main sector affected is agriculture, followed closely by water, planning, energy, natural hazards, finance and insurance.
24. The main reason for the users it to support their planning policies and plans, adapt to climate, identify potential of climate conditions.

25. The kind of services the users originally demanding were diverse: 1) projection of future climate for evaluating climate change impact; 2) reliable estimates of climate trends; 3) adaptation plan and cost/benefit analysis; 4) forescasts; 5) services on air quality.
26. Seven CS examples are for free, 5 are paid.
27. The reason to use a specific service is because of the excellent expertise/reputation of the institution offering a specific service.
28. Personal and institutional contact have been at the origin of developing these CS.
29. Three CS are evaluated, five not.
30. All institutions promote and disseminate their CS through web site, annual reports, TV, publications, face to face, print material, workshops.
31. Questions and recommendations to be addressed in the future:
    - this kind of mapping should be done in all JPI climate Member States to make the learning from the experiences easier;
    - web-based platforms - as part of the communication strategy like the Climate Knowledge Hub - are important, and need to be linked to other platforms at European (such as EU Climate Adapt: http://climate-adapt.eea.europa.eu/) or International level (Climate Service Parntership:http://www.climate-services.org/content/what-are-climate-services). How to establish a communication process that enables a continuous communication amongst providers and probably with users as well?;
    - labeling climate services might be helpful to distinguish the quality of the services;
    - what kind of structure/tools do we need to provide better climate services, workshops, web-based platforms and portals, social media tools, webinars?;
    - how to best evaluate climate service?;
    - what are the real cost of services? and what services should be free/for charge?;
    - JPI Climate should continue exploring what are indicators for the quality of climate services, what mechanisms to certifiy services, how will these mechanisms be used, by whom and for what purpose, nature of the desired quality assurance program/mechanism will be assessed.

5. MAIN INDIVIDUAL FINDINGS IN ITALY

(THE INDIVIDUAL RESPONSES IN ITALY AND THE OTHER MS OF JPI CLIMATE CAN BE ACCESSED THROUGH THE LINK INDICATED IN SECTION 2)

	Questions	Comments
1.	Description of institution	ARPA ER: public institution, 500 staff ARPA FVG: public institution, 201-500 staff ASSAM: public institution, 51-200 staff CMCC: research network, 51-200 staff CNR: institution of a research institute, more than 500 staff ENEA: public institue, more than 500 staff ENTECRA: research network, more than 500 staff EUROCUBE srl: private enterprise company, 1-10 staff ISPRA Ambiente: public institute, more than 500 staff KYOTO CLUB: NGO, 11-50 staff MEEO: private enterprise company, 1-10 staff SIAS: public institute, more than 500 staff UNIBO: university network, more than 500 staff VICCS: university network, more than 51-200 staff
2.	Can you identify yourself with our JPI climate definition of climate services?	ARAPA ER: yes, we are involved in studies on climate, climate change and its impacts, which have already been tailored to specific requires for adaptation in agricolture, transportations, health and resilient cities ARPA FVG: yes although we can offer only a limited spectrum of products ASSAM: yes CMCC: yes ENEA: we have expertise on developing and managing underpinning research on climate services ENTECRA: yes EUROCUBE: yes ISPRA Ambiente: we produce and disseminate climate data and indicators at national level MEEO: we fully match with the mentioned definition SIAS: climate services are part of a larger set of instruments offered especially to farmers to improve their activities and to reduce environmental impact of

		agriculture VICCS: yes, we have been established to coordinate all related activities and research within the University Ca' Foscari
3.	Since when you offer climate services?	ARPA ER: 1990 ARPA FVG: 2000 ASSAM: 2007 CMCC: 2011 ENEA: 2009 ENTECRA: 1876 EUROCUBE: 2004 ISPRA Ambiente: 2004 KYOTO CLUB: 2012 MEEO: 2004 SIAS: 1998
4.	Why offering climate services?	ARPA ER: to fulfill the requests from different sectors of the society and administration in order to reduce the vulnerability to the impact of climate change ARPA FVG: institutional duty ASSAM: for the benefit of future generation CMCC: to provide high quality climate information to end-users and decision makers CNR: research in agriculture-resources- agrometeorology, agroclimatology ENEA: I am coordinating a project of EU FP7 ENTECRA: it is a part of our mission and our history EUROCUBE: firstly because we have always believed in the sustainable urban development. Climate change is an environmental, social and economical priority and cities and communities are the main drivers for developing new green economies. Furthermore, climate change is a priority sector where it is possible to create new jobs and new market opportunities. ISPRA Ambiente: the production and dissemination of informations about the state of the environment is one of the main tasks of our institution KYOTO CLUB: because we believe is a natural evolution and development of the energy services support that we offer. Using an integrate approach we will be more efficient MEEO: because of our academic background and because we are convinced about

		the need of climate services in the daily life SIAS: farmers need a good knowledge of climate in many occasions, e.g. in case of plantation of new cultivars of fruit trees, in planning new irrigation schemes, in evaluating impact of new pests VICCS: Climate sciences need to have scientifically sound and robust avenue to reach society and produce value added
5.	Collaboration with other institutions?	ARPA ER: CMCC, CNR IBIMET, CRA-CMA, CRA-SPA ARPA FVG: other ARPAs in Northern Italy (we have some kind of consortium called ARCIS - climatological archive for Northern Italy) ASSAM: www.meteomarche.it Regione Marche Civil Protection CMCC: APEC CNR: WMO, ARPA, NMHS Universities (on research, capacity building, cooperation, operational use) ENEA: WMO, CSP, Met Services, other institutions (research activities, and prototyping) ENTECRA: Servizio Meteorologico dell'Aeronautica Militare ISPRA Regional meteorological services (data exchange) EUROCUBE: Acclimatise (we are an Associated Partner), ICLEI (we are Member), MedCities/FAIC/Coordinamento Agende21/UBC (as possible project partners) ISPRA Ambiente: Regional environmental agencies, National Meteorological and Agrometeorological services (at present, with informal collaboration and exchange of data) KYOTO CLUB: Ambiente Italia Research Institute (they offer the technical support and KYOTO CLUB is more on the police and financial issue) MEEO: NASA, ECMWF, ARPA-EMR (data provision) SIAS: CRA-CMA CNR-ISAC JRC-MARS ARPA-EMR (We exchange meteorological data of out stations network to evaluate climatically meteorological events, then we take part to common project, as "Agroscenari" and "ECLISE") VICCS: CMCC, FEEM, CNR
6.	Are there any other institutions in your country which offer similar services than you?	ENEA: yes, regional met services for instance ENTRECRA: yes: Servizio Meteorologico dell'Aeronautica Militare ISPRA Regional meteorological services EUROCUBE: not sure ISPRA Ambiente: National and regional meteorological services offer climate data based on their networks. CNR-ISAC offer trend estimate of climate variables

		KYOTO CLUB: Climalia and Acclimatise Associate Italy, CMCC MEEO: not in the same way SIAS: our institution offers services at regional level, whereas national institutions such as CNR-ISAC and CRA-CMA work at national level
7.	Services offered:	ARPA ER: 1) iCOLT; 2) Local climate scenarios; 3) Local climate profile LCP ARPA FVG: 1) station statistic tables, some gridded maps, some tailored products; 2) station statistic tables grid maps trends ASSAM: 1) Agrometeorology; 2) Climate Change in Regione Marche; 3) Weather forecasting for Regione Marche CMCC: Seasonal forecasting CNR: Climate smart agriculture, rational use of water ENEA: 1) User need requirements analysis; 2) Climate information for Energy management ; 3) Climate information for adaptation ENTECRA: 1) Bollettino Agrometeorologico Nazionale (National Agrometeorological Bulletin) ; 2) Bollettino fenologico IPHEN (IPHEN Phenological Bulletin) ; 3) Allerta caldo (Heatwave alert for dairy cattle) EURCUBE: 1) Fund rising for implementation of urban resilience; 2) Developing and planning adaptation and mitigation strategies and actions for public and private sector; 3) Networking and cooperation in the field of sustainability, climate change and urban development ISPRA Ambiente: Climate indicators over Italy KYOTO CLUB: 1) Stakeholders Engagment and Participatory Process for Adaptation Plan; 2) Communication and Information; 3) Cost/benefit analysis MEEO: 1) Air quality by combining satellite and in situ measurements ; 2) Meteo climate time series web platform SIAS: 1) Detailed regional climatology; 2) Analysis of extreme events; 3) Studies about land suitability on climatic basis UNIBO: LCA, Material and energy recovery VICCS: Analysis of scenarios, impacts, risks, costs related to climate change
8.	Describe your climate service	ARPA ER: “iCOLT" very year, ARPA-SIMC integrates satellite data, seasonal weather forecasts and water balance predictions to provide a probabilistic assessment of potential irrigation demand of crops for the Emilia-Romagna regional plain area (Northern Italy) and also for each of the eight reclamation and irrigation consortia. ARPA ER: “Local climate scenario“: local climate change scenarios of temperature and precipitation, made by statistical downscaling techniques, are assessed for the period 2021-2050 against 1961-1990. The selected areas in the AGROSCENARI

		project were in the Po valley plain; Marche, Puglia and Sicilia regions; Benevento and Oristano provinces. The local projections were used to quantify the climate change impact on irrigation requirements of several crops (kiwi, tomato and corn; alfalfa, artichokes and asparagus; citrus, peach and grapevine). ARPA ER: "Local Climate Profile": consists in the analysis of the observed and future climate variability and changes that could occur in the main climatological variables. Historical time series are used in order to construct observed climate profile, while scenarios obtained through statistical downscaling methods are used for future profile. The LCP has been produced in framework of the Life+ Blue Ap project. ARPA FVG: "Statistical tables": for the most relevant parameters for the automatic station in the region gridded and graphical climatic maps for temperature and precipitation base data from ca. 30 automatic synoptic stations in FVG installed in the 90ies .pdf and .xls files ASSAM: "Agrometeorology": agriculture support with elaboration of meteo weather forecast for Regione Marche (Italy); develop and distribution of meteo data (like temperature, precipitation, wind, ...) from our net of meteo stations (more information for the net here: www.meteo.marche.it/stazioni_coa.aspx CMCC: "Seasonal forecast": seasonal predictions are provided on a monthly basis, for a 6-month interval. Global mean temperature and rainfall anomalies are provided for several 3-monthly periods. This climate product is provided on an operational basis. ENTECRA: "National Agrometeorological Bulletin": Monthly bulletin with data and maps for main agrometeorological parameters ENTECRA: "IPHEN Phenological Bulletin": The aim of the service is producing nationwide maps of analysis and forecast of plants phenological stages mainly used to satisfy the needs of agriculture, health and environmental care. IPHEN is a data processing system composed of the following main segments (a) collection of atmospheric and phenological data, (b) processing of data with suitable phenological and geo-statistical models and (c) phenological maps of analysis and forecast. ENTECRA: "Heatwave alert for dairy cattle": this service produces nationwide maps for six days forecast of diurnal and nocturnal THI (Temperature-Humidity Index) for productivity and mortality of dairy cattle ISPRA Ambiente: quality control, homogenisation and statistical analysis of climate variables time series: calculation of mean and extreme climate indicators. Estimate and regular update of their trends. Empirical-Statistical downscaling of climate projections KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan": we support the local authorities to adopt a community-based approach to develop their adaptation plan. A special focus is related to the Private Sector Engagment and with a particulat attention to the Energy Sector. We are now discussing with our members - such as ENEL - possible collaboration on climate

		service research project KYOTO CLUB: “Communication and information“: awareness campaign and training activities specifically for the users and needs“ KYOTO CLUB: “Cost/Benefit Analysis“: we are exploring at the moment different methodologies and opportunities to the development of a cost and benefit analysis MEEO: “Air quality by combining satellite and in situ measurements“: the system accepts, as input, images coming from the MODIS sensors and generates, as output, near surface PM10, PM2.5, AOT and AQI maps with a resolution of 1km x 1km MEEO: “Meteo climate time series web platform“: this service provides a web application to access satellite/model/in-situ climate products in order to: extract and visualize time series of single- / multi-products at pixel level; extract and visualize subsets of single- / multi-products VICCS: We offer our multi-disciplinary competences to support decision makers in considering the climate change dimension in decision/plicy making: e.g. uncertainty analysis, cost-benefity or cost- effectiveness analysis, etc.
9.	Please, name 3 keywords which characterise the content of your climate service	ARPA ER “iCOLT“: satellite data, seasonal forecast, water balance model ARPA ER: “Local climate Scenario“: climate projections, dowscaling techniques, water balance model ARPA ER: “Local Climate Profile“: observed climate variability, future climate projections, mean and extreme fields ARPA FVG: “statistical tables“: averages, sums, percentiles ASSAM: Agrometeorology, data meteo, weather forecast CNR: agriculture, sustanability, adaptation ENTECRA: “National Agrometeorological Bulletin“: bulletin, climatology, agrometeorology ENTECRA: “IPHEN Phenological Bulletin“: ENTECRA: “IPHEN Phenological Bulletin“: Phenology, analysis and forecast maps, normal heat hours ENTECRA: “Heatwave alert for dairy cattle“: THI forecast, dairy, cattle ISPRA Ambiente: climate monitoring, statistical analysis, climate trends KYOTO CLUB: “Stakeholders Engagment and Participatory Process for Adaptation Plan“: engagment, community-based, resilience KYOTO CLUB: “Communication and information“: resilience, community-based, uncertainty KYOTO CLUB: “Cost/benefit analysis“: cost/benefit, montecarlo, risk reduction

		MEEO: "Air quality by combining satellite and in situ measurements": satellite imagery support, vector, regression MEEO: "Meteo climate time series web platform": OGC service INSPIRE multi-temporal, sensor, resolution VICCS: decison support, science-policy interface, disciplinary integration
10.	Key competences	ARPA ER: "I COLT": technology, management ARPA ER: "Local climate scenario": technology, applied research, management ARPA ER: "Local Climate Profile": technology, applied research, education ARPA FVG: "statistical tables", "station statistic tables grid maps trends": technology, applied research, management ASSAM: technology, applied research CMCC: fundamental research CNR: fundamental research ENTECRA: "National Agrometeorological Bulletin", "IPHEN Phenological Bulletin","Heatwave alert for dairy cattle": applied research, technology EUROCUBE: "Fund rising for implementation of Urban Resilience": management, education ISPRA Ambiente: applied research, management, technology, education KYOTO CLUB: "Stakeholders engagment and participatory process for adaptation plan": management, economy, policy KYOTO CLUB: "Communication and information": management, education KYOTO CLUB: "Cost/benefit analysis": applied research, technology, management, education MEEO: "Air quality by combining satellite and in situ measurements": applied research, technology MEEO: "Meteo climate time series web platform": technology SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": technology VICCS: "Integrated assessment", "Decision support", "Higher education"
11.	Thematic focus	ARPA ER: "iCOLT", "Local climate scenario", "Local Climate Profile": impacts, vulnerability and adaptation ARPA FVG: "Statistical tables", "Station statistic tables grid maps trends": climate

		systems, local climate change assessment ASSAM: impacts, vulnerability and adaptation CMCC: climate system CNR: impacts, vulnerability and adaptation ENTECRA: "National Agrometeorological Bulletin","IPHEN Phenological Bulletin": climate system, impacts, vulnerability and adaptation ENTECRA: "Heatwave alert for dairy cattle": impacts, vulnerability and adaptation EUROCUBE: "Fund rising for implementation of urban resilience": impacts, vulnerability and adaptation ISPRA Ambiente: impacts, vulnerability and adaptation KYOTO CLUB: "Stakeholders engagment and participatory process for adaptation plan": impacts and adaptation, resilient energy infrastructure KYOTO CLUB: "Communication & Information", "Cost/benefit analysis": impacts and adaptation MEEO: "Air quality by combining satellite and in situ measurements": impacts and climate proyection MEEO: "Meteo climate time series web platform": climate systems SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": impacts, vulnerability and adaptation
12.	Type of your climate service?	ARPA ER: "iCOLT": data, process data, maps, graphics, methods, synthesis report, workshops, early warning system ARPA ER: "Local climate scenario": data, process data, maps, graphics, methods, synthesis report, workshops, early warning systemmeta data ARPA ER: "Local Climate Profile": data, process data, maps, graphics, methods ARPA FVG: "statistical tables", "station statistic tables grid maps trends": data, processed data, maps, graphics, methods, meta data, synthesis report, consultancy ASSAM: data, process data, maps, graphics, synthesis report, consultancy, financial tool, decision support tool, workshops, early warning system CMCC: graphics, maps, synthesis report, consultancy CNR: process data, methods, synthesis report, strategic development, decision support tool, early warning system ENTECRA: "National Agrometeorological Bulletin": data, process data, graphics, maps, meta data, synthesis report

		ENTECRA: "IPHEN Phenological Bulletin": data, process data, graphics, maps, meta data, synthesis report, decision support tool, early warining ENTECRA: "Heatwave alert for dairy cattle": graphics and maps EUROCUBE: "Fund rising for implementation of Urban Resilience": guideline, manual, consultancy,guidance, workshop, strategy development, financial tool, decision support tool, early warning system ISPRA Ambiente: data, process data, graphics, maps, meta data, tool, synthesis report, consultancy, decision support tool KYOTO CLUB: "Stakeholders engagment and participatory process for adaptation plan", "Communication and information", "Cost/benefit analysis": graphics, maps, tools, methods, synthesis report, guideline, manual, consultancy, workshop, strategic development, financial tool MEEO: "Air quality by combining satellite and in situ measurements": processed data, data, graphics, meta data, maps MEEO: "Meteo climate time series web platform": processed data, data, graphics, meta data, maps, methods, early warning SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": data, process data, graphics, maps VICCS: data, maps, methods, synthesis reports, decision support tools, modelling, assessment and valuation methods
13.	Is your climate service project-bound	ARPA ER: "iCOLT": no ARPA ER: "Local climate scenario": yes ARPA ER: "Local climate profile": no ARPA FVG: "statistical tables", "station statistic tables grid maps trends": it would be just fine to fit in a project CMCC: no ENTECRA: "National Agrometeorological Bulletin": no ENTECRA: "IPHEN Phenological Bulletin": yes EURCUBE: "Fund rising for implementation of Urban Resilience": no KYOTO CLUB: "Stakeholders engagment and participatory process for adaptation plan", "Communication & Information": yes MEEO: "Air quality by combining satellite and in situ measurements": no MEEO: "Meteo climate time series web platform": yes

14.	On which climate data/indicators is your service based?	ARPA ER: " iCOLT", "Local climate scenario": temperature, precipitation and derived indicators ARPA FVG: "statistical tables": T, RR, RH, dd, ff, SR ARPA FVG: "station statistic tables grid maps trends": means medians percentiles return time ASSAM: temperature, precipitation, wind for Regione Marche CMCC: climate data can be temperature, precipitation or wind speed. The mean or extreme values can be differentiated. Indicators can also be of socio-economic origin. Temperature and precipitation data are provided. ENTECRA: "National Agrometeorological Bulletin": the service is based on daily data of air and soil temperature, rainfall, relative hunidity, wind direction and speed, pressure, solar radiation. ENTECRA: "IPHEN Phenological Bulletin": hourly temperatures and phenological data EUROCUBE: "Fund rising for implementation of urban resilience": climate data can be temperature, precipitation or wind speed. There mean or extreme values can be differentiated. Indicators can also be of socio - economic origin; temperature/precipitation; socio - economic data ISPRA Ambiente: meteorological observations time series; mean and extremes indicators of temperature, precipitation, etc. KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan": on regional data - when available - in Bologna we use the data deliver by the Regional Environment Protection Agency. This will be combine with the IPCC data. Consider that sometimes we don't consider as a priority the future scenario because we base our risk analysis on the existing risk related to climate change and to a scenario with a shorter term, to 2020 MEEO: "Air quality by combining satellite and in situ measurements": PM concentration MEEO: "Meteo climate time series web platform": satellite observations model data In-situ observations
15.	Where does your climate data/indicators come from and why did you choose exactly these ones?	ARPA ER: "iCOLT": weather stations and gridded data because of their direct availability and good quality ARPA ER: "Local climate scenario": weather stations and gridded data, the quality and the lenght of the available time series ARPA FVG: "statistical tables": network of approx 30 synoptic automatic stations installed from 1989-1990 till 2005 because they are the best standard station with high density ARPA FVG: "station statistic tables grid maps trends": regional stations best info

		source ASSAM: from a net of 70 meteo stations in our regional territory CMCC: climate forecasts are the result of a dynamical climate model ENTECRA: "National Agrometeorological Bulletin": our data come from about 150 stations belonging to national weather services (Italian Air Force and National Agricultural Informative System) ENTECRA: "IPHEN Phenological Bulletin": the service is based on phenological data collected by the network of volunteer observers of IPHEN project and on meteo-climate data of the National Agro-Meteorological Database (BDAN) (cma.entecra.it) EUROCUBE: "Fund rising for implementation of Urban Resilience": regional and local databases ISPRA Ambiente: data come from national and regional institutions or from web sites. We use WMO-standard data, as far as they are availble KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan": this data come from who is in charge to monitor the meteo and climate data, so also who could easily monitor and continuosly update the local authorities in charge for the strategies and plan implementation. More than this we choose a public institution also because too often the private research centre are too expensive to delivery their data. So public data are open, free and the governance is easier MEEO: "Air quality by combining satellite and in situ measurements": aerosol optical depth from satellite, together with meteorological parameters (Air Temperature, Humidity, Boundary layer height, ..) is a key observation that allows at improving the retrieval of PM concentrations VICCS: indicators are case dependent
16.	Which methods do you need to produce your climate service?	ARPA ER: "iCOLT": data collection, measurements, data analysis, mean and extreme values, modelling, research technology, downscaling seasonal forecasts tecniques and water balance, interdisciplinary research ARPA ER: "Local climate scenario": data collection, measurements, interviews, data analysis, mean and extreme values, modelling, applied research technology, statistical downscaling tecniques and agromet models, literature, research, interdisciplinary research ARPA ER: "Local climate profile": data collection, measurements, data analysis, mean and extreme values, modelling, statistical downscaling, programme coordination and management, interdisciplinary research ARPA FVG: "statistical tables": data collection, measurements, interviews, data analysis, mean, median, percentiles, return time ARPA FVG: "statistical tables", "station statistic tables grid maps trends": data

		collection, measurements, interviews, data analysis, mean, median, percentiles, return time, applied research technology ASSAM: data collection, measurements, interviews, data analysis, mean, extreme values CMCC: a seasonal prediction system based on a coupled ocean - atmosphere climate model initialized with a realistic state of the climate system is used CNR: literature research, interdisciplinary research ENTECRA: "National Agrometeorological Bulletin": meteorological stations network, data collection, data analysis, mean or extreme and climatic values, modelling, water balance, phenology ENTECRA: "IPHEN Phenological Bulletin": data collection, measurements, inteviews, data analysis, mean or extreme values, models based on a Normal Heat Hours approach which weighs hourly air temperature effectiveness for plant phenological progression, literature research ENTECRA: "Heatwave alert for dairy cattle": data analysis, mean or extreme values, forecasts, meteorological model DALAM (Limited Area Model) EUROCUBE: "Fund rising for implementation of Urban Resilience": data collection, data analysis, literature research, capacity building ISPRA Ambiente: data collection, measurements, data analysis, mean and extreme values, statistical and geo-statistical modelling, literature research, applied research, technology KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan": data collection, measurements, interviews, LCIP and private questionnarie, data analysis, mean and extreme values, models, future scenario at 2020 or max 2030 - sometimes will be useful to have a scenario to 2017, policy analysis, applied research, technology, interdisciplinary reserch KYOTO CLUB: "Communication and information": literature, policy analysis, applied research, technolgy, capacity building, programme coordination, management KYOTO CLUB: "Cost/benefit analysis": policy analysis, applied research, capacity building, programm coordination, interdisciplinary research MEEO: "Air quality by combining satellite and in situ measurements": data collection, measurements, model data, modelling, technology, applied research, interdisciplinary research MEEO: "Meteo climate time series web platform": data collection, interviews or measurments, data analysis, mean or extreme values, modelling, applied research, technology SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": data collection, data analysis, modelling,

		applied research, technology VICCS: policy analysis, impact assessment, monetary and non-monetary valuation, social network analysis, stakeholders‘ engagement, statistical analysis, capacity building
17.	How do you communicate the uncertainties related to your service? As uncertainties we define uncertainties related to climate data and the range of results of climate scenarios.	ARPA ER: “iCOLT“: uncertainties of seasonal forecast are shown by probability functions (box plot diagram) ARPA ER: “Local climate scenario“: uncertainties of seasonal forecast are shown by probability functions (box plot diagram) ARPA ER: “Local climate profile“: uncertainties area communicated through probability distribution functions ARPA FVG: “statistical tables“: by explaining them directly to users during ad hoc meetings ARPA FVG: “station statistic tables grid maps trends“: via direct contact with users CMCC: as uncertainties we define uncertainties related to climate data and the range of results of climate scenarios). A probabilistic estimate of the uncertainty associated with the climate forecast (based on the ensemble members spread) is provided. ENTECRA: “National Agrometeorological Bulletin“: specifying the confidence interval of climatic data ENTECRA: “Heatwave alert for dairy cattle“: this aspect is under construction ISPRA Ambiente: by distinguishing between significant and non - significant trends at certain confidence level KYOTO CLUB: “Stakeholders Engagment and Participatory Process for Adaptation Plan“: we reduce the uncertainty using the current risk and we link the needs to the cost already happen. So the remaing uncertainty we use the link that also the existing environment models has almost the same uncertainty and level of errors. So we can easily reduce the uncertainty in the community arena in the meanwhile science will find a solution MEEO: “Air quality by combining satellite and in situ measurements“: validation analysis are published in scientific papers
18.	Which time horizon is relevant for your service?	ARPA ER: “iCOLT“: 3 months ARPA ER: “Local climate scenario“: future until 2040 and 2100 ARPA ER: “Local climate profile“: future until 2040 and 2100 ARPA FVG: “statistical tables“, “station statistic tables grid maps trends“: present, past, until 2040, 2070 ASSAM: past and present

		CMCC: 6 months CNR: present, future until 2040 ENTECRA: "National Agrometeorological Bulletin", "IPHEN Phenological Bulletin", "Heatwave alert for dairy cattle" past and present ISPRA Ambiente: past, present, future until 2040 KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan", "Cost/Benefit Analysis": past, present, future until 2040. Other time horizon: 2017 - 2020 - 2025 - 2030 KYOTO CLUB: "Communication and information": 2040. Also 2017-2020-2025-2030 MEEO: "Air quality by combining satellite and in situ measurements", "Meteo climate time series web platform": present, past, until 2040 SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": present, future until 2040
19.	What is the spatial scale of your service?	ARPA ER: "iCOLT", "Local climate scenario": local (provinces of Emilia Romagna), regional (Emilia Romagna Region) ARPA ER: "Local climate scenario": national - sub regional areas distribuited all over Italy ARPA ER "Local climate profile": local, Bologna ARPA FVG: "statistical tables", "station statistic tables grid maps trends": regional-Friuli Venezia Giulia Region ASSAM: regional-Marche Region CMCC: global CNR: Emilia Romagna region ENTECRA: "National Agrometeorological Bulletin", "IPHEN Phenological Bulletin", "Heatwave alert for dairy cattle": national (Italy) EUROCUBE: "Fund rising for implementation of Urban Resilience": local, regional, transnational ISPRA Ambiente: national (Italy) KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan": local (Bologna, Padua, Salerno, Naples and all cities); regional (Emilia Romagna, Veneto, Campania and all regions), national (Italy), transnational (Spain, Greece, Portugal, Croatia, Slovenia, Serbia, Bosnia, Albania, Montenegro), continental (Europe) KYOTO CLUB: "Communication & Information", "Cost/benefit analysis": local, regional, nationa, transnational, continental

		MEEO: "Air quality by combining satellite and in situ measurements", "Meteo climate time series web platform": local, regional, national, transnational, continental, global SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": regional – Sicily VICCS: we do not have a preferred scale, but we emphasis spatially explicit features
20.	How do you finance the development and the provision of your service?	ARPA ER: "iCOLT": with public funds (no call) ARPA ER: "Local climate scenario": with public funds (no call) ARPA ER: "Local climate profile": with public funds (call) ARPA FVG: "statistical tables", "station statistic tables grid maps trends": with public funds (no call) ASSAM: with public funds (call) CMCC: the personnel involved in this activity is partly funded by EU Projects, and partly funded by the Italian governmental funding agencies (Italian Ministry of Education, University and Research and Ministry for Environment, Land and Sea) CNR: with public funds (call) ENTECRA: "National Agrometeorological Bulletin": with public funds (calls) ENTECRA: "IPHEN Phenological Bulletin", "Heatwave alert for dairy cattle": with public funds (no calls) EUROCUBE: "Fund rising for implementation of Urban Resilience": public funds and hybrid forms (PPPs) KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan", "Communication & Information", "Cost/Benefit Analysis": with public funds (calls) MEEO: "Air quality by combining satellite and in situ measurements", "Meteo climate time series web platform": private and public funds (call) SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": with public funds (no call) VICCS: the personnel involved in this activity is partly permanent staff/faculty at the university and partly funded by international, EU and national projects
21.	Are there any restrictions caused by the financing?	ARPA ER: "iCOLT": some restrictions in choosing satellite platforms for images ARPA ER: "Local climate scenario", "Local climate profile": no ARPA FVG: "statistical tables", "station statistic tables grid maps trends": of

		course, mainly in manpower (only one person currently 100% working on climate) CNR: difficulties in temporal planning due to uncertainties on the fate of the calls ENTECRA: "National Agrometeorological Bulletin": yes. For example, from 2011 the bulletin is no longer printed but only published online ENTECRA: "IPHEN Phenological Bulletin": the financing will finish in 2014 ENTECRA: "Heatwave alert for dairy cattle": yes. There are restrictions for implementation of the results ISPRA Ambiente: yes, the lack or the uncertainty of financing limit the service development KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan": the lack of direct public funds is an important limit to further development MEEO: "Air quality by combining satellite and in situ measurements", "Meteo climate time series web platform": no
22.	Who are the users of your service?	ARPA ER: "iCOLT": Decision makers / politicians, reclamation consortia, regional extension services ARPA ER: "Local climate scenario": researchers, decision makers, politicians, Minister of Agriculture, National Counsil for research in agriculture, Universities ARPA ER: "Local climate profile": public administration, water authorities, health public services, developers and politicians, etc.; citizens and stakeholders ARPA FVG: "statistical tables, "station statistic tables grid maps trends": researchers, consultancies, decision makers, general public, agricultural land use and planning renewable energy sector ASSAM: decision makers, consultancies, general public,farmers, farmer organization, local politicians CMCC: consultancies CNR: decision makers, politicians, researchers, farmers , technicians, associations ENTECRA: "National Agrometeorological Bulletin": researchers, consultancies, decision-makers, politicians, general public ENTECRA: "IPHEN Phenological Bulletin": researchers, consultancies ENTECRA: "Heatwave alert for dairy cattle": cattlemen, Some members of the AIA (Associazione Italiana Allevatori - Italian Association of Cattlemen) EUROCUBE: "Fund rising for implementation of Urban Resilience": decision makers, politicians, general public ISPRA Ambiente: researchers, consultancies, decision-makers, politicians, general public, public and private consultants, universities, research institutions, the

		Ministry of the environment and the stakeholders involved in climate change adaptation strategy and plan KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan": consultancies, public general, decision-makers, local authorities, architecture, professional, urban planners, regional and muncipality offers, private sector KYOTO CLUB: "Communication & Information", "Cost/benefit analysis": consultancies, public general, decision-makers, politicians MEEO: "Air quality by combining satellite and in situ measurements", "Meteo climate time series web platform": researchers, politicians, decision-makers, consultancies SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": general public VICCS: mainly public institutions
23.	In which sector/sectors do the users operate?	ARPA ER: "iCOLT": agricultural, water ARPA ER: "Local climate scenario": agricultural, water, natural hazards, research, education ARPA ER: "Local climate profile": agricultural, water, tourism, energy, building and construction, natural hazards, health, transport, spatial planning, urban planning, politics, education, media ARPA FVG: "statistical tables": agriculture, water, energy building and construction, spatial planning, research ARPA FVG: "station statistic tables grid maps trends": health, forestry, education, agriculture, water, energy building and construction, spatial planning, research ASSAM: agriculture, water, politics CMCC: agriculture, water, energy, industry and trade CNR: agriculture, water, forestry, biodiversity, urban planning, nutrition ENTECRA: "National Agrometeorological Bulletin": agriculture, building and construction, finance, insurance ENTECRA: "IPHEN Phenological Bulletin": agriculture, health ENTECRA: "Heatwave alert for dairy cattle": agriculture EUROCUBE: "Fund rising for implementation of urban resilience": agriculture, tourism, energy, building and construction, health, transport, spatial planning, industry and trade, urban planning, finance and insurance, politics ISPRA Ambiente: agriculture, forestry, water, tourism, energy, natural hazards,

		health, biodiversity, urban planning, transport KYOTO CLUB: "Stakeholders engagment and participatory process for adaptation plan": agriculture, water, energy, natural hazards, transports, industry and trade, urban planning, social structures, politics finance and insurance KYOTO CLUB: "Communication and information": agriculture, water, energy, transports, industry and trade, urban planning, social structures, politics, finance and insurance, social infrastructure, politics, research, education KYOTO CLUB: "Cost/Benefit Analysis": agriculture, energy, tourism, building and construction, transport, industry and trade, urban planning, finance and insurance, social infrastructure, politics, research, education MEEO: "Air quality by combining satellite and in situ measurements": health, urban planning, research, media MEEO: "Meteo climate time series web platform": forestry, natural hazards, catastrophe management, health, spatial planning, urban planning, research SIAS: "Detailed regional climatology", "Analysis of extreme events", "Studies about land suitability on climatic basis": agriculture, water, forestry
24.	For what do the users use your service?	ARPA ER: "iCOLT": It is a support for planning water needs and supply to agriculture during summer season ARPA ER: "Local climate scenario": ARPA is the project partner for downscaling climate projections and the leader of the irrigation research line ARPA ER: "Local climate profile": ARPA is the project partner involved in the development of the local climate profile ARPA FVG: "statistical tables": for evaluating the best way to adapt to climate or to exploit the climate potentials ARPA FVG: "station statistic tables grid maps trends": for their interest ENTECRA: "Heatwave alert for dairy cattle": improving wellness of dairy cattle EUROCUBE: "Fund rising for implementation of urban resilience": developing strategies and projects; implementing urban policies; fund rising on climate sector ISPRA Ambiente: they need series of climate data and indicators for their work/research. They need climate trends estimate for the assessment of climate change imapcts and vulnerability and for adaptation strategies and plans KYOTO CLUB: "Stakeholders engagment and participatory process for adaptation Plan": adapation plan and strategies, identifying potential actions and to increase the awarness on this topic, cost and benefit analysis MEEO: "Air quality by combining satellite and in situ measurements": air quality monitoring and forecast MEEO: "Meteo climate time series web platform": climate multi source

		parameters comparison VICCS: “Supporting planning and decisions“
25.	What kind of services were the users originally demanding?	ARPA ER: “iCOLT“: amount of water requirements of any regional reclamation consortium during irrigation season ARPA ER: “Local climate scenario“: local projections of climate change and study of the impact in agriculture ARPA ER: “Local climate profile“: projection of future climate for evaluating climate change impact on the town of Bologna ARPA FVG: “Statistical tables“: mainly they themselves do not know recently growing demand for raster maps CMCC: from the end-users side there is often confusion between climate and meteorlogical services. The kind of demand (for both spatial and time resolution) does often match more closely the meteorological services ENTECRA: “Heatwave alert for dairy cattle“: specialized wheater forecast for livestock ISPRA Ambiente: free and user-friendly availability of climate data series and analysis; reliable estimates of climate trends KYOTO CLUB: “Stakeholders Engagment and participatory process for adaptation plan“: adaptation plan and cost/benefit analysis MEEO: “Air quality by combining satellite and in situ measurements“: detailed and customized service for air quality application
26.	Do users pay for the service?	ARPA ER: “iCOLT“, “Local climate scenario“, “Local climate profile“: no ARPA FVG: “Statistical tables“, “station statistic tables grid maps trends“: no, except for tailored products ASSAM: it is free for the farmes; the data meteo in not free CNR: no ENTECRA: “National Agrometeorological Bulletin“: “IPHEN Phenological Bulletin“ : no EUROCUBE: “Fund rising for implementation of urban resilience”: yes ISPRA Ambiente: no KYOTO CLUB: “Stakeholders engagment and participatory process for adaptation plan“, “Communication and information“: yes MEEO: “Air quality by combining satellite and in situ measurements“: yes SIAS: “Detailed regional climatology“, “Analysis of extreme events“, “Studies

		about land suitability on climatic basis“: no
27.	Why do users choose exactly your service?	ARPA ER: “iCOLT“: ARPA is a technical body of the regional government and a long experience on seasonal forecast and water balance models ARPA ER: “Local climate scenario“: ARPA is a project partner ARPA ER: “Local climate profile“: ARPA has an international experience in local climate change projection ARPA FVG: “statistical tables“: because we have the best data and data check in the region ARPA FVG: “Station statistic tables grid maps trends“: best source of info for the region ASSAM: is the only in this region, it i's institutional ENTECRA: “Heatwave alert for dairy cattle“: there is only this service for livestock in Italy EUROCUBE: “Fund rising for implementation of urban resilience”: good results achieved in the past activites ISPRA Ambiente: perhaps it is the only public service available at national level, offering all the components listed above KYOTO CLUB: “Stakeholders engagment and participatory process for adaptation plan“: because we also find fundings for the services itself, so we didn't ask them money but find for them MEEO: “Air quality by combining satellite and in situ measurements“: because it is a real operational service MEEO: “Meteo climate time series web platform“: it is a centralized gateway to exploit climate data
28.	How did it come to the development of your climate service?	ARPA ER: “iCOLT“: having contacts with water managing authorities, local extension services and regaional decision makers ARPA FVG: “Statistical tables“: “Local climate scenario“: through the partecipation to european projects (es: Stardex, Demeter, Ensemble) ARPA ER: “Local climate profile“: personal and institutional relationships ARPA FVG: “Statistical tables“, “station statistic tables grid maps trends“: we originated from an agricultural weather service, which naturally includes climate services CMCC: seasonal predictions started as a scientific activity, within the framework of EU-funded projects CNR: feedback of research

		ENTECRA: "Heatwave alert for dairy cattle": this service was developed by a research project EUROCUBE: "Fund rising for implementation of urban resilience": there is not a fixed role. Sometime some customers ask us to produce a project o to provide them with a specific service. Sometimes we offer some solutions and suggestions autonomously KYOTO CLUB: "Stakeholders Engagment and Participatory Process for Adaptation Plan": is part of the International Cooperation Unit Strategies and is based on the respondent's experience at the Stockholm Environment Institute
29.	How does the relation to the users normally start?	ARPA ER: "iCOLT", "Local climate scenario": personal and institutional contacts ARPA ER: "Local climate profile": formal requirements and meetings ARPA FVG: "Statistical tables", "Station statistic tables grid maps trends": through the internet, I guess, when they need something they look for ASSAM: the user need the service, a support for his agricolture activity CMCC: more often we contact the users CNR: dissemination, networking ENTECRA: "Heatwave alert for dairy cattle": this aspect is in development EUROCUBE: "Fund rising for implementation of urban resilience": mapping potential customers KYOTO CLUB: "Stakeholders engagment and participatory process for adaptation plan": direct contact MEEO: "Air quality by combining satellite and in situ measurements": by marketing actions
30.	Are your services evaluated?	ARPA ER: "iCOLT", "Local climate profile": no ARPA ER: "Local climate scenario": yes, by project scientific board, through final results and technical reports to evaluate the fulfilment of the project purposes ARPA FVG: "statistical tables", "station statistic tables grid maps trends": no ASSAM: yes, by Marche Region through indicators CMCC: no ENTECRA: "National Agrometeorological Bulletin" , "IPHEN Phenological Bulletin", "Heatwave alert for dairy cattle": no EUROCUBE: "Fund rising for implementation of urban resilience": no MEEO: "Meteo climate time series web platform": yes, by scientific communities - by direct use of the web application

31.	Do you promote your service and how?	ARPA ER: “iCOLT“: yes, through thematic workshop at the beginning of the irrigation season ARPA ER: “Local climate scenario“: yes, paper, publications ARPA FVG: “Statistical tables“: yes, via our website; during TV interviews ARPA FVG: “Station statistic tables grid maps trends“: yes, inserting links in the communication ASSAM: yes, periodic pubblication, web, conference CNR: no ENTECRA: “National Agrometeorological Bulletin“: yes, digital data ENTECRA: “Heatwave alert for dairy cattle“: no EUROCUBE: “Fund rising for implementation of urban resilience”: website/social network ISPRA Ambiente: yes, web site; annual reports; publications KYOTO CLUB: “Stakeholders engagment and participatory process for adaptation plan“: face-to-face meeting, public event MEEO: “Air quality by combining satellite and in situ measurements“: by marketing actions MEEO: “Meteo climate time series web platform“: by dissemination actions VICCS: yes, web site; annual reports; publications; conferences
32.	Which type of media do you use?	ARPA ER: “iCOLT“: Front sessions ARPA ER: “Local climate scenario“: publications ARPA FVG: “station statistic tables grid maps trends“: Web, TV ASSAM: internet, local newspaper ISPRA Ambiente: mainly the web KYOTO CLUB: “Stakeholders engagment and participatory process for adaptation plan“: web, paper, magazine MEEO: “Air quality by combining satellite and in situ measurements“, “Meteo climate time series web platform“: mailing list, web sites, events
33.	How do you disseminate the service to the user?	ARPA ER: “iCOLT“, “Local climate scenario“: workshop, presentation of results ARPA ER: “Local climate scenario“: print material, workshop, presentation of results ARPA FVG: “statistical tables“, “station statistic tables grid maps trends“: print

		material, digital data, workshops, face to face advice, media ASSAM: print material, digital data, workshops, media CMCC: print material, face to face advice, media CNR: workshops, presentation of results, associations ENTECRA: "Heatwave alert for dairy cattle": digital data ISPRA Ambiente: digital data, presentation of results, media KYOTO CLUB: "Stakeholders engagment and participatory process for adaptation plan": print material, digital data, media, workshops KYOTO CLUB: "Communication and information": "Cost/benefit analysis": print material, digital data, media, workshops, presentation of results, face-to-face MEEO: "Air quality by combining satellite and in situ measurements", "Meteo climate time series web platform": print material, digital data, media, workshops, presentation of results, face-to-face

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