# DARECLIMED STRUCTURE

DARECLIMED project consists of the following seven work packages:

**WP1: Management**

This Work Package includes the steering and supervision of the project and the monitoring of its progress; it will rely largely on the Steering Committee of DARECLIMED. It also addresses communication with the EC, as well as communication and coordination between partners, and in particular the setting up of an on-line collaborative platform. It will also involve reporting, both internally and to the EC, and the assessment of advancement and results. The governance of the project will be based on a Consortium Agreement, providing in particular a conflict resolution process

**WP2: Identification and structure of existing data repositories**

WP2 aims to identify and commit national/regional data holders and institutions through local/national workshops and to inform and engage key stakeholders in the study region as well. It will collaborate with international and European projects/initiatives engaged in comparable endeavors.

More specifically, DARECLIMED building on and utilizing the extensive experience and expertise represented in these initiatives/projects, will strive to take stock of existing data, firstly, and then provide information and access to these data, to a wider community outside science, including policy makers, students and the general public by organizing the data through common formats and by providing user-friendly software tools.

Moreover, the possibility to collect and disseminate meta-data on existing data holdings will be explored. For this purpose, workshops will be organized in five countries of the region, which will bring together relevant institutions and data centers as well as major stakeholders in the fields of climatology, water and energy. Furthermore, a draft Memoranda of Understanding (MoU) will be formulated that will spell out the major legal and procedural conditions for data exchange between national/local data providers and the DARECLIMED consortium. Relevant decision makers and stakeholders will, thus, be engaged in order to facilitate the unrestricted disposal of data or meta-data of existing data holdings. To that end, procedures and protocols will be developed so as to be employed when contacting governmental stakeholders and policy makers in each country. This will be achieved with the aid of

GEOSS Regional Caucuses and the management of the MEDARE initiative, which have already developed guidelines, principles and document templates (MoUs) for this purpose.

**WP3: Data repository, quality and procedures**

WP3 aims to specify all issues related to the technical infrastructure for the planned data repository and to install a dedicated Task Force that will define standards and procedures for data standards and data exchange. In addition, procedures for quality assurance, quality control and the homogenization of data from various sources will be specified. A user-friendly software for data mining and analysis will be developed and a repository for existing regional climate models and related simulation results will be implemented.

More analytically, the data repository will, uniquely, combine multiple data sets of different structure and origin, the only requirement being that the data can be organized according to geographical location and time. There will also be the possibility to extract and combine data provided through multiple local and remote sources, as well as to analyze the data directly on the dedicated server in Cyprus and to have the option to download both the original data and/or the analysis results. The major mean to this data handling and analysis will be the Live Access Server (LAS), which is a highly configurable Web server to provide flexible/easy access to geo-referenced data. It can present locally held data or remotely distributed data as a unified virtual data base through the use of OpenDAP networking. Ferret is the default visualization application used by LAS. Both LAS and Ferret are products of the Pacific Marine Environmental Laboratory of NOAA.

A Task Force (TF) is aimed to be initiated and installed, that will develop formal agreements between National Meteorological and Hydrological Services (NMHS) and other main data suppliers on the one hand, and the consortium, represented by the Cyprus Institute, on the other. It will also establish a data policy that will assure the rational use of the data and at the same time will protect the data owners and the DARECLIMED consortium.

In WP3 will plan to develop procedures and methodologies for maintaining sufficient data quality as well as a high degree of data homogeneity in the envisioned data repository. For this purpose, workshops will be organized to share experiences and training on the different procedures used by the NMHSs.

Finally, an infrastructure suitable for collecting and analyzing RCMs that have been employed in the study region as well as their resultant climate projections will be created. Thus, DARECLIMED will pave the way for and enable a model inter-comparison exercise, to be carried out within the regional climate modeling community.

## WP4: Data ownership, security, intellectual property, sharing mechanisms

The main objective of WP4 is to install a dedicated Task Force that specifies legal aspects of data ownership, security, intellectual property and, sharing mechanisms. It aims, also, to engage international organizations with expertise in legal issues of data sharing and data exchange, as well as stakeholders who could potentially contribute data in a dialog regarding legal issues of data sharing. Workshops on these issues in countries of the DARECLIMED study region will be carried out.

More specifically, the members of the Task Force (TF) with relevant expertise, particularly including legal specialists and government representatives will address the issues of ownership, security and intellectual property with regard to data to be included in the repository. An additional important function of this fraction of the TF will be the formulation of procedures, guidelines and policies for the sharing and exchange of data between involved parties. For this purpose, the TF will seek advice of and consult with appropriate international organizations such as the World Meteorological Organization (WMO) or the European Centre for Medium-Range Weather Forecasts (ECMWF) with the aim to ensure appropriate protection of ownership of data and information by the TF.

In order to formulate guidelines and policies that will be mutually agreeable and acceptable, we aim to engage and inform all stakeholders and institutions who potentially will contribute to the DARECLIMED data repository. To that end, we will ensure largest possible transparency in the deliberations of the TF and will ensure that all relevant decisions and recommendations be communicated to these stakeholders in due time. To that end, we will identify one or two members of the TF who will liaise with these stakeholders through appropriate mechanisms and media.

Finally, workshops will be organized in each of the countries in the region, which will bring together relevant stakeholders and organizations with members of the TF, in order to facilitate guidelines and policies that will be mutually agreeable and acceptable between different data providers and the DARECLIMED consortium.

## WP5: Coordination of supporting infrastructures

In WP5 we will explore the necessary technical conditions for the creation of the envisioned DARECLIMED data repository and we will liaise with our colleagues from the Computation Based Science and Technology Center (CaSToRC) of the Cyprus Institute and the Cy-Tera project to outline possible synergistic potentials in realizing a data repository as envisioned in DARECLIMED.

More specifically, our aim is to explore and outline hardware requirements (computers, servers, connectivity, etc) necessary for creating and maintaining a data repository. This will particularly be based on results of WP3. For this prpose, we will closely interact with our colleagues at the CaSToRC who coordinate LinkSCEEM-2, which aims "...to build scientific and technological bridges between Europe and the Middle East, and thus to narrow the digital gap between the Eastern Mediterranean and the Western World." in order to enable an efficient transfer of knowledge and an appropriate exchange of experiences and expertise between the two projects. We envision that this infrastructure, which is rapidly taking shape, will be usefully employed in creating the DARECLIMED data repository thereby unleashing substantial synergistic potential between the two projects.

Finally, we will organize Workshops on combining results obtained in WP3 dealing with issues of software infrastructure, data availability and quality, and procedures for storage and dissemination, with the hardware requirements outlined in this WP.

## WP6: International Conference on Data Infrastructures for Climate Change Research

This work package aims to organize an International Conference on Data Infrastructures for Climate Change Research in Europe and the Eastern Mediterranean and will publish the Proceedings of the International Conference. It will possibly be held in Cyprus or Crete towards the end of the project, and will last for three days, bringing together around 100 participants, including 16 invited speakers from Cyprus, the Middle-East, Northern Africa and Europe.

The main objective of the conference will be to disseminate the outcome of the studies conducted within the DARECLIMED project. It will be aimed at the regional and international scientific community in the fields of climatology, energy and water, at potential users of the data repository in the regional scientific and administrative community, at EU and regional decision-makers in academic, economic and political

circles, and at the general public. The presentations as well as the major results of the conference will be published in a conference proceedings volume. The conference will have the following main components:

(i) The current status of data availability and accessibility in the fields of climatology, energy and water,
(ii) The impacts of ongoing climate change as evident in the energy and water sectors of the region,
(iii) The technical, scientific and legal aspects of data sharing and dissemination in the region and,
(iv) The DARECLIMED Data Repository

**WP7: Dissemination and outreach**

In WP7 we will reach out in order to inform about the rational for, as well as, the major goals and objectives of DARECLIMED and disseminate the major results and the methodologies developed for the creation of a data repository as envisioned in DARECLIMED.

In order to accomplish this, a dedicated project web-site will not only serve to keep the scientific community, stakeholders and the interested public informed, it will also become the entry point to DARECLIMED's Data Repository as facilitated through the employment of the LAS software. Regular updates will keep the visitors of the web-site informed about the progress achieved and the work to be carried out.

In addition, specific workshops will be carried out in individual countries of the region, addressing particular topics related to DARECLIMED, which will bring together relevant institutions and data centers as well as major stakeholders in the fields of climatology, water and energy. A second series of workshops will be devoted to share experiences and training on the different procedures used by the NMHSs to generate data and to explore methodologies for integrating these data into DARECLIMED's Data Repository. Finally, a third sequence of workshops will explore the legal and formal issues of data sharing, data exchange and data dissemination with regard to ownership, security and intellectual-property concerns.

The major results of DARECLIMED, finally, will be disseminated to the international community through our contacts to the GEOSS program and the MEDARE project thereby identifying and highlighting the specific challenges to be faced by and the opportunities of a data repository in the Eastern Mediterranean.