International CLIVAR Project Office (ICPO)

Annual Progress Report for SSG

Submitted by ICPO

May 2012

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ICPO Staff

A summary of ICPO Staff in 2011/12 is provided in Table 1.

Efforts are being made to appoint a new ICPO Director acceptable to NERC, following Bob Molinari's retirement in January 2012 on health grounds. Arrangements have been made for the interim period; Catherine Beswick (Staff Scientist, 1FTE) has assumed the role of Acting Director, to manage the directorial responsibilities until a suitable candidate can be found. The position is now being advertised widely as a secondment opportunity. We are very grateful for the continued support of Valery Determmerman, on the Joint Planning Staff for WCRP, who has put a significant amount of effort into CLIVAR/ICPO during this transitional period.

Following the retirement of Sandy Grapes (ICPO secretary/desktop publishing support, 0.9 FTE) in early 2011, two new personnel were recruited: Matthew Reynolds (web developer, 0.6 FTE) and Christina Thompson (administrator/secretary, 0.4 FTE). Desktop publishing requirements (for CLIVAR Exchanges publication) are now outsourced.

The ICPO continues to benefit hugely from three Staff Scientists: Anna Pirani (0.5 FTE) works from The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy; Carlos Ereno (0.5 FTE) is based at the University of Buenos Aires, Argentina; and Nico Caltabiano is hosted by the National Oceanography Centre, where Catherine, Christina, and Matt are also based. Ms. Xiaohui Tang serves as a communications facilitator for Chinese scientists involved in CLIVAR projects (e.g. NPOCE).

The annual ICPO meeting was held in association with the 18th meeting of the CLIVAR SSG (Paris, France, May 2011), which was attended by all Staff Scientists, the former Director Bob Molinari, and Valery Detemmerman. Between meetings, ICPO discussions are typically maintained through telecons, email and opportunistic visits. Weekly telecons have recently been established to enhance general internal ICPO communications.

Table 1: ICPO Staff 2011/12

Name	Located	Position	Funding Source	Full Time Equivalent (FTE)
Dr Robert Molinari	NOC	ICPO Director (Retired Jan 2012)	NERC	Apr11-Nov11: 1 FTE Nov11-Jan12: 0.6 FTE
Ms Catherine Beswick	NOC	Staff Scientist (Acting Director w.e.f. 1st Feb 2012)	NERC	1 FTE
Mrs Christina Thompson	NOC	ICPO Administrator	NERC	0.4 FTE

		(18th April 2011)		
Mr Matthew Reynolds	NOC	Web Developer (1st June 2011)	NERC	0.6 FTE
Dr Nico Caltabiano	Independent (with NOC visitor status)	Staff Scientist	US CLIVAR	1 FTE
Dr Carlos Ereño	University of Buenos Aires, Argentina	Staff Scientist	US CLIVAR	0.5 FTE
Dr Anna Pirani	Abdus Salam International Centre for Theoretical Physics, Trieste, Italy	Staff Scientist	US CLIVAR	0.4 FTE (Mean over 2011/12 period)

ICPO Funding

NERC provides the full time salary for Catherine Beswick, and the part time salaries for Mrs Christina Thomson and Mr Mathew Reynolds. NERC also provided Bob Molinari's salary until his retirement earlier this year. The NERC fiscal year extends from 1 April 2012 through 31 March 2013. The total contribution from NERC to the ICPO is approximately 300,000 USD.

Through funds provided by the US NSF, NASA and NOAA a UCAR/NERC contract administered by the US CLIVAR Office, the full time salary of Dr Antonio 'Nico' Caltabiano is paid, and half time salaries of Drs Anna Pirani and Carlos Ereno are paid. The total amount provided by the US to the ICPO in terms of salary support is approximately $187,000. The fiscal year for this support extends from 1 May 2012 through 30 April 2013.

The World Climate Research Program (WCRP) provides the support for ICPO Staff Scientists to attend the workshops and steering group meetings of the CLIVAR panels and working groups they support. In addition, WCRP supports the travel of the Director, ICPO to Steering Group meetings of the other three projects as well as travel to other WCRP meetings. WCRP and CLIVAR are in the process of establishing the level of this funding for 2013 meetings.

ICPO Activities

Please refer to Appendix C for individual Staff activities. The following sections outline ICPO activities over the 2011/12 period.

1. Support to CLIVAR Panels, Working Groups and SSG

The ICPO has continued to supply the dedicated support needed by the various CLIVAR panels and working groups (listed at optional Annex 1) and its SSG.

CLIVAR-sponsored meetings scheduled for 2011/12 and organised by ICPO staff included 11 panel/working group meetings, five CLIVAR workshops, a CLIVAR Town Hall Meeting, and the 18th meeting of the CLIVAR SSG (Paris, France, May 2011). Specific meetings supported by staff can be found in Appendix C.

Support provided to the panels and working groups typically includes: working with panel/working group chairs on agendas; funding and logistical arrangements for meetings; attendance at the meetings themselves; and the preparation and distribution of meeting reports and subsequent follow-up. A key staff responsibility is to follow-up on action items from panel and working group meetings, which provides support to a variety of CLIVAR-related science activities. These are summarized in meeting reports (see below).

The membership of all CLIVAR working groups and panels were reviewed and updated during the 2011/12 period. The updated lists were paced in the CLIVAR Handbook and on the CLIVAR web page.

In 2011 the ICPO developed a Staff Handbook, which serves to standardise ICPO administrative procedures. It is a useful reference tool for current and future ICPO staff. The handbook is continually updated as procedures evolve. It is being used as a template for good practice for the other WCRP project offices.

2. Development and Maintenance of the CLIVAR Website

The new CLIVAR web site was launched at the end of 2011 after significant efforts from the web developer and other ICPO staff. Maintenance and development of the CLIVAR website as a key communication tool will continue, involving all ICPO staff. The new website makes us of a content management system (CMS). The CMS makes it simpler for CLIVAR staff to disseminate the latest updates to a range of audiences in a timely and cost efficient manner.

The website provides a portal for CLIVAR to provide a 'climate service', i.e. information to the wider community, providing the support and setting for coordinated activities. It will act as CLIVAR's legacy by collecting and presenting results and information on what CLIVAR has achieved.

Further development and updating of the website is an ongoing task, and through our monthly bulletins and CLIVAR Exchanges, we are actively encouraging the community to provide comments on the new site, in order to feed into its continued development.

3. Information Management

This year the ICPO is developing a contacts management system. The system will be dual purpose:

1. It will provide a publically accessible database of scientists working in CLIVAR-related fields, which is searchable by area of research. This functionality will help inform potential collaborators on what others are doing, thereby creating new opportunities. The new system will enable users to sign up more easily, thereby increasing the network and participation.
2. It will provide a resource for ICPO staff; the system allows the tagging and categorisation of contacts so that messages sent out by CLIVAR can be focused to their target audiences. This element is being designed to be accessible to all ICPO staff remotely, whilst being secure to the public.

In general, this new system will allow CLIVAR to operate its role as network provider for the climate science community. On-going development includes further integration with the website and third party communication services.

4. Publication of CLIVAR Exchanges

The ICPO has continued to publish CLIVAR Exchanges – see the list of publications for the year in Mandatory Annex 6.

By producing special themed issues, Exchanges plays an important programmatic role in communicating to other projects and funders about what activities are going on, and highlighting the science priorities. Exchanges plays an important role in communicating with this audience to help its own strategic planning. The issues that contain more scientific contributions are useful for communicating emerging results that are perhaps immature for peer review publication.

5. Enhance the Visibility of CLIVAR

The ICPO has sought to enhance the visibility of CLIVAR through its website and through the new CLIVAR Bulletin, now published and distributed (by email) on a monthly basis. The CLIVAR bulletin, first published in February 2012, provides up-to-date information on project meetings and publications, and other news and events of interest to the CLIVAR community. Its primary objective is to provide a larger community with a picture of CLIVAR activities. The ICPO also continues to publish CLIVAR Exchanges, has contributed articles on CLIVAR to the industrial journal "Sea Technology", and is working on an article for the NERC publication Planet Earth.

The ICPO also promoted CLIVAR at the WCRP Open Science Conference, Denver, US, October 2011. Staff members encouraged and supported poster clusters submitted by panel members, and distributed and presented promotional material (e.g. Exchanges publications, CLIVAR banner, CLIVAR posters).

The ICPO are developing a communications strategy, alongside proposed terms of reference and membership for a new panel on CLIVAR communications. This will be presented to the CLIVAR SSG at its next meeting in June 2012 (Mexico).

The ICPO also contributes to the development of components of the WCRP website, where CLIVAR involvement is high, for example on topics such as global climate modelling, and contributes to the WCRP "ezine" (electronic magazine).

In addition to the general interactions with and support to WCRP, the former director attended the following meetings: the TACE/PIRATA Workshop; the OOPC meeting; ESF-MedCLIVAR Final Conference (MedCLIVAR is an endorsed project of CLIVAR); and the USCLIVAR Summit. At these events the former director reported on CLIVAR activities and offered areas of potential interactions with International CLIVAR projects. The former director also delivered a presentation on CLIVAR at the University of Reading.

6. WCRP Open Science Conference

The planned 2nd CLIVAR Science Conference evolved to a WCRP-wide Open Science Conference (OSC), which was held in Denver, CO, US, in October 2011. The Scientific Organising Committee was chaired by J. Hurrell, (CLIVAR SSG co-chair) and the ICPO played an integral role in the organisation and execution of the OSC, through a range of contributions.

One ICPO staff scientist sat on the local organising committee for the OSC, and another sat on the Media Committee; the ICPO took a leading role on communicating via social media networks, to create a 'buzz' around the event. Other communication tools included posters, brochures, newsletters etc.

ICPO staff also coordinated 'poster clusters', drawing on the expertise of panel members and their collaborators. These were groups of ten or more posters linked together by a unifying theme, which were presented during one of the OSC's poster sessions.

The former director was a member of two OSC Early Career Scientist (ECS) committees. The former director also proposed an ECS panel session on 'Communicating Climate to the Public'. The proposal was accepted and several science reporters participated in a panel discussion. The session was well attended with considerable interaction between the panel and the audience.

7. Funding Bids

The ICPO (under NERC) was selected to join a consortium bidding for funding under the European Seventh Framework Programme (FP7). The project – called NACLIM (North Atlantic Climate: Predictability of the climate in the North Atlantic/European sector related to North Atlantic/Arctic Ocean sea surface temperature and sea ice variability and change) – was successful in securing this funding, and is therefore scheduled to commence in late 2012. The ICPO involvement in the project will be to help disseminate the project's output to the international user community, thereby providing a 'climate service'.

The ICPO secured both WCRP and US CLIVAR funding to support participant travel to CLIVAR panel and working group meetings, and CLIVAR workshops, by drafting and submitting proposals to WCRP and the US funding agencies, respectively. Additionally, the former director worked with the US CLIVAR Office

to submit a proposal to US funding agencies for the 2012/2013 salaries of Drs Ereno, Pirani and Caltabiano. The total amount requested was approved.

8. Endorsed Projects

The ICPO facilitated the endorsement process for SAMOC, the project on South Atlantic Meridional Overturning Circulation.

Staff also coordinated the reporting procedure for existing projects.

Appendix A: 2012 CLIVAR-sponsored Meetings and Workshops

Meeting Title	Group	Venue	Dates	Comments
10th Meeting of the CLIVAR Working Group on Ocean Model Development (WGOMD)	WGOMD	Venice, Italy	11-13 January 2012	
Workshop on Using Paleo-Climate Model/Data Comparisons to Constrain Future Projections	CLIVAR/PAGES Working Group	Honolulu, Hawaii, US	1-3 March 2012	
Indonesian Throughflow Workshop	Indian Ocean Panel / Pacific Panel	Jakarta, Indonesia	12-14 March 2012	
WCRP Workshop on developing a Global Drought Information System	Drought Interest Group	Frascati, Italy	11-13 April 2012	
7th Pacific Panel Meeting	Pacific Panel	Noumea, New Caledonia, France	28-29 April 2012	
Capacity building workshop on Data Rescue & Climate Change Indices:	ETCCDI	University of West Indies, Mona, Jamaica	7-10 May 2012	

a contribution to the implementation of the GFCS in the Caribbean				
VAMOS Workshop on Modeling and Predicting Climate in the Americas	VAMOS	Petropolis, Brazil	4-6 June 2012	
15th Session of the CLIVAR VAMOS Panel	VAMOS	Petropolis, Brazil	6-7 June 2012	
SSG-19	SSG	La Paz, Mexico	11-14 June 2012	
CLIVAR/WCRP Workshop on Decadal and Multi-decadal Variability in Pacific and Indian Ocean	PP - IOP	Qingdao	4 - 7 September, 2012	No financial support requested from WCRP
12th Session of the CLIVAR Atlantic Implementation Panel	AIP	Kiel, Germany	10-11 September 2012	
IMBER ClimECO3 Summer School	IMBER	Ankara, Turkey	23-28 July 2012	
AAMP12	AAMP	Nanjing, China	13-14 September 2012	
International Workshop on Interdecadal Variability of the Global Monsoons	AAMP	Nanjing, China	10-12 September 2012	
6th Session of the CLIVAR/IOC-GOOS Indian	IOP	Cape Town, South Africa	15-20 October 2012	Joint meeting with IOGOOS9, SIBER3, IRF3

Ocean Panel				
Ocean Synthesis and Air-Sea flux evaluation Workshop	GSOP	Woods Hole, USA	27-30 Nov 2012	
6th Session of the CLIVAR Global Synthesis and Observations Panel	GSOP	Woods Hole, USA	30 Nov / 01 Dec 2012	

Appendix B: Proposed Meetings for 2013

Meeting Title	Proposing Group	Venue	Dates	Cost (USD)	Last Meeting	Comments
8th Meeting of the CLIVAR/CliC/SCAR Southern Ocean Panel	Southern Ocean Panel	Hobart, Australia	21-22 February 2013	20,000	October 2011	Joint session with WGOMD planned Follows the WGOMD/SOP workshop
5th VACS Panel Meeting	VACS	Addis Ababa, Ethiopia	September 2013 (2-3 day)	14,000	November 2011	In conjunction with the planned VACS workshop
The State of the African Climate System Conference	VACS	Addis Ababa, Ethiopia	September 2013	30,000	November 2011	In conjunction with the planned VACS panel meeting
11th Session of WGOMD	WGOMD	Hobart, Australia	21-23 February 2013	20,150	January 2012	Joint session with SOP planned
WGOMD/SOP/CliC Workshop on Sea Level Rise, Ocean/Ice-Shelf Interaction and Ice Sheets	WGOMD	Hobart, Australia	18-20 February 2013	15,000	January 2012	To be held prior to WGOMD and SOP panel meetings
8th Pacific Panel Meeting	Pacific Panel	China	September 2013 (2.5 day)	10,000	April 2012	
Developing an	Drought	TBD (not	April 2013	15,000	April 2012	Same amount to be

Experimental Global Drought Information System with a focus on user needs and pilot studies	Interest Group	Europe)				requested from GEWEX
ETCCDI regional workshops	ETCCDI	TBD	TBD	10,000	May 2012	Travel and accommodation to send a CLIVAR specialist for 3 workshops
16th Session of VAMOS	VAMOS	TBD	May/June 2013 (2-day)	10,000	June 2012	
13th Session of AAMP	AAMP	TBD	October 2013	10,000	September 2012	Immediately after Fifth International Workshop on Monsoons (IWM-V)
GSOP Workshop on Ocean Sub-Surface Climate Data	GSOP	Hobart, Australia (TBC)	Between April and June 2013 (3 day)	15,000	November 2012	Possibly a week before/after the GODAE Oceanview meeting on Observing System Evaluation and Coupled Data Assimilation in April (Hobart) which is being endorsed by the panel
10th Meeting of IOP	IOP	TBD	TBD (2.5-day)	10,000	October 2012	
Total requested:	**179,150 USD**					

Appendix C: Summary of Individual ICPO Staff Activities and Achievements

Ms Catherine Beswick

1. Support to Panels

SOP

- membership rotation
- panel meeting support
- coordinated OSC poster cluster
- coordinated contributions to Exchanges 58
- co-author for article

CLIVAR/PAGES working group

- membership rotation
- panel meeting support
- support for workshop
- set up list serve
- encouraged contribution to Exchanges 58

Extremes cross-cut

- workshop support
- rapporteur

2. Meetings Supported

Seventh meeting of the Southern Ocean Panel, Boulder, US, 19-21 October 2011.

WCRP Open Science Conference, Denver, US, 24-28 October 2011.

CLIVAR/PAGES Working Group meeting, Denver, US, 28 October 2011.

CLIVAR Town Hall meeting at Ocean Sciences, Salt Lake City, Utah, US, 21 February 2012.

Workshop on Using Paleo-Climate Model/Data Comparisons to Constrain Future Projections, Hawaii, 1-3 March 2012. Organised by the CLIVAR/PAGES working group.

WCRP Global Drought Information System workshop, Frascati, Italy, 11-13 April 2012. Organised under the WCRP extremes cross-cut.

3. Reports

(2011) *Report of the Sixth Meeting of the CLIVAR/CliC/SCAR Southern Ocean Panel, Southampton, UK, 14-17 June 2010*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 148)

(2011) *Report on the WCRP Workshop on Drought Predictability and Prediction in a Changing Climate, Barcelona, Spain, 2-4 March 2011*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 162)

JSC-32 report

SOP7 report (in prep.)

Hawaii workshop report (in prep.)

4. Communication/Outreach

Monthly CLIVAR bulletin

Draft CLIVAR communications strategy

Leaflets for Town Hall meeting

Sea Technology co-author

Coordinated and co-authored Planet Earth article

Contributions to the WCRP website

The ICPO has sought to enhance the visibility of CLIVAR through new CLIVAR Bulletin, now published and distributed (by email) on a monthly basis. The bulletin, first published in February 2012, provides up-to-date information on project meetings and publications, and other news and events of interest to the CLIVAR community. Its primary objective is to provide a larger community with a picture of CLIVAR activities.

Developed posters to publicise CLIVAR for WCRP Open Science Conference

Co-editor of CLIVAR Exchanges 58

OSC Media Team

5. Other

Continued development of the ICPO Staff Handbook, which serves to standardise ICPO administrative procedures. It is a useful reference tool for current and future ICPO staff. The handbook is continually updated as procedures evolve. It is being used as a template for good practice for the other WCRP project offices.

Contributed to successful bid for European Framework Programme 7 funding under the NACLIM project.

Dr Antonio 'Nico' Caltabiano

1. Support to Panels

VACS

- Organization, funding and logistics of the VACS Meeting, Cape Town, South Africa, 21-23 November 2011
- Support call for papers for CLIVAR Exchanges special issue on Africa Climate Science, to be published July/August 2012

AIP

- Follow up on actions from AIP-11
- Organization, funding and logistics for AIP-12 to be held in Kiel, Germany,
- Maintenance and update of the panel's webpages

Pacific Panel

- Organization, funding and logistics of the Indonesian Throughflow Workshop, Jakarta, Indonesia, 12-14 March 2012
- Organization, funding and logistics of the 7th Pacific Panel Meeting, Noumea, New Caledonia , 28-29 April 2012
- Maintenance and update of the panel's webpages

IOP

- Organization, funding and logistics of the 8th Session of the CLIVAR Indian Ocean Panel, Chennai, India, 25-29 July 2011
- Maintenance and update of the panel's webpages

GSOP

- Organization, funding and logistics of the 5th Meeting of the Global Synthesis and Observations Panel (GSOP), Grenoble, France, 11-13 May 2011
- Provided support to the development of an air-sea flux inventory and intercomparison project (with the aim of promoting best practices within the range of different approaches used to develop air sea flux products) by developing the webpages. These webpages list an inventory of air-sea flux (heat, freshwater and wind stress) products developed after 1990 categorized according to production method. It is anticipated that additions of further products will continue, in particular ocean synthesis and wind stress datasets. A web link has been included for each product,

which can be consulted for details such as resolution, and time period covered.

2. Meetings Supported

5th Meeting of the Global Synthesis and Observations Panel (GSOP), Grenoble, France, 11-13 May 2011

8th Session of the CLIVAR Indian Ocean Panel, Chennai, India, 25-29 July 2011

WCRP Open Science Conference, Denver, Colorado, USA, 24-28 October 2011

Indonesian Throughflow Workshop, Indonesia, 12-14 March 2012

VACS Meeting, Cape Town, South Africa, 21-23 November 2011

7th Pacific Panel Meeting, Noumea, New Caledonia, France, 28-29 April 2012

3. Reports

(2011) *Report of the 5th Session of the VACS Panel Meeting Report, Cape Town, South Africa, 21-23 November 2011.* Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 172)

(2011) *Report of the 6th session of the Pacific Panel, Guayaquil, Ecuador, 15-16 Oct 2010.* Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 173)

4. Communication/Outreach

Sea Technology article: Molinari, R,; Caltabiano, A.C.; Beswick, C. Improving Climate Models With Ocean Observational Data

Planet Earth article

Developed posters to publicise CLIVAR for WCRP Open Science Conference

Co-editor of Exchanges 58

5. Other

Local organizing committee for WCRP Open Science Conference

Dr Carlos Ereno

1. Support to Panels

VAMOS

- Workshop support
- Panel meeting support
- Edition VAMOS Newsletter
- CLARIS/LPB project support
- Maintenance of the VAMOS / CLIVAR web site
- Maintenance of the VAMOS database of scientists in the Asian-Australian region and dissemination of relevant information

AAMP

- Workshop support
- Panel meeting support
- Maintenance of the AAMP / CLIVAR web site
- Maintenance of the AAMP database of scientists in the Asian-Australian region and dissemination of relevant information

2. Meetings Supported

11th Annual Meeting of the CLIVAR Asian-Australian Monsoon Panel, Beijing, China, 7-9 April 2011 and 7th Forum on Regional Climate Monitoring, Prediction and Assessment for Asia (FOCRAII 2011), Beijing, China, 6-8 April 2011

CLARIS LPB M36 Meeting, Toledo, Spain, 5-9 September 2011

WCRP Open Science Conference, Denver, Colorado, USA, 24-28 October 2011

CLIVAR VAMOS Workshop on Modelling and Predicting Climate in the Americas, Petropolis, Brazil, 4-6 June 2012

15th Session of the CLIVAR VAMOS Panel, Petropolis, Brazil, 6-7 June 2012

3. Reports

(2011) *Report of the 13th Session of the VAMOS Panel, Buenos Aires, Argentina, 29-31 July 2010*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 156)

(2011) *Report of the 8th Session of the Asian-Australian Monsoon Panel (AAMP), Honolulu, Hawaii, 19-21 February 2007*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 157)

(2011) *Report of the 10th Session of the Asian-Australian Monsoon Panel (AAMP), Busan, Republic of Korea, 18-19 June 2009*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 158)

(2011) *Report of the 12th Session of the CLIVAR VAMOS Panel, San Juan, Puerto Rico, USA, 3-5 June 2009*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 159)

(2011) *Report of the 9th Session of the CLIVAR VAMOS Panel, Foz do Iguazu, Brazil, 22-23 April 2006*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 160)

(2011) *Report of the 11th Session of the CLIVAR VAMOS Panel, Miami, USA, 25-28 March 2008*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 161)

(2011) *Report of the 9th Session of the Asian-Australian Monsoon Panel, Beijing, China, 22-25 October 2008.* Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 165)

(2011) *Report of the 10th Session of the CLIVAR VAMOS Panel, Santiago, Chile, 2-5 April 2007.* Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 166)

(2011) *The IASCLiP Modeling Plan.*Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 167)

(2011) *Intra-Americas Study of Climate Processes (IASCLIP).*Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 168)

4. Communication/Outreach

Participated in the preparation of a brochure describing the current understanding of monsoons. The brochure has been forwarded to a large community to provide information on this critical climate phenomenon.

Co-editor of Exchanges 57 – special issue on La Plata Basin

Co-editor of Exchanges 59 – special issue jointly VAMOS Newsletter 8, in press

5. Other

Cooperation in the organization of the 19th session of the CLIVAR Scientific Steering Group

6. Actions to facilitate the search of potential sponsors to host the International CLIVAR Project Office

Dr Robert 'Bob' Molinari

1. Funding activities

Interactions with SSG co-chairs, ICPO Staff, Geneva Staff and CLIVAR panels and working groups resulted in a list of desired meetings for 2012. The list, including costs, was forwarded to WCRP and CLIVAR was awarded $200,000 to convene the requested sessions. This amount represents an increase of funds received over the past two years, allowing for a more complete meeting schedule.

Negotiations with the Director of the US CLIVAR Office resulted in a proposal for continued support of Drs Pirani and Caltabiano. The proposal was approved by the appropriate US funding agencies and NERC, NOC and the US CLIVAR Office are working on the transfer of funds.

A new track for obtaining funds for the ICPO was recommended by WCRP. The approach involves the ICPO becoming components of proposals being generated by large climate groups and performing coordination functions. The ICPO became a member of the NACLIM proposal through interactions between Molinari, as co-PI with C. Beswick of the ICPO component and the coordinators. NACLIM is directed at improving seasonal to decadal climate forecasts for Europe. The proposal has been approved for funding and work will begin this fall. Negotiations with NACLIM managers resulted in the ICPO not being charged any overhead fees for participating in this project.

2. Interactions with other groups

Developed interactions with ESA and EUMETSAT. Arranged for participation of ESA representative at SSG-18 where potential joint projects were discussed. Discussed potential future interactions with EUMETSAT personnel at OSC.

Although MedCLIVAR is officially completed, several components of the project continue. Molinari worked with MedCLIVAR scientists to develop cooperate projects.

Molinari was a member of the Executive Committee for an OOPC working group directed at establishing a Sustained Deep Ocean Observing System. He participated in the editing of the scientific plan being developed to start the program.

Molinari attended the US CLIVAR Summit to develop potential areas of cooperation between that group and International CLIVAR. Several cooperative projects are underway due to the activities of CLIVAR working groups and panels and US groups and these projects were discussed at the Summit with continued cooperation encouraged.

3. Meetings Supported/Attended

SSG-18: Presented ICPO report of past year's activities, wrote final meeting report.

Convened ICPO Staff meeting following SSG-18 to discuss future ICPO activities (e.g., Exchanges, new web page, etc.)

WCRP Open Science Conference, Denver, Colorado, USA, 24-28 October 2011: participated on outstanding abstract and awards committee

Attended mini 2-day JSC meeting following OSC to discuss future WCRP direction.

PAGES/CLIVAR Luncheon Workshop at OSC Conference: discussed future coordination between PAGES and CLIVAR. Additional discussions are planned.

14th Session of the Working Group on Seasonal to Interannual Prediction (WGSIP), Trieste, Italy, 12-14 September 2011: served as meeting support with considerable assistance from Dr. Pirani. Wrote final meeting report, with is not an official CLIVAR document.

US CLIVAR Summit, 19-21 July 2011: participation discussed above.

ESF-MedCLIVAR Final Conference - Mediterranean Climate: From Past to Future, Lecce, Italy, 6-9 June 2011: participation discussed above.

4. Reports

(2011) *Report of the 18th Meeting of the CLIVAR Scientific Steering Group (SSG-18), Paris, France, 2-5 May 2011*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 164)

(2011) *Report of the 13th Session of the Working Group on Seasonal to Interannual Prediction (WGSIP), Buenos Aires, Argentina, 29-31 July 2010*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 151)

(2012) Co-author of an article describing CLIVAR activities during 2011, which appeared in the Industry Journal SEA TECHNOLOGY.

5. Communication/Outreach

Member of Early Career Scientist (ECS) committee of the WCRP Open Science Conference which reviewed and based on review recommended abstracts suitable for presentation at the OSC. At the OSC, participated on 2 committees, one that selected presentations deserving recognition and another that selected presentations deserving awards.

Proposed an ECS panel session on 'Communicating Climate to the Public', which was accepted resulting in several science reporters participating in a panel discussion. The session was well attended with considerable interaction between the panel and the primarily ECS audience.

Co-editor of Exchanges 56 and 57 – Reviewed articles submitted to the special issues of EXCHANGES on CMIP5 and the La Plata Basin.

6. Other

Delivered a presentation on CLIVAR at the University of Reading highlighting areas of CLIVAR research suitable for graduate student projects and the value of participating on CLIVAR panels and working groups.

Involved in early preparations for SSG-19, working with IMBER Project Office to develop a combined meeting.

Worked with ICPO Staff and IT staff member to develop new CLIVAR web site.

Instituted approximately bi-monthly teleconference calls with ICPO Staff to disseminate Staff activities. More frequent calls were used to discuss specific issues such as web site design.

Dr Anna Pirani

1. Support to Panels

WGCM (now reports to JSC)

- Produced a special issue of Exchanges on CMIP5, with information on the main components of CMIP5, promoting opportunities for analysis for the wider community.
- Provided organizational support for the CMIP5 analysis workshop held in March 2012 in Hawaii, US.
- Transferred website to WCRP server.
- Provided support for CMIP5 workshop, development of meeting website.

WGSIP (now reports to JSC)

- Provides information on the CHFP necessary for participation by means of the CHFP website (both for data producers and data users), and work to engage the wider CLIVAR community by presenting the experimental framework and results.
- Transferred website to WCRP server.

WGOMD

- Oversees CLIVAR Repository for Evaluation of Ocean Simulations (REOS) and the Coordinated Ocean-ice Reference Experiment (CORE) websites.

ETCCDI

- Produced ETCCDI outreach material: a leaflet that was distributed at the 2011 WMO Congress and a poster presented at the WCRP OSC (*Climate Science for Climate Services - Expert Team on Climate Change Detection and Indices (ETCCDI), A. Klein Tank , X. Zhang and A. Pirani, Session: From Global Observations to Integrated Climate Information*)
- Is developing an online Moodle course for ETCCDI on calculating indices and evaluating climate extremes

VACS

- Launching the WCRP Africa Newsletter – a means for African climate researchers to share their work with colleagues within Africa and with the WCRP community at large. The newsletter will also distribute information on training opportunities, meetings, etc relevant for climate research in Africa
- Developing the WCRP Africa Network of climate scientists – a database accessed through the VACS website that people can submit their details to or can search for scientists by topic or region of study. The database will strengthen the research network between groups in Africa, and will be used by WCRP to circulate information. The database will also facilitate the creation of links and contacts for new collaborative opportunities.
- Re-developing the VACS website

Decadal Variability, Prediction and Predictability (WCRP cross-cut)

- Support the DCPP through its website

2. Meetings Supported

CMIP5 Analysis Workshop, Honolulu, Hawaii, US, 5-9 March 2012

10th Meeting of the CLIVAR Working Group on Ocean Model Development (WGOMD), Venice, Italy, 11-13 January 2012

14th Session of the Working Group on Seasonal to Interannual Prediction (WGSIP), Trieste, Italy, 12-14 September 2011

VACS Meeting, Cape Town, South Africa, 21-23 November 2011

15th Session of the Working Group on Coupled Modelling, Boulder, Colorado, US, 19-21 October 2011

3. Reports

(2011) *Report on the Data and Bias Correction for Decadal Climate Predictions*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 150)

(2011) *Report of the 13th Session of the Working Group on Seasonal to Interannual Prediction (WGSIP), Buenos Aires, Argentina, 29-31 July 2010*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 151)

(2011) *Report of the 9th Session of the Working Group for Ocean Model Development (WGOMD), Boulder, USA, 23-25 September 2010*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 152)

(2011) *Report of the 14th Session of the CLIVAR/WCRP Working Group on Coupled Modelling (WGCM), Exeter, UK, 4-6 October 2010*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 154)

(2011) *Report of the 4th Meeting of CCl/CLIVAR/JCOMM Expert Team on Climate Change Detection and Indices (ETCCDI), Victoria, Canada, 23-25 February 2011*. Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 163)

(2011) *Report of the 14th Meeting of the CLIVAR Working Group on Seasonal to Interannual Prediction, Trieste, Italy, 12-14 September 2011.* Southampton, UK, International CLIVAR Project Office (ICPO Publication Series, 170)

4. Communication/Outreach

Editor of Exchanges 56 – CMIP5 Special Issue

Africa Newsletter, Network of African scientists

ETCCDI outreach material

REOS, CORE websites

Mr Matt Reynolds

1. Website development – The main goal of the new CLIVAR website was to make it modern and fresh and to use the latest content management systems to allow the site to be easily kept up to date from anywhere in the world. I choose the Drupal CMS as it gave us a platform to grow the website adding in more advanced features as the site grew.
2. Development of contacts management system – For the contacts management system we're using a program called CiviCRM. This is a standalone web based system but has close ties with Drupal which allows us to tie it into the backend of our website. The ultimate goal is that we then leverage the data contained within for website functions and to allow authorised users to access the data.
3. Developed a template for the monthly e-bulletin – The e-bulletin uses the Mailchimp.com email system to send targeted news to interested parties subscribed to our mailing list. I adapted on of the mailchimp basic templates to fit in with the CLIVAR brand.
4. Helped with OSC media strategy – Through the use of social media we set up and linked accounts to help approve awareness of the OSC and allow participants to connect with each other before, during and after the event.

Mrs Christina Thompson

1. Set up UCAR contracts
2. Development of ICPO Staff Handbook
3. WOCE atlases
4. Administrative support to the Staff Scientists and ICPO Director
5. Manage ICPO email account
6. Maintenance of the CLIVAR database and the data cleansing preparation for the new contents managements system.
7. Create administration working instruction.
8. Preparation and formatting reports in line with WCRP guidance (panel and working group reports) for publication on E-prints
9. Maintain calendar events on the website

Appendix D: Endorsed Project Reports

CINDY-DYNAMO

1) Project Title

Cooperative Indian Ocean experiment on intraseasonal variability in the Year 2011 (CINDY2011) and Dynamics of the Madden-Julian Oscillation (DYNAMO)

2) Website

http://www.jamstec.go.jp/iorgc/cindy/

http://www.eol.ucar.edu/projects/dynamo/

3) Date Endorsed

16 September 2009

4) Principle Investigators

Kunio Yoneyama (Japan Agency for Marine-Earth Science and Technology)

Chidong Zhang (University of Miami)

5) Countries Involved

Japan, USA, India, Indonesia, France, UK, Australia, Maldives, Kenya, Seychelles, Sri Lanka, Papua New Guinea, Singapore, Taiwan, Korea

6) Supporting agencies and financial implications for CLIVAR/WCRP, if any

N/A

* Major supporting agencies for a campaign are NSF, NOAA, ONR, NASA, and JAMSTEC.

7) Organizational structure

A CINDY2011 project office has been established at the Research Institute for Global Change (RIGC) of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC). The Project office coordinates the field campaign, manages quality controlled data, maintains web page, organizes planning and scientific workshops, and others. Science Committee has also been organized to provide scientific guideline and it also plays a role of point of contact for each country and/or participating their own project. The Project office contacts each country through this committee member.

The DYNAMO project has formed its Scientific Steering Committee, several working groups (for ship, land-based observations, aircraft, models, etc.) to facilitate discussions on observation strategies, numerical modeling activities, and data management, and a Project Office (established at NCAR/EOL) to help with the field logistics. Coordination between CINDY and DYNAMO Project offices has been established.

8) Project start date

April 2008

9) Project end date

Not specified (at least continue till the end of 2014).

Field campaign has been conducted from October 2011 through March 2012 (Intensive observing period is from 1 October 2011 through 15 January 2012, while extended observing period will be ended on 31 March 2012).

10) Objectives and relevance to CLIVAR/WCRP

The aim of the experiment is to collect in-situ atmospheric and oceanic observations to study the intraseasonal variability in the equatorial Indian Ocean, with focus on the initiation process of convection in the MJO. The experiment is designed to promote our knowledge of the MJO as well as its numerical simulation and prediction, which leads to improvement of the prediction of weather and climate not only in the tropics but also at higher latitudes.

Our activity cannot be accomplished without the relationship with scientific activities discussed at several CLIVAR panels. For example, IndOOS (Indian Ocean Observing System), which is guided by the CLIVAR/GOOS Indian Ocean Panel, is a necessary component to provide with background surface meteorology as well as the upper ocean conditions over the tropical Indian Ocean. During the campaign, supports for IndOOS (ex. recovery of drifting RAMA buoy) were conducted. In addition, since the MJO is a key phenomenon for the onset of the Australian monsoon, this campaign directly relates to the monsoon studies discussed at the Asian-Australian Monsoon Panel. Furthermore, the MJO is a major theme for various international projects such as YOTC (Year Of Tropical Convection) of WCRP and WWRP/THORPEX. Data taken from this campaign will be used for those studies.

11) Planned activities

Field campaign has been conducted from October 2011 to March 2012. Intensive observation array was formed in the central tropical Indian Ocean with islands (Gan and Male at Maldives, Diego Garcia, Sri Lanka) and ship sites at 8S, EQ along 80.5E. During a campaign, numerical forecast have also been carried out by many operating agencies and research institutes/universities.

12) Accomplishments including interactions with CLIVAR working groups and panels

At least, any of CINDY/DYNAMO PIs attend annual meetings of AAMP and IOP and report the progress of our activity.

In addition, following the recommendation made by CLIVAR-SSG and AAMP, we input the information about our activity and exchange the idea with the YOTC / MJO Task Force.

Furthermore, during the campaign, we made mooring works for RAMA buoy array.

13) Modeling and observational data generated and accessibility

Through the field campaign, various observation data have been obtained as well as numerical products.

CINDY2011/DYNAMO adopts “timely release and free/open sharing data policy” for all data obtained during field campaign. Data centers have been established in JAMSTEC and NCAR/EOL, and they are responsible for collecting and

distributing data sets. In particular, currently, several working groups are discussing about quality control of data sets. It is planned that all quality controlled data will be released to the public by April 2013.

14) Documents generated and significance

Science Plans for CINDY2011 and DYNAMO

Operation Plans for CINDY2011 and DYNAMO

* All documents mentioned above are available from CINDY and DYNAMO web sites.

An article describing CINDY/DYNAMO will be submitted for publication in the CLIVAR Exchanges.

15) Summary remarks

Intensive observing period has just been ended on 15 January 2012. During 3.5 months period, three MJO events have been successfully captured by CINDY/DYNAMO observation array. Currently, while quality control procedures have been conducted, analyses and hind cast calculation have also been initiated to study those events.

MedCLIVAR

1) Project Title

MedCLIVAR

2) Website

http://www.medclivar.eu/

3) Date Endorsed

January 2005

4) Principle Investigators

Scientific Steering Group

Chair: Piero Lionello, University of Salento - Lecce, ITALY

5) Countries providing financial support to MedCLIVAR

Austria, Cyprus, France, Germany, Greece, Israel, Italy, Portugal, Spain, Switzerland, Turkey, and United Kingdom

6) Supporting agencies and financial implications for CLIVAR/WCRP, if any

European Science Foundation (ESF) with support for MedCLIVAR activities provided by funding agencies from the countries listed in 5 and on the MedCLIVAR website.

7) Organizational structure

A Scientific Steering Group manages the MedCLIVAR program. The SSG is in charge of providing scientific guidance for the implementation of MedCLIVAR and establishing scientific liaison with relevant organizations and existing programmes, as appropriate. The SSG meets about twice per year and reports to CLIVAR International on the MedCLIVAR activities and progresses.

8) ESF start date

May 2006

9) ESF end date

30 September 2011

10) Objectives and relevance to CLIVAR/WCRP

The Specific Objectives of MedCLIVAR taken from the MedCLIVAR website are:

To reconstruct past climate variability by using a multiproxy approach of available instrumental observations (whose dense network includes some among the longest existing time series worldwide), documentary evidence and natural archives; and to explore the physical mechanisms and address the importance of different forcing factors of past variability at different time and space scales using coupled-paleoclimate model runs.

To investigate the connections between Mediterranean and global climate variability, considering the influence of both the mid-latitude climate patterns (e.g. the North Atlantic Oscillation, the Eastern Atlantic pattern and other

teleconnection patterns) and the tropical climate patterns (e.g. El Niño Southern Oscillation, the Asian and African Monsoons). This also includes the study of the role of these patterns on the occurrence of extreme events in the Mediterranean area.

To understand the mechanisms responsible for the Mediterranean Sea circulation, for sea level trends and variability, for long-term as well as abrupt changes of water mass characteristics, for variability of dense water formation processes and of vertical stratification.

To assess the possible feedbacks of the Mediterranean dynamics on the global climate system. These include the effect of Mediterranean sea surface temperature (SST) on the export of moisture to regions around it, on Sahel precipitation, on large scale atmospheric circulation, as well as that of the salty Mediterranean outflow across Gibraltar Strait on the Atlantic Meridional Overturning Circulation.

To identify the environmental and climatic effects caused by the strong anthropogenic influence at regional scale to which the Mediterranean region has been exposed since ancient time due to heavy demographic pressure. This topic includes the compilation of a list of critical parameters for monitoring the evolution of the present climate; identification of possible gaps of currently deployed monitoring networks and suggestions for their improvement and extension.

To understand and predict the response of the Mediterranean climate to the increase of radiatively active gases and aerosols. This includes the analysis of the effects on the intensity of extreme and hazardous events (e.g. heat waves, cold spells, extreme weather, dry periods, flooding), of consequences on regional resources (e.g. water, agriculture, energy requirement, etc.) and of impacts of climate change in general.

To make available scientific information and data on regional climate variability, trends and changes to public opinion, authorities and stakeholders in the Mediterranean countries.

Relevance to CLIVAR (taken from a 2007 document)

Within CLIVAR, the MedCLIVAR project aims to provide

- Focus on a region which is climate-sensitive, stressed by extremes of heat, highly variable precipitation, and limited water resources. Because of this situation combined with the growing population of these vulnerable areas, the large economical, cultural and political differences, climate change has a potentially large socio-economic impact on the Mediterranean countries.
- Climate change detection, attribution and prediction studies on the regional scale.
- New insight on the variability of global climate patterns as reflected in the variability of the Mediterranean climate and useful information for research areas on the MOC, NAO, ENSO, and Indian Monsoon
- Understanding of the role of Mediterranean Sea on global climate patterns

- Implement CLIVAR in Mediterranean countries, entraining new scientists, especially from North Africa, East Europe and the Middle East.

11) Planned activities

See summary remarks

12) Accomplishments including interactions with CLIVAR working groups and panels

See summary remarks

13) Modeling and observational data generated and accessibility

See MedCLIVAR website

14) Publications, documents and reports

Mediterranean Climate Variability, Book published by ELSEVIER

MedCLIVAR article in PAGES News, vol.13, n.3

CLIVAR Exchanges special issue on MedCLIVAR, vol.11, n.2

"The MedCLIVAR workshop and 1st summer school" contribution to Exchanges, n.48, pg 10

García-Herrera, R., J. Luterbacher, P. Lionello, F. González-Rouco, P. Ribera, X. Rodó, C. Kull, C. Zerefos, (2007): Reconstruction of Past Mediterranean Climate, Eos Trans. AGU, 88(9), 111.

Lionello, P., Llasat, M.C. (2010): Promoting a precipitation database for the Mediterranean region, Eos 91, 76

Toreti, A., Kuglitsch, F.G., Xoplaki, E., Luterbacher, J., Wanner, J. (2010): A Novel Method for the Homogenization of Daily Temperature Series and Its Relevance for Climate Change Analysis , Amer. Met. Soc., Vol. 23

Trigo, R. M., Serrano, S.M.V. (2010): Understanding the North Atlantic Oscillation and Its Effects in the Mediterranean, Eos, Organic carbon distribution and isotopic composition in three records from the eastern Mediterranean Sea during the Holocene, in press on Organic Geochemistry (Georgios Katsouras, Alexandra Gogou, Ioanna Bouloubassi, Kay-Christian Emeis, Maria Triantaphyllou, Grigorios Roussakis, Vasilios Lykousis)

Mediterranean climate from past to the future. The second MedCLIVAR book is being completed.

A special issue of the Elsevier journal **GLOBAL AND PLANETARY CHANGE** dedicated to "Oxygen isotopes as tracers of Mediterranean variability: linking past, present and future" (Eds. M.D. Jones, C.N. Roberts and G. Zanchetta)

C. Neil Roberts, Giovanni Zanchetta, Matthew D. Jones. *Oxygen isotopes as tracers of Mediterranean climate variability: An introduction*

E. Dotsika, S. Lykoudis, D. Poutoukis. *Spatial distribution of the isotopic composition of precipitation and spring water in Greece*

S. P. Lykoudis, A. A. Argiriou, E. Dotsika. *Spatially interpolated time series of $d^{18}O$ in Eastern Mediterranean precipitation*

A.T. Brasier, J.E. Andrews, A.D. Marca-Bell, P.F. Dennis. *Depositional continuity of seasonally laminated tufas: Implications for $d^{18}O$ based palaeotemperatures*

C. Mangili, B. Plessen, C. Wolff, A. Brauer. *Climatic implications of annual to decadal resolution stable isotope data from calcite varves of the Piànico interglacial lake record, Southern Alps*

M. J. Leng, M. D. Jones, M. R. Frogley, W. J. Eastwood, C. P. Kendrick, C. N. Roberts. *Detrital carbonate influences on bulk oxygen and carbon isotope composition of lacustrine sediments from the Mediterranean*

D. Ariztegui, F.S. Anselmetti, J. -M. Robbiani, S.M. Bernasconi, E. Brati, A. Gilli, M.F. Lehmann. *Natural and human-induced environmental change in southern Albania for the last 300 years — Constraints from the Lake Butrint sedimentary record*

M. D. Jones, J. Imbers. *Modeling Mediterranean lake isotope variability*

A. Baker, C. Bradley. *Modern stalagmite $d^{18}O$: Instrumental calibration and forward modelling*

C. N. Jex, A. Baker, I. J. Fairchild, W. J. Eastwood, M. J. Leng, H. J. Sloane, L. Thomas, E. Bekaroglu. *Calibration of speleothem $d^{18}O$ with instrumental climate records from Turkey*

A. Moreno, H. Stoll, M. Jiménez-Sánchez, I. Cacho, B. Valero-Garcés, E. Ito, R. L. Edwards. *A speleothem record of glacial (25–11.6 kyr BP) rapid climatic changes from northern Iberian Peninsula*

T. Felis, N. Rimbu. *Mediterranean climate variability documented in oxygen isotope records from northern Red Sea corals — A review*

C. Spötl, K. Nicolussi, G. Patzelt, R. Boch. *Humid climate during deposition of sapropel 1 in the Mediterranean Sea: assessing the influence on the Alps*

A. C. Colonese, G. Zanchetta, A. E. Fallick, F. Martini, G. Manganelli, R. N. Drysdale. *Stable isotope composition of Helix ligata (Müller, 1774) from Late Pleistocene–Holocene archaeological record from Grotta della Serratura (Southern Italy): Palaeoclimatic implications*

K. Pustovoytov, S. Riehl, H. H. Hilger, E. Schumacher. *Oxygen isotopic composition of fruit carbonate in Lithospermeae and its potential for paleoclimate research in the Mediterranean*

A special issue of the Elsevier journal **GLOBAL AND PLANETARY CHANGE** dedicated to Mediterranean Climate Variability (Eds. P.Lionello, S.Planton, X.Rodo')

P. Lionello, S. Planton, X. Rodo. *Preface: trends and climate change in the Mediterranean region*

S. Somot, F. Sevault, M. Deque and M. Crepon. *Climate Change Scenario (21st century) for the Mediterranean using an Atmosphere-Ocean Regional Climate Model*

K. Tolika, C. Anagnostopoulou, P. Maheras and M. Vafiadis. *Simulation of Future Changes in Extreme Rainfall and Temperature conditions over the Greek area: a comparison of two statistical downscaling approaches*

D. Gomis, S. Ruiz, J. Terrades, M. Garcia-Sotillo and E. Alvarez-Fanjul. *Low frequency Mediterranean Sea level variability. Part I: the contribution of atmospheric pressure and wind*

S. Ruiz and D. Gomis. *Characterization of surface heat fluxes in the Mediterranean Sea from 44-year high-resolution atmospheric data set*

A. Ullmann, P.A. Pirazzoli and V. Moron. *Sea surges around the Gulf of Lions and atmospheric conditions*

M.N. Tsimplis, M. Marcos and S. Somot. *21st century Mediterranean Sea level rise. Regional model predictions*

C. Capilla. *Time series analysis and identification of trends in a Mediterranean urban area*

J.A.Lopez-Bustins and J. Martin-Vide. *A recent negative phase in the western Mediterranean oscillation (WeMO): the effect on gulf of Valencia and Bay of Biscay rainfall (Iberian peninsula)*

M.Barriendos and F.S. Rodrigo. *Reconstruction of seasonal rainfall variability in the Iberian Peninsula (16th-20th centuries) from documentary data*

P. Alpert, S.O. Krichak, I. Osetinsky, M. Dayan, D. Haim and H. Shafir. *Climatic trends to extremes and regional modeling over the E. Mediterranean*

F. Dominguez-Castro, J.I. Santisteban, M. Barriendos and R. Mediavilla. *Seasonal reconstruction of the evolution of drought episodes for central Spain from rogation ceremonies recorded at Toledo Cathedral from 1506 to 1900: a methodological approach.*

P. Lionello, S. Cogo, M.B. Galati and A. Sanna. *Mediterranean wave climate in scenario simulations*

F. Giorgi and P. Lionello. *Climate change projection in the Mediterranean Region*

M. Vargas-Yanez, M.J. Garcia, J. Salat, M.C. Garcia-Martinez, J. Pascual and F. Moya. *Warming trends and natural oscillations in the western Mediterranean shelf.*

N. Ciccarelli, J. Von Hardenberg, A. Provenzale, C. Ronchi, A. Vargiu and R. Pelosini. *Climate Variability in North-Western Italy during the Second Half of the XX Century*

E. Hertig and J. Jacobeit. *Downscaling Future Climate Change: Temperature Scenarios for the Mediterranean area*

M.N. Tsimplis and G.P. Shaw. *The forcing of sea level variability around Europe*

Special issue of Natural Hazards and Earth System Sciences: *Understanding dynamics and current developments of climate extremes in the Mediterranean region*
Editor(s): R. García-Herrera, P. Lionello, and U. Ulbrich

15) Summary remarks

These summary remarks are based on information obtained at the MedCLIVAR Final conference (MFC), 6-9 June, Lecce, Italy and the 11th MedCLIVAR Steering Committee Meeting and the impressions developed from this information. The European Science Foundation (ESF) funded MedCLIVAR for a 5-year period, which ended in May 2011. Thus, this meeting represented the last MedCLIVAR session funded by this ESF grant.

MedCLIVAR is also an endorsed International CLIVAR. The endorsement was given in January 2005. Although, ESF funding for MedCLIVAR ended in May 2011, many activities of the program are planned to continue while new funding sources for a second-generation project are being sought. Thus, the potential for interactions between Med and International CLIVAR remain possible and will be addressed after a brief review of the project to date is given.

The wide scope of MedCLIVAR and the many activities that intersect with those of International CLIVAR is obvious from just a listing of the major MCF agenda items. The agenda items include: Mediterranean climate: relevant and important scientific issues; Mediterranean climate: relevant and important scientific issues; The circulation of the Mediterranean Sea: trends and circulation; Paleoclimatic evidence from the Mediterranean; Synoptic patterns: climatology and trends; Modeling of the Mediterranean climate system; Mediterranean sea level; Aerosols chemistry and climate; The climate of the Mediterranean region in future climate projections; The Mediterranean Climate research: Integrated and National projects; and Extremes and impact of climate variability and change.

Not only do the main agenda items illustrate overlaps, but also individual talks provide additional evidence for common interests. For example, embedded in many of the sessions were talks on the large-scale circulation it's effect on Med climate and Med climate effect on the larger scale, on downscaling of models, on drought, on climate services, etc. The list of publications above, including one book published and another about to be published, speaks to the scientific productivity of this group on issues of both regional and global importance.

As mentioned previously ESF funding for MedCLIVAR has ended. However, many of the MedCLIVAR activities will continue. For example, MedCLIVAR scientists will continue to try and involve North African and Eastern European countries in their research, promote capacity building, and create task teams on understanding climate processes and variability, generating climatologies from satellite data and interact with climate service providers. A small group of MedCLIVAR scientists are preparing a white paper on MedCLIVAR accomplishments over the past 5 years, to establish priorities for the next 5 years and to develop a 5-year management strategy for the program. The white paper is to be finalized at a meeting scheduled for 19-20 September 2011 in Tel Aviv.

In summary, MedCLIVAR is a successful research program that from my limited knowledge seems to have successfully met the objectives originally established for the program. As listed in the last paragraph many of these successes are in areas of increased importance to international CLIVAR. Unfortunately, over the past several years' interactions between the two groups have been significantly reduced and valuable links in areas such as extremes, downscaling and climate services have not been realized. Thus, I recommend that International CLIVAR

through it's modeling, data analysis and basin panels renew links with those portions of the remaining MedCLIVAR that have similar goals. I also recommend that if MedCLIVAR should be successful in obtaining funds for MedCLIVAR-II, International CLIVAR recognize it as a Basin Panel. Such linkages can only help both programs to meet their past and new objectives in the changing climate framework.

NPOCE

ANNUAL REPORT FOR NPOCE PROGRAM

1) Project Title

Northwestern Pacific Ocean Circulation and Climate Experiment (NPOCE)

2) Website

http://npoce.qdio.ac.cn/

3) Date Endorsed

April 23, 2010

4) Principle Investigators

The constitution of the NPOCE Scientific Steering Committee (SSC) is as follows:

Chair: Dunxin Hu, Institute of Oceanology, Chinese Academy of Sciences (IOCAS), China

Members:

Rameyo Adi, BRKP, Ministry of Marine Affaires and Fisheries, Indonesia

Kentaro Ando, Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan

Dake Chen, Second Institute of Oceanography (SIO), State Oceanic Administration, China

Arnold Gordon, Columbia University, US

Dongchull Jeon, Korea Ocean Research and Development Institute (KORDI), Korea

William Kessler, National Oceanic and Atmospheric Administration (NOAA), US

Jae-Hak Lee, Korea Ocean Research and Development Institute, Korea

Yukio Masumoto, Japan Agency for Marine-Earth Science and Technology, Japan

Bo Qiu, University of Hawaii, US

Stephen Riser, University of Washington, US

Andreas Schiller, Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia

Cesar Villanoy, University of the Philippines, Philippines

Fan Wang, Institute of Oceanology, Chinese Academy of Sciences, China

Lixin Wu, Ocean University of China (OUC), China

5) Countries Involved

Australia, China, France, Germany, Indonesia, Japan, Korea, Philippines, and USA

6) Supporting agencies and financial implications for CLIVAR/WCRP, if any

Each participating project of NPOCE is supported by its own funding agencies.

7) Organizational structure

8) Project start date

May 30, 2010

9) Project end date

10) Objectives and relevance to CLIVAR/WCRP

Major objectives of NPOCE include:

1. Observe and elucidate the structure, variability and dynamics of the ocean circulation in the Northwestern Pacific region with special attentions to low-latitude western boundary currents, and clarify its interaction with marginal seas, the ITF and the subtropical ocean circulation;

2. Assess roles of the far western Pacific heat and freshwater transport and air-sea fluxes in the maintenance and variability of the warm pool, and in regional and global climate variability by a combination of observational and modeling studies;

3. Evaluate the societal impacts and provide scientific basis for developing a sustained program to monitor the currents and their heat and mass transports for future climate prediction.

NPOCE contributes to CLIVAR objectives, particularly to the notion of ocean process, ocean enhanced, and ocean sustained observations. Together with synergetic on-going projects (e.g., Southwest Pacific Ocean Circulation and Climate Experiment (SPICE)), it will inform many upcoming projects about what and where the focus should be in order to address important issues, including the role of western boundary currents (WBCs) in the ENSO discharge/recharge process, in warm pool evolution and the ITF dynamics, and in tropical-extratropical interactions.

11) Planned activities

NPOCE plans to hold a couple of meetings and seminars in 2012. The Open Science Symposium (OSS) on Western Pacific Ocean Circulation and Climate is to be jointly organized by NPOCE and SPICE on October 15-17, 2012 in Qingdao, China (website: http://oss2012.csp.escience.cn). It will be held under the auspices of WCRP/CLIVAR with financial support from some Chinese agencies and IOC/WESTPAC, CSIRO, etc. The NPOCE SSC meeting-2012 will be held sometime prior to the OSS. The Joint Seminar of the NSFC-NRF Scientific Cooperation Program is planned to be held in July, 2012, under the auspices of Chinese and Korean funding agencies. NPOCE will also actively participate in other related meetings. For example, NPOCE and SPICE will co-organize a session named as Western Pacific Ocean Circulation and Air-Sea Interactions in the upcoming Ocean Sciences Meeting (OSM) on 20-24 February 2012 in Salt Lake City, Utah. An ITF GATEWAY workshop will be held in the CLIVAR Task Team meeting in Indonesia in March 2012.

Hydrological surveys in the northwestern Pacific Ocean (NPO) will go on. Chinese scientists from IOCAS plan to retrieve 3 moorings measuring WBCs at 8ºN and 18ºN in summer of 2012. JAMSTEC will recover 2 subsurface moorings off Mindano in December, 2012. KORDI will carry out 2 cruises in spring and summer of 2012 to replace surface buoys and subsurface moorings, and 3 cruises in collaboration with the MIXET project for the equatorial thermocline mixing study.

12) Accomplishments including interactions with CLIVAR working groups and panels

During the year 2011, participating projects of NPOCE made notable progress towards realization of the NPOCE scientific goals.

NPOCE devotes to promoting observations in the NPO. IOCAS fulfilled 2 surveys in January and July 2011, deployed and replaced 3 subsurface moorings to measure WBCs at 8ºN and 18ºN. One of these moorings was successfully deployed and retrieved at the water depth of 6100m, obtained the first direct current observation data featuring such long period in this region, and measured remarkable strong underflow at 1000m depth off the Mindano coast, indicating complicate 3-d circulation structure of NPO WBCs. SIO carried out a cruise in September 2011 to deploy Argo profiling floats and to conduct other related field observations. A total of 26 Argo floats were deployed, and 17 CTD stations were taken along the way. Ten of the two-way communication floats are strategically placed for the purpose of observing ocean response to tropical cyclones. They also recovered a current mooring system deployed in 2010 west of the Luzon Strait, which provides a year-long time series for studying low-frequency flow variability as well as high-frequency fluctuations such as internal waves. Finally, they took a section of microstructure measurements across the Luzon Strait to obtain direct observations of vertical turbulent mixing, in order to evaluate the difference in mixing strength between the South China Sea and the open ocean to the east. JAMSTEC conducted one cruise to deploy two subsurface moorings off Mindanao, which consist mooring array with IOCAS NPOCE group to measure the variability and dynamics of Mindanao current and Mindanao Under current system, and performed CTD and ship-board ADCP measurements along 7ºN from the coast of Philippine to 130ºE. KORDI carried out hydrographic surveys in May-June 2011 through POSEIDON and GAIA projects. In the POSEIDON project, three sub-surface current meter moorings located along a JASON 2 satellite track in the mid Philippine Sea have been maintained to monitor the North Equatorial Current. In the GAIA project, in order to gather the data set to develop a new parameterization scheme for the equatorial thermocline mixing, a series of measurements of water properties, currents and turbulence were carried out in a meridional section along a TRITON line at 157ºE and a zonal section at 0.5ºN in June 2011. Four-day time series measurement was also conducted at a selected site. The data reveal again a small scale velocity structure which raises the need of a new mixing parameterization in the thermocline. University of Washington deployed some profiling floats equipped with SeaBird surface temperature/salinity sensor (STS) and Passive Acoustic Listener (PAL) unit in the Western Pacific Ocean for the measurements of wind speed, rainfall, and near-surface temperature and salinity. With these efforts, observation system in

the NPO is enriched, and valuable data featuring long period and a diversity of variables are expected.

For the effort to develop the ITF monitoring program, the ITF GATEWAY program has been discussed through a series of meeting between KORDI and LDEO researchers. Its objective is to monitor the contribution to the ITF of Mindanao/Halmahera and Luzon Straits. It will be considered to conduct the moorings of PIES, CPIES and current meters more than 2 years with 1 year rotation of all moorings.

NPOCE also supports ocean and climate model developments and simulations. OUC and collaborators are developing a hierarchy of models with focus on the NPOCE domain, which include: (1) High resolution global ocean circulation model (LICOM), a quasi-global ocean circulation model (78ºS-66ºN) with a horizontal resolution of 1/10 degree and 55 vertical levels with a minimum layer thickness of 10m, built mainly by the Institute of Atmospheric Physics, Chinese Academy of Sciences. A preliminary analysis on the model results shows the circulation in the western Pacific is, at least, comparable with other high resolution models at the same resolution, and the path of the Kuroshio Current south of Japan is significantly improved. (2) High resolution of regional coupled ocean-atmosphere model, jointly developed by OUC and Texas A&M University. The regional ocean circulation model ROMS is coupled to the regional weather and climate model WRF, with the domain enclosing the Western Pacific and the tropical Indian Ocean. The horizontal resolution is 9km for ROMs and 27km for WRF. A test run has been carried out to simulate the typhoon “Saomai” in 2006. Both the track and the intensity of this typhoon are reasonably captured by this coupled model. The model will be used to study multi-scale air-sea interaction over the Western Pacific and the tropical Indian Ocean. (3) High resolution regional model nested in large-scale model, a quasi-global ocean circulation simulation system based on HYCOM model with refined grids over the NPOCE domain. A high resolution time series of temperature, salinity and currents over the tropical Pacific (1/12 degree) spanning from 1948 to 2011 has been attained with this model. The mean currents simulated by this model have been validated with a mooring data at 18ºN. The agreement is reasonable. The model product will be used to examine the log-term variability of the ocean circulation in the western tropical Pacific.

Based on the observation and modeling results, sea level, circulation and climate variability in the NPO is intensively studied. It is noticed that in the broad regions of the tropical western Pacific Ocean, linear trend of sea level rise based on satellite altimeter measurements exceeds 10 mm/yr, i.e., more than three times the rate of the global mean sea level rise. Analysis based on a 1.5-layer reduced-gravity model result shows that both the observed sea level rise, accompanied by southward migration and strengthening of the North Pacific Current (NEC) and North Pacific Countercurrent (NECC), are largely attributable to the upper ocean water mass redistribution caused by the surface wind stresses of the recently strengthened atmospheric Walker circulation.

In the year of 2011, two major projects closely related with NPOCE are newly funded by Chinese funding agencies. One is a National Basic Research Program (973 program) named as Structure, Variability and Climatic Impacts of Ocean

Circulation and Warm Pool in the Tropical Pacific Ocean, led by Dr. Fan Wang, with a budget of about 6 million dollars. The other is a State Program on Global Change, named as Oceanic Response to Global Change and its Effect on East Asian Monsoon, whose chief scientist is Dr. Dongliang Yuan from IOCAS. Both projects will be operated from 2012 through 2016. Funding of new projects ensures sustainable implementation of NPOCE program.

13) Modeling and observational data generated and accessibility

Availability of NPOCE data will follow the CLIVAR Data Policy (http://www.clivar.org/data/data_policy.php). The data sharing page on NPOCE website is in the process of construction, which will document and publicize all available data, or redirect towards appropriate servers. It is preliminarily agreed that NPOCE data will be open to public after two years of project.

14) Documents generated and significance

NPOCE Science/Implementation Plan is published in December 2011 by the Ocean Press, Beijing. The S/I plan is a guiding document of NPOCE research and activities. Its publication will facilitate general understanding towards NPOCE program and internal exchange among NPOCE groups.

15) Summary remarks

Since its inauguration in May 2010, NPOCE undertook a series of activities to promote field observation and model development. Observations in the NPO now reach a prosperous period, with regular surveys on hydrological and microstructure measurements, and continuous observations via current meters, Argo floats, surface temperature/salinity floats, etc. A hierarchy of ocean circulation and climate models is developed with focus on the NPOCE domain, which enables numerical study on multi-scale processes including Typhoon, WBCs, ENSO and long-term climate variability. Substantial research progresses in NPO circulation and climate studies are expected.

As all the NPOCE participating projects from different countries proceed steadily, two new projects get funded for the period 2012-2016, which further ensures sustainable implementation of NPOCE. In the following years, NPOCE will continue its efforts in NPO modeling and observation, and will further enhance interaction with other programs and research fields, such as SPICE and ITF studies.

TACE

1) Project Title

TACE: Tropical Atlantic Climate Experiment

2) Website

TACE, Observations Working Group: http://tace.geomar.de/

3) Date Endorsed

April, 2006

4) Principle Investigators

Peter Brandt (GEOMAR, Kiel, Germany), William E. Johns (RSMAS, Miami, U.S.), Ping Chang (Texas A&M University, College Station, U.S.), Wilco Hazeleger (KNMI, De Bilt, Netherlands), Bernard Bourlès (IRD, Cotonou, Benin), Marcus Dengler (GEOMAR, Kiel, Germany), Gustavo Goni (NOAA/AOML, Miami, U.S.), Rick Lumpkin (NOAA/AOML, Miami, U.S.), Chris Reason (University of Cape Town, South Africa), Mathieu Rouault (University of Cape Town, South Africa)

5) Countries Involved

France, Germany, U.S., South Africa, Netherlands, Brazil

6) Supporting agencies and financial implications for CLIVAR/WCRP, if any

National funding: France, Germany (BMBF, DFG), U.S. (NSF, NOAA), EU (EU-AMMA), South Africa, Brazil, Netherlands

7) Organizational structure

Multi-national cooperative project, two working groups (observations and modeling)

8) Project start date

February 2005

9) Project end date

September 2012

10) Objectives and relevance to CLIVAR/WCRP

TACE goal is to advance the predictability of climate variability in the tropical Atlantic and surrounding region and to provide a basis for assessment and improvement of coupled models.

11) Planned activities

TACE final conference: Tropical Atlantic Variability Meeting / PIRATA-17 Meeting, 10th – 14th September 2012, Kiel, Germany

http://tace.geomar.de/tav/index_tav.html

12) Accomplishments including interactions with CLIVAR working groups and panels

Strong link between CLIVAR AIP and TACE, next AIP meeting jointly with TACE final conference;

Enhanced observations in the eastern tropical Atlantic, advances in simulating, understanding and predicting Tropical Atlantic Variability

13) Modeling and observational data generated and accessibility

Data Portal: http://tace.geomar.de/

14) Documents generated and significance

TACE reports are available on the CLIVAR webpage

http://www.clivar.org/organization/atlantic/tace

15) Summary remarks

IASCliP

1) Project Title

Intra-Americas Study of Climate Processes (IASCLIP)

2) Website

http://www.eol.ucar.edu/projects/iasclip/

3) Date Endorsed

28 July 2009

4) Principal Investigators

David B. Enfield, Atlantic Oceanographic and Meteorological Laboratory – NOAA

Art Douglas, Creighton University

5) Countries Involved

Colombia, Costa Rica, Dominican Republic, El Salvador, Honduras, Nicaragua, Puerto Rico, USA

6) Supporting agencies and financial implications for CLIVAR/WCRP, if any

N/A

- NSF, through its support of the Continuously Operating Caribbean GPS Observational Network (COCONET)
- NOAA, through a targeted announcement of opportunity of the Climate Program Office (CPO) for Modeling, Analysis, Predictions and Projections (MAPP).

7) Organizational structure

IASCLIP research is overseen and directed by a Science Steering Committee (SSC).

A number of Working Groups (WGs) have been formed to facilitate collaborations and information exchanges among scientists who are interested in the IASCLIP research, are willing to contribute, and to better track the progress of the program:

WG-A (Modeling & Diagnostics)

WG-B (Observations)

WG-C (Applications& Capacity-Building)

8) Project start date

April 2007

9) Project end date

Not specified (Approximately, the end of 2015).

10) Objectives and relevance to CLIVAR/WCRP

IASCLIP is most relevant to, complements and interacts with, the other monsoon

programs under the CLIVAR-VAMOS umbrella. By its relevance to the monsoon region east of the Rocky Mountains, IASCLIP embraces the largely unfulfilled (largest scale) Tier Three of NAME, and the neighboring the NAME core region to the west that includes the eastern North Pacific, western Mexico and SW United States. Anomalies of the Atlantic warm pool (AWP) — with its core of boreal summer SSTs in excess of 28°C in the IAS — are (through the Hadley circulation) associated with subsidence and boundary layer processes in the SE Pacific (VAMOS/VOCALS) and with ITCZ excursions in the Atlantic that affect rainfall in rainfall in the Amazon and NE Brazil. They are thus also indirectly associated associated with the moisture supply to southern Brazil and northern Argentina Argentina (VAMOS/MESA). Outside of VAMOS, IASCLIP — by its nature — shares shares strong commonality with the CLIVAR's interests in the Atlantic overturning circulation, model assessment, climate prediction, drought and and observations/process studies. Many of the scientists on IASCLIP working working groups, or otherwise interested in IASCLIP, are also members of the US the US CLIVAR panels and working groups concerned with these interests. There are also clear links with WCRP GEWEX.

11) Planned activities

With cooperation of various federal and foreign funding agencies, IASCLIP seeks to improve and expand the observational network across the region as a means to improve NCEP operational models. Early warning systems and long term climate monitoring will benefit from the new network.

The program seeks to improve our understanding of the seasonal cycle and movement of the ITCZ across the warm water pool and nearby continents.

Emphasis will be placed on understanding the transition of the monsoon systems between South and North America and associated teleconnections.

The program seeks to improve our understanding and prediction of major weather events and climate extremes within the region:

A. Intraseasonal to decadal fluctuations in TC frequency, intensity and point of TC landfall.

B. Flood events (ITCZ, TC, and frontal induced).

C. Regional droughts (mid summer drought).

12) Accomplishments including interactions with CLIVAR working groups and panels

- Trips to Colombia, Dominican Republic, and other Central America countries with the purpose to contact the various institutions that can potentially benefit from working with IASCLIP and which can help IASCLIP do a better job through the establishment of a useful cooperative framework.

- Regional assessments of the surface meteorology, upper air and oceanographic observing networks throughout the IAS region

- Development of tropical storm strike probabilities and climatologies of tropical storm tracks as modulated by the Atlantic Warm Pool

- Establishment of the IASCLiP Forecast Forum 2012 (March-April-May outlook)

- Intercomparisons of the performance of CMIP5 models in their ability to represent the coupled (ocean-land-atmosphere) behavior of the IAS climate

- Studies on the causes and impacts of the Caribbean and mid-summer droughts throughout the IAS region

13) Modeling and observational data generated and accessibility

IASCLIP Modeling Plan at http://www.eol.ucar.edu/projects/iasclip/documentation/IASCLIP.Modelplan_latest.pdf

IASCLiP Forecast Forum 2012 at http://www.eol.ucar.edu/projects/iasclip/documentation/IASCLIP_MAM_2012.pdf

14) Documents generated and significance

IASCLIP Monitoring Plan

IASCLIP Modeling Plan

Relevant Journal Publications

All documents mentioned above are available from IASCLIP web site.

An article describing IASCLIPhas been submitted for publication in the May 2012 edition of CLIVAR Exchanges

15) Summary remarks