## KE PROGRAMME FOUR-MONTHLY REPORT

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| Name of KE Programme | **Water Security Knowledge Exchange Programme** | |
| KEP Lead | **Prof Alan Jenkins** | |
| Reporting Period | **From: 1st Aug 2013** | **To: 30th November 2013** |
| Date of submission | **8th January 2014** | |
| Signed | **Alan Jenkins** | |

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### 1. Key Outcomes and Impact
*Please provide details of the outcomes and impact KEP outputs have generated during this period (i.e. the 'so what' factor)*

Work undertaken by WSKEP has had the following impact.

- The High Level Event 'Improving Resilience of Businesses to water-related risks' was held on 6th November 2013. The event received a good turn out from a range of different sectors which lead to some interesting discussions. Duncan Wingham was one of the speakers at the event and invited attendees to consider ways in which businesses could work with NERC. This has lead to some follow on discussions with various businesses and will be addressed further at the next PAG meeting on 28th January 2014.
- WSKEP has made progress with working with businesses. The latest information can be found in the report 'Progress and Planning for Engagement with Specific Businesses' which will be one of the papers at the next PAG meeting.
- AMEC undertook a study on 'Water Quantity: the synergies between Agriculture and Water Utilities' on behalf of WSKEP. Since the publication of the report WSKEP are finalising a follow up meeting that AMEC are organising in the Midlands region with Anglian water, the EA and others to take the findings forward.
- A meeting on 'Exploring the opportunities and barriers to much larger scale aquifer storage and recharge than has so far been practised in the UK' brought together 20-30 experts from academia, EA and the water utilities on 4th December 2013. WSKEP sponsored this event, with support from BGS UKWIR and UKWRIP. The meeting created and explored new ideas and further potential for 'Managed Aquifer Recharge' MAR in the UK. The intention is that plausible ideas will be further investigated by interested parties.
- As part of Work Package 4, the Wales Environment Research Hub organised a very successful workshop on 'Communicating Environmental Science' in June 2013 at which NERC was represented. The meeting was oversubscribed and people had to be turned away. As a result of this, there was a demand for a further workshop which Mark Everard organised called 'Communicating science for sustainable practice' which was held at the University of West of England, on 27th - 28th November 2013.
- The Industry Impact Award Scheme was launched in March 2013 and allows partnerships of research and industry people to apply for grants to stimulate new knowledge exchange activities. These grants are designed to pump prime activities which may lead on to applications and support from other, larger Research Council or Technology Strategy Board knowledge exchange schemes. One application has been funded to date and the WSKEP has extended the end date until March 2014, and re-advertised the scheme across NERC list servers.
- WaterR2B was launched at the High Level Event on 6th November 2013 and now showcases over 40 case studies across 8 different sectors. The programme is seeking feedback on how WaterR2B can be improved for users of the website.
- The Water Research Directory was launched in April 2012 with 300 entries and now has over 900 entries. Pages on the University Research networks and hydrological research facilities have recently been added. Both pages are self populating and have increased the functionality of the directory.
- The WSKEP website currently ranks 3rd on Google (out of 702 million returns) for the generic search term "water security". In April it was ranked 7th (out of 636 million returns). It has featured on the first page for the same search for a year. The entries ranked 1 and 2 are Wikipedia and UEA. In the last quarter, WSKEP has overtaken the US EPA, UNESCO, Oxford University and Water Aid. There are no NERC sites in the top 50. LWEC was in 40th place in April but has moved down. Unique visitor figures have taken a sharp upturn since the start of the year, and "1,000 in a single month" has been passed twice in the last quarter reaching the previously set target. In 2013 the average is a shade over 900 per month (c.f. ~650 per month during Q4 2012).

## 2. Key Activities
*Please list key activities, meetings, workshops etc. that the KEP has undertaken or participated in this period*

The information in this section lists the key activities and achievements by Work Package (WP), during the reporting period. (**Section 3 below, lists key outputs and Section 1 above lists key outcomes and impacts.**)

### WP1- Identify key needs and science challenges faced by the users

WP1 had been completed in Phase 1 of the Programme, however, the new Programme Framework (PF) introduced two new tasks. The first (Task 1.5) was to revise the plan for the Phase 2 Data Sub Area. The Group approved both parts of the revised plan; to undertake a mapping exercise of existing data initiatives and data sets and the development of a Data Portal to make it easier for businesses to find datasets relevant to their needs. Work is now about to be begin on the development of the Data Portal after speaking to colleagues at CEH who have a good knowledge of the data landscape. Discussions also took place with UKWRIP about how we can better join up the different web tools by developing an overarching front end to provide web accessible information on programmes, projects, peoples and facilities relevant to the water sector.

The second new task (Task 1.6) is to engage with businesses to determine their KE needs in relation to water security. During this period, members of the PMG have been in discussion with a number of businesses. An update on progress in this area can be found in a paper written at the request of the KE Advisory Board following the second year Programme review. It is called 'Short Report – Progress and Planning for Engagement with Specific Businesses' and will be one of the papers at the PAG meeting on 28th January 2014. This document is now updated as and when discussions develop with the different businesses.

### WP2 - Identify the science that matches the key needs and challenges of the users

The new PF added two new tasks to this WP. The original three parts to this WP can be grouped together as the creation of a Research Directory (http://www.ukwaterresearch.net/). It lists PI's and Co-PI's of freshwater projects in the NERC Grants on the Web (GOTW), and is further enhanced with details of a) researchers who have attended WSKEP events, b) from web searching University websites, or c) researchers who have self-registered their interest in being included in the Directory. During the reporting period a Directory of University Water Networks has been added which has the facility for people to submit their own networks. There are currently 7 listed. Also an interactive map of research facilities has been added which currently has 25 listings.

The second new task (Task 2.5) is to establish an Industry Impact Award Scheme where proposals are invited for small knowledge exchange grants. The Scheme has attracted a reasonable number of enquires and to date one proposal has been accepted and a grant awarded. The Scheme was set up to run from April – December 2013, and has now been extended to March 2014. The scheme has been re-advertised on the NERC list servers to help stimulate more applicants.

### WP3 - Organise Events and Activities to bring together the users and scientists

This Work Package is divided into three parts, 1) the management of KE events in support of Sub Areas, 2) activities with users to identify areas where WSKEP could support their programmes of work and 3) activities to increase impact from recent Research Programmes. From part 1 of this WP, the Sub Area Workshops run in Phase 1 of the Programme and the subsequent Development meeting recommended various actions to take forward. These actions were added to this WP as new tasks and will be described below.

For part 1 of this WP, during the reporting period the PMG discussed the proposal for an innovative media-rich online Water Data Portal. The portal will deliver a comprehensive catalogue of national water-related data that are of interest to a range of stakeholders. The portal is likely to provide a perspective on the data, how useful they are, how to access them (possibly with video clips) and allow users to comment on the datasets. Work has now begun and will be completed by the end of March 2014.

WSKEP sponsored a workshop on 'Innovative and radical groundwater, recharge, storage and resource development' on 4th December 2013. The workshop was organised by Tony Rachwall from the University of Surrey and looked at ways to share state of the art knowledge, operational experience and planned schemes on managed aquifer recharge, storage and recovery that are relevant to the UK. The workshop was supported by BGS, UKWIR and UKWRIP. A report is currently being written up and should be available in early 2014.

For part 2 of this WP, User Based Activities during this period have focussed on the tasks in the new PF. Task 3.2c is about raising the profile of health impacts of extremes. The PMG have been in discussion with Public Health England and have finalised a piece of work aiming to reduce the health impacts from flooding by identifying high risk populations. A one day workshop will take place on 30th January 2014 and a report on the conclusions will be produced. Task 3.2e concerns identifying synergies between agricultural and water utility users around the management of water. AMEC has undertaken this work and produced a report which is available on the WSKEP website:
(http://www.wskep.net/assets/documents/Synergies_between_agriculture_and_water_utilities_Final%20Report.pdf)
As a follow on from this work, AMEC will run an industry workshop with Anglian Water and the Environment Agency amongst others that is planned for early 2014. The WSKEP is currently setting up the contract for this work.

**WP4 - Connect and coordinate KE across NERC**

This Work Package is in two parts, part 1) is about connecting and communicating with other groups whilst part 2) concerns the management and maintenance of the WSKEP website. No new tasks have been added to this WP.

KE Networks: WSKEP members attended the NERC Knowledge Exchange Network (KEN) meeting in Edinburgh on 21st November 2013 to learn about other KE activities currently taking place and to network with other KE members and exchange views. The programme also had the opportunity to give a presentation and web tool demonstration at the KEN meeting.

KE Fellows: WSKEP undertakes activities to support and add value to the NERC KE Fellows. WSKEP met a number of water related KE Fellows at the KEN meeting.

Other KE Programmes: The MRE KEP was also represented at the KEN meeting. THE WSKEP team were able to discuss progress and experiences with them and exchange information on how the programmes are developing.

Other KE Networks: Following on from a Phase I Workshop WSKEP sponsored the Wales Environment Research Hub (WERH) to organise a workshop on 'Communicating Environmental Science' on 27-28 June 2013. This was attended by NERC representatives. This workshop has now lead onto another similar workshop 'Communicating science for sustainable practice' which was held at the University of West of England, on 27th -28th November.

The WSKEP website ([http://www.wskep.net/index.php](http://www.wskep.net/index.php)) has grown and developed during the reporting period. It is now a well respected site for water security information. The events calendar is kept up to date with WSKEP and other national and international conferences and meetings. Newsletters (e-zines) are sent out monthly highlighting WSKEP activities and others supported by the Programme. Tweets are posted nearly every day as well as when the website is updated. WSKEP now has over 800 followers.

**WP5 - Communicate with the science and user communities**

This Work Package is in two parts, part 1) is about writing and maintaining a Communication Plan whilst part 2) covers the organisation of a High Level event.

The WSKEP Communication Plan is a living document and updated regularly. The latest version will be presented at the next PAG meeting on 28th January 2014.

WSKEP hosted a Reception 'Improving Resilience of Businesses to Water Related Risks' at Central Hall Westminster on Wednesday 6th November 2013. There were four speakers, David Willetts, Duncan Wingham, Colin Drummond and Mark Fletcher .The aim of the event was to raise the profile of NERC science being used by businesses. It brought together high level representatives from industry, government and academia to discuss recent initiatives to encourage innovation in water management. There were two sponsors, Arup and British Water and seven banners around the room that displayed different science initiatives. The initiatives represented were BGS, COSMOS UK, Hydrological Outlooks, Met office, Water@Leeds, SWIRL and WaterR2B. WaterR2B was launched and the UK Water Research Directory was promoted. Duncan Wingham invited the attendees to discuss ways in which NERC could carry out Knowledge Exchange activities with business, which has resulted in some follow on discussions. An article was written up about the event (http://www.wskep.net/news.php?id=295) and a short video prepared showing highlights of the evening (http://www.wskep.net/news.php?id=296).

**WP6 - Act as a KE Ambassador**

This WP is an ongoing activity whereby the good practice in relation to KE is shared among the NERC community. Opportunities to share experiences have been undertaken whenever possible. WSKEP has interacted with other NERC KE networks and programmes, those of other Research Councils, other University led proposals, initiatives sponsored by government departments and devolved governments, trade and professional associations and European and international KE networks. Across this wide range of communities, WSKEP has been able to highlight NERC's commitment to, and leadership in water related knowledge exchange.

**WP7 - Manage the WSKEP**

This WP relates to the management of the Programme by the PMG. The PMG meets on a monthly basis to discuss progress, issues and upcoming events. Minutes are prepared for all meetings and actions are followed up.

The PAG consists of individuals who volunteer their time and who have been selected in order to provide a diverse range of insights into water KE related issues. The eighth PAG meeting was held on 19th September 2013 at Broadway House, London and was minuted and actions completed.

The PMG monitors the Programme budget and actions are revised in the light thereof. In early December the PMG submitted a proposal for a third phase of WSKEP running from April 2014 to March 2015 to be paid for by some of the anticipated under spend in the current financial year. WSKEP is currently waiting to hear the outcome of its submission, however the topic will be discussed at the next PAG meeting on 28th January 2014. The PMG also regularly updates a risk register which is reviewed at the PAG meetings. The PMG completed the fifth Interim report to NERC in August 2013.

## 3. Key Outputs

*Please list and summarise the key outputs generated from KEP activities in this period (i.e. projects, partnerships, reports etc)*

- Preparations for and follow up as a result of the Westminster Reception ' Improving resilience of businesses to water related risks'
- WaterR2B – new case studies added (http://waterr2b.net/)
- UK Water Research Directory – more researchers added (http://www.ukwaterresearch.net/)
- WSKEP 5th Interim Report
- Progress Report on Engaging with Businesses

## 4. Progress against deliverables due during this reporting period or delayed from a previous period (this list has been revised to match the new Programme Framework Oct 2012 – Mar 2014)

| Task | Task name | Output | Proposed end date | Actual end date | Reason for deviation |
|------|-----------|--------|-------------------|-----------------|----------------------|
|      |           |        | End               |                 |                      |
| 1.5 | Revise the plan for the Data Sub Area | Revised plan | May 2013 | May 2013 | |
| 1.6 | Engage with businesses to determine their KE needs | Case studies | Nov 2013 | | Extended till end of Programme |
| 2.3a | Add scientific outputs to the UK Water Research Directory | Database | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 2.3b | Add information on water research and demonstration facilities | Info on the website | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 2.3c | Identify industry relevant offers from researchers who attended WSKEP SPS workshops | Report | Mar 2013 | May 2013 | Lower priority |
| 2.4 | Identify and extract industry specific outputs from NERC funded RPs | Report | Mar 2013 | May 2013 | Lower priority |
| 2.5 | Establish the Industry Impact Award scheme | Award scheme | Mar 2014 | Mar 2013 | |
| 3.1a | Take the Data Sub Area forward | Report and Data Portal | Sept 2013 & Mar 2014 | | |
| 3.1b | Review of assessment of communication plans for drought conditions during the 2010-2012 period | Comms plans | Sept 2013 | | Slow to set up contract |
| 3.2a | Organise one-to-one activities with key industry sectors contacted during User Based Activities of the first phase of WSKEP | Varied | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 3.2b | Organise one-to-one activities with policy makers and regulators contacted during User Based Activities of the first phase of WSKEP | Varied | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 3.2c | Raise the profile of health impacts of extremes | Report | Feb 2013 | January 2014 | Slow to set up contract |
| 3.2d | Engage with stakeholders about their operational risk assessments | WSBF Report | Initial meeting Dec 2012 | Dec 2013 | |
| 3.2e | Identify synergies between different users around management of water | AMEC Report | May 2013 | May 2013 | |
| 3.2f | Engage with stakeholders about anticipating future change and implications for policy and businesses | Report from CIWEM Annual meeting | Initial meeting Dec 2012 | April 2013 | Annual meeting held in April |
| 3.2g | Engage with businesses to facilitate access to NERC knowledge | Meetings / discussions | Nov 2013 | | Extended till end of Programme |
| 3.3a | Synthesise outputs from ecosystem services research initiatives | Report | Mar 2013 | July 2013 | Slow to set up contract |
| 3.3b | Review plans for current RPs and identify existing and potential decision support tools | Report | Mar 2013 | June 2013 | Lower priority |
| 3.3c | Outputs from WSBF round table meetings | Reports | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 4.1 | Inform SIM's, to improve industry involvement in NERC RP's | Inc industry attendances at Town mtg | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 4.2 | Liaise with the other KE Programmes | Meetings / discussions | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 4.3 | Manage information relating to KE and research funding calls | Info on the | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |

Water security
Knowledge exchange programme

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| | | website | | | |
| 4.4 | A compendium of case studies | Info on the website | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 4.5 | A calendar of KE events | Info on the website | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 4.6 | Management of a register of KE activities | Info on the website | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 4.7 | Maintenance and management of the WSKEP website | Website | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 5.1a | Maintain and update the Communication Strategy | Comms Report | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 5.1b | Prepare a glossy brochure | Report | Feb 2013 | N/A | Information put into WaterR2B |
| 5.2 | Organise a High Level Event | Event | Nov 2013 | Nov 2013 | |
| 6.1 | Prepare six industry case studies (See Task 1.6) | Case studies on WaterR2B | Nov 2013 | Nov 2013 | |
| 6.2 | Presentations to disseminate good KE practice | Presentations | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 7.1 | Organise PAG meetings | Meetings | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 7.4 | Prepare Interim and Annual reports | Reports | Ongoing to Mar 2014 | Ongoing to Mar 2014 | |
| 7.5 | Prepare an end of Programme Evaluation Report | Report | Mar 2014 | | |

## 5. Key problems / Lessons learnt

*Please identify any problems or serious risks (e.g. technical, financial) that have prevented the achievement of planned targets for this period or that are likely to affect the programme in the future; please comment on any mitigation plans / lessons learnt as a result of these issues.*

Key problems / lessons learnt include the following:

- Change of time of the High Level Event due to diary commitments
- Identify ways in which the programme can carry forward the web tools beyond the life of the programme
- Dependence on third parties, research based or industry
- Time for industry groups to understand the aims of WSKEP and businesses
- Key role of 'consultancy' sector in water knowledge exchange
- Finding the best option for the maintenance of the web tools after the life of the programme

## 6. Key Opportunities

*Please summarise key opportunities for the KEP and/or NERC identified during this period*

Discussions with business and industry have lead to a number of follow on meetings. This has created the potential for NERC science to be taken up and used by businesses.

## 7. Plans for the next period

*Please summarise key activities planned for the next period and provide details of plans already in place to achieve these*

Activities planned for the next period include the following:

- Discussions with businesses
- CIWEM Parliamentary Event 9th December 2013
- Ninth PAG meeting on 28th January 2014
- Public Health England Workshop 30th January 2014
- British Water Parliamentary Event 4th February 2014
- AMEC Industry workshop to discuss synergies between agriculture and water utilities February 2014
- Building of the Phase 2 Data Sub Area Data Portal
- Administration for the 'Industry Impact Award' scheme

## 8. Other

*Please provide any additional information which helps to describe progress in this period*

There is no additional information to report during this period.