



WATER SECURITY
Knowledge Exchange Programme



Water Security KE Programme Annual Report

Second Annual Report of the
Water Security Knowledge Exchange Programme
April 2012 – March 2013

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Acronyms

BIS	UK Department for Business, Innovation and Skills	PAG	Programme Advisory Group
BGS	British Geological Survey	PF	Programme Framework
CEH	Centre for Ecology and Hydrology	PI	Principal Investigator
CIWEM	Chartered Institution of Water and Environmental Management	PMG	Programme Management Group
CCN	Catchment Change Network	RCUK	Research Councils UK
CDP	Carbon Disclosure Project	RELU	Rural Economy and Land Use Programme
EA	Environment Agency	RP	Research Programme
ESKTN	Environmental Sustainability Knowledge Transfer Network	SIM	Science and Innovation Manager
ESRC	Economic and Social Research Council	SuDS	Sustainable Drainage Systems
EVO	Environmental Virtual Observatory	SPS	Specific Priority Subject
GOTW	Grants on the Web	UEA	University of East Anglia
HPA	Health Protection Agency	UKCDS	UK Collaborative on Development Sciences
ICID	International Commission on Irrigation and Drainage	UKCIP	UK Climate Impacts Programme
KE	Knowledge Exchange	UKTI	UK Trade and Investment
KEAB	Knowledge Exchange Advisory Board	UKWIR	UK Water Industry Research
KEN	Knowledge Exchange Network	UKWRIP	UK Water Research and Innovation Partnership
KTN	Knowledge Transfer Network	UNESCO	United Nations Organization for Education, Science and Culture
LWEC	Living with Environmental Change	WERH	Wales Environment Research Hub
NERC	Natural Environment Research Council	WIG	Cross - Research Council Water Interest Group
		WP	Work Package
		WSBF	Westminster Sustainable Business Forum
		WSKEP	Water Security Knowledge Exchange Programme

Summary

This Annual report describes the Water Security KEP's progress against its targets and deliverables. It highlights the outcomes and impacts of its activities, notes key achievements and outputs, outlines future plans and presents the current and forecast financial position.

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Contents

1.	Background to this Annual Report	1
2.	Key Outcomes and Impact	1
3.	Key Activities.....	2
4.	Key Outputs	7
5.	Progress against deliverables	7
6.	Key problems / Lessons learnt.....	8
7.	Key Opportunities.....	8
8.	Plans for the next period.....	8
9.	WSKEP Finances.....	8
	Appendix 1 Progress against deliverables.....	9
	Appendix 2 Financial Statement	11

1. Background to this Annual Report

This Annual report reflects on progress made during the second year of a three year Programme. WSKEP was set up to run in two eighteen month phases so this year covers the last 6 months of the first phase and the first six months of the second Phase. After the first Annual Report, the Knowledge Exchange Advisory Board (KEAB) requested that the Programme Management Group (PMG) put more emphasis and focus on industry priorities and asked them to produce a new Programme Framework for October 2012 – March 2014 (PF). This was prepared and submitted to NERC and was informally agreed in September 2012. The work described in this report is based on the new PF and makes references to any new tasks added (with their task number) where appropriate.

2. Key Outcomes and Impact

Work undertaken by WSKEP has had the following impact.

- The Water Research Directory was launched in April 2012 with 300 entries. All entries have been validated by the researcher themselves. The facility is designed to promote collaboration and to accelerate users (business and policy) access to NERC and other research funded water science. It currently contains **846 entries** which far exceeds the Q2 2013 target of 400+. The site receives **~140 visits per month** (c.f. 120 per month at the end of Q4 2012). From the logging system it is clear that Universities are using it. Commercial operations tend to use commercial service providers which means the logging system cannot identify the individual organisation. However, there are rare exceptions such as W S Atkins. Industry networks have expressed an interest in taking over the Directory, and in developing complementary functionality with their own web-based tools.
- The Water Research Directory has a listing of water research and demonstration facilities in the UK. The aim is that it will become the first comprehensive listing for the UK.
- 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 received to date.
- Richard Blackmore's report showed that participants at the Workshops made new contacts and were developing collaborative research (eg Manchester airport with Lancaster University), and forming agreements to work together on submitting proposals and winning bids. The survey of workshop delegates found that 50 out of 71 respondents had identified potential collaborations as a result of the workshops, and that 73 bilateral discussions had been held. Despite the short time lags since the end of the workshop programme, 27 collaborations had already been initiated, or were being planning.
- The Sub Area Development meeting produced a comprehensive synthesis of main short, medium and long term priorities of users. This helped shape a broad consensus among leading contributors to WSKEP, and set the priorities for follow-up action by the WSKEP PMG. The top ten priorities form a major part of Phase 2 of the Programme and are tasks in the new Programme Framework.
- E-Respond was designed and created in response to a Defra/EA request to be able to pose questions to the research community for which they need answers. The system is entering a testing phase within Defra/EA.
- 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' will bring together 10-15 experts from academia, EA and the water utilities in July 2013. WSKEP has made early plans to support and sponsor the event.
- WSKEP support for the NERC CCN has enabled this network to remain the preferred route for delivery of a knowledge hub for the Defra/EA catchment based approach. WSKEP support has also ensured that other NERC data, knowledge and expertise will be an integral part of the next generation of web based knowledge provision to stakeholders (third sector organisations, industries, consultants and government bodies) involved in implementing the catchment based approach across England and Wales.
- The methodology for writing Synthesis Reports is being trialled across several parts of the EA and is expected to define best practice for Defra/EA methods to access knowledge / evidence from the research base.

- Regarding the website, a Google search for the generic phrase “**water security**” produces **636 million returns**. The **WSKEP** site is **ranked 7th** (c.f. 9th in December 2012) and appears on the first page (and has done so since September 2012). The entries ranked 1 - 6 are Wikipedia, University of East Anglia (UEA), the US Environmental Protection Agency, UNESCO and Water Aid. The next NERC-related activity to appear (LWEC) is in 40th place on page 4. The **WSKEP logo** is the **10th image** to appear on Google Images when the same search is applied. It is the only logo in the top 30 images. Unique visitor figures to the website have taken a sharp upturn since the start of the year, and “**900 in a single month**” was passed for the first time. In Q1 2013 the average is just over 900 per month (c.f. ~650 per month during Q4 2014). News and Calendar pages are the most popular. Google Analytics reveals that since November 2012, the site was visited from a total **501 different servers** (c.f. 206 up to December 2012) and from **68 countries** (c.f. 30 up to December 2012). The majority of visits (86%) are from within the UK. Top four countries with interest are UK, US, Canada, and Spain.
- A prototype version of WaterR2B was unveiled at the Research Councils UK (RCUK) Water Showcase event at the end of March 2013. It contains 18 case studies demonstrating the benefits for industry of high quality water research. The website will be launched at the High Level Event at with David Willets is speaking in November 2013.

3. Key Activities

The description below lists the **key activities and achievements** by Work Package (WP), during the reporting period.

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

WP1 had been completed in the first year of the Programme, however, the new PF has introduced two new tasks. The first (Task 1.5) is to revise the plan for the Phase 2 Data Sub Area. Phase 1 users identified two Sub-Area Topics (Data and Water Quality) as priorities for Phase 2 of the Programme. After consulting the Programme Advisory Group (PAG), the Data topic, will be restructured to deliver a greater relevance to industry, possibly by working with the Environmental Virtual Observatory (EVO) project. A revised plan for this topic will be developed in the next period. The Water Quality Sub Area Topic however, will not be taken forward.

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, WSKEP have identified several businesses which have partnered with NERC scientists to maintain or improve the environment in which they work. Danone who own Evian water, wishes to be recognised as an international leader in sustainable water resource management. It aims to meet - and where possible exceed - international benchmarks, best practice, norms and standards. Therefore, the company sought advice from organisations that provide scientific support to achieve these aims. Coca Cola wanted to restore a degraded stretch of river near its bottling plant in south east London. In addition to removing unsightly rubbish, the restoration had to be sustainable, being resilient to both flood and drought events, and it had to re-establish native ecosystems that were consistent with the local area. The company sought expertise from appropriate organisations who were able to help with the environmental and social sciences. South West Water wanted an in-depth assessment of the hydrological conditions of 2012 in South East England against which to assess the performance of their drainage infrastructure during this very wet year. They commissioned a report from hydrological experts which helped them to assess the true wet weather impacts on the region throughout the year and get the right balance between the impacts of fluvial flooding and the performance of their sewer network. Scottish Resource Group who own Scottish Coal wish to empty a lake in order to mine the coal reserves from beneath it. This activity will have environmental impacts on the lake and surrounding area and hence the company contacted experts in lake restoration to undertake an ecological impact assessment. The aim was to see if it would be feasible to return the lake to ‘Good’ ecological status once the coal is mined and the water restored. The process of gathering information for case studies from different companies will continue into the next period. (See WP6 for information on Case studies.)

WP2 - Identify the science that matches the key needs of the users

The new PF modified this WP. The original three parts to this WP can be grouped together as the creation of a Water Research Directory (<http://www.ukwaterresearch.net/>) (Figure 1). 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 this reporting period we have implemented a facility for researchers to add their scientific output to the site. The other new aspect to the Directory is information on water research and demonstration facilities in the UK. A page has been set up on the site where those responsible for such facilities can record information about them to provide the first comprehensive listing for the UK. This will be more widely advertised in the next period. The Directory is becoming a very useful resource for businesses, allowing them to search for researchers in their specialist fields of interest.

The new PF has added two new tasks to this WP. The first new task (Task 2.4) is to identify and distil from past, current and future NERC funded Research Programmes (RP), industry specific outputs and potential impacts. Initial work on this has begun by identifying who holds this information. Existing RP Programme Offices have been contacted as well as the NERC Science Delivery team. The PMG will prepare a report during the next reporting period.

The second new task (Task 2.5) was to establish an Industry Impact Award Scheme where proposals are invited for small knowledge exchange grants. A description of the Scheme was prepared, checked for legalities and announced via the monthly e-zine and at the RCUK Water Research Showcase at the end of March. Applicants can apply for grants from April –December 2013.

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.

The management of KE events in support of Sub Areas

At the beginning of the reporting period the final Phase 1 Workshops were completed. They were all well attended with representation by key individuals from relevant organisations. New partnerships were forged and discussion produced excellent synthesis of the major challenges in the respective priority subject areas. Participant reports were circulated to all who attended and Summary reports have been produced and published on the website. A Sub Area Development Meeting was held in June where the research recommendations from all the Workshops were discussed and prioritised for further action by the WSKEP. Those being taken forward have been added to this WP as new tasks and will be described below.

One of the objectives of the Workshops was to initiate collaboration between the researchers and users that attended. The PMG commissioned Richard Blackmore of Research Impact Consulting to gather information by questionnaire about these collaborations and recommend new approaches that could be included in any future workshops to increase the number and effectiveness of post-event collaborations. The report 'Collaborations arising from WSKEP Workshops' has been published on the website. Out of 71 delegates who responded, 50 reported having identified opportunities for collaboration and 27 partnerships had already been initiated, or were being planning.

Task 3.1b is a new task resulting from the Sub Area Development meeting to review the efficacy of communication plans for drought conditions during the 2010 – 2012 drought. The Environment Agency (EA) has published its report 'Review of the 2010-12 drought and prospects for water resources in 2013' (<http://www.environment-agency.gov.uk/research/library/publications/131328.aspx>). Since then the PMG have been in discussion with Waterwise to see what can be done to improve communication with the general public about water saving initiatives. The PMG have also agreed to sponsor the Groundwater Forum conference which will focus on experiences of the recent drought and its subsequent end to explore what has been learned from recent events and how to better communicate complex scientific issues affecting the public.

Activities with users to identify areas where WSKEP could support their programmes of work

In the first six months of the reporting period, User Based Activities focussed on the delivery of several projects requested and funded by Defra/EA under Task 3.2b of the new PF. Actions included monitoring progress on: a Guidance document for undertaking Quick Scoping Reviews and Rapid Evidence Assessments, national water quality

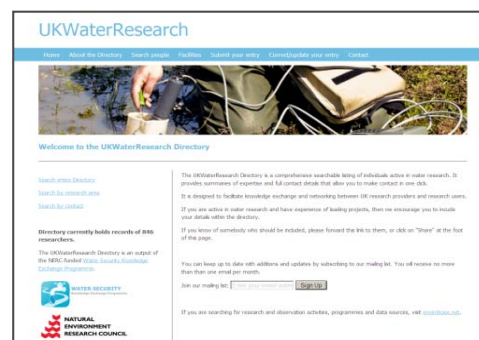


Figure 1 The UK Water Research Directory

scenarios using UKCIP09, a Systematic Review on natural, restored and constructed wetlands and planning for an international conference on methods for determining environmental flows. The Guidance document has subsequently been applied to two evidence assessments which are currently with Defra and the review teams for consultation. Work continued in the general area of identifying methods and tools by which Defra/EA can access policy relevant knowledge from the vast amount of national, European and international research. WSKEP also developed and launched a web based tool called e-Respond (<http://www.e-respond.net/>) (Figure 2) which enables Defra/EA staff to pose questions for which they are seeking advice from the research community.

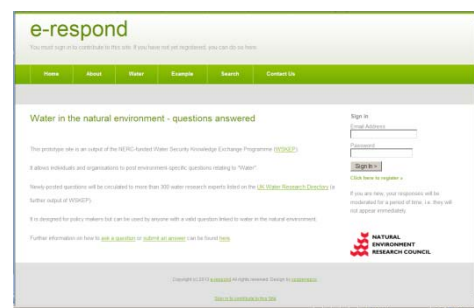


Figure 2 e-Respond

Industry User Based activities focussed upon building relationships with key user groups, and working with their established academic partners to increase and diversify that industry's access and use of NERC science. Key industry sectors included water utilities (where Exeter University has been commissioned to extend the work they are doing with Southwest Water on carbon sequestration to four other water utilities), the grocery sector where the WSKEP is working with Cranfield University to expand current work on increasing resilience to droughts, and with the financial sector (The Carbon Disclosure Project (CDP) - Water and the Financial Service Knowledge Transfer Network (KTN)) to identify topics where academic partners can work with CDP-Water and its industry partners. Dialogue also took place with electricity generators, extractive industry, the consulting sector and British Waterways. WSKEP supported the involvement of academics in water innovation actions being run by trade and professional associations – eg British Water, Water Industry Forum and Water Innovation Network.

In the second six months, User Based Activities have focussed on the tasks in the new PF. Task 3.2c is a new task to raise the profile of health impacts of extremes and in particular flood events. The PMG and the British Geological Survey (BGS) are in discussion with the Health Protection Agency (HPA) to reduce the health risk from flooding. To do this the HPA will initiate a meeting with members of the Natural Hazards Partnership to identify vulnerable or high risk populations before a flood occurs and to determine how to learn from flood events which affect people's health. A proposal has been written and this will be taken forward in the next period. Task 3.2d is to engage with stakeholders about their operational risk assessments. The PMG sponsored a Westminster Sustainable Business Forum (WSBF) meeting where the topic under discussion was 'Water Security and Future Business Risks'. Task 3.2e is another new task to identify synergies between agricultural and water utility users around the management of water. The PMG commissioned AMEC to prepare a report which will collate the currently fragmented information on the subject. The report, which is due to be finished at the end of May 2013, will review water utility and catchment oriented projects as well as the recent UK Water Industry Research (UKWIR) report and examine the relationships that are currently recognised. Task 3.2f is about engaging with stakeholders about understanding / anticipating future change and implications for policy. WSKEP sponsored the CIWEM Annual conference because it provided a platform for researchers and users to meet and discuss how they are anticipating change and what implications it has for the policy or businesses that they are involved with. Task 3.2g is about engaging with businesses to facilitate access to NERC knowledge. This is an ongoing process and is partially covered by the two WSBF round table discussions on 13th Dec 2012 and 28th Jan 2013. WSKEP has also supported the involvement of academics in water innovation actions being run by trade and professional associations, eg. The Chartered Institution of Water and Environmental Management (CIWEM), British Water.

Activities to increase impact from recent Research Programmes.

During the reporting period, based on outputs from the Rural Economy and Land Use (RELU) Programme, Lancaster University completed a Case Study / Best Practice guide on the local stakeholder involvement in catchment management schemes. This has been made available through the Catchment Change Network (CCN) Knowledge Hub to those involved in the Defra/EA catchment based approach. Due to staff constraints Imperial College withdrew from its initial undertaking to run a KE activity with the consulting sector and the EA on the use of the improved groundwater modelling of the unsaturated zone that was developed under the Lowland Catchment Research

Programme. WSKEP has proposed that it should be considered further within the relevant RP (NERC Changing Water Cycle Programme).

Two new tasks have been added to the third part of this WP as a result of the new PF. Task 3.3a is about synthesising outputs from recent and current ecosystem services research initiatives and Task 3.3b, aims to review plans for Current RPs and identify potential decision support tools. The PMG plans to run these two tasks together through the Ecosystems Knowledge Network and the Environmental Sustainability KTN (ESKTN). They propose to engage agri-food businesses and retailers at the UK regional level in understanding and using water-related ecosystem service valuation tools. The goal will be for these businesses to be able to manage risks and respond to opportunities. This will be taken forward in the next reporting period.

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.

Connecting and communicating with other groups

KE Networks: During the reporting period WSKEP undertook several types of activity to support the NERC CCN based at Lancaster. The first priority was to put in place new funding lines which took the network beyond the end dates of its NERC funding. WSKEP then highlighted the need for additional funding for the CCN to Defra/EA and supported a researcher-stakeholder workshop in May 2012 to identify relevant knowledge to support a knowledge hub for the Defra/EA Pilots. Since then the PMG have helped organise a sub contract for new additional UK Department for Business, Innovation and Skills (BIS) Sciencewise money to support the network in the coming period.

KE Fellows: WSKEP undertakes activities to support and add value to the NERC KE Fellows. WSKEP has provided Rachel Dearden with access to a range of key stakeholders beyond the Local Government Association and consultants with whom she can develop her sustainable drainage systems (SuDS) related methods and tools. Tanya Warnaars has been provided with advice and support in contacting stakeholders, in discussions with the Financial Services KTN. WSKEP attended a NERC Knowledge Exchange Network (KEN) meeting in Southampton in Nov 2012 which was also attended by 9 KE Fellows, 4 of which work on water related subjects. The meeting provided an opportunity to network as well as to identify the NERC M&S Fellow, Claire Quinn who had only just been appointed and the Unilever/Heineken Fellows, Ann Bruce and Tom Osborne.

Other KE Programmes: The Marine Renewable Energy KE Programme was also represented at the KEN meeting. The WSKEP team were able to discuss progress and experiences with them and subsequently exchanged information regarding the development of case studies.

Other KE Networks: WSKEP have commissioned Alastair Moseley to undertake a mapping of professional, trade associations, societies or informal interest groups involved in water related knowledge exchange activities. The mapping involves a compilation of the description of the activities undertaken and subjects covered by these networks and includes contact details and web addresses. This report is pending.

Similar activity by the Welsh Environmental Research Hub (WERH) in partnership with Bangor University is developing Case Studies / Best practice guidance for industry and regulators on research needs and knowledge transfer. They are running a 'Communicating Environmental Science' workshop on 27/28 June 2013 in support of this work. Depending upon the results, the processes and methods developed may be disseminated more widely across the UK.

Dan Osborn is the NERC Lead on Living with Environmental Change (LWEC) and WSKEP have met with him to discuss ways to collaborate on the Government Office for Science - LWEC UK Water Research and Innovation Partnership (UKWRIP) Initiative. WSKEP supported and attended a UKWRIP Workshop in May 2012 that was organised by UKWIR and Tony Rachwall on Water Infrastructure R&D needs. WSKEP has offered support to Louise Heathwaite to organise a Think Tank for the environmental and climate KE Action Group of the UKWRIP.

WSKEP had discussions with those setting up the new NERC Drought and Flood calls. The outcomes of the four Phase 1 Drought and Floods Workshops were fed through to influence the direction of the new RPs. Ned Garnett

(NERC Atmospheric Sciences, Science and Innovation Manager) used the outcomes from the WSKEP Workshop on drought management to convince Economic and Social Research Council (ESRC) to co-fund the new RP on Droughts.

WSKEP supported the planning of the RCUK Water Showcase 27th March 2013 and attended the successful event at the Wellcome Trust in London.

The WSKEP website

The WSKEP website (<http://www.wskep.net/>) (Figure 3) has grown and developed significantly during the reporting period. It was launched in March 2012 and has now become a well respected site for water security information, accessed at all levels including by MPs. As well as the original information (About us, Events, Research and Innovation, News, Networks and a Document store), two new facilities have been added; a secure area for PAG members and a LinkedIn part for the WSKEP community. 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 as well as others supported by the Programme. Tweets are posted about once a week as well as when the website is updated. WSKEP now has over 470 followers.



Figure 3 The WSKEP Web site

WP5 - Communicate with the science and user communities

This Work Package is divided into two parts, part 1) is about writing and maintaining a Communication Plan whilst part 2) is about organising a High Level event.

Communication Plan

The WSKEP Communication Plan is a living document and consequently updated regularly to take into account new developments and priorities of the Programme. It has just been revised so that it can be presented as one of the papers at the next PAG meeting at the end of May 2013.

High Level Event

A High Level Event will be organised to raise the profile of NERC science being used by businesses. Current plans are for Duncan Wingham to host the event. Speakers will include David Willetts MP and the Chief scientists for two businesses. An appropriate venue is now being sought and an agenda determined.

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, for example at each of our Specific Priority Subject Workshops and at the Sub Area development meeting. WSKEP has interacted with other NERC KE networks and programmes, those of other Research Councils, other University led proposals, initiatives by sponsored 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.

The new PF added an extra task (Task 6.1), into the WP to develop case studies of benefit to industry from NERC and other freshwater science. WSKEP has developed a dynamic website for many different sectors, from the water utilities, through, farming, energy, consulting and health amongst others to highlight case studies of where working with research organisations, industry has solved some of its challenges and needs. The website is called WaterR2B (<http://waterr2b.net/>) (Figure 4) and was showcased at the RCUK Water



Figure 4 The WaterR2Bhe case studies website

Showcase event at the end of March. It currently contained 18 case studies and is set to expand over the coming months.

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.

The PAG consists of individuals from industry, consultancies, Government Ministries and Agencies who volunteer their time and who have been selected in order to provide a diverse range of insights into water related issues. Two new members have been welcomed to the PAG in the last year, Silvia Boschetto from BP and Duncan Wardrop from Lafarge. PAG meetings were held on 8th May 2012 at CEH Wallingford, 11th September 2012 at BIS, London and 23rd January 2013 at CEH Wallingford. They were all minuted and the actions completed.

The PMG monitors the Programme budget and actions are revised in the light thereof. It also regularly updates a risk register which is reviewed at the PAG meetings. The PMG completed the third and fourth Interim reports to the NERC KE Advisory Board.

4. Key Outputs

The key outputs for the period were:

1. Six Workshops with Full Participant Outcome Reports
2. Six Workshop Summary Reports (http://www.wskep.net/workshop_outputs.php)
3. Sub Area Development Meeting with Full Participant Outcome Report
4. Sub Area Development Meeting Summary statement (<http://www.wskep.net/summarystatement.php>)
5. Report by Richard Blackmore 'Collaborations arising from WSKEP Workshops' (<http://www.wskep.net/news.php?id=200>)
6. First Annual Report and Presentation to the NERC KE Advisory Board
7. Case Study 'Best Practice from RELU on local stakeholder participation in catchment management' (<http://www.catchmentchange.net/about/resource-centre/>)
8. Oral presentation of published paper at the British Hydrological Society's Eleventh National Symposium
9. UK Water Research Directory - researcher scientific outputs added (<http://www.ukwaterresearch.net/>) and research and demonstration facilities page added (<http://www.ukwaterresearch.net/>)
10. FWR Newsletter lead article 'WSKEP soaking up Knowledge – A novel approach to supporting sustainable and resilient management of droughts' (<http://www.euwfd.com/FWR-Newsletter10-0.pdf>)
11. Launch of e-respond tool (<http://www.e-respond.net/>)
12. The Westminster Sustainable Business Forum - 'Sustainable Solutions: Raising the water mark' (<http://www.wskep.net/news.php?id=196>)
13. All Party Parliamentary Water Group – 'Making Innovation a Reality' Brochure (<http://www.wskep.net/news.php?id=201>)
14. A short guide to Water related searches written by WSKEP and Envirobase team members
15. Guidelines document 'Guidance document for the production of Quick Scoping Reviews and Rapid Evidence Assessments'
16. Sponsorship of a work leading to a paper in the journal Environmental Evidence on the effectiveness of reedbeds at retaining nutrients from agricultural pollution (<http://www.environmentalevidencejournal.org/content/2/1/1>)
17. Launch of the Industry Impact Award Scheme (http://www.wskep.net/Industry_Impact_Awards.php)
18. Unveiling of the WaterR2B case studies website (<http://www.waterr2b.net/>)

A list of publications is provided in the metrics spreadsheet.

5. Progress against deliverables

The table in Appendix 1 shows progress against deliverables due during the reporting period, or delayed from a previous period. The table is the revised table as set out in the new Programme Framework for Phase 2 of the Programme.

6. Key problems / Lessons learnt

The planning of the Development meeting posed a number of interesting challenges related to ensuring the outcomes represented an accurate synthesis of the major outcomes from each individual SPS workshop. This type of meeting was quite unfamiliar to many of the delegates, but through careful moderation it was possible to identify short medium and long term priorities.

Delivery of many of the WSKEP activities depend upon other third parties. While many of these have been research organisations – the increased emphasis upon industry relevance has meant that the Phase 2 activities need a stronger industry lead in planning and delivering KE actions.

It has taken considerable time for industry groups to understand what the WSKEP is seeking to do, and how it can complement industry wide needs from knowledge and innovation. This underlines the fact that building stronger research -user collaboration is a long term process. While the development processes have been quite slow with some industry groups, once decisions are made to proceed, industry groups expect actions to start very quickly.

7. Key Opportunities

The points below list the key opportunities for WSKEP that have emerged during the reporting period.

The UKWRIP is a potentially powerful mechanism to build long term improvements in the UK's water related knowledge exchange. The WSKEP has sought to support the UKWRIP wherever possible, including following up on the workshop organised by UKWIR and Surrey University (Tony Rachwal) on Water Infrastructure research.

Stronger relationships have been built with NERC RP programme managers, with the WSKEP playing a role in the development of both the Floods from Intense Rainfall and the Droughts RP's. In addition, good contacts have been built with the NERC Macronutrients Programme manager (Paul Whitehead) and ongoing interactions with the Changing Water Cycle and Storm Risk Mitigation Programmes.

WSKEP engagement in the Welsh Government WERH and the Scottish Government Centre of Expertise for Waters, opening up opportunities for the WSKEP to complement and be itself complemented through partnering with these water KE activities in the devolved administrations.

RCUK organised a Water Showcase in March 2013 which WSKEP support by planning a session and attending the event.

Influences of specific interactions by WSKEP at company / industry levels may provide new insights into how to enhance approaches to pathways to impact at project and Research Programme levels.

Awareness of the new Research Programme six monthly reporting process may lead to more effective approaches to increasing KE activity by the WSKEP group.

8. Plans for the next period

Activities planned for the next period include:

- Planning for the High level event in November 2013
- Planning the Data Sub Area
- Preparing more case studies
- Water research and demonstration facilities on the UK Water Research Directory
- Various task reports
- CIWEM Annual Conference 10-11 April 2013
- PAG meeting 29th May 2013
- KEN meeting 25th June 2013
- WERH /WSKEP Communicating Environmental Science Workshop 27-28 June 2013
- Industry/WSKEP meeting on aquifer storage and recharge July 2013
- Regular updates to the WSKEP website

9. WSKEP Finances

The PMG have prepared a Financial Statement for the year April 2012 – March 2013. This is submitted with the Annual Report. Appendix 2 gives an explanation of the figures.

Appendix 1 Progress against deliverables

The table shows progress against deliverables during the reporting period.

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		
1.6	Engage with businesses to determine their KE needs	Case studies	Nov 2013		
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	Sept 2013		
3.1b	Review of assessment of communication plans for drought conditions during the 2010-2012 period	Comms plans	Sept 2013		
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	October 2013	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	Initial mtg with Coca Cola and M&S etc.	Nov 2013		
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 website	Ongoing to Mar 2014	Ongoing to Mar 2014	
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		
6.1	Prepare six industry case studies (See Task 1.6)	Case studies on WaterR2B	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		

Appendix 2 Financial Statement

The PMG have prepared a Financial Statement for the year April 2012 – March 2013. This is submitted with the Annual Report.

Summary Statement¹

The total expenditure incurred by the WSKEP during 2012/13 was £555,177 against a total budget of £612,022 of which the NERC contribution at 80% FEC was £444,141 against a budgeted NERC contribution of £489,618. Below is an explanation for each sub section of the Statement.

Staff Costs

During the reporting period it was agreed with NERC Swindon Office that the budget for staff costs could be increased from £253,328 to £303,328 by redistributing funds budgeted for recurrent costs to the staff costs budget. As previously reported, this redistribution of funding was to cover additional staff costs incurred in order to deliver the programme objectives within the 3 year timeframe of the programme. However due to a decrease in overhead costs and the change in focus of the programme it meant that the expenditure for staff cost in 2012/13 was £50,669 below the revised budget provision. The £50,669 under spend will be carried over into 2013/14 staff costs as there will be a need for more resource to complete the programme within the timeframe.

Non-Staff Costs

Travel and Subsistence

Travel and Subsistence expenditure for 2012/13 was £14,214.22 against a budget of £16,739.00 and therefore represented an under spend of £2,524.78 against this budget line. This under spend is a result of staff being unable to attend events due to other work commitments. While the rates of spend on T&S is expected to increase during 2013/14, the budget for 2013/14 will be revised downwards by approx 15-20% to more realistically reflect the expected levels of future spend.

Consumables (inc Literature and Marketing).

Expenditure for consumables during 2012/13 was £10,560.20 against a budget of £4,150.00. Due to transferring responsibility for graphic design and printing from NERC Swindon Office to external contractors working directly to the WSKEP – the bulk of the expenditure on literature, banners and publicity material is reported under the Contractors heading below. The spend under Consumables reflects initial costs associated with material produced to promote the website, and the UK Water Research Directory. The over spend has been due to the development of the WaterR2B website which had not been anticipated at the beginning of the programme.

Events – hosted by the KEP

The WSKEP hosted six workshops which were organised by different host organisations to increase the attendance to the workshops. Expenditure on these events was £55,991.66 against a budget provision of £9,470.00 – representing an over spend of £46,521.66. The over spend against this budget line was due to the cost of the host organisations arranging the workshops on the programmes behalf. However, by the programme achieving cost savings by using a single event facilitator meant that funds were available to cover these costs.

Events – General Promotion

Substantial additional resource was allocated to general promotional activities above the provisions made in the Business Plan at the start of the Programme. The expenditure on this budget line in 2012/13 was £29,930.00 against a budget of £12,660.00. The greater priority given to this area was required to respond to the need to raise the profile of water research, KE and innovation at political levels (through participation in three parliamentary events). Other events that the programme sponsored were two British Water Innovation days, a UEA Water security and

¹ All financial data is reported at Full Economic Cost (FEC) unless other stated.

International Commission on Irrigation and Drainage (ICID) Seminar on global and local irrigation policy and also the CIWEM and Institution of Civil Engineers evening reception which marked the 60th anniversary of the 1953 floods.

Events – Attended

WSKEP staff attended a number of water security related conferences, where the WSKEP was publicised. Expenditure against this budget lines was £2,281.80 against a budget provision of £15,040.00. The low expenditure reflects the time pressure that WSKEP staff have been under to deliver the programme objectives. Also many of the events have been free to attend and just travel expenses have been charged to the programme. While attendance at external conferences is increasing this budget line will be £2,000 for 2013/14.

Contractors – event facilitation

Expenditure during the year was £20,646.08 against a budget of £188,120.00 representing an under spend of £167,473.92. The use of a single event facilitator has also enabled the programme to achieve costs savings – while delivering a far greater coherence in the design, delivery and outputs of the different workshops. This has allowed the workshops to be hosted and organised by the relevant organisations. There has also been a reduction in the number of workshops originally planned at the start of the programme in order to achieve the programme objectives set out in the second phase of the programme.

Contractors – report writing

The number of reports commissioned was lower than expected due to other activities being funded under Contractors-other. One of the reports produced by Richard Blackmore on Collaborations arising from WSKEP workshops, provided useful evidence on the impact of the workshops. Expenditure under this budget line was £17,280.00 in 2012/13 against a budget of £28,005.00.

Report writing in regards to the SPS workshops has until now been allocated to either the event facilitation or CEH staff cost budget lines.

Contractors – others

Expenditure for other contractors during 2012/13 was £106,666.39 against a budget provision of £82,005.00 – an over spend of £24,661.39. Under this heading are the costs associated with taking on design, literature and the web site – and of using an external communications company. Also included under this budget line are the actions being commissioned through industry groups, trade and professional associations, and university groups prepared to undertake KE activities targeting key industry sectors and/or government bodies. With the programmes change of focus on industry and business an increased amount of work has been done in this area and is the reason for the over spend.

Equipment

A small amount of equipment has been purchased totally £621.00. This has included equipment to display publicity material at events, hiring of pin boards for the workshop and the Vodaphone accounts for the two iPads to support WSKEP communications at exhibitions.

Other Costs

Other costs for 2012/13 totalling £359.37 against a budget allocation of £1,000.00 were made for various items including membership to ICID, Postage and Courier services for sending publication material to events, and some insurance costs for transporting WSKEP publicity material around the UK.

Finance Conclusions

The overall expenditure has come in close to the level at which it was budgeted, but with some redistribution between the different budget lines. This redistribution of expenditure is to be expected with the change in focus of the programme. The revised Programme Framework has meant that there will need to be a change in the budget allocation to be able to achieve the deliverables that have been agreed in the Framework. The revised Programme

Framework estimates fewer events requiring expert facilitation. The remaining budget for Contractors – event facilitation has been distributed to areas of the budget that require greater spend.

Similar overall levels of expenditure are expected, but with the budget plan and distribution between budget lines for 2013/14 will reflect the deliverables agreed in the Programme Framework 2012-2014. A revised breakdown of costs with explanation for changes for next financial year has been submitted to NERC.