

## Third Meeting of the Adaptation Committee Bonn, Germany, 18–20 June 2013

### Report on the review of existing databases and clearing-house type mechanisms for national adaptation planning

#### 1. Background

##### *Mandate*

The AC discussed the issue of a “database and clearing house type mechanism (CHM) for information relating to national adaptation planning” at its second meeting, and concluded with a request to the secretariat, in collaboration with and under the guidance of an AC member, the Chair and Vice-Chair of the AC, to carry out, a review of existing databases and prepare a review report with recommendations on possible AC actions by the next AC meeting.

##### *Background information on the CHM discussion and results of the 2<sup>nd</sup> AC meeting*

The discussion at the second meeting, produced an initial listing of "desired features" for the potential CHM, including

- To serve as a "one-stop-shop";
- Being flexible and dynamic management of the information through, among others, the possibility for users to upload and update information,
- To contain information quality-controlled through such measures as review of its authority and verification of its authenticity as appropriate, and synthesized based on generic frameworks;
- To make information available in multiple languages; and
- Easily accessible

The AC summed up the motivation for improving access to information through the web, through the goal of enhancing the NAP process, covering all necessary activities during the formulation and implementation of the plans, as part of the outputs of the process. This could be achieved through selective entries of information considered useful, and information that has been narrowed down to a manageable volume, compared to the overwhelming number of entries that a Google search would provide.

##### The AC identified the following desirable functions:

- To provide the parties with accurate, "filtered" information about the current and future threats due to climate change, as well as opportunities, how these translate into real life situations, and survey of proven solutions aimed at reduction of vulnerability at all levels. The quality of data should be more important than quantity;
- To present scientific data and information in an accessible manner to all users (using a non-technical presentation style) and promote best practices in adaptation, using the UN official languages to make information available to all;
- To establish and use a standard format of collecting the data, information and its presentation, so it directly supports activities under elements of the NAP guidelines,<sup>1</sup> and promotes interoperability with other information systems;
- To provide assurance of credibility and reliability of the sources of information, such as through an expert review panel composed of UN selected experts;
- To put together a list of independent adaptation experts as well as scientific institutions and organizations, including UN agencies and a variety of NGOs;

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<sup>1</sup> Decision 5/CP.17, annex.

- To be a living and learning site, allowing for adding feedback from NAP practitioners but keeping interaction between the users (if made possible) separated from the verified information database;
- Contributing to the adaptation related communication strategy of the AC, aimed at raising awareness of the problem as well as existing solutions.

#### Targeted users

- National stakeholders involved in managing the NAP process as well as technical aspects of the design and implementation of adaptation actions;
- All others involved in supporting developing countries in undertaking the NAP process.

#### Process of development and the scope

In discussing the process of developing a NAP tool, the AC noted the information needs for preparing successful NAPs –and recommended that the NAP guidelines (for LDCs and non-LDCs) and the information system as being developed by LEG should be considered the basis of the tool. The AC could then advise on the further development and operation of the tool.

The AC discussed the development of a NAP tool/information system and that it could include the following considerations:

- An evaluation and review of the existing databases/information systems (mandated to the UNFCCC secretariat – *this paper*);
- Design and/or implementation of a customized search function to streamline the location of relevant information;
- Establishment of a steering/advisory committee to support the development of the tool, if deemed necessary following consideration of the review report.

## **2. Objectives and approach of this paper**

This paper aims to present a review of current information systems and databases that are hosted under the UNFCCC and those on the outside, in relation to the needs of the database/CHM being discussed under the AC, with a view to identifying possible next steps.

Given the rapid proliferation of information systems or so-called knowledge websites, some self-organizing has started such as the Climate and Development Knowledge Network (CDKN), which is supporting a network of “knowledge brokers” to meet and interact on a regular basis. This group will hold its meeting, for this year, in Bonn on 8-9 June, and could present an opportunity to collect more information about the systems that will be represented.

Given the large number of sites that could be included in this review, the approach taken focuses on functions that different sites offer, and a few examples are cited. However, a comprehensive review will not be attempted.

Statistics on how each site is accessed and used are not readily available. Such information is collected by the owners of each site. The AC could request such information from various site managers, or encourage them to make such information public on their sites,

The AC could also design and conduct a comprehensive survey to assess how climate adaptation information systems are accessed and used, including details of who is accessing the sites from which countries. Such a survey would need to target potential users in addition to the site creators/managers.

The paper concludes with recommendations and options on how the AC might engage in strengthening existing platforms, such as through building on work carried out under the NWP and the LEG, among others, or whether the AC should develop its web system/database/portal/CHM.

### 3. Key functions supported and selected examples

In this section, some of the functions of existing information systems or platforms. A given site will include one or several functions. Some of these functions may be embedded in the websites of organizations, making access to information difficult in some cases, unless users can get direct access to the sites of interest through sub-addresses (e.g. [unfccc.int/ldc](http://unfccc.int/ldc), to get to the LDC Portal within the big wide world of the UNFCCC website, or the Finance Portal at <http://www3.unfccc.int/pls/apex/f?p=116:1:1736679060551813> for issues of finance under the Convention). The functions below are presented in no particular order, and although the examples given are only indicative, they give a sampling of the more useful components of different systems.

**Stocktaking of adaptation actions/projects:** Various sites offer information on adaptation projects under implementation, or recently completed, with the Adaptation Partnership website [www.adaptationpartnership.org](http://www.adaptationpartnership.org) offering the most comprehensive synthesis to date. At the moment, data is compiled in regional reports, with accompanying analysis. Other sites, such as the ALM by UNDP and partners, offers registered users the option to upload details about projects. Under the ALM [www.adaptationlearning.net](http://www.adaptationlearning.net), country profiles give background information about a country, and dynamic content from the database – a cursory look revealed that information for a given country may not always be up to date or complete, as inputs depend on user inputs. Users can also browse data using maps to select information by themes (sectors, type of data, funding source or leading organization). In general, it is quite cumbersome and expensive to assemble comprehensive project data for all developing countries.

Detailed information on each (adaptation) project is available from some funding agency websites, including full project documents, for example, full information on projects funded from the Global Environment Facility (GEF) are available at [www.theGef.org](http://www.theGef.org). Such information is a useful resource for those considering developing new projects. A potential danger lies in the perception that may arise in associating adaptation (success/progress) with projects. Useful monitoring of adaptation especially the capture of progress in adaptation (especially outcomes and impacts), is quite difficult, and will likely require a different approach.

The compilations of adaptation projects are nonetheless useful for monitoring support for adaptation. A useful compliment would be a database of coping mechanisms, to capture actions that are not the direct result of funded projects.

- **Data for scientific/impact assessment:** Several websites provide data including on climate change scenarios and technical guidance on the use of these datasets, for impact and vulnerability assessment. Notably the IPCC Data Distribution Centre (DDC) <http://www.ipcc-data.org>, and many data centres supported by national programmes. Data and tools for sector-specific assessments are also available from relevant agencies. Such sites require significant funding and long-term support, and will continue to serve a very useful purpose for the climate science community.

The IPCC DDC provides data, scenarios and associated technical guidance that support assessments of impacts and vulnerability including for subregions, for the following:

- Climate observations, as global mean time series and gridded fields
- Climate model projections and simulations: Monthly means and climatologies (decadal and 30-year means),
- Socio-economic data,
- Environmental data and Scenarios,
- Guidelines and other supporting material.

The IPCC DDC supports the consistent collection of data covering a great diversity of different scenario elements would pose substantial challenges to individual researchers/countries. It provides access to such a collection of data and scenarios and offers guidance on their application.

The IPCC DDC is overseen by the IPCC Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA) and jointly managed by the British Atmospheric Data Centre (BADC) in the United Kingdom, the CSU World Data Centre Climate (WDCC) in Germany, and the Center for International Earth Science Information Network (CIESIN) at Columbia University, New York, USA (<http://www.ciesin.org>). The data on the IPCC DDC are provided by co-operating modelling and analysis centres.

The data on the IPCC DDC is ideal for global or regional assessment, although with some skill, data can be extracted for particular countries. The latest climate change scenarios as will be assessed in the 5<sup>th</sup> IPCC Assessment Report are yet to be made available.

The IPCC DDC offers online tools to extract as well as visualize data of interest on-screen. The extent to which many of the online functions are still operational or supported is not clear. Another example of a data/information system is that by IIASA and FAO for agriculture, called **Global Agro-Ecological Zones (GAEZ)**, <<http://www.fao.org/nr/gaez/en/#>>:

Food and Agriculture Organization of the United Nations (FAO) and the International Institute for Applied Systems Analysis (IIASA) have developed the Agro-Ecological Zones (AEZ) methodology over the past 30 years for assessing agricultural resources and potential. Rapid developments in information technology have produced increasingly detailed and manifold global databases, which made the first global AEZ assessment possible in 2000. Since then global AEZ assessments have been performed every few years. With each update of the system, the issues addressed, the size of the database, and the number of results have multiplied.

The latest version, GAEZ 3.0, is the most ambitious assessment yet and has the goal to make publicly available the entire database and all results of this assessment.

The GAEZ database provides the agronomic backbone for various applications including the quantification of land productivity. Results are commonly aggregated for current major land use/cover patterns and by administrative units, land protection status, or broad classes reflecting infrastructure availability and market access conditions. With this large amount of data, a new system had to be created to make the data accessible to a variety of users. The result is the new GAEZ Data Portal, an interactive data access facility, which not only provides free access to data and information and allows visualization of data, but also provides the user with various analysis outputs and download options, at: <<http://gaez.fao.org/Main.html>> or <<http://webarchive.iiasa.ac.at/Research/LUC/GAEZv3.0>>.<sup>2</sup>

The GAEZ has been used in several global, regional and national assessments, and presents the state-of-the knowledge for agricultural assessment. For an example of a comprehensive national food security assessment, see an example for China at <[http://webarchive.iiasa.ac.at/Research/SRD/ChinaFood/index\\_m.htm](http://webarchive.iiasa.ac.at/Research/SRD/ChinaFood/index_m.htm)> .

While the NAP tool/system under the UNFCCC would not attempt to develop such tools as the IPCC DDC and the IIASA/FAO GAEZ, the AC may wish to invite/mobilize relevant organizations to develop such websites/tools for major sectors, or to enhance their existing systems, to facilitate use by developing country teams in their formulation of NAPs.

- **Adaptation planning – Tutorials/wizards**

A few adaptation programmes have developed online tutorials or step-by-step guides (such as wizards/navigators) to guide the preparation of adaptation plans, mostly at the local level, including:

- UK CIP Adaptation Wizard: <http://www.ukcip.org.uk/wizard/>
- EU Climate adaptation support tool: <http://climate-adapt.eea.europa.eu/web/guest/adaptation-support-tool/step-1>

<sup>2</sup> Source of the above text: <<http://www.fao.org/nr/gaez/en/#>>.

- VICTORIAN CENTRE FOR CLIMATE CHANGE ADAPTATION RESEARCH, Australia (VCCCAR): <http://www.adaptation-navigator.org.au/page.php?id=23>
- ICLEI ADAPT, for local governments at <http://www.icleiusa.org/tools/adapt>

Many such tools are designed for non-climate change experts, such as those in the private sector or local government wishing to develop adaptation plans. Many other toolkits exist for adaptation planning in the form of publications.

The *NAP Central* system being developed by the LEG will include similar functions by providing navigation through the steps of the NAP technical guidelines, with step-by-step instructions and links to other resources.

- **Exchange of information**

Several websites are available to facilitate the exchange of adaptation information with different levels of detail and rigor, including some linked to social media. The following are examples:

- weAdapt: <http://weadapt.org>
- Adaptation Learning Mechanism: <http://www.adaptationlearning.net>
- The UNFCCC Adaptation Exchange on Facebook  
<https://www.facebook.com/The.Adaptation.Exchange>
- Community Based Adaptation Exchange: <http://community.eldis.org/.59b70e3d>

These sites provide a useful platform for researchers and others to share information about their adaptation activities and to hold online discussion with peers. The extent to which adaptation practitioners in developing countries are able to participate in these exchanges varies based on quality of internet access in the case of LDCs. Information of usage of these and all other information systems would be useful to guide efforts.

- **Navigation/gateways**

Another type of function is that of providing a gateway to data, information and knowledge systems. Several so-called **Distributed Active Archive Centers (DAACs)** are available in the USA and offer an archive of research data from various environmental change projects and programmes as a service to the global research community. The data extends to freely available remotely sensed data produced by NASA, including data from Landsat, MODIS and other satellites. The **NASA Global Change Master Directory**: <http://gcmd.nasa.gov> provides links to the various DAACs and earth observing system data and information system (EOSDIS). This directory is a one-stop-entry to the data and tools available from the US government supported services and their partners, and includes discussion of data standards and data access and analysis tools. Some examples of links with data of international research locations include:

- Oak Ridge National Lab DAAC for biogeochemical dynamics:  
<http://webmap.ornl.gov/wcsdown/>
- Satellite data is available for free download from several sites including the Global Land Cover Facility (GLCF) <http://glcf.umd.edu>, for Landsat, MODIS, Ikonos, AVHRR, SRTM (digital elevation data); the Global Observatory for Ecosystem Services at <http://www.goes.msu.edu/index.cfm>, including Landsat data and data for the Famine Early Warning System (FEWS-Net);
- Daily weather data are archived and distributed through NOAA at the Global Surface Summary of Day website (with over 9000 Worldwide Stations - updated daily) at: <https://www.ncdc.noaa.gov/cgi-bin/res40.pl>.
- The various earth science information providers in the USA are part of a network called the Federation of Earth Science Information Partners (ESIP) (<http://www.esipfed.org>).

A recent initiative for climate change information systems led to development of a network so-called climate knowledge brokers, under the CDKN programme. A meeting of this group in 2012 is described at [http://en.openei.org/wiki/Knowledge\\_Brokers\\_Workshop-Resources](http://en.openei.org/wiki/Knowledge_Brokers_Workshop-Resources). The meeting including twenty of the leading climate and development web initiatives and they talked about how they could collaborate better. The group included well-established players like the [Adaptation Learning Mechanism](#), [Eldis](#), and the [World Bank Climate Change Knowledge Portal](#), as

well as newer initiatives like [ci-grasp](#) and the [Latin American Carbon Finance Portal](#). Other regional initiatives included [Africa Adapt](#) and the [Asia and Pacific Adaptation Knowledge Platform](#). See the annex for a full list of information systems that were represented at the 2012 meeting.

An interesting tool that has been developed as a result of discussions of the climate knowledge brokers, is a navigation tool called (Climate) **Knowledge Navigator** by the Institute of Developed Studies (IDS) in the UK (<http://kn.ids.ac.uk>). The Knowledge Navigator is a categorised dataset of Climate Change platforms covering adaptation, mitigation and development, and gives metadata for each of the 100 plus systems profiled. This is a useful survey of latest climate information systems and web sites.

The Knowledge Navigator has a “widget”<sup>3</sup> that anyone can download and install on their own website, and it would display a search window that would query the Knowledge Navigator and return search results. The widget is part of an “application programming interface or “API”, developed by IDS called the “**Knowledge Services API**,” to access a particular database, and can be customized to show results by region, or to generate “tag clouds” based on frequency of say countries, themes, keywords or regions for documents or organizations in the Knowledge Services datasets. The tag cloud shows keywords with size proportional to the frequency of documents in the datasets, and can be used to browse the data.

Eldis ([www.eldis.org](http://www.eldis.org)), part of IDS, is an online information service providing free access to relevant, up-to-date and diverse research on international development issues. Eldis includes over 30,000 summaries and links to free full-text research and policy documents from over 8,000 publishers. The Knowledge Services API can be embedded within a user’s webpage and can be used to search and return results from the Eldis system, without having to search from within the Eldis webpage. This powerful capability promotes access to information from a common source or from a collection of sources that share similar classification systems. The classification or tagging of the information is thus carried out in a standard manner to ensure comparability of the results.

The reegle Clean Energy Portal (<http://www.reeep.org/reegleinfo>), has developed a tagging API that automatically tags documents based on a glossary of keywords. This ensures documents are consistently tagged with keywords. Users can add their content to the pool of information, which then becomes part of the database that everyone can search and return information from, in a consistent manner.

For such tagging APIs to be truly useful to the broadest of users, the underlying glossaries should, as a first step, be reviewed widely by different stakeholders, and validated before they are used to tag documents that go into big (and permanent) databases. Such mis- or mal-tagging would be almost impossible to reverse once a document has been processed and incorporated into the database.

In developing the NAP tool/information systems, the use of the APIs described above would be useful to consider, to offer interoperability with existing information systems such as the Eldis system, and to support efforts designed to introduce consistent classification of information. A custom-made glossary for a major NAP tool, could facilitate consistent and transparent tagging of documents and so improve searching of its contents.

- **Clearing house mechanisms**

Two examples of clearinghouses for adaptation are the EU Climate-Adapt system and the Georgetown Climate Center.

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<sup>3</sup> A widget is an element of a graphic user interface in computer programming that displays information that can be changed by the user, such as a search window within a page.

The **Georgetown Climate Center** houses information for the USA, and includes:

- An adaptation clearinghouse (<http://www.georgetownclimate.org/adaptation/clearinghouse>) that categorizes information by policy areas (law and governance, sea-level rise and urban heat); sectors, or by organization.
- Legislative Tracker ([http://www.georgetownclimate.org/federal-action/legislative-tracker?field\\_bill\\_subjectarea\\_value\\_many\\_to\\_one=Adaptation&field\\_bill\\_chamber\\_value\\_many\\_to\\_one=All&field\\_bill\\_sponsor\\_value=&field\\_bill\\_term\\_value\\_many\\_to\\_one=112th](http://www.georgetownclimate.org/federal-action/legislative-tracker?field_bill_subjectarea_value_many_to_one=Adaptation&field_bill_chamber_value_many_to_one=All&field_bill_sponsor_value=&field_bill_term_value_many_to_one=112th)): Track adaptation legislation in Congress, on federal legislation that affects adaptation, energy, greenhouse gas emissions, and transportation policies. The Center also analyses key legislation and identifies how pending bills could impact existing state policies and programs.
- State and Local Adaptation Plans (<http://www.georgetownclimate.org/adaptation/state-and-local-plans>): provides a list of adaptation plans created by state and local governments in the USA

**The European Climate Adaptation Platform (CLIMATE-ADAPT)** (<http://climate-adapt.eea.europa.eu>): is an initiative of the European Commission and helps users to access and share information on:

- Expected climate change in Europe
- Current and future vulnerability of regions and sectors
- National and transnational adaptation strategies
- Adaptation case studies and potential adaptation options
- Tools that support adaptation planning

It includes an adaptation support tool, and allows users to access information from a central database by sector, country and other keywords. Information is entered into the database and tagged, and users get to see a selection of results when viewing various pages, or they can opt to view all relevant entries. It is very easy to use and offers a wide range of information in a very compact manner.

The above two examples of clearing houses offer an excellent basis for designing systems for NAPs for developing countries. The design of NAP Central is largely based on the EU CLIMATE-ADAPT, to provide continuity in coverage from the EU countries to the developing countries.

#### • **Selected regional systems**

The list below describes a sampling of regional information systems based on summaries in the Knowledge Navigator (<http://kn.ids.ac.uk>). Many of these include listings of adaptation projects and programmes, case studies, data including through online maps, and documents/reports.

- **AFRICA ADAPTATION KNOWLEDGE NETWORK (AAKNet)**: <http://www.aaknet.org>, part of the UNEP Global Adaptation Network.
- **AfricaAdapt**: <http://www.africaadapt.net>: A French-English bilingual network facilitating the flow of climate change adaptation knowledge for sustainable livelihoods between researchers, policy makers, civil society organisations and local communities in Africa. AfricaAdapt is collaboratively hosted by three African organisations: Environment and Development in the Third World (ENDA-TM), Forum for Agricultural Research in Africa (FARA) and IGAD Climate Prediction and Applications Centre (ICPAC).
- **Asia Pacific Adaptation Network**: <http://www.apan-gan.net>: APAN aims to facilitate adaptation capacity building, policy-setting, planning and practices through the mobilization and sharing of knowledge and technologies, with the ultimate aim of helping countries in the region to build climate resilience of vulnerable human systems, ecosystems and economies. APAN aims at generating and sharing knowledge and information on adaptation to enhance adaptation actions; facilitate application of appropriate knowledge to adaptation programs/projects; facilitate access to adaptation finance mechanisms; facilitate knowledge generation on appropriate technologies and develop the capacity of national and local planners, communities, development partners and the private sector in adaptation.



- **The Pacific Climate Change Portal** <http://www.pacificclimatechange.net>: developed by the Secretariat of the Pacific Regional Environment Programme, in collaboration with its partners. The portal provides a platform for institutions and governments in the Pacific region to share information that can be readily accessed by linking to information repositories such as the Pacific Islands Global Ocean Observing System. The major target groups expected to use the portal are national stakeholders (PICTs), regional stakeholders (CROP agencies) and development partners. A broader audience, however, is not excluded.
- **The Climate and Development Knowledge Network** (<http://cdkn.org>) supports decision-makers in designing and delivering climate compatible development. Through a combination of research, advisory services and knowledge management, the Network supports locally owned and managed policy processes. CDKN works in partnership with decision-makers in the public, private and non-governmental sectors nationally, regionally and globally.
- **Caribbean Community Climate Change Centre:** (<http://www.caribbeanclimate.bz>) The Caribbean Community Climate Change Centre (CCCC) is repository and clearing house for regional climate change information and data and provides climate change-related policy advice and guidelines to the Caribbean Community (CARICOM) Member States. The Centre is recognised by the UN and other international agencies as the focal point for climate change issues in the Caribbean.
- **Climate Adaptation Knowledge Exchange (CAKE)** (<http://www.cakex.org>): aims at building a shared knowledge base for managing natural systems in the face of rapid climate change. CAKE brings together EcoAdapt's recognized leadership in developing the concepts and practices of climate adaptation with Island Press's experience as the leading publisher of solutions-based environmental information to offer valuable, up-to-date, and authoritative materials on the subject. CAKE also intends to help build an innovative community of practice.
- **UKCIP** (<http://www.ukcip.org.uk>): co-ordinates scientific research into the impacts of climate change and helps organisations adapt to these impacts by sharing the research outputs in ways that are useful. UKCIP works at the boundary between scientific research, policy makers and stakeholders - i.e. people working in the public, private and voluntary sectors interested in the impacts of climate change.

In designing the NAP tool/NAP Central, it would be beneficial to establish formal links with, including discussions/guidance on establishing common standards for data and information, these and other regional information systems in the developing world, to formalize collaboration and data-sharing.

#### 4. Mapping of current systems under the UNFCCC

The *NAP Central* system that is under development, with initial oversight by the LEG, will offer a first-entry to information relevant to NAPs (for all countries, less those covered by existing systems such as for the EU and USA), and will have several components, including the following:

- An online and interactive version of the NAP Technical Guidelines, including extra/additional information such as suggested tools, examples and case studies for steps of the NAP process;
- Resources for adaptation assessment, planning and implementation (tools, methods, data, examples) by sector, country and region;
- A country portal that will summarize available information on adaptation (information on assessments, adaptation policies, projects and programmes; and NAP documents;
- Information on gaps and needs, and support being provided to address the gaps and needs;
- An archive of NAP outputs including assessment reports to be submitted by countries;
- A platform to exchange experiences and lessons learned in undertaking the NAP process.



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There are several existing systems under the UNFCCC webpage that provide support to various adaptation activities. These would be taken into account in the design of new systems, integrating or linking to them, as appropriate. These include:

- The LDC Portal: multiple subsystems on NAPAs and related information for LDCs <unfccc.int/LDC>;
- NWP information tables and databases <[http://unfccc.int/adaptation/knowledge\\_resources/databases/items/6996.php#NWP](http://unfccc.int/adaptation/knowledge_resources/databases/items/6996.php#NWP)>;
- The Finance Portal <<http://www3.unfccc.int/pls/apex/f?p=116:1:3264437916185918>>;
- CC:iNet on Article 6: <[http://unfccc.int/cc\\_inet/cc\\_inet/items/3514.php](http://unfccc.int/cc_inet/cc_inet/items/3514.php)>;
- TT:Clear on technology transfer:<<http://unfccc.int/ttclear/pages/home.html>>.

## 5. Discussion

The analysis in this paper, though limited in coverage of systems actually cited, draws upon a much broader review of systems. The following are some observations that could guide next steps for the AC in fulfilling the functions that were proposed at the AC2.

Data and information useful for adaptation planning has not necessarily increased dramatically as stated by some. In fact, very few systems, if any, critically look at what data and information is needed to support adaptation planning. What has increased dramatically, is the number of web-based information systems that strive to make finding data and information (now being upgraded to knowledge) easier. In effect, the different systems are working with the same baseline of data, and simply packaging it differently for users. System designers are broadening their sources of information, or using broader definitions of information to include, thus giving the impression of an information explosion. Standards seem to be rarely followed, with a lot of unpublished materials being included in information systems.

In many cases, if functions that deal with exchange of stories (including the “information push” by project proponents), are taken out, then what is left is an archive of projects lists from major programmes (e.g. under the LDCF, PPCR or major bilateral programmes), tools and outputs (reports). It would be interesting to analyse the underlying basic data and information captured in different information systems to arrive at a core set of available data and information.

An even more useful analysis would be to explore the basic essential data and information that is needed for adaptation planning, and then use the outcomes in designing a *navigator* to the information that is needed to support effective NAP processes. This is perhaps the natural next step to the efforts that are actively developing navigation to the information systems themselves (the websites) as opposed to the data/information.

Data and information that changes over time, should be represented in databases/information systems that allow regular update. This is a handicap of many so-called databases that are in fact listings or just data tables, often the outputs of a paper or project.

The tagging of information is another area that needs attention. Consistent tagging between information systems has obvious advantages, however, there is need for broad input on the definitions in glossaries to ensure all information is tagged in an objective and complete manner. Need for classifying systems ...

The nature of navigation for a system is another important factor. Dynamic and graphic searches and browsing of information is desirable. Many websites offer the option of displaying location of projects and other information on maps. There is need for a careful assessment of the added value of doing this when speed of access is taken into account, and whether it makes sense to display the information in map form.

The design of information/knowledge websites should offer added value to the user – most systems simply facilitate access to pre-selected documents, thus saving time from a doing regular Google or library search, and in some cases, directs the user to certain types of information. Ideally knowledge portals should offer a synthesis of information to guide users, so they don't

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need to read and explore options on their own. For example, users should be guided to find the best data, methods and tools for the adaptation planning efforts, to the extent possible.

Sites that list adaptation projects must define (explicitly or indirectly) what adaptation is. In many cases, they craft their own definition, different from others, which makes it difficult to compare the results of their compilation. As an example, the Global Adaptation Atlas (<http://www.adaptationatlas.org>) defines adaptation as follows: "The Global Adaptation Atlas takes the broadest possible definition of adaptation. We aim to capture all activities that contributors self-define as adaptation ranging from risk assessment to planning and infrastructure design to evaluation. By synthesizing the widest spectrum of adaptation measures, we aim to show how efforts to adapt to climate change will necessarily shift as climate impact information improves and local capacity builds over time."

(<http://www.adaptationatlas.org/faq.cfm>) .

It is unlikely a universal definition of adaptation can be derived and yet it is so needed.

Given the important role of information in adaptation planning, it would appear a peer-review system is needed to certify/"publish" information systems. This would instill some quality control in this open information era.

## **6. Possible general AC advice on development of systems in support of adaptation**

Based on the discussions at AC2, the AC could consider the following advice to those developing information systems and databases for adaptation:

- Information provided should inform rather than give a comprehensive (overwhelming) coverage of a topic;
- Information provided should enhance the elements of the NAP process;
- Sources of information should be certifiable (meet QA/QC standards that could be developed, if these do not exist).

### **The AC could consider the following next steps:**

- Agree on principles/advice to those developing information systems for adaptation;
- The AC could then issue these as a general set of guidelines for the adaptation community, including the encouragement of harmonizing systems under development by different actors, such as through adoption of common standards for interoperability and comparability;
- Partner with the LEG in producing the NAP Central information system, as opposed to launching a separate effort. The AC could provide advice on the design of the NAP Central, including the elaboration of how some of the functions in Section 1 could be fulfilled;
- The AC could also set in motion surveys to gather details about existing information systems, such as information on access to different existing systems by country/region, assess user needs, user profiles, and to evaluate utility of different types of information in practical terms. This could also include requests to information system developers to provide some of the needed information.

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**Annex: List of Climate Knowledge Brokers Platforms**

*(Source: Climate Knowledge Brokers Workshop 2012)*

<b>Platform</b>	<b>Web address</b>
ACCCRN	<a href="http://www.acccrn.org">www.acccrn.org</a>
Actualidad Ambiental	<a href="http://www.actualidadambiental.pe">www.actualidadambiental.pe</a>
Adaptation Knowledge Platform for Asia	<a href="http://www.climateadapt.asia">www.climateadapt.asia</a>
Adaptation Learning Mechanism	<a href="http://www.adaptationlearning.net">www.adaptationlearning.net</a>
Africa Adapt	<a href="http://www.africa-adapt.net">www.africa-adapt.net</a>
Africa Adaptation Programme	<a href="http://www.undp-aap.org">www.undp-aap.org</a>
ARCAB	<a href="http://www.arcab.org">www.arcab.org</a>
Asia Pacific Adaptation Platform	<a href="http://www.asiapacificadapt.net">www.asiapacificadapt.net</a>
CCAFS	<a href="http://ccaafs.cgiar.org">ccaafs.cgiar.org</a>
Caribbean Community Climate Change Centre	<a href="http://www.caribbeanclimate.bz">www.caribbeanclimate.bz</a>
ci-grasp	<a href="http://cigrasp.pik-potsdam.de">cigrasp.pik-potsdam.de</a>
Climate and Development Knowledge Network	<a href="http://cdkn.org">cdkn.org</a>
Climate Finance Options	<a href="http://www.climatefinanceoptions.org">www.climatefinanceoptions.org</a>
Climate Funds Update	<a href="http://www.climatefundsupdate.org">www.climatefundsupdate.org</a>
Climate Prep	<a href="http://www.climateprep.org">www.climateprep.org</a>
ClimateTech Wiki	<a href="http://climatetechwiki.org">climatetechwiki.org</a>
Ecosystem Marketplace	<a href="http://www.ecosystemmarketplace.com">www.ecosystemmarketplace.com</a>
Eldis	<a href="http://www.eldis.org">www.eldis.org</a>
Finanzas Carbono	<a href="http://finanzascarbono.org">finanzascarbono.org</a>
ICIMOD	<a href="http://www.icimod.org">www.icimod.org</a>
IISD Reporting Services	<a href="http://www.iisd.ca">www.iisd.ca</a>
India Environment Portal	<a href="http://www.indiaenvironmentportal.org.in">www.indiaenvironmentportal.org.in</a>
InfoAmazonia	<a href="http://infoamazonia.org">infoamazonia.org</a>
Internews	<a href="http://www.internews.org">www.internews.org</a>
IRENA	<a href="http://www.irena.org">www.irena.org</a>
MAPS	<a href="http://www.mapsprogramme.org">www.mapsprogramme.org</a>
OneClimate	<a href="http://oneclimate.net">oneclimate.net</a>
OpenEI	<a href="http://en.openei.org">en.openei.org</a>
PIK	<a href="http://www.pik-potsdam.de">www.pik-potsdam.de</a>
Reegle.info	<a href="http://www.reegle.info">www.reegle.info</a>
SEA Change	<a href="http://seachangecop.org">seachangecop.org</a>
The REDD Desk	<a href="http://www.theredddesk.org">www.theredddesk.org</a>
UN CC:Learn	<a href="http://www.uncclearn.org">www.uncclearn.org</a>
UNEP Climate Change Adaptation	<a href="http://www.unep.org/climatechange/adaptation">www.unep.org/climatechange/adaptation</a>
UNFCCC	<a href="http://unfccc.int">unfccc.int</a>
weADAPT	<a href="http://weadapt.org">weadapt.org</a>
World Bank Climate Change Knowledge Portal	<a href="http://sdwebx.worldbank.org/climateportal">sdwebx.worldbank.org/climateportal</a>

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